SUBGROUP DIFFERENCES AMONG FEMALE DATING INTIMATE PARTNER VIOLENCE (IPV) PERPETRATORS: A TYPOLOGICAL APPROACH

by

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(Under the Direction of Joan Jackson)

ABSTRACT

Previous research suggests that male intimate partner violence (IPV) perpetrators can be differentiated into subgroups on the basis of personality characteristics, severity of violence perpetrated, and the generality of violent behaviors. Better understanding of variation among partner violent individuals may lead to more effective assessment, treatment, and prevention of violence. Women’s perpetration of IPV is vastly understudied relative to men’s perpetration, and very limited research has examined whether the dimensions that differentiate abusive men are also useful in describing abusive women. The present study used a sample of young adult women who endorsed perpetration of dating IPV. A model-based cluster analysis was carried out on scores of antisocial and borderline personality characteristics, violence severity, and violence generality to identify subgroups of female IPV perpetrators. Results suggest that female perpetrators are a heterogeneous group and may meaningfully differ on these characteristics as well as developmental experiences and proximal correlates of violence.

INDEX WORDS: Intimate partner violence, Dating violence, Female perpetration, Perpetrator subgroups, Typology
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DEDICATION

This thesis is dedicated to my loving and supportive mother, Wendy W. Harding.

Thanks for believing in me.

This thesis is also dedicated to all of the individuals who have been directly or indirectly affected by domestic violence.
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I would like to acknowledge and say thank you to all of the individuals who have provided support during the process of working on this study. To my mentor, Joan Jackson, for providing encouragement, guidance, and support for this project from start to finish. To each of my committee members, Steven Beach, Karen Calhoun, and Anne Shaffer: Thank you all for contributing your valuable expertise and input.

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CHAPTER 1

INTRODUCTION

Purpose of the Study

The intimate partner violence (IPV) research literature has been progressing and evolving in recent years, due to the increasing empirical focus on understanding the etiology, development, nature, and outcomes of partner violence (see, for example, reviews by Bell & Naugle, 2008; Johnson & Ferraro, 2000). In general, understanding of the nature of violence perpetration within intimate or romantic relationships has evolved from a relatively narrow conceptualization of partner violence as a unidirectional act perpetrated by a batterer, to a more sensitive and nuanced appreciation for the individual, dyadic, and intergenerational influences on intimate partners acting within specific societal and cultural contexts (Bell & Naugle, 2008; Langhinrichsen-Rohling, 2005). In a recent commentary on the key findings that are shaping the direction of the field, Langhinrichsen-Rohling (2005) delineated the most significant empirical findings and described potential implications for the treatment of violence perpetrators, service provision for victims, and the research that is needed to further develop our understanding. Included in this “greatest hits” list were (among others) the controversial finding that women perpetrate violence as frequently as (and in some cases, more frequently than) men, and the theoretical identification and empirical validation of the existence of batterer subtypes.

The research literature on intimate partner violence perpetration has made strides in the recent successful application of typological approaches to understanding subtype differences among male perpetrators (Bell & Naugle, 2008; Lewis & Fremouw, 2001). The identification of subgroup differences in IPV perpetrators has implications for the understanding of the
development of IPV (i.e., identification of different pathways that may result in abuse perpetration), interventions and perpetrator treatment efforts, and the prevention of relationship violence. However, typological approaches for understanding young adult dating partners and female perpetration in particular have not experienced the same level of attention or success. Given that early forms of violence experience (including dating violence in adolescence) are developmentally important in later IPV perpetration and victimization, research examining within group differences of young adult dating violence perpetrators has important theoretical and applied implications.

The current study sought to expand existing understanding of perpetration subtypes using a typological approach in a sample of young adult dating partners, with the goal of identifying and evaluating subtypes within male and female perpetrators. This document will first provide an overview of the different theoretical approaches taken in IPV research, and describe several key empirical findings in the literature that support the value of and need for the current research. Next, we describe the methodology employed in the present study. To examine our questions of interest, subtypes of perpetrators were created by differentiating groups based on severity of violence perpetrated, personality characteristics, and generality of the violence (i.e., if violence is only occurring within the relationship or if there are also violent behaviors external to the relationship). Differences in distal risk factors, such as abuse sustained in childhood and witnessing IPV, and in proximal risk factors, such as personality factors, attitudes toward violence, substance use, attachment, and relationship stress, were then compared across identified subtypes.
CHAPTER 2
THEORETICAL GROUNDWORK FOR IPV RESEARCH

Intimate partner abuse is a complex problem. Attempts to understand domestic violence began to gain traction in the 1970’s as the women’s movement grew and societal attention was directed toward women’s issues (Frieze, 2008). Domestic violence was conceptualized primarily as the result of a society that valued and empowered masculinity and devalued and disenfranchised women. It was believed that in certain relationships, patriarchal influences resulted in men who dominated, controlled, and abused their wives. Men were viewed as the primary perpetrators of domestic assault, and women the primary victims. In later years, researchers began to hypothesize that violence was the result of a pathological, disordered (male) perpetrator. Theories such as Dutton’s (1994) abusive personality were proposed. More recently, the wide variation in perpetrator characteristics, relationship characteristics, contextual influences, and developmental pathways that result in domestic violence has led to broader theories that attempt to take into account a range of influences, from the level of society down to the level of the individual (Bell & Naugle, 2008).

Johnson and Ferraro (2000) suggest that there are multiple considerations that researchers must consider when attempting to understand perpetration. First, there are individual differences among perpetrators of relationship abuse, such as heritable predispositions to impulsivity or negative affectivity, attachment style, or personality characteristics. Second, there are different patterns of violence against partners, which vary as a function of the dynamics of the dyadic relationship. Third, there are different types of intimate relationships. Partners may be married,
casually dating, cohabitating, or same-sex (to name a few key distinctions). Finally, abuse in relationships occurs within a larger societal context. These distinctions have been studied by researchers drawing on several key theoretical frameworks, in an attempt to draw empirical findings together in a cohesive manner. Several theories have been particularly influential in the way the field approaches the problem of IPV, described as follows.

**Sociocultural Level Theories**

*Feminist Theory.* As previously mentioned, feminist theory was perhaps the first framework with which IPV was examined (Dobash & Dobash, 1977; 1984; Pence & Paymar, 1993; Walker, 1979; Yllo, Bograd, & McHugh, 1989). Researchers using this framework to approach the problem of IPV viewed relationship violence as the result of an imbalance in power between the sexes. Societal devaluation of traditionally “female” traits, women’s limited access to economic resources and societal influence, and the overvaluation of traditionally “masculine” traits were hypothesized to contribute to the problem of wife-beating. The feminist theory perspective posited that men use violence with the goal of controlling, regulating, and punishing their devalued and objectified wives (Bell & Naugle, 2008). As stated by Dobash and Dobash (1984), “We would argue that many violent episodes should be understood as often constructed intentionally by the aggressor…Crimes of violence against women cannot be explained solely through the use of an interactional or situational analysis. Rather, they are deeply imbedded in the existing intentions of male aggressors and these in turn are shaped and legitimated by a wider socio-cultural context of patriarchal domination” (pp. 286-287). Feminist theory provided a foundation for examining the problem of violence perpetrated within relationships; however, advances in the field have illuminated shortcomings of using this theory to explain IPV. One
important weakness of feminist theory is the increasingly acknowledged problem of female-
perpetrated physical aggression within relationships.

**Dyad/Power Theory.** Extensions of feminist theory emerged in the literature over time. Researchers began to hypothesize that perhaps power imbalance within the relationship was also important to examine. It was proposed that relationships that were more egalitarian in nature would be less conducive to partner violence, even within the larger context of a patriarchal society. A power imbalance within the relationship was hypothesized to place stress on the relationship, which in combination with certain background and situational factors could result in relationship violence (see, for example, Cascardi & Vivian, 1995; Frieze & McHugh, 1992; Straus, 1979).

**Individual Level Theories**

**Social Learning Theory.** Social learning theorists posit that IPV perpetration results from early learning of violent tactics through exposure to modeled behaviors in early childhood. Based on theory developed by Bandura in the early 1970’s, researchers posited that early observation of abusive behaviors or direct receipt of abuse leads to the later development of tolerance and acceptance for these behaviors (Bandura, 1971; 1973; Lewis & Fremouw, 2001). Social learning theory states that reinforcement does not have to be direct in order for learning to take place; rather, observing reinforcing and punishing outcomes is sufficient for behavioral learning. Riggs and O’Leary (1989; 1996) proposed a model of dating violence that drew heavily on social learning theory. These authors posited that dating violence stems from a combination of contextual factors (such as exposure to aggression modeling, exposure to abuse in childhood, acceptance of violence as an appropriate conflict response, and prior use of aggression) interacting with situational factors (such as substance use, partner’s aggressive behaviors, poor
problem solving skills, and the seriousness of the relationship) to potentiate or attenuate risk for future violent episodes. This background-situational model of dating violence has been examined empirically with mixed support. For example, Luthra and Gidycz (2006), using backward-stepwise logistic regression, found that partner’s use of aggression, alcohol use, father-child aggression, and two problem solving behaviors predicted female’s use of aggression with 83% sensitivity. Alternately, for males, alcohol use, relationship length, and partner’s use of aggression positively predicted violence perpetration status with 30% sensitivity.

Individual Differences/Psychopathology. In the mid 1990’s, researchers began to posit that perhaps intimate partner violence could be explained by individual level differences that predispose people to violence. Early researchers posited that some of these individual level differences included deviances in attachment development and maladaptive, disordered personality traits (e.g., Dutton, 1994; Dutton, 1995). Dutton’s (1994) concept of an “abusive personality” was based on theorized etiologies of partner violence in the disordered development of attachment, traumatic early childhood experiences, and impulsivity. Dutton proposed that approximately 40% of male perpetrators who present for treatment could be characterized by what he referred to as Borderline Personality Organization (BPO). Other researchers also emphasized the importance of individual differences in describing perpetrators of IPV. For example, Holtzworth-Munroe and Stuart (1994) hypothesized that developmental influences (such as early childhood experiences, association with deviant peers, genetic factors) would interact with and also influence the development of related contextual influences (such as attachment style, impulsivity, attitudes toward violence, social skills), resulting in different patterns of abuse and personality characteristics among abusive partners.
Gottman and colleagues (1995) proposed that there were differences in male batterers’ heart rate reactivity, which could differentiate between perpetrators of severe violence with antisocial personality characteristics and perpetrators of lower levels of violence with non-elevated levels of antisocial personality characteristics. Specifically, males who exhibited decelerated heart rate activity while engaged in a conflict discussion with their partners tended to perpetrate more severe violence and exhibit antisocial personality characteristics (Gottman, Jacobson, Rushe, Shortt, Babcock, LaTaillade, & Waltz, 1995). However, this finding has failed to replicate in other studies (e.g., Babcock, Green, Webb, & Graham, 2004; Meehan, Holtzworth-Munroe, & Herron, 2001). Babcock and colleagues (2004) posited that the failure to replicate was the result of an artifactually high baseline heart rate measurement in the Gottman et al. study. However, Babcock and colleagues did find lower resting heart rate to be positively associated with men’s violence perpetration, antisocial personality, and general violence levels (Babcock et al., 2004). Results of this study suggest that perpetrators who lack anticipatory anxiety (when they know they are about to engage in a conflict-discussion) may be more prone to severe relationship aggression in addition to antisocial and criminal behaviors outside of the relationship.

In sum, there have been multiple theoretical approaches that serve as the foundation for and context of current IPV research. Recently, increased emphasis has been placed upon integration of these varying theoretical frameworks. It is now widely recognized that there is no “one-size-fits-all” approach to understanding violence perpetration. More than ever, researchers are incorporating the interactive effects of individual vulnerabilities, developmental influences, and broader contextual and societal factors that may contribute to the diverse etiologies of partner violence perpetration (Bell & Naugle, 2008).
CHAPTER 3

THE BIDIRECTIONAL NATURE OF RELATIONSHIP VIOLENCE PERPETRATION

A recent and ongoing controversy among researchers studying IPV revolves around the problem of female-perpetrated violence. Some researchers argue forcefully that female-perpetrated violence is as frequent and as severe as male-perpetrated violence, with many of the same detrimental consequences (e.g., Dutton, 2007); others posit that female-perpetrated violence does not carry the same consequences associated with the gender-based problem of female victimization (e.g., Reed, 2008). In general, many researchers are now accepting that violence perpetrated by both genders represents a problem deserving of empirical attention, while still appreciating the unique situation of female victims relative to male victims. Specifically, women are more likely to face economic and social barriers when leaving a relationship, have less physical strength than male partners, and may be more likely to be injured by abusive acts (e.g., Archer, 2000; Frieze, 2008; Straus, 2006; Whitaker, Swahn, Hall, & Haileyesus, 2008).

Severity and Frequency of Violence

Most researchers investigating dating or partner violence use an “acts” scale, or a scale that measures the presence and frequency of specific abusive acts. The development of the Conflict Tactics Scale (CTS; Straus, 1979) and Revised Conflict Tactics Scale (CTS-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) provided a way for the field to quantify the victimization and perpetration among couples. The widespread empirical use of the CTS-2 has allowed for comparison of victimization and perpetration rates across diverse samples (Langhinrichsen-Rohling, 2005).
A number of studies using acts scales to quantify violence perpetration and victimization have reported greater rates of female victimization by a male partner, compared to male victimization by a female partner. For example, findings from the National Violence Against Women Survey (NVAWS), which utilized a nationally representative sample of approximately 8,000 women and 8,000 men, showed that women had a significantly greater lifetime prevalence of physical violence victimization (39.2%) compared to men (7.3%) (Arias & Corso, 2005). However, other researchers have shown that violence is perpetrated at similar frequencies and similar prevalence among both men and women, even in different cultural contexts (e.g., Magdol, Moffitt, Caspi, Newman, Fagan, & Silva, 1997; O’Leary, Slep, Avery-Leaf, & Cascardi, 2008; Straus & Ramirez, 2007). The discrepancy in findings likely reflects the diversity of samples studied and methodological approaches. For example, researchers taking a feminist perspective to IPV are more likely to study convenience samples of victimized women or males in treatment programs, while researchers that take a more dyadic or social perspective to understanding violence in relationships may be more likely to use community samples (Archer, 2000; Johnson, 1995; 2006).

In an attempt to consolidate these diverse findings and examine partner aggression prevalence rates across samples, Archer (2000) conducted a meta-analytic review of aggression rates within the IPV research literature. Results indicated that women were significantly more likely to perpetrate physical violence than men, though the overall effect was small ($d = .05$). Given that studies using adolescent or college samples tend to find that women perpetrate equal or greater rates of violence relative to men (Archer, 2000; Straus & Savage, 2005; Straus, 2004; 2008) and even greater rates of severe violence (Cercone, Beach, & Arias, 2005), it has been hypothesized that relationship status may be a moderator of the effect size and direction of
perpetration rates. Specifically, the disproportionate rate of female perpetration may be attributed to a woman’s perceptions that a) the man won’t retaliate and b) her partner is capable of defending themselves and will not be hurt by the violence. These perceptions are hypothesized to be more prevalent among women in dating relationships (e.g. Fiebert & Gonzalez, 1997). Archer (2000) concluded that there was evidence supporting the moderating effect of sample on the effect size and direction of the violence perpetration, consistent with Johnson’s (1995) articulation that different research samples tap into different kinds of violent dynamics (i.e., situational couple violence, intimate terrorism, and mutual violent control). In particular, samples of highly victimized populations or batterers in treatment reported greater effect size differences and more frequent violence perpetration by men, compared to community or college samples (Archer, 2000).

While the violence captured by acts scales suggests that males and females both perpetrate violence, there is wide recognition of the weakness inherent in using acts scales. Limitations of the CTS-2 include the failure of the items to capture the severity of an injury that may result from an act or the motivation for the violence (e.g., can comparisons be drawn between a woman who endorses “kicking” her male partner and a man who endorses “kicking” his female partner? Does a light slap on the arm have the same meaning as a hard slap across the face?). Further, acts scales may neglect theoretically important contextual variables, such as the motivation for violence and reaction to or outcome of the violence (e.g. Langhinrichsen-Rohling, 2005). Thus, researchers have suggested that the topological similarity in prevalence and frequency of violence perpetration among men and women may be masking behaviors that have theoretically important differences (Cercone et al., 2005). As this paper will elucidate in more detail, research suggests that motivations for and assumptions of violence perpetration (e.g.,
intent to harm a partner versus an assumption that one’s violent act will not inflict injury) and the physical and psychological outcomes of IPV may be markedly different by gender. For this reason, many researchers posit that men’s and women’s violence does not necessarily represent the same construct, and empirical attention should address contextual factors, such as motivation for, reaction to, and effects or outcomes of the violent act. These considerations become particularly important when examining male and female perpetration of violence with the intention of comparing perpetration across genders.

**Gender-Specific Considerations in IPV Research**

*Risk Factors for Relationship Violence Perpetration.* A review of the literature suggests that there are more similarities than differences in risk factors for violence perpetration among men and women (Medeiros & Straus, 2006). Research supports that certain factors are consistently identified in the literature as increasing the likelihood of violence perpetration for both males and females, including child abuse, witnessing domestic violence, substance use, low self-esteem, and low social support (for a review, see Lewis & Fremouw, 2001). Other research has shown that neglectful behavior experienced as a child was related to greater levels of physical assault and injury perpetration among a cross national sample of 6,900 university students (Straus & Savage, 2005). This relationship may be explained by disruption in development, in that neglected children are not taught how to use nonaggressive means to achieve their goals (e.g. Tremblay, 2003). Early problem drinking and negative affect have also been shown to be common factors associated with both male and female perpetration (Chen & White, 2004). Trait anger is associated with violence perpetration among men and women, when comparing individuals with generalized partner violence (i.e., violent both within and outside of the relationship) to nonviolent individuals (Cogan & Fennell, 2007). Further, research has shown
correlations between emotional intelligence and scores on the propensity for abusiveness scale (PAS) among both male and female undergraduate students (undergraduate males, $r = -0.71$; undergraduate females, $r = -0.66$), suggesting that deficits in emotional intelligence are associated with elevated propensity to engage in abuse perpetration for students of both genders (Winters, Clift, & Dutton, 2004).

Research investigating violence perpetration has identified psychopathology (specifically, pathological personality traits) as an important correlate of IPV perpetration. As stated by Widiger and Mullins-Sweatt (2004), “There are a number of reasons why wives are battered and beaten; however, no adequate explanation can safely ignore the fundamental contribution of the male batterer” (p. 1396). Antisocial and Borderline Personality Disorder diagnoses and trait measurements have reliably been implicated in empirical findings as consistent correlates of intimate partner violence perpetration by men (e.g., Dutton & Starzomsky, 1993; Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000; Kim & Capaldi, 2004; Mauricio, Tein, & Lopez, 2007). Antisocial personality traits include impulsivity, aggressiveness, callous disregard for others’ safety, and lack of remorse, characteristics often associated with male perpetrators of IPV. Research on the “abusive personality” and propensity for abusiveness emphasizes the role of personality pathology in certain IPV perpetrators (Dutton, 1994). Specifically, attachment insecurity, trauma symptoms, and borderline personality traits (i.e., components of the “abusive personality”) have accounted for a portion of the variance identified in men’s perpetration. Recently, research has identified attachment, trauma symptomatology, and personality pathology (specifically, elevated scores on the MCMI-III Antisocial, Borderline, and Dependent Subscales) to be associated with female perpetration of violence as well, suggesting that constructs such as personality, attachment, and trauma symptomatology are important risk factors for both male and
female perpetrated violence (Goldenson, Geffner, Foster, & Clipson, 2007; Stuart, Moore, Gordon, Ramsey, & Kahler, 2006).

Although many of the same risk factors are present for men and women, some research suggests that the same risk factors may differ in theoretical importance for each gender. For example, in a sample of 200 college men and women, women’s perpetration of dating violence was predicted by having a violent partner, alcohol use, and having a violent father (Luthra & Gidycz, 2006). These variables, combined with conflict resolution strategies, formed a model that predicted female perpetration with 83.3% sensitivity. Men’s perpetration was predicted by use of alcohol, longer length of relationship, and having a violent partner; however, this model classified male perpetrators with only 30% accuracy (Luthra & Gidycz, 2006). Magdol and colleagues (1997), using a representative cohort sample of young adults in New Zealand, showed that men’s severe violence was more likely to be associated with other deviant characteristics (such as personality pathology, substance abuse, violence outside of the relationship) relative to females’ severe violence. Other research has supported the notion that men are more likely to perpetrate interpersonal violence to others outside the relationship context (Cogan & Fennell, 2007). Other research suggests that maternal depression interacts with gender to predict severe violence perpetration. Specifically, Keenan-Miller, Hammen, and Brennan (2007) found that women (but not men) whose mothers had a history of depression were more likely to perpetrate severe IPV. In sum, findings indicate that gender specific factors may moderate the influence of risk factors on perpetration likelihood.

**Risk Factors for Violence Victimization.** Notably, there is extensive overlap between risk factors for violence perpetration and violence victimization in relationships, which may be explained by the strong association between victimization and perpetration, particularly for
women (e.g., Cercone et al., 2005 demonstrated that female’s victimization explained approximately 50% of the variance in aggression perpetration). Many of the aforementioned risk factors for perpetration also carry increased risk of victimization, including child abuse, witnessing domestic violence, substance use, low self-esteem, and low social support (Lewis & Fremouw, 2001). Psychosocial factors may also be risk factors for victimization. A longitudinal study of a community sample of adolescents found that youth history of major depression or dysthymia predicted severe violence victimization, an effect that was partially mediated by social functioning (Keenan-Miller, Hammen, & Brennan, 2007). The authors suggest that, given other empirical findings that individuals who have experienced depression are more likely to have high-conflict and low satisfaction relationships, social skills deficits may be the operating process by which depression translates to victimization.

As with perpetration risk factors, some variables are similar for men and women, while some are unique or differ in magnitude. A longitudinal study of 1291 adolescents examined potentially modifiable risk factors for physical and sexual dating violence onset and chronicity (Foshee, Benefield, Ennett, Bauman, & Suchindran, 2004). For men, being hit by an adult, having low self-esteem, and having been in a physical fight predicted onset of victimization when controlling for other bivariate predictors of onset and chronic victimization. Men’s chronic victimization was also predicted by these variables, as well as having a friend that had been a victim, drinking alcohol, and being white (non-hispanic) (Foshee et al., 2004). For women, being hit by an adult was predictive of onset of serious physical dating violence when controlling for other variables. This variable, plus living in a single parent household, predicted chronic physical dating violence victimization. For onset of sexual dating violence, having a friend who was a victim and being depressed predicted onset of sexual dating violence controlling for other
significant bivariate predictors. Additionally, for chronic sexual dating violence, holding traditional gender stereotypes, depression, and having a friend who was a victim were risk factors (Foshee et al., 2004).

Motivation for violence. The motivating factors for violent actions may be different for men and women. For example, research suggests that men’s violence is more often instrumental in nature, compared to women’s use of violence (Cercone et al., 2005; Holtzworth-Munroe, 2005b). Specifically, research has shown that male perpetrators are more likely to endorse instrumental reasons for their aggression, such as “I believe that physical aggression is necessary to get through to some people” than female perpetrators (Cercone et al., 2005, p. 211). Alternately, studies have suggested that women’s use of violence may be motivated by anger or tension relief or by retaliation for past violence (Cercone et al., 2005; Hamberger & Lohr, 1997).

In order to investigate this hypothesis, researchers have examined subgroup differences of female violence perpetration (Foshee, Bauman, Linder, Rice, & Wilcher, 2007). Foshee and colleagues (2007) conducted interviews with 116 men and women identified as dating violence perpetrators by an acts scale. Based on transcripted responses to interview questions, coders classified each narrative within the taxonomy based on the history of abuse in the relationship, the immediate precipitating behaviors of the partner, and the motivation for the violence. The authors identified four groups of female perpetrators, classified as follows: 1) Patriarchal terrorism response (38.5% of the sample), characterized by a history of psychological and physical abuse victimization and a violent act by the partner immediately preceding the woman’s violence; 2) Anger response (25%), characterized by no abuse history, no violence immediately preceding the woman’s violence, and anger as the motivating factor for perpetration; 3) Ethic enforcement (19.2%), characterized by no abuse history, no violence immediately preceding the
woman’s aggression, and desire to enforce an ethical stance as the motivating factor; and 4) First time aggression response (17.3%), characterized by no abuse history, and violence from the partner as a precipitant of the woman’s perpetration. The identified groups were characterized by an anger expression or tension relief motivation (i.e., anger response group) or some form of retaliation or self-defense motive (i.e., the patriarchal terrorism response group and the first time aggression response). For the men in this study, the majority of perpetrated acts (64.3%) were classified as “escalation prevention,” in which the primary motive for violence was de-escalation of their partners’ violence. The remaining proportion of male aggressive acts were “too disparate” to classify (Foshee et al., 2007, p. 514).

**Outcomes of violence.** In terms of physical outcomes of violence, research has showed that women are more often injured, and more likely to experience severe injuries than men (Archer, 2000; Arias & Corso, 2005). Specifically, of the sampled men and women in the National Violence Against Women Survey, 20.7% of the men and 39.2% of the women who had experienced physical victimization reported at least one injury (Arias & Corso, 2005). Further, women experienced more severe injuries compared to men. Women reported more brain or spinal cord injuries, broken neck or back, and internal injuries (8.5%) compared to men (6.6%); more broken bones, burns, or chipped or knocked out teeth (11.2%) compared to men (8.5%); and more scratches, bruises, welts, swelling, sore muscles, or sprains (73.7%) compared to men (60.4%). However, men were more likely to experience lacerations, knife wounds, and cuts (24.5%) compared to women (6.7%) (Arias & Corso, 2005). Findings also indicated that women seek mental health services and utilize medical care (i.e., trips to an emergency room, hospital, or physician resources) in disproportionately greater rates than males (Arias & Corso, 2005). Results from Archer’s (2000) meta-analysis also support the finding that women are more
frequently injured by IPV. Specifically, it was found that women were more likely to be injured visibly or require medical treatment as a result of partner violence ($d' = .15$ and $.08$, respectively). Female victimization is also associated with poorer health status and health behaviors (Straight, Harper, & Arias, 2003).

**Reactions to violence.** Perhaps not surprisingly, given the potentially more severe physical consequences of violence for women, research suggests that women are more likely to fear their partner’s violence (Follingstad, Wright, Lloyd, & Sebastian, 1991; Langhinrichsen-Rohling, Neidig, & Feeny, 2000). This gender difference in fear becomes more pronounced with more severe violent behaviors (Cercone et al., 2005). In a study using a typological approach to examine reactions to violence among a sample of men and women in domestic violence abatement treatment programs, Hamberger and Guse (2005) found that men and women fell disproportionately into different clusters. Specifically, the majority of the women in the study belonged to the subgroup characterized by emotional reactions of fear, anger, and insult. Further, the primary behavioral response was to acquiesce to their partner’s demands or attempt to escape the situation (Hamberger & Guse, 2005). Alternately, the majority of male perpetrators belonged to the group that was characterized by very low fear of their partner’s violence and a primary motivation of control and domination (Hamberger & Guse, 2005). Similarly, research has demonstrated that men generally do not perceive women as physically intimidating or fear-provoking (Langhinrichsen-Rohling, Neidig, & Thorn, 1995).

More distal outcomes of victimization may include a tendency to view risk differently. Among a sample of college women, dating violence victimization was shown to be associated with increased perception of risk for future dating violence victimization (Helweg-Larsen, Harding, & Kleinman, 2008). Other research has also suggested that victimization history by a
dating partner may influence how relationship behaviors are perceived in hypothetical dating situations. Among a sample of 200 college men and women, women with histories of psychological, physical, or sexual victimization perceived hypothetical dating situations as more inappropriate (i.e., women were more likely to interpret an ambiguous scenario as threatening or a violation of dating norms) (Prospero & Vohra-Gupta, 2007). However, among men, sexual victimization history was associated with endorsement of aggressive behaviors in a hypothetical situation (i.e., thinking that the protagonist should respond with aggression). These findings suggest that abuse histories affect men and women differently in regard to their perceptions of threat and reactions to perceived threats.
CHAPTER 4

DATING VIOLENCE AMONG ADOLESCENTS AND YOUNG ADULTS

Prevalence and Bidirectionality

Violence and abuse within young adult dating partners is prevalent (Magdol et al., 1997; O’Leary et al., 2008; Straus, 2008). In a cross-cultural study of 1, 544 university students from Mexico and the United States, Straus and Ramirez (2007) found that between 29.7% (sample in New Hampshire) to 46.1% (sample in Ciudad Juarez, Mexico) of sampled students reported perpetrating violence within their relationship. The combined sample average was consistent with previous estimates of dating violence perpetration (see Archer, 2000), with 33.7% of the students reporting previous violence perpetration in a relationship. When only severe acts of violence were considered, 11.4% of the combined sample endorsed perpetrating a severe form of violence (e.g., kicking, punching, or choking). Perpetration rates did not differ by gender, suggesting that women engaged in similar amounts of severe violence perpetration as men. Other researchers have supported that the majority of violent relationships are bidirectionally violent, and when only one partner is violent, it is actually more likely to be the female partner (Magdol et al., 1997; O’Leary et al., 2008; Straus, 2008). Other research has examined relational aggression (i.e., withholding affection as punishment, giving the silent treatment) perpetration in young adults’ dating relationships (Goldstein, Chesir-Teran, & McFaul, 2008). Results indicated that women reported higher rates of relational aggression perpetration than men, although both genders had high prevalence rates of relational aggression perpetration (i.e., only 4% of participants said they had “never” engaged in any relational aggressive acts). Further, relational
aggression perpetration was associated with self-reported depressive and anxious symptoms, and also with anxious attachment to a partner.

**Adolescent IPV as a Risk Factor for Later IPV**

Researchers have illustrated that previous experience with violence or abuse is associated with increased risk for sustaining abuse in later relationships (Whitfield, Anda, Dube, & Felitti, 2003; Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004). For example, one study that surveyed college women in each year of college found that prior experience with dating violence victimization predicted subsequent dating violence during all four years in college (Smith, White, & Holland, 2003). In addition, compared to childhood victimization, high school victimization was a stronger predictor of experiencing relationship abuse in college (Smith et al., 2003). A one-year longitudinal study with 691 high school students revealed that adolescents who were involved in two or more violent relationships during the time of the study experienced a higher number of contextual risk factors (peer aggression and deviancy, and relationship conflict and hostility). This effect was moderated by accepting attitudes of dating violence, such that for students with high acceptance of dating violence, peer aggression and delinquency predicted recurrent aggression. Alternately, for students with low acceptance of violence, relationship conflict and hostility predicted recurrent dating violence (Williams, Connolly, Pepler, Craig, & Laporte, 2008).

**The Intergenerational Transmission of Violence**

One of the most notable and consistent findings in the IPV research literature is the empirical association of child abuse, violence witnessed in the family of origin, and adolescent dating violence with experiencing adult intimate partner violence (e.g. Kernsmith, 2006). This link is often attributed to the importance of social learning in the development of intimate partner
violence, in that these behaviors are observed during childhood and incorporated into the individual’s own behavior, either as a means of preventing further abuse (i.e., adopting the behavior of the perpetrator in order to avoid being victimized) or because it is viewed as an acceptable conflict resolution tactic (Cappell & Heiner, 1990; Kernsmith, 2006; Lewis & Fremouw, 2001). Prior victimization may also change the way individuals perceive threat within their relationship. For example, in a study of 114 men and women in batterer treatment programs, it was found that all but 3% of the sample had experienced prior exposure to violence, either in the form of child physical or emotional abuse, witnessing domestic violence, or sexual abuse or assault (Kernsmith, 2006). Findings from this study suggested that the three forms of prior abuse identified in the study predicted generalized fear of one’s partner, feelings of powerlessness in the relationship, and feeling fearful and emotionally weak at the time of an abusive incident. Sexual abuse and assault were the strongest predictors, remaining significant when controlling for other forms of abuse (Kernsmith, 2006). Interestingly, an interaction emerged between sexual abuse and gender for the prediction of fear during abuse perpetration, in that men who had experienced sexual abuse reported greater levels of fear during an abusive incident than women. These findings suggest that previous violent experiences are associated with an increased propensity to use violence in response to a real or perceived threat.

Recent research suggests that the link between family of origin violence and violence within adult relationships may not be as strong as some researchers posit. For example, Busby and Holman (2008) posit that violence in the family of origin exerts its influence on the overall perception of home environment and later adult functioning. Busby and Holman recommend that the violence in the family of origin be examined as one of many risk factors that influence adult functioning. Similarly, a recent longitudinal study of 164 couples in the community suggested
that child maltreatment (specifically, parental rejection) positively predicted adulthood physical and psychological abuse perpetration. This effect remained significant when other forms of childhood maltreatment were entered in the model, and exerted its effect indirectly through PTSD symptoms and deficits in social information processing (Taft, Schumm, Marshall, Panuzio, & Holtzworth-Munroe, 2008).

In sum, dating violence sustained in adolescence and young adulthood is prevalent and associated with risk for violence in subsequent relationships. Efforts to understand violence perpetration among the dating relationships of individuals entering adulthood provides integral insight into the nature of IPV at this developmental juncture.
CHAPTER 5

TYPOLOGICAL APPROACHES TO UNDERSTANDING INTIMATE PARTNER VIOLENCE

The diversity of factors that may ultimately culminate in or contribute to the development of partner abuse results in a heterogeneous spectrum of abuse patterns. This heterogeneity is important in as much as it influences treatment choices and intervention efforts. Researchers have begun to identify theoretically important differences within samples of perpetrators and couples using typological approaches (e.g., Holtzworth-Munroe, 2000; Johnson, 1994; 2006). The variation in violence perpetrators stems from a combination of qualitative differences, (i.e., presence or absence of particular risk factors such as abuse history, generality of violence, and dyadic characteristics of the violence) and dimensional differences (i.e., personality constructs and severity or frequency of violence perpetrated) among violence perpetrators. Typological approaches provide a way to identify potentially different etiologies and developmental courses of certain types of perpetrators. Specifically, identifying systematic variance among batterers provides valuable information when examining the mechanisms of traditional risk factors that may be specific to certain outcomes. These methods may also provide guidance for the development of more specific and effective intervention programs, by tailoring to the specific needs of certain perpetrator subgroups.

There have been several attempts to describe differences among perpetrators of IPV. Faulk (1974) identified five types of batterers depending on motivation for violence: stable and affectionate, dependent and passive, dependent and suspicious, dominating, and violent and bullying. Jacobson, Gottman, and Short (1995) noted the differences among batterers depending
on situation, personality, and wife dependency, using the terms “cobras” and “pit bulls” to describe observed subtypes. In an attempt to incorporate the proportion of men who perpetrated sexual violence only, Monson & Langhinrichsen (1998) developed an integrated typology (closely following Holtzworth-Munroe & Stuart’s 1994 typology) consisting of family-only, dysphoric/borderline, generally violent/antisocial, and sexually obsessive groups.

Perhaps one of the most influential typological efforts was Johnson’s (1994; 2006) theoretical proposition that there were different subtypes of violent relationships. This theory developed out of the observation that different research samples tended to exhibit different patterns of perpetration and victimization. Specifically, while researchers debated how to interpret the relatively equivalent rates of perpetration among men and women during the 1990’s, Johnson proposed that these community samples were characterized by high rates of what he termed *situational couple violence*. These violent acts were often more minor forms of violence, stemming from situational and contextual factors that provoked an aggressive reaction by one or both partners. Alternately, Johnson posited that the form of domestic violence that has been captured by samples from clinical, forensic, or victim advocacy service contexts is more frequently what he termed *intimate terrorism*. This subtype of violence is most frequently perpetrated by males to their female partners, and is characterized by high levels of violence and coercive control over the victim. The victims in these relationships may be either violent or nonviolent, but do not exhibit the same coercive control that their partner exhibits. In cases when an individual has a violent and controlling partner and reacts with violence, but not control, Johnson identifies *violent resistance* partner abuse. The final form of partner violence identified in this typology is *mutual violent control*, which occurs when both partners exert controlling behaviors and violence to one another. Researchers investigating this typological hypothesis
have used within-dyad comparative analyses of the ratio amount of perpetration and victimization of coercive control and physical violence, and generally have found support for these subtypes (e.g., Graham-Kevan & Archer, 2003; Henning, Renauer, & Holdford, 2006; Swan & Snow, 2002). A clear strength of Johnson’s approach is that it provides a “bigger picture” of the violence; that is, it describes the overall nature of the relationship with clarity and robustness. However, this dyadic and bidirectional perspective comes at the expense of not attending to the individual characteristics of the perpetrator, which have also been shown to meaningfully differentiate perpetrators of IPV.

The Holtzworth-Munroe and Stuart (1994) typology differs from Johnson’s in its focus on the individual characteristics specific to the perpetrator of IPV. Theoretically developed based on existing literature on psychopathological correlates of perpetration, generality of violence, and severity of the violence perpetrated, this typology has been empirically validated on several community and clinical samples of men (Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000; 2003; Huss & Langhinrichsen-Rohling, 2006; Johnson, Gilchrist, Beech, Weston, Takriti, & Freeman, 2006). Using Ward’s hierarchical agglomerative method and K-means cluster analyses to identify and confirm clusters, Holtzworth-Munroe and colleagues (2000) identified four subtypes of male batterers. *Family Only (FO)* perpetrators are those who resemble Non-Violent Control groups (i.e., fewest risk factors for violence) and tend to exert low levels of aggression and antisocial behavior. *Low-Level Antisocial (LLA)* batterers were those who had intermediate levels of antisocial and aggressive behaviors. *Generally Violent-Antisocial (GVA)* batterers exhibited the highest levels of antisocial and violent behavior, and also perpetrated violence outside of the relationship. This group was also characterized by high levels of violence acceptance, hostility toward women, and impulsivity. Batterers comprising the *Borderline-
Dysphoric (BD) group resembled the GVA group on some measures (accepting attitudes of violence, hostility toward women, and impulsivity) but also exhibited high levels of preoccupied and fearful attachment, dependency, and jealousy. This group generally also exhibits the highest levels of general psychological distress, including a range of Axis I and Axis II symptomatology (Holtzworth-Munroe et al., 2000).

The typological work for female perpetration and adolescent perpetration has not advanced as rapidly as the efforts on clinical levels of male perpetrated violence. One explanation for the lack of empirical attention to subtypes of female violence perpetration is that there is not the same historical development of theory for female violence (e.g. Holtzworth-Munroe, 2005a). This may be due to unconscious (or conscious) bias in the field of domestic violence, which leads to biased explanatory systems or over-confidence in existing conceptualizations of a construct (McHugh, Koeske, & Frieze, 1986). Frieze (2008) provides an exposition of her own reluctance to “accept the data” on female perpetration, acknowledging the personal investment that she (and other early researchers) felt in understanding IPV as a women’s issue. Thus, while the male perpetrator literature has ample theoretical underpinnings, from feminist theory, social learning, and psychopathological explanations, the female perpetration literature has struggled to identify a grounding framework with which to examine female perpetrated violence. Given the lack of a “gold standard,” some researchers have applied existing, male-perpetrator typologies to female perpetrators, with some success.

Babcock and colleagues (2003) attempted to replicate the clusters identified in the Holtzworth-Munroe and Stuart (1994) typology on a sample of 52 women referred to a treatment center for their abusive behavior. The authors sought to determine whether subgroups of women differed in regard to their motivation for violence and examined whether some women used
violence more instrumentally (e.g., to incite a reaction or to control their partner) or reactively (e.g., self-defense or fear) (Babcock, Miller, & Siard, 2003). Women were divided into groups based on the generality of their violence (as in the Holtzworth-Munroe & Stuart 1994 typology), partner-only (PO) or generally violent (GV). Findings indicated that women in the GV group were more likely to use instrumental violence, report more traumatic symptoms, and were more likely to have witnessed maternal violence perpetration. Further, while women in the PO group perpetrated less violence overall, the two groups did not differ on self-reported partner’s perpetration of abuse (Babcock et al., 2003). The authors concluded that the generality of women’s violence serves as a marker for other correlating factors, such as severity of violence perpetrated, level of traumatic symptoms, and the developmental risk factor of witnessing maternal IPV. More recently, Walsh and colleagues (2010) conducted a cluster analysis based on personality traits among a sample of male and female psychiatric inpatients (Walsh, Swogger, O’Connor, Schonbrun, Shea, & Stuart, in press). Results of their study indicated that the female IPV perpetrators were described by a cluster solution that contained groups resembling the Holtzworth-Munroe and Stuart subgroups (GVA, B/D, and FO), as well as a high-victimization and low-level antisocial group. Thus, there is preliminary evidence suggesting that the Holtzworth-Munroe and Stuart (1994) typology may be relevant in understanding women’s IPV perpetration.

There has also been limited research examining subgroups of dating violence perpetration among non-clinical samples. One study identified subgroups of dating violence perpetrators using a sample of 166 college students (97 females and 69 males) who reported that they had perpetrated violence in a dating relationship. Subgroups classified by researchers in this study included stable minimizers, hostile disengaged, hostile pursuers, and secure lovers (Stith, Jester,
& Bird, 1992). These groups were found to differ on the severity of the violence perpetrated, coping strategies employed, negotiation styles, and level of conflict reported in the relationship. Findings from this study underscore the applicability of typological approaches to groups perpetrating subclinical levels of dating violence—a conclusion that makes theoretical sense, given the dimensional nature of many of the important distinguishing factors between perpetrators. For example, although college samples may not exhibit the high levels of antisocial behavior or the severity of violence found among batterers in a treatment program, it is likely that there is enough variance among perpetrators to be distinguishable from one another on variables of interest (i.e., attachment styles, levels of dependency, antisocial traits, severity or frequency of violence perpetrated). One weakness of the Stith et al. (1992) study was that men and women were grouped together in the typology. Given the differences identified in risk factors, motivations for, and reactions to violence established in the literature, it seems logical to examine men and women separately. Separate typologies for male and female perpetrators would lend the most useful information to applied efforts to prevent and intervene in violent dating relationships, and would contribute meaningfully to the literature on female and male perpetration of violence.
CHAPTER 6
RATIONALE AND HYPOTHESES

The current study aimed to extend the current typological literature to a sample of young adults experiencing dating violence. Perpetration typologies were developed separately for female and male perpetrators. Applying a typological approach with personality, violence generality, and violence severity variables to a young adult dating sample represents an important addition to existing understanding of the nature of violence perpetration. Specifically, validation of perpetration subtypes in this sample would establish that variation among abusive dating relationships in young adulthood can be meaningfully differentiated by the same factors as those in more severely violent, older samples, lending validity to these variables in conceptualizing the construct of partner violence. Further, while there are certainly differences in the outcomes and consequences of IPV by gender, research generally supports similarity in risk factors (Medeiros & Straus, 2006) and personality factors (Goldenson, Geffner, Foster, & Clipson, 2007; Stuart, Moore, Gordon, Ramsey, & Kahler, 2006) associated with both males’ and females’ perpetration of IPV. Thus, it is plausible that using a typological approach developed on male batterers in the community may also be a valid approach for examining differences in young adult dating violence and female perpetration. Exploring the utility of this approach to differentiate female perpetration represents a useful addition to existing literature.

In the present study, perpetrator clusters were formed using the theoretical dimensions identified in the Holtzworth-Munroe and Stuart (1994) typology; specifically, severity of violence perpetrated, generality of violence, and personality/psychopathology. Notably, the
violence severity and personality/psychopathology variables represent theoretically dimensional constructs. Thus, although we expected to find a restricted range of violence perpetration and less severe personality pathology in this sample of young adults in dating relationships, with sufficient sample size it was expected to be possible to detect subgroups. It was expected that three subgroups would be identified consistent with those identified by Holtzworth-Munroe and colleagues (2000). First, we expected a group of perpetrators who engage in infrequent and low severity violence, with low levels of psychopathology and minimal violence perpetration outside of the relationship (Low Pathology/Relationship Only). We also expected a group of perpetrators who perpetrate moderate-high levels of relationship violence and exhibit high levels of psychological distress and relative elevations on the borderline personality measure (Borderline/Dysphoric). Finally, we expected a group of perpetrators to emerge who perpetrate moderate-high levels of violence, exhibit relative elevations on the antisocial personality measure, and also perpetrate high levels of violence outside of the relationship (Generally Violent/Antisocial).

Upon establishing the best cluster solution for the IPV perpetrator subsample, we expected that subtypes would differ meaningfully on measures of distal risk factors (i.e., childhood maltreatment, parenting behavior, and violent socialization in the family of origin). It was expected that the Low Pathology group would exhibit the lowest levels of these negative childhood experiences, while the Borderline/Dysphoric and Generally Violent subgroups would exhibit the greatest levels of negative and maltreating experiences. We also expected that groups would differ on individual-level proximal correlating variables (i.e., attitudes toward violence, emotion regulation, proximal antecedents to violence, and other psychopathology) and variables relating to the relationship (i.e., attachment style, relationship anxiety, relationship distress). It
was expected that the Low Pathology group would display low levels of these proximal risk factors and the BD and GVA groups would display greater levels.
CHAPTER 7

METHOD

Participants

Participants included men and women from a large Southeastern university. Participants were eligible to take the study if they were currently in a romantic relationship of at least three months duration or to have been in a relationship of at least three months duration within the past twelve months. The study was advertised as an online survey assessing individuals’ childhood experiences, personality characteristics, and behaviors in dating relationships. Participants were primarily recruited through the research participant (RP) pool. Participants recruited through the RP pool received credit toward fulfillment of introductory level psychology course research requirements. Students were also given the option of a written paper to fulfill the research requirement. Men and women who wished to participate in the study but were not in the RP pool were entered in a raffle drawing for a chance to win a $50 prize in exchange for participation ($n = 4$). In total, 501 women and 176 men took part in the study. Participants were classified as IPV perpetrators if they endorsed perpetrating at least one instance of physical aggression in a current or recent relationship in the past year. Out of the total sample, 212 women (42.3% of the total female sample) and 61 men (34.7% of the total male sample) endorsed IPV perpetration in their current or recent relationship.

The present study used the subsample of men ($n = 61$) and women ($n = 212$) who endorsed IPV perpetration plus a comparison group of 50 non-violent daters of each gender. Thus, the sample used in the present study included 262 undergraduate women and 111 men.
Women ranged in age from 18-25 ($M = 19.2$, $SD = 1.3$). The majority of the women responded to survey questions in regard to a current relationship ($n = 205$, 78.2%) and the remaining women endorsed a past relationship within the previous year ($n = 57$; 21.8%). The majority of the women self-identified as Caucasian (82.4%), and 5.3% were African American, 6.5% were Hispanic/Latina, 6.5% were Asian, 0.4% were Native Hawaiian or Pacific Islander, and 1.9% identified their racial/ethnic background as “other.” Men ranged in age from 18-30 ($M = 19.6$, $SD = 1.8$). The majority of the men responded to survey questions in regard to a current relationship ($n = 72$, 64.9%) and the remaining men reported on a past relationship within the previous year ($n = 39$; 35.1%). The majority of the men self-identified as Caucasian (84.7%), and 3.6% were African American, 0.9% were Hispanic/Latino, 8.1% were Asian, and 2.7% identified their racial/ethnic background as “other.”

Sample Size and Power Analysis

To determine the sample size necessary to detect the expected magnitude of relationships among variables, a power analysis was conducted. Previous literature using Analyses of Variance (ANOVAs) comparing subtype groups of batterers on constructs similar to those proposed in the present study generally indicates a large effect relationship (estimated mean effect size for omnibus group mean comparisons: $f = .50$) (Holtzworth-Munroe et al., 2000), but given that those effects were present among a sample of maritally distressed men in the community, a conservative estimate was used in the present study. Using a four group design (as expected, three perpetration subtypes and a nonviolent comparison group), and setting a conventional alpha level of .05, desired power level at .80, and a conservative estimate of the predicted effects at .25, it was determined that 180 participants would yield sufficient power for analyses (power analysis was conducted with G*Power 3.0.10; Faul, Erdfelder, Lang, &
Buchner, 2007). However, several cautions were noted. First, the estimated sample size was based on estimates of $n = 45$ for each cluster identified and the nonviolent comparison group. It is possible that our BD and GVA groups will be much smaller than the group(s) characterized by low levels of violence and relatively low levels of pathology. Further, given the number of planned analyses, we set a more stringent alpha level (using a Bonferroni correction) for our significance criteria. However, it is reasonable to expect that our conservative estimate of the expected effect sizes and will yield sufficient power with the aforementioned sample size.

**Procedure**

The survey took between 1.5 to 2 hours to complete. The survey consisted of demographic information, measures used to differentiate the subtypes of perpetrators, and measures used to validate and compare cluster groups. Survey and procedures were approved by the University of Georgia’s Institutional Review Board. Given the sensitive nature of survey topics, and to help minimize responding influenced by social desirability, participants were assured that their responses were anonymous. Surveys were completed in a computer lab or classroom proctored by the primary researcher or a trained research assistant. Informed consent was obtained with participant signature on the informed consent page. A participant’s data was linked only to a participation number assigned by the internet data-collection software. A debriefing form was given to students upon completion of the survey. The debriefing included more detailed information about the purpose of the current study, and provided the researcher’s contact information as well as names and contact information of area mental health and community resources.
Measures Used To Differentiate Perpetrator Subtypes

Severity of Violence Perpetrated. The Revised Conflict Tactics Scale (CTS-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) is a self-report measure designed to assess conflict tactic behaviors used and experienced within a relationship. The questionnaire includes 39 item pairs comprising five subscales to measure the frequency and severity of violence perpetration and victimization within a relationship. Subscales include negotiation, injury, psychological aggression, physical assault, and sexual coercion. Items ask about the respondent’s own behavior (measuring perpetration of conflict behaviors), and the behavior of the respondent’s partner (measuring victimization). Participants respond on an eight point scale indicating the number of times the behavior or action occurred (once in the past year, twice in the past year, 3-5 times in the past year, 6-10 times in the past year, 11-20 times in the past year, more than 20 times in the past year, not in the past year but it did happen more than one year ago, and this has never happened). The CTS-2 accounts for severity of violence by including items specified as either “minor” or “severe.”

The physical assault subscale of the CTS-2 assesses the amount of physical abuse. This subscale includes 12 items assessing both minor physical assault (e.g., “My partner twisted my arm or pulled my hair”) and severe physical assault (e.g., “I choked/strangled my partner”). The psychological aggression subscale of the CTS-2 assesses the amount of psychological abuse occurring in the relationship. This subscale includes eight items and assesses both minor psychological aggression (e.g., “I insulted or swore at my partner”) and severe psychological aggression (e.g., “My partner destroyed something belonging to me”). The sexual coercion subscale measures sexually coercive behaviors in the relationship. This scale includes seven questions that assess the use of three types of coercion (insisting on sex, using threat of force,
and using physical force) with three types of sexual acts (vaginal, anal, and oral). The injury subscale of the CTS-2 assesses the amount of physical injury both partners sustained in the relationship. The injury subscale includes six items assessing both minor injury (“I had a sprain, bruise, or small cut because of a fight with my partner”) and severe injury (“My partner had a broken bone because of a fight with me”).

All subscales have been shown to exhibit moderate to high internal consistency (Straus et al., 1996). Interpartner agreement on the CTS-2 has been demonstrated to be low to moderate (e.g., Kappa coefficients of 0.45 for women’s aggression and 0.47 for men’s aggression) (O’Leary & Williams, 2006). Generally, higher levels of agreement are found for behaviors that are more objective and less prevalent (e.g., report of sustained injuries) (Simpson & Christensen, 2005). Nine week test-retest reliability coefficients of the CTS-2 subscales in a sample of male batterers in a court-mandated treatment program were generally moderate to high ($r_s = .60$ to $.76$), although the test-retest reliability of the sexual coercion subscale was low ($r = .30$). Psychometric analyses have generally provided support for the convergent validity of subscales through demonstrated correlates of sexual coercion, predicted relationships of assault and injury for men and women, association of ratings of psychological and physical aggression, and negative relationships of violent acts with scores of social integration. In addition, discriminant validity has been supported by predicted non-relationships with theoretically unrelated subscales (i.e., low or nonsignificant correlations between scores on the negotiation, injury, and sexual coercion subscales) (Straus et al., 1996). Cronbach’s alphas for the women in the present study were $.75$, $.62$, $.56$, and $.41$ for the psychological aggression, physical assault, injury, and sexual coercion subscales, respectively. Cronbach’s alphas for the men in the present study were $.61$,
.53, .04, and .50 for each of the respective subscales (note: Cronbach’s alpha for the injury subscale is low due to invariance of four of the six items).

**Violence Generality.** A questionnaire to determine the generality of violence by participants was adapted from the General Violence Questionnaire (GVQ; Holtzworth-Munroe et al., 2000). This scale assessed the perpetration of violence to others outside of the relationship context. Respondents were presented with a list of 12 violent behaviors, taken from the CTS-2, and asked to indicate the number of times in the past they engaged in the behavior toward any of eight provided categories of people (i.e., behaviors toward family members, male friends, female friends, coworkers, acquaintances, strangers, police officers, and other). Previous research has found adequate internal reliability for using similar scales to obtain violence generality estimates (Cronbach’s alpha = .90 in Holtzworth-Munroe et al., 2000; Cronbach’s alpha = .91 in Boyle, O’Leary, Rosenbaum, & Hassett-Walker, 2008). In addition, these scales have demonstrated predicted relationships with intimate partner violence perpetration, general aggressiveness, and conduct disorder/delinquency. Group comparisons using violence generality as the discriminating factor have shown stronger relationships among the generally violent group to measures of exposure to violence in the family of origin, lifetime antisocial behavior, and disinhibition, providing further support for the convergent validity of this scale (Boyle et al., 2008). In the present study, Cronbach’s α for the female sample was .88; Cronbach’s α for male sample was .90.

**Antisocial and Borderline Personality Characteristics.** The MCMI-III (Millon, 1994) is a 175-item self report inventory with 24 subscales corresponding to Axis I (e.g., anxiety, depression) and Axis II pathology (and three modifying indices). Millon (1994) reported good test-retest reliability coefficients (ranging from .80 to low .90s). The MCMI-III has been
extensively used in the IPV research literature, and has also successfully discriminated between typological groups. Construction of the MCMI and the subsequent revision efforts involved rational derivation of items based on expert opinion, existing literature, and current understandings of personality development and psychopathology. Thus, the MCMI-III is a theoretically-grounded instrument for the assessment of personality and Axis I psychopathology. The instrument exhibits good internal consistency and test-retest reliability. In addition, relations between the MCMI-III and MMPI subscale elevations, comparisons of MCMI-III profiles across diagnostic groups, and correlations of MCMI-III scale scores with expert diagnostic ratings provide support for the criterion validity of this instrument’s scales (Millon, 1994). The cluster analysis in the present study used the base-rate corrected scores for the Antisocial (Cronbach’s $\alpha$ for the female sample = .73; Cronbach’s $\alpha$ for the male sample = .77) and Borderline scales (Cronbach’s $\alpha$ for the female sample = .78; Cronbach’s $\alpha$ for the male sample = .72) to differentiate groups on these constructs. The subgroup comparisons conducted after the cluster analysis also used the base-rate corrected scores for the Dysthymia (Cronbach’s $\alpha$ for the female sample = .83; Cronbach’s $\alpha$ for the male sample = .80) and Anxiety scales (Cronbach’s $\alpha$ for the female sample = .81; Cronbach’s $\alpha$ for the male sample = .69) to differentiate groups on these constructs.

**Measures Used to Validate and Compare Subtypes**

**Proximal Correlating Variables: Situational and Relationship Variables**

*Psychological Abuse.* The short version of the Psychological Maltreatment of Women Inventory-Short Version (PMWI-Short Version; Tolman, 1989; 1999) is a 14-item scale comprised of two subscales: Dominance/Isolation and Emotional/Verbal abuse. The items assessing perpetration were used in the present study. The Dominance/Isolation subscale has
seven items measuring resource isolation, subservience demands, and rigid observance of sex roles (e.g., “I restricted my partner’s use of the telephone”). In the present study, Cronbach’s $\alpha$ for the female sample = .69, and Cronbach’s $\alpha$ for the male sample = .70. The Emotional/Verbal abuse subscale has seven items measuring the presence of verbal attacks, demeaning behaviors, and emotional resource withholding (e.g., “I tried to make my partner feel crazy”). In the present study, Cronbach’s $\alpha$ for the female sample = .86, and Cronbach’s $\alpha$ for the male sample = .81. Wording of the items was modified slightly to be applicable to both respondents of both genders (e.g., “I accused my partner of having an affair with another man” was modified to “I accused my partner of having an affair with another person”). Previous research has utilized this scale to measure the amount of coercive control tactics present within an abusive relationship (e.g., Henning et al., 2006). Subscales have exhibited the ability to successfully discriminate groups of physically abused women, non-abused/relationship-distressed women, and non-abused/non-distressed women. In addition, subscales displayed expected relations to other instruments that assess non-physical abuse among women, providing support for the ability of this measure to assess the construct of psychological maltreatment of women in relationships (Tolman, 1999).

**Personal and Relationship Profile.** The Personal and Relationship Profile (PRP; Straus, Hamby, Boney-McCoy, & Sugarman, 1999) measures 21 substantive areas with theoretical and empirically observed relationships to physical violence within dating, cohabiting, and marital relationships. The PRP is comprised of 187 items and takes approximately 30 minutes to complete. Participants are asked to respond to items in regard to a current or past relationship of duration greater than one month, indicating their level of agreement with the statement from a scale of 1 (Strongly Disagree) to 4 (Strongly Agree). Normative data using a college sample suggest that each of the subscales have minimally adequate internal reliability (alphas from .60
to .69), and two-thirds of the subscales have moderate to high internal reliability (alphas from .70-.89). The discriminant properties of the subscales (differentiating between men and women, and offenders and non-offenders) suggest that these scales exhibit acceptable criterion and construct validity (Straus & Mouradian, 1999). Scales of the PRP assess a number of relationship and interpersonal level constructs and individual level constructs related to violence. The subscales included in the present study included Relationship Distress (8 items) (Cronbach’s $\alpha$ for the female sample = .88; Cronbach’s $\alpha$ for the male sample = .88), Depressive Symptoms (8 items) (Cronbach’s $\alpha$ for the female sample = .87; Cronbach’s $\alpha$ for the male sample = .81), Substance Abuse (8 items) (Cronbach’s $\alpha$ for the female sample = .80; Cronbach’s $\alpha$ for the male sample = .80), and Violent Socialization (8 items) (Cronbach’s $\alpha$ for the female sample = .73; Cronbach’s $\alpha$ for the male sample = .72).

**Attachment Style and Relationship Anxiety.** The Relationship Styles Questionnaire (RSQ; Griffin & Bartholomew, 1994) is a 30-item self-report questionnaire that measures adult attachment (secure, fearful, preoccupied, and dismissing). This four category model of adult attachment is based on underlying views (positive or negative) of the self and other. Previous research has shown convergent and discriminant validity in the realm of intimate partner violence and perpetration subtypes, particularly for the preoccupied, fearful, and dismissing attachment styles (Holtzworth-Munroe et al., 2000; Johnson et al., 2006) Cronbach’s alphas for the female sample were .33, .80, .42, and .59 for secure, fearful, preoccupied, and dismissing, respectively. Cronbach’s alphas for the male sample were .19, .62, .45, and .64 for secure, fearful, preoccupied, and dismissing, respectively. The Relationship Anxiety Inventory (RAI; Jouriles, McDonald, Garrido, Rosenfield, & Brown, 2005) was used to assess the level of relationship stress experienced by partners. In previous research, this scale has exhibited
relationships with theoretically associated constructs, including perpetration of physical aggression, perpetration of threatening behaviors in a relationship, and endorsement of posttraumatic stress disorder (PTSD) symptomatology, providing preliminary evidence for the convergent validity of this scale (Jouriles et al., 2005). Cronbach’s α in the present study was .83 for the female sample, and .81 for the male sample.

**Intimate Partner Violence Acceptance.** The Intimate Partner Violence Attitude Scale (IPVAS; Smith, Thompson, Tomaka, & Buchanan, 2005) was used to measure participants’ attitudes toward IPV. This 22-item scale has been demonstrated to have a three-factor structure, assessing attitudes toward abuse in a relationship (e.g., “I think it helps our relationship for me to make my partner jealous”), attitudes toward violence (e.g., “Threatening a partner with a knife or gun is never appropriate”), and attitudes toward control (e.g., “I would be flattered if my partner told me not to talk to someone of the opposite sex”). Fincham and colleagues (2008) validated the three factor structure, and demonstrated relationships between this measure and other theoretically associated constructs (such as self-reported communication patterns) and differential predictive validity for relationship outcome by each of the subscales (i.e., the control subscale distinguished between groups that broke up and those who remained in the relationship). Fincham and colleagues (2008) omitted five items from the scale due to low variance and problematic wording, leaving a 17-item scale with acceptable alpha coefficients for the violence subscale (Cronbach’s α = .77), abuse subscale (Cronbach’s α = .91), and control subscale (Cronbach’s α = .71) (Fincham, Cui, Braithwaite, & Pasley, 2008). In the present study, alphas for each of the subscales for the women were .38, .67, and .55, respectively. For men, alphas were .87, .65, and .52, respectively.
Proximal Antecedents to Violence. The Proximal Antecedents to Violent Episodes scale (PAVE; Babcock, Costa, Green, & Echkardt, 2004) is a 20-item self report instrument designed to measure antecedents to violent episodes. The scale has demonstrated good convergent and discriminant validity with theoretically relevant constructs, including measures of anger, psychopathy, psychological abuse, and social desirability (Babcock et al., 2004). Factor analyses have identified a three factor structure to the items. Factors include violence as a means of controlling the partner, violence in response to verbal abuse sustained from the partner, and violence in response to feelings of jealousy (Babcock et al., 2004). Alpha coefficients for each of the factors in a sample of maritally violent men were adequate to high (violence to control $\alpha = .95$; violence due to jealousy $\alpha = .74$; violence following verbal abuse $\alpha = .95$). Alpha coefficients for the female sample in the present study were .86, .73, and .76, respectively. Alpha coefficients for the male sample in the present study were .88, .68, and .86 respectively.

Proximal Correlating Variables: Psychopathology

Posttraumatic Stress Symptoms. The PTSD Checklist-Civilian (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1991) was used to assess for the presence of posttraumatic stress symptoms. The PCL-C is a 17-item self report measure assessing the three symptom dimensions of posttraumatic stress disorder (PTSD); intrusive symptoms, hyperarousal symptoms, and avoidance-numbing symptoms (Krause, Kaltman, Goodman, & Dutton, 2007). Psychometric analyses indicated that the total score and subscales demonstrated high internal consistency (i.e., alphas ranging from .85 - .94), and expected high interrelations between subscales. Test-retest reliability of this instrument is also good, ranging from $r = .68$ (two week interval) to $r = .88$ (one week interval). In addition, analyses suggest that this scale correlates highly with other well-established measures of PTSD (i.e., the Impact of Event Scale and the Mississippi Scale for
PTSD – Civilian version). Evidence for the discriminant properties of this instrument have been evidenced in the comparatively lower correlations between this measure and measures of general psychological distress and depression, compared to correlations with other measures of PTSD symptoms (Ruggiero, Del Ben, Scotti, & Rabalais, 2003). Cronbach’s $\alpha$ for the female sample in the present study was .93, and Cronbach’s $\alpha$ for the men was .92.

Aggression. The Reactive-Proactive Aggression Questionnaire (RPQ; Raine, Dodge, Loeber, Gatzke-Kopp, Lynam, et al., 2006) is a 23-item self-report inventory that measures aggression in response to emotional arousal (reactive aggression, e.g., “How often have you yelled at others when they have annoyed you?”) or aggression used to manipulate or achieve a desired outcome (proactive aggression, e.g., “How often have you yelled at others so they would do things for you?”). The RPQ takes about five minutes to fill out and requires a third grade reading level. Items for the RPQ were adapted from a previous measure (i.e., Dodge & Coie’s 1987 measure of teacher-rated aggression) and theoretically derived from related research literature on reactive-proactive aggression. The two-factor structure was supported using confirmatory factor analysis (Raine et al., 2006). Evidence for the discriminant validity of these two factor scales have been demonstrated by observed correlations between reactive aggression and impulsivity, hostility, social anxiety, lack of close friends, and ideas of reference in a sample of 16 year old males. Further, proactive aggression in the same sample was associated with psychopathic personality, blunted affect, delinquency, and violent offending (Raine et al., 2006). Further, subscales have demonstrated good internal consistency (Reactive $\alpha = .84$; Proactive $\alpha = .86$; Total $\alpha = .90$) (Raine et al., 2006). For the female sample in the present study, Cronbach’s alphas were .80 and .70, for reactive and proactive aggression, respectively. For the men in the study, Cronbach’s alphas were .82 and .85, respectively.
Emotion Regulation. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item scale measuring different aspects of emotion regulation, including awareness and understanding of emotions, acceptance of emotions, ability to engage in goal-directed behavior and refrain from impulsive behavior while experiencing negative emotion, and access to emotion regulation strategies perceived as effective. The DERS has been found to have a six factor structure: 1) Nonacceptance of emotional responses (Nonacceptance); 2) Difficulties engaging in goal-directed behavior (Goals); 3) Impulse control difficulties (Impulse); 4) Lack of emotional awareness (Awareness); 5) Limited access to emotion regulation strategies (Strategies); and 6) Lack of emotional clarity (Clarity). Gratz and Roemer (2004) reported high internal consistency for the total scale (Cronbach’s $\alpha = .93$) and alpha levels greater than .80 for each of the factor subscales. The DERS also demonstrated good test-retest reliability over a period from four to eight weeks ($r = .88$) and demonstrated predicted relationships with associated constructs (deliberate self-harm among college males and females; and intimate partner abuse perpetration among college males) (Gratz & Roemer, 2004). Cronbach’s $\alpha$ for the total score in the female sample $= .95$. Cronbach’s $\alpha$ for the total score in the male sample $= .94$.

Distal Correlating Variables: Family of Origin Variables

Maltreatment in Childhood. The Childhood Trauma Questionnaire (CTQ; Bernstein, Fink, Handelsman, Foote, Lovejoy, Wenzel, Sapareto, & Ruggiero, 1994) was used to assess childhood maltreatment. The CTQ is a brief self-report inventory inquiring about sexual abuse, emotional abuse and neglect, and physical abuse and neglect experiences in childhood and adolescence. Items are responded to on a 5-point Likert scale, ranging from 1 (Never True) to 5 (Very Often True). Validation of the CTQ has involved multiple clinical and community samples (Bernstein et al., 1994; Bernstein & Fink, 1998; Fink, Bernstein, Handelsman, Foote, & Lovejoy,
1995). Studies indicate that this scale has high temporal stability (evidenced by high test-retest reliability over a 2- to 6-month interval; intraclass correlation = 0.88), high internal consistency (Cronbach’s alphas ranging from .79 to .94) and good convergence with standardized interviews (e.g., the Childhood Trauma Interview) (Bernstein et al., 1994). Cronbach’s $\alpha$ for the total measure for the female sample was .88. For each of the subscales, alphas were .63, .96, .75, .88, and .54 for the CPA, CSA, CEA, CEN, and CPN subscales, respectively. Cronbach’s $\alpha$ for the total measure for the male sample was .88. For each of the subscales, alphas were .71, .90, .73, .82, and .51 for the CPA, CSA, CEA, CEN, and CPN subscales, respectively.

*Parental Warmth and Control.* The Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) is a 25-item, retrospective self-report inventory measuring parental care (e.g., “was affectionate to me”) and control/overprotection (e.g., “tried to control everything I did”) during the first 16 years of life. The PBI has been shown to have good internal consistency and test-retest reliability (Parker et al., 1979), and convergent and discriminant validity have been demonstrated by meaningful relationships with a range of psychological disorders (Parker, 1984). For the female sample, Cronbach’s alphas were .84, .92, .86, and .94 for maternal control, maternal care, paternal control, and paternal care, respectively. For the men, Cronbach’s alphas were .83, .86, .79, and .90 for each of the subscales, respectively.

*Measures regarding the nature of the relationship.* Participants were asked a number of demographic questions and questions pertaining to the nature of their relationship.

**Design and Analyses**

A model-based cluster analysis using the *Mclust* program developed for R software (Fraley & Raftery, 1998) was carried out on the data to identify subtypes of perpetrators among both the male and female perpetrator samples. Model-based cluster analyses overcome the
primary limitations of more commonly used clustering techniques; specifically, the tendency for cluster techniques that specify different cluster characteristics to produce different cluster classifications using the same data, the imposition of a cluster solution on data that may not actually have a cluster structure, and the inability to determine goodness-of-fit for cluster solutions (Mun, Windle, & Schainker, 2008). Model-based cluster analyses tests the fit of models that differ in the specification of cluster characteristics, and account for data characteristics including: 1) clusters that differ in orientation, size, or shape; 2) non-normally distributed clusters, and 3) “noise” in the data (Banfield & Raftery, 1993). Model-based cluster analysis is a new procedure that has been used to examine a number of psychological constructs in recent years, including adolescent and young adult delinquency, smoking, substance use, and sexual behaviors (e.g., Mun et al., 2008) and subtypes of psychopathic violent offending (e.g., Hicks, Markon, Patrick, Krueger, & Newman, 2004; Skeem, Johansson, Andershed, Kerr, & Louden, 2007). In the current study, standardized scores on the CTS-2 physical aggression subscale, the MCMI-III antisocial and borderline base-rate corrected scale scores, and the generality of violence questionnaire were entered into the analysis. The number of clusters was determined by the best fitting model identified by the clustering procedure, as defined by the Bayesian information criterion (BIC).

A series of one-way ANOVAs was performed to examine differences across the clusters. Alpha was adjusted using a Bonferroni correction calculated for each grouping of statistical tests in order to control for Type I error. ANOVAs were expected to demonstrate that the clusters differed in the expected manner on the criteria variables used to create the clusters (specifically, the scores on the antisocial and borderline measures, the generality of violence, and perpetration of physical violence in the relationship). These analyses were not used to validate the clusters (as
these are the variables on which the clusters were derived), but were conducted in order to illustrate the statistically significant mean differences across each subgroup. In order to establish validity of the clusters, ANOVAs were conducted to compare clusters on each of the theoretical variables of interest. These variables included various measures assessing psychopathology, relationship attachment, relationship anxiety and distress, other forms of relationship aggression perpetration, reactive/proactive aggression, antecedents of aggression, attitudes toward violence, childhood trauma, maternal and paternal warmth and control, and socialization of aggression. Post hoc analyses were conducted using least significant differences (LSD) tests (Newton & Rudestam, 1999), and effect sizes were calculated using eta-squared to examine the relative size of each effect.
CHAPTER 8
RESULTS

Model-Based Cluster Analysis Results – Female Perpetrators

The following analyses were carried out on the subset of the female sample who endorsed at least one act of physical aggression against their dating partner in the previous year (female IPV perpetrator \(n = 212\)). A model-based cluster analysis using MClust software (Fraley & Raftery, 2002) was carried out using standardized values from the MCMI-III Borderline and Antisocial Base Rate scores, the CTS-2 physical aggression subscale, and the GVQ total score. The best-fitting model (BIC value = -1673) yielded a three-cluster solution with clusters of diagonal orientation and varying volume and shape. The next best fitting model (BIC value = -1685) yielded a two-cluster solution. When comparing models, a difference in BIC of greater than 10 is considered very strong support for the better fitting model (Raftery, 1995), and thus the three-cluster solution was selected and interpreted as the optimal model.

Group Differences on Clustering Variables – Female Perpetrators

It was expected that the cluster analysis would reveal subgroups of relationship violence perpetrators that differed in regard to personality pathology, generalized violence, and relationship violence perpetration. Notably, the overall cluster solution derived in this sample of female college students is consistent with expectations and similar in nature to typological solutions derived for samples of male IPV perpetrators. Standardized scores for the three groups on each cluster-defining variable are depicted graphically in Figure 1. Means and standard deviations of the three perpetrator clusters on each of the cluster-defining variables are reported.
in Table 1. Means and standard deviations of a Non-Violent Comparison group \( (n = 50) \) are also displayed. Results of four one-way ANOVAs are displayed in Table 1. Results of post hoc group comparisons are reported, and means with a common superscript do not significantly differ from one another at \( p < .05 \).

![Figure 1](image)

Figure 1. Female perpetrators’ standardized scores on cluster-defining variables.

For MCMI-III Borderline Base Rate scores, Cluster One \( (M = 22.1, SD = 16.17) \) did not differ significantly from the Non-Violent Comparison group \( (M = 29.5, SD = 26.93) \). Cluster Two exhibited the highest score on this subscale \( (M = 69.2, SD = 13.00) \), and was significantly greater than Cluster Three \( (M = 49.3, SD = 23.29) \). In sum, two of the clusters were significantly elevated on Borderline PD symptomatology relative to the Non-Violent Comparison group and
Cluster One. Cluster Two demonstrated the highest levels of BPD pathology and was significantly different from all other groups (see Table 1).

For MCMII-III Antisocial Base Rate scores, Cluster One \((M = 31.4, SD = 19.69)\) did not significantly differ from the Non-Violent Comparison group \((M = 30.5, SD = 24.05)\). Cluster Two showed the highest elevation on the Antisocial Base Rate scores \((M = 63.0, SD = 13.28)\), and was significantly higher than Cluster Three \((M = 55.6, SD = 20.84), p < .05\). In sum, two of the clusters were significantly elevated on Antisocial PD symptomatology relative to the Non-Violent Comparison group and Cluster One. Cluster Two demonstrated the highest levels of Antisocial PD pathology and was significantly different from all other groups (see Table 1).

For physical aggression as assessed by the CTS-2, Cluster One \((M = 2.8, SD = 1.42)\) did not significantly differ from Cluster Two \((M = 3.9, SD = 2.36), p > .05\). Cluster Three showed the highest elevation on physical aggression \((M = 8.6, SD = 6.81)\), and was significantly greater than both Clusters One and Two, \(ps < .05\). All perpetration clusters endorsed significantly more relationship violence than the Non-Violent Comparison group, as expected \((ps < .05)\). In sum, Cluster Three demonstrated the highest levels of physical aggression in the past year. Clusters One and Two perpetrated less physical aggression and did not significantly differ from one another. All perpetrator subgroups endorsed more relationship aggression than the Non-Violent Comparison group (see Table 1).

For generalized physical aggression perpetrated outside of the relationship, Cluster One \((M = 0.9, SD = 1.42)\), Cluster Two \((M = 1.7, SD = 2.21)\), and the Non-Violent Comparison group \((M = 1.4, SD = 3.95)\), perpetrated statistically similar levels of generalized aggression, \(ps > .05\). Cluster Three showed the highest elevation on generalized physical aggression \((M = 17.1, SD = 14.33)\), and endorsed significantly greater levels of generalized violence relative to Clusters One
and Two and the Non-Violent Comparison group, $ps < .05$. Thus, Cluster Three reported the greatest amount of generalized physical aggression in the past year. The other clusters and the Non-Violent Comparison groups all perpetrated low levels of generalized physical aggression and did not differ significantly from one another on this variable (see Table 1).

Table 1. Comparisons of female perpetrator clusters on cluster-defining variables

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1 ($n = 64$)</th>
<th>Cluster 2 ($n = 70$)</th>
<th>Cluster 3 ($n = 46$)</th>
<th>Non-Violent Comparison ($n = 50$)</th>
<th>$F$</th>
<th>df</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borderline MCMI base rate score</td>
<td>22.13$^a$ 16.17</td>
<td>69.21$^b$ 13.00</td>
<td>49.28$^c$ 23.29</td>
<td>29.51$^d$ 26.93</td>
<td>74.62</td>
<td>3, 226</td>
<td>&lt;.001</td>
<td>.50</td>
</tr>
<tr>
<td>Antisocial MCMI base rate score</td>
<td>31.36$^a$ 19.69</td>
<td>63.04$^b$ 13.28</td>
<td>55.59$^c$ 20.84</td>
<td>30.50$^d$ 24.05</td>
<td>44.62</td>
<td>3, 227</td>
<td>&lt;.001</td>
<td>.37</td>
</tr>
<tr>
<td>CTS-2 physical aggression</td>
<td>2.80$^a$ 2.00</td>
<td>3.94$^a$ 2.36</td>
<td>8.59$^b$ 6.81</td>
<td>0.00$^c$ 0.00</td>
<td>50.88</td>
<td>3, 229</td>
<td>&lt;.001</td>
<td>.40</td>
</tr>
<tr>
<td>General violence</td>
<td>0.91$^a$ 1.42</td>
<td>1.67$^a$ 2.21</td>
<td>17.11$^b$ 14.33</td>
<td>14.44$^a$ 3.95</td>
<td>64.61</td>
<td>3, 224</td>
<td>&lt;.001</td>
<td>.47</td>
</tr>
</tbody>
</table>

Note. Means with a common superscript do not significantly differ from one another ($ps > .05$).

In sum, results of the cluster analysis suggest that female perpetrators demonstrate systematic differences in regard to personality pathology, violence generality, and level of relationship aggression. Cluster One ($n = 64$, 35.6% of the perpetrator subsample) is characterized by low levels of physical violence, low levels of generalized violence, and low levels of both Antisocial and Borderline pathology. This group most resembles the Family Only group of batterers identified by Holtzworth-Munroe and colleagues (2000); here we will refer to this group as the Low-Pathology (LP) cluster. Cluster Two ($n = 70$, 38.9% of the perpetrator subsample) is characterized by elevated levels of personality pathology on both the Antisocial and Borderline PD subscales (with a relative elevation on Borderline compared to Antisocial
symptoms), low levels of generalized violence, and moderate levels of relationship aggression. This group most resembles the Borderline/Dysphoric subgroup identified by Holtzworth-Munroe and colleagues (2000); thus we will refer to this group as the Borderline/Dysphoric (BD) cluster.

Cluster Three ($n = 46, 25.6\%$ of the perpetrator subsample) is characterized by moderate levels of personality pathology (with a relative elevation on Antisocial compared to Borderline symptoms) and the highest levels of physical aggression both within and outside of the relationship. This group most resembles the Generally Violent/Antisocial subgroup identified by Holtzworth-Munroe and colleagues (2000); thus we will refer to this group as the Generally Violent (GV) cluster.

**Model-Based Cluster Analysis Results – Male Perpetrators**

The following analyses were carried out on the subset of the male sample who endorsed at least one act of physical aggression against their dating partner in the previous year (male IPV perpetrator $n = 61$). A model-based cluster analysis using $MClust$ software (Fraley & Raftery, 2002) was carried out using standardized values from the MCMI-III Borderline and Antisocial Base Rate scores, the CTS-2 physical aggression subscale, and the GVQ total score. The best-fitting model (BIC value = -549) yielded a three-cluster solution with diagonal, equal shape components. The next best fitting model (BIC value = -554) yielded a two-cluster solution. When comparing models, a difference in BIC between 2-6 is considered positive support for the better fitting model (Raftery, 1995), and thus the three-cluster solution was selected and interpreted as the optimal model.

**Group Differences on Clustering Variables – Male Perpetrators**

As with the female perpetrators, it was expected that the cluster analysis would reveal subgroups of relationship violence perpetrators that differed in regard to personality pathology,
generalized violence, and relationship violence perpetration. Notably, the overall cluster solution derived in this sample of male college students is similar in nature to typological solutions derived for male samples of IPV perpetrators in community and clinical samples, and similar to the solution derived for the female IPV perpetrator subsample as described above. Standardized scores for the three groups on each cluster-defining variable are depicted graphically in Figure 2. Means and standard deviations of the three perpetrator clusters on each of the cluster-defining variables are reported in Table 2. Means and standard deviations of a Non-Violent Comparison group \((n = 50)\) are also displayed. Results of four one-way ANOVAs are depicted in Table 2. Results of post hoc group comparisons are reported, and means with a common superscript do not significantly differ from one another at \(p < .05\).

For MCMI-III Borderline Base Rate scores, Cluster One evidenced the lowest levels of BPD pathology \((M = 24.0, SD = 14.88)\) and differed significantly from Cluster Two \((M = 68.2, SD = 10.65)\), Cluster Three \((M = 53.7, SD = 27.24)\) and the Non-Violent Comparison group \((M = 39.9, SD = 26.37)\). Cluster Two exhibited the highest score on this subscale \((M = 68.2, SD = 10.65)\), although this mean was not significantly different from Cluster Three. Cluster Three was intermediate to and did not significantly differ from Cluster Two or the Non-Violent Comparison Group. In sum, Clusters Two and Three demonstrated the highest levels of BPD pathology. Cluster Three was more intermediate in nature and did not significantly differ from the level of pathology displayed by the Non-Violent Comparison group. Cluster One had the lowest scores on this measure.

For MCMI-III Antisocial Base Rate scores, Cluster One \((M = 47.9, SD = 15.24)\) did not significantly differ from the Non-Violent Comparison group \((M = 47.5, SD = 23.75)\). Cluster Two showed the highest elevation on the Antisocial Base Rate scores \((M = 72.8, SD = 13.62)\),
but was not significantly different from Cluster Three \((M = 62.0, SD = 23.15)\). Cluster Three did not significantly differ from Cluster One or the Non-Violent Comparison Group. In sum, Cluster Two was significantly elevated on Antisocial PD symptomatology relative to Cluster One and the Non-Violent Comparison group.

![Figure 2. Male perpetrators’ standardized scores on cluster-defining variables.](chart)

*Note: BPD = MCMI-III Base-rate corrected score on the Borderline Personality Scale; ANT = MCMI-III Base-rate corrected score on the Antisocial Personality scale; GVQ = Total score on the Generalized Violence Questionnaire; Phys Assault = Total score on the CTS-2 Physical Aggression subscale.*

For physical aggression as assessed by the CTS-2, Cluster One \((M = 1.6, SD = 0.94)\) perpetrated the least physical aggression in their relationships of all of the perpetrator subgroups. Cluster Two perpetrated significantly more aggression \((M = 2.4, SD = 1.48)\) than Cluster One, but significantly less than Cluster Three \((M = 4.3, SD = 3.08)\), which showed the highest
elevation on physical aggression. All groups were significantly elevated on this variable relative to the Non-Violent Comparison group ($M = 0.00, SD = 0.00$), as expected ($ps < .05$). In sum, Cluster Three demonstrated the highest levels of physical aggression in the past year. Clusters Two and One perpetrated less physical aggression, with Cluster One perpetrating the least amount of aggression in the past year. All perpetrator subgroups perpetrated more relationship aggression than the Non-Violent Comparison group.

For generalized physical aggression perpetrated outside of the relationship, Cluster One ($M = 3.6, SD = 4.40$), Cluster Two ($M = 7.5, SD = 7.73$), and the Non-Violent Comparison group ($M = 9.3, SD = 19.18$) perpetrated the lowest levels of generalized physical aggression and did not significantly differ from one another. Cluster Three showed the greatest elevation on generalized physical aggression ($M = 34.0, SD = 15.39$). In sum, Cluster Three demonstrated the highest levels of generalized physical aggression in the past year. The other clusters and the Non-Violent Comparison groups endorsed significantly less generalized aggression in the past year and did not differ from each other.

Table 2. Comparisons of male perpetrator clusters on cluster-defining variables.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1 ($n = 14$)</th>
<th>Cluster 2 ($n = 30$)</th>
<th>Cluster 3 ($n = 9$)</th>
<th>Non-Violent Comparison ($n = 50$)</th>
<th>$F$</th>
<th>$df$</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borderline MCMI base rate score Antisocial</td>
<td>24.00$^a$</td>
<td>14.88</td>
<td>68.23$^b$</td>
<td>10.65</td>
<td>53.67$^{bc}$</td>
<td>27.24</td>
<td>39.90$^c$</td>
<td>26.37</td>
</tr>
<tr>
<td>Antisocial MCMI base rate score CTS-2 physical aggression</td>
<td>47.86$^a$</td>
<td>15.24</td>
<td>72.83$^b$</td>
<td>13.62</td>
<td>62.00$^{ab}$</td>
<td>23.15</td>
<td>47.53$^a$</td>
<td>23.75</td>
</tr>
<tr>
<td>General violence</td>
<td>1.57$^a$</td>
<td>0.94</td>
<td>2.40$^b$</td>
<td>1.48</td>
<td>4.33$^c$</td>
<td>3.08</td>
<td>0.00$^d$</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note. Means with a common superscript do not significantly differ from one another ($ps > .05$).
In sum, results of the cluster analysis yielded a cluster solution that is similar in nature to other typological solutions derived for male samples of IPV perpetrators. This solution is also similar in nature to the overall patterns present for the female IPV perpetrators in this sample. Cluster One is characterized by low levels of physical violence, low levels of generalized violence, and low levels of both Antisocial and Borderline pathology (LP; the Low-Pathology cluster). Cluster Two is characterized by elevated levels of personality pathology on both the Antisocial and Borderline PD, low levels of generalized violence, and low levels of relationship aggression (BD; the Borderline/Dysphoric cluster). Cluster Three is characterized by moderate levels of personality pathology (with a relative elevation on Antisocial compared to Borderline symptoms) and the highest levels of physical aggression both within and outside of the relationship (GV; the Generally Violent cluster).

Comparison of Cluster Subgroups for Men and Women on Cluster-Defining Variables

Before moving on to the cluster validation stage, we wished to examine the differences among the male and female BD, GV, and LP subgroups on the cluster-defining variables. Standardized scores were derived for the men and women separately, and are presented in the following figures for purposes of comparing the male and female clusters on each of the cluster-defining variables. As illustrated in the following graphs, the groups identified separately for the male and female subsamples appeared strikingly similar. No significant differences were found in the standardized scores for men and women for each of the three perpetration clusters.
Note: Standardized scores were derived separately for male and female samples. $BPD = $ MCMI-III Base-rate corrected score on the Borderline Personality Scale; $ANT = $ MCMI-III Base-rate corrected score on the Antisocial Personality scale; $GVQ = $ Total score on the Generalized Violence Questionnaire; $Phys\ Assault = $ Total score on the CTS-2 Physical Aggression subscale.

Figure 3. Comparisons of men and women in Cluster One (LP; Low-Pathology Subgroups)

Figure 4. Comparisons of men and women in Cluster Two (BD; Borderline/Dysphoric Subgroups)
Standardized scores were derived separately for male and female samples. \( BPD = \text{MCMI-III Base-rate corrected score on the Borderline Personality Scale} \); \( ANT = \text{MCMI-III Base-rate corrected score on the Antisocial Personality scale} \); \( GVQ = \text{Total score on the Generalized Violence Questionnaire} \); \( \text{Phys Assault} = \text{Total score on the CTS-2 Physical Aggression subscale} \).

Figure 5. Comparisons of Men and Women in Cluster Three (GV; Generally Violent Subgroup)

In summary, the results of the model-based cluster analyses carried out separately for male and female perpetrators suggest that there may be important similarities among the subgroup structures of men and women who perpetrate IPV. In the next section, the subgroups of female perpetrators will be compared on variables relating to abuse perpetration for the purpose of cluster validation. We will seek to understand if and how these subgroups differ on variables of interest that relate to developmental experiences and more proximal variables relating to IPV. The small number of men in the perpetrator clusters (i.e., \( n_s = 14, 30, \) and 9 for the LP, BD, and GV subgroups, respectively) precludes interpretation of any group differences on cluster validating variables at this point. Thus, cluster validation for the male subgroups will not be discussed or interpreted in this document. However, for the interested reader, tabled results for preliminary analyses for the men in this study are presented in Appendix A. Due to low power of
these analyses, the reader is cautioned from interpreting or extrapolating from displayed mean differences.

**Group Differences on Validating Variables – Female Perpetrators**

The following analyses were conducted using the female sample. Groups (LP, BD, GV, and Non-Violent Comparison) were compared on several groupings of variables in order to validated the clusters and examine differences in distal and proximal risk factors for IPV. Variable groupings included measures of psychopathology, relationship security, other forms of relationship aggression, characteristics of aggression, and family of origin variables.

**Psychopathology and Emotion Dysregulation**

The female perpetrator subgroups were first compared on measures assessing various forms of psychopathology and emotion dysregulation. It was expected that the BD subgroup would generally evidence the greatest difficulties with psychopathology and emotion dysregulation. We expected that the LP group would not differ from the Non-Violent Comparison group on measures of psychopathology. The GV group was expected to exhibit moderate levels of difficulty with various forms of psychopathology. Results of a series of one-way ANOVAs revealed that groups differed significantly on measures of posttraumatic stress symptom, difficulties in emotion regulation, depression, substance and alcohol abuse, dysthymia, and anxiety. As expected, the LP group did not differ significantly from Non-Violent Comparisons on any of the measures of psychopathology. Further, members of the BD cluster displayed elevated difficulties across a variety of measures of psychopathology, including depression, dysthymia, anxiety, and PTSD symptomatology. The GV group demonstrated more intermediate symptom levels, endorsing greater pathology relative to the LP group but less severe difficulty when compared to the BD group. The GV and BD subgroups did not
significantly differ on measures of emotion dysregulation and substance use. Findings for each of the variables assessed are presented below, and results of ANOVAs and post hoc tests are presented in Table 3.

*Emotion Dysregulation.* For emotion regulation difficulties as assessed by the DERS (Gratz & Roemer, 2004), the BD group ($M = 88.3, SD = 24.32$) and the GV group ($M = 81.9, SD = 21.55$) exhibited significantly greater difficulties in emotion regulation relative to both the LP group ($M = 66.4, SD = 17.48$) and the Non-Violent Comparison group ($M = 71.5, SD = 18.89$), but did not differ significantly from one another. Further, the LP group did not differ significantly from the Non-Violent Comparison group (see Table 3).

*Substance Use.* For substance abuse as assessed by the PRP (Straus et al., 1999), the BD group ($M = 13.7, SD = 3.99$) and the GV group ($M = 13.7, SD = 4.58$) exhibited significantly greater substance abuse relative to both the LP group ($M = 11.8, SD = 3.47$) and the Non-Violent Comparison group ($M = 10.9, SD = 3.12$), but did not differ significantly from one another. Further, the LP and Non-Violent Comparison group reported levels of substance abuse that did not significantly differ from one another (see Table 3).

*Depression/dysthymia.* For depressive symptoms as assessed by the PRP, the BD group exhibited the highest levels of depressive symptoms ($M = 14.9, SD = 4.57$) and was significantly greater than the GV group ($M = 13.1, SD = 3.58$), the LP group ($M = 10.6, SD = 2.23$), and the Non-Violent Comparison group ($M = 11.5, SD = 2.50$). The depressive symptoms displayed by the GV group were significantly greater than both the LP and the Non-Violent Comparison group. The LP and Non-Violent Comparison group exhibited the lowest levels of depressive pathology and did not significantly differ from one another (see Table 2). Dysthymia, as assessed by the MCMI-III, showed a similar pattern of findings. Again, the BD group exhibited the
highest levels of dysthymic symptoms ($M = 42.4, SD = 28.45$) and was significantly greater than the GV group ($M = 25.5, SD = 28.01$), the LP group ($M = 9.1, SD = 16.13$), and the Non-Violent Comparison group ($M = 15.0, SD = 20.72$). The dysthymic symptoms displayed by the GV group were significantly different from both the LP and the Non-Violent Comparison group. The LP and Non-Violent Comparison group exhibited the lowest levels of dysthymic pathology and did not significantly differ from one another (see Table 3).

*Anxiety and Posttraumatic Stress.* For anxiety, results suggested that the BD group displayed the greatest levels of anxious symptomatology ($M = 67.5, SD = 26.70$), and was significantly different from the GV group ($M = 40.3, SD = 31.37$), the LP group ($M = 33.0, SD = 33.03$), and the Non-Violent Comparison group ($M = 40.8, SD = 33.87$). The LP, BD, and Non-Violent Comparison groups did not differ significantly from one another (See Table 2). For posttraumatic stress symptomatology, results suggested that the BD group again exhibited the greatest level of pathology ($M = 33.8, SD = 13.26$), reporting significantly more PTSD symptoms than the GV group ($M = 27.4, SD = 10.59$), the LP group ($M = 22.6, SD = 5.81$) and the Non-Violent Comparison group ($M = 23.2, SD = 5.85$). The GV group reported significantly more PTSD symptoms than the LP and Non-Violent Comparison groups, who did not differ from one another (See Table 3). Thus, the BD group appears to be comprised of individuals who may be more likely to endorse or experience anxious symptomatology. Notably, on the MCMI measure of anxiety, the GV group endorsed levels of anxiety comparable to the Non-Violent Comparison and LP groups, further suggesting important differences between the BD and GVA group in regard to the psychopathology among individuals in these two clusters.

In summary, results generally suggest that groups differ in meaningful ways on measures of psychopathology. The similarity between the LP and Non-Violent Comparison group on
measures of psychopathology is consistent with expectations and lends support to the presence of a perpetration subgroup whose violence is likely attributable to factors other than individual psychopathological processes. The members of the BD cluster display elevated difficulties across a variety of measures of psychopathology, including depression, dysthymia, anxiety, and PTSD symptomatology. The GV group demonstrated more intermediate symptom levels, endorsing greater pathology relative to the LP group but less severe difficulty when compared to the BD group. The GV and BD subgroups did not significantly differ on measures of emotion dysregulation and substance use, suggesting that members of both clusters may experience similar levels of difficulty managing emotional experiences and may be similarly at risk for substance abuse difficulties.

Table 3. Comparisons of female clusters on psychopathology variables.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1: LP (n = 64)</th>
<th>Cluster 2: BD (n = 70)</th>
<th>Cluster 3: GV (n = 46)</th>
<th>Non-violent comparison (n = 50)</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD symptoms (PCL-C)</td>
<td>22.56a</td>
<td>33.84b</td>
<td>27.44a</td>
<td>23.22a</td>
<td>18.59</td>
<td>3, 225</td>
<td>&lt;.001</td>
<td>.20</td>
</tr>
<tr>
<td>Difficulties in emotion regulation (DERS)</td>
<td>66.41a</td>
<td>88.26b</td>
<td>81.87a</td>
<td>71.53a</td>
<td>13.04</td>
<td>3, 201</td>
<td>&lt;.001</td>
<td>.17</td>
</tr>
<tr>
<td>Depression (PRP)</td>
<td>10.61a</td>
<td>14.94b</td>
<td>13.13a</td>
<td>11.51a</td>
<td>19.39</td>
<td>3, 220</td>
<td>&lt;.001</td>
<td>.21</td>
</tr>
<tr>
<td>Substance abuse (PRP)</td>
<td>11.83a</td>
<td>13.72b</td>
<td>13.65a</td>
<td>10.88a</td>
<td>7.21</td>
<td>3, 219</td>
<td>&lt;.001</td>
<td>.09</td>
</tr>
<tr>
<td>Dysthymia (MCMI)</td>
<td>9.13a</td>
<td>42.41b</td>
<td>25.52a</td>
<td>15.02a</td>
<td>24.55</td>
<td>3, 228</td>
<td>&lt;.001</td>
<td>.25</td>
</tr>
<tr>
<td>Anxiety (MCMI)</td>
<td>32.97a</td>
<td>67.51b</td>
<td>40.78a</td>
<td>33.87</td>
<td>15.83</td>
<td>3, 227</td>
<td>&lt;.001</td>
<td>.18</td>
</tr>
</tbody>
</table>

**Note.** Means with a common superscript do not significantly differ from one another (ps > .05). Bonferroni corrected alpha value = .008.
Next, the perpetrator subgroups were compared on measures relating to relationship security and distress. Results of a series of one-way ANOVAs revealed significant omnibus effects of group membership for measures of Preoccupied Attachment, Relationship Anxiety, and Relationship Distress. Omnibus tests of Secure Attachment, Fearful Attachment and Dismissing Attachment did not reach statistical significance as defined by the Bonferroni-corrected alpha value ($p < .008$; see Table 4). Results generally suggest that perpetration subgroups may relate to their relationships and partners in several meaningfully different ways. The low-pathology group generally displays lower levels of insecure attachment and less relationship anxiety and relationship distress relative to the BD and GV subgroups. This group does not appear to differ much from the non-violent daters, with the exception that they display moderately elevated levels of relationship anxiety. The BD and GV subgroups appear to exhibit similar levels of insecure attachment, relationship anxiety, and relationship distress. These groups appear to have more insecure attachment styles and are also more likely to feel anxious or distressed about their relationships. Notably, they do not appear to differ meaningfully from one another on these particular variables. Given the BD subgroup’s increased anxiety in general, it is notable that relationship anxiety and distress are comparable and not significantly different between these two subgroups. Findings for each of the variables assessed are presented below, and results of ANOVAs and post hoc tests are presented in Table 4.

**Attachment Style.** Members of the BD group displayed the highest levels of Preoccupied Attachment ($M = 12.4, SD = 3.05$) and reported significantly greater levels of this attachment style relative to the LP ($M = 10.8, SD = 2.99$) and Non-Violent Comparison ($M = 10.8, SD = 2.84$) groups. The GV group also displayed elevated levels of preoccupied attachment ($M = 11.5,$
$SD = 2.11$), and did not differ significantly from either the BD, LP, and Non-Violent Comparison groups (see Table 4).

### Table 4. Comparisons of female clusters on relationship variables.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1: LP ($n = 64$)</th>
<th>Cluster 2: BD ($n = 70$)</th>
<th>Cluster 3: GV ($n = 46$)</th>
<th>Non-violent comparison ($n = 50$)</th>
<th>$F$</th>
<th>$df$</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure Attachment</td>
<td>17.10</td>
<td>15.79</td>
<td>16.39</td>
<td>16.62</td>
<td>2.30</td>
<td>3, 228</td>
<td>.079</td>
<td>.03</td>
</tr>
<tr>
<td>(RSQ)</td>
<td>2.70</td>
<td>3.10</td>
<td>3.04</td>
<td>2.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preoccupied</td>
<td>10.78$^a$</td>
<td>12.42$^b$</td>
<td>11.51$^{ab}$</td>
<td>10.84</td>
<td>4.69</td>
<td>3, 226</td>
<td>.003</td>
<td>.05</td>
</tr>
<tr>
<td>Attachment (RSQ)</td>
<td>2.99</td>
<td>3.05</td>
<td>2.11</td>
<td>2.84</td>
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<td></td>
<td></td>
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<tr>
<td>Fearful Attachment</td>
<td>9.55</td>
<td>11.60</td>
<td>11.24</td>
<td>10.20</td>
<td>3.69</td>
<td>3, 228</td>
<td>.013</td>
<td>.06</td>
</tr>
<tr>
<td>(RSQ)</td>
<td>3.43</td>
<td>4.24</td>
<td>3.76</td>
<td>4.03</td>
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<tr>
<td>Dismissing Attachment</td>
<td>14.63</td>
<td>15.04</td>
<td>16.30</td>
<td>14.65</td>
<td>2.53</td>
<td>3, 226</td>
<td>.058</td>
<td>.03</td>
</tr>
<tr>
<td>(RSQ)</td>
<td>3.51</td>
<td>3.07</td>
<td>3.47</td>
<td>3.83</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Anxiety</td>
<td>16.71$^a$</td>
<td>18.94$^b$</td>
<td>19.04$^b$</td>
<td>13.84</td>
<td>8.80</td>
<td>3, 226</td>
<td>&lt;.001</td>
<td>.11</td>
</tr>
<tr>
<td>(RAI)</td>
<td>5.94</td>
<td>5.39</td>
<td>7.35</td>
<td>5.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Distress</td>
<td>13.90$^a$</td>
<td>15.79$^b$</td>
<td>15.95$^b$</td>
<td>12.69$^b$</td>
<td>4.83</td>
<td>3, 228</td>
<td>.003</td>
<td>.06</td>
</tr>
<tr>
<td>(PRP)</td>
<td>5.08</td>
<td>5.09</td>
<td>5.65</td>
<td>4.32</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Note.* Means with a common superscript do not significantly differ from one another ($ps > .05$). Bonferroni corrected alpha value = .008.

**Relationship Anxiety and Relationship Distress.** Members of the BD and GV subgroups displayed statistically similar high levels of relationship anxiety (BD: $M = 18.9$, $SD = 5.39$; GV: $M = 19.0$, $SD = 7.35$). The LP subgroup displayed moderate levels of relationship anxiety ($M = 16.7$, $SD = 5.94$), expressing less relationship-related worry than the BD and GV groups but greater anxiety relative to the Non-Violent Comparison group ($M = 13.8$, $SD = 5.23$). For Relationship Distress, both the BD and GV groups exhibited the highest levels of distress in their relationships (BD: $M = 15.8$, $SD = 5.09$; GV: $M = 16.0$, $SD = 5.65$). The LP ($M = 13.9$, $SD = 5.08$) and Non-Violent Comparison ($M = 12.7$, $SD = 4.32$) groups displayed less distress and did not differ significantly from one another (see Table 4).
Relationship Aggression

Next, the perpetrator subgroups were compared on measures assessing other forms of aggressive perpetration within the relationship, including several measures of psychological maltreatment, injury, and sexually coercive behaviors (see Table 5). In general, the BD and GV subgroups endorsed the greatest levels of psychological aggression, injury, and sexual coercion perpetration in their relationships and did not significantly differ from one another on any of these measures. The LP subgroup did not differ from the Non-Violent Comparison group on Injury and Sexual Coercion perpetration, but did endorse moderate levels of psychological aggression perpetration in their relationships that was significantly greater than the level endorsed by the Non-Violent Comparison group. Thus, in sum, members of the GV and BD groups are more aggressive across the board, and the LP subgroup is differentiated from Non-Violent daters on measures of psychological as well as physical aggression perpetration. Findings for each of the variables assessed are presented below, and results of ANOVAs and post hoc tests are presented in Table 5.

Psychological Aggression. Results indicated that all three perpetrator subgroups endorsed perpetrating more Psychological Dominance/Isolation behaviors (BD: $M = 10.5$, $SD = 3.54$; GV: $M = 10.7$, $SD = 4.02$; LP: $M = 9.5$, $SD = 2.42$) relative to the Non-Violent Comparison group ($M = 8.0$, $SD = 2.36$), but did not significantly differ from one another. For Psychological Emotional/Verbal aggression, members of the BD and GV clusters endorsed the highest levels of perpetration (BD: $M = 13.3$, $SD = 4.47$; GV: $M = 13.5$, $SD = 6.06$). The LP subgroup endorsed significantly lower levels of perpetration ($M = 11.3$, $SD = 3.49$), and all perpetrator subgroups endorsed more aggression relative to the Non-Violent Comparison subgroup ($M = 8.7$, $SD = 2.56$). For psychological aggression assessed by the CTS-2, members of the BD and GV clusters
again endorsed the highest levels of perpetration (BD: $M = 12.7$, $SD = 6.29$; GV: $M = 12.9$, $SD = 7.81$). The LP subgroup endorsed significantly lower levels of perpetration ($M = 8.7$, $SD = 4.61$), and all perpetrator subgroups endorsed more aggression relative to the Non-Violent Comparison group ($M = 4.0$, $SD = 4.98$; see Table 5).

### Table 5. Comparisons of female clusters on perpetration of other forms of relationship aggression.

<table>
<thead>
<tr>
<th>Cluster 1: LP $(n = 64)$</th>
<th>Cluster 2: BD $(n = 70)$</th>
<th>Cluster 3: GV $(n = 46)$</th>
<th>Non-violent comparison $(n = 50)$</th>
<th>$F$</th>
<th>$df$</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Dominance/Isolation (PMWI)</td>
<td>9.52a</td>
<td>2.42</td>
<td>10.53a</td>
<td>4.02</td>
<td>8.00b</td>
<td>2.36</td>
<td>7.85</td>
</tr>
<tr>
<td>Psychological Emotional/Verbal (PMWI)</td>
<td>11.30a</td>
<td>3.49</td>
<td>13.27b</td>
<td>4.47</td>
<td>13.50b</td>
<td>6.06</td>
<td>8.72c</td>
</tr>
<tr>
<td>Psychological Aggression (CTS-2)</td>
<td>8.66a</td>
<td>4.61</td>
<td>12.72b</td>
<td>6.29</td>
<td>12.94b</td>
<td>7.81</td>
<td>4.04c</td>
</tr>
<tr>
<td>Injury (CTS-2)</td>
<td>0.05a</td>
<td>0.22</td>
<td>0.39b</td>
<td>0.97</td>
<td>0.57b</td>
<td>1.78</td>
<td>0.0a</td>
</tr>
<tr>
<td>Sexual Coercion (CTS-2)</td>
<td>0.49a</td>
<td>1.78</td>
<td>1.60b</td>
<td>2.93</td>
<td>1.91b</td>
<td>3.52</td>
<td>0.36a</td>
</tr>
</tbody>
</table>

*Note.* Means with a common superscript do not significantly differ from one another ($ps > .05$). Bonferroni corrected alpha value = .01.

**Injury.** Each of the subgroups endorsed very low levels of injury perpetration as measured by the CTS-2. Despite the low variability, significant differences were still observed between groups. Members of the BD and GV clusters endorsed the highest levels of perpetration (BD: $M = 0.4$, $SD = 0.97$; GV: $M = 0.6$, $SD = 1.78$). The LP subgroup endorsed significantly lower levels of perpetration ($M = 0.1$, $SD = 0.22$), and did not significantly differ from the Non-Violent Comparison subgroup ($M = 0.0$, $SD = 0.00$; see Table 5).

**Sexual Coercion.** For Sexual Coercion perpetration assessed by the CTS-2, members of the BD and GV clusters endorsed the highest levels of perpetration (BD: $M = 1.6$, $SD = 2.93$; GV: $M = 1.9$, $SD = 3.52$). The LP subgroup endorsed significantly lower levels of perpetration.
(M = 0.5, SD = 1.78), and did not significantly differ from the Non-Violent Comparison group (M = 0.4, SD = 1.54; see Table 5).

**Characteristics of Aggression**

Next, the subgroups were compared on measures of reactive and proactive aggression, proximal antecedents of violence, and accepting attitudes toward violence. Results revealed significant omnibus effects for each of these variables, with the exception of Acceptance of Control and Acceptance of Violence (which did not meet our Bonferroni-corrected value for significance, p < .006 for this set of analyses, see Table 6). In general, the GV subgroup endorsed the greatest likelihood of becoming violent following each of the proximal antecedents, including feelings of jealousy, intention of controlling their partner, and after receipt of verbal abuse from their partner. The BD and GV subgroups endorsed greater acceptance of abusive tactics, and both groups demonstrated similar levels of reactive forms of aggression. Notably, members of the GV subgroup endorsed the greatest amounts of proactive aggression, suggesting greater likelihood of using aggression instrumentally to reach various interpersonal goals. The BD and LP groups endorsed less use of proactive aggression. Overall, results provide partial support for the expectation that subgroups would differ on measures relating to acceptance of aggression, proximal antecedents of aggression, and the reactive or proactive nature of aggression. Findings for each of the variables assessed are presented below, and results of ANOVAs and post hoc tests are presented in Table 6.

**Proximal Antecedents.** For proximal antecedents of violence, the GV subgroup endorsed the greatest likelihood of becoming violent following Jealousy (M = 12.0, SD = 5.41), Verbal Abuse (M = 7.3, SD = 2.87), or with the intent to Control their partner (M = 13.9, SD = 5.94) relative to each of the other perpetrator subgroups and the nonviolent daters. The BD subgroup
endorsed moderate likelihood of becoming violent following Jealousy ($M = 9.7, SD = 4.16$), Verbal Abuse ($M = 8.7, SD = 3.12$), or with the intent to Control their partner ($M = 16.7, SD = 9.7$), and was significantly different from the GV group and the Non-Violent Comparison group on these variables. The Low-Pathology group endorsed intermediate levels of likelihood of becoming violent following Jealousy ($M = 9.5, SD = 4.33$), Verbal Abuse ($M = 8.1, SD = 3.09$), or with the intent to Control their partner ($M = 16.1, SD = 7.40$) and did not significantly differ from either the BD group or the Non-Violent Comparison groups on these variables (see Table 6). In summary, for proximal antecedents of violence, the GV group endorsed the highest likelihood of becoming violent relative to each of the other groups for all of the subscales. This makes sense, given that this group perpetrates the highest levels of physical aggression in their relationships, and it suggests that they are more likely to be prompted to use aggressive means following a variety of proximal prompting events or motives.

Accepting Attitudes of Violence, Abuse, and Control. For Acceptance of Abuse, the BD ($M = 11.6, SD = 3.93$) and GV groups ($M = 12.2, SD = 3.77$) were both significantly more accepting of abusive behaviors than the Non-Violent Comparison group ($M = 9.4, SD = 1.96$). The LP group again was intermediate ($M = 10.8, SD = 2.73$) and differed significantly from the GV and Non-Violent Comparison group, but did not differ from the BD group in their acceptance of abusive behaviors (see Table 6).

Reactive-Proactive Aggression For Reactive Aggression, the BD ($M = 6.7, SD = 3.71$) and GV groups ($M = 7.0, SD = 2.98$) endorsed the highest levels of reactive aggression and were not significantly different from one-another. Both groups were significantly different from the LP ($M = 4.4, SD = 2.35$) and Non-Violent Comparison group ($M = 4.0, SD = 2.71$), who did not differ from each other. For Proactive Aggression, the GV group ($M = 2.0, SD = 2.45$) endorsed
the highest levels of proactive aggression and was significantly greater than the BD group ($M = 0.9, SD = 1.30$). Both the BD and GV groups were significantly different from the LP ($M = 0.4, SD = 0.66$) and Non-Violent Comparison group ($M = 0.3, SD = 0.66$), who did not differ from each other (see Table 6).

Table 6. Comparisons of female clusters on variables related to aggressive relationship behavior.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1: LP ($n = 64$)</th>
<th>Cluster 2: BD ($n = 70$)</th>
<th>Cluster 3: GV ($n = 46$)</th>
<th>Non-violent comparison ($n = 50$)</th>
<th>$F$</th>
<th>df</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive Aggression (RPQ)</td>
<td>$4.35^a$</td>
<td>$6.74^b$</td>
<td>$6.95^b$</td>
<td>$4.04^a$</td>
<td>$2.71$</td>
<td>$13.84$</td>
<td>$3, 220$</td>
<td>$&lt;.001$</td>
</tr>
<tr>
<td>Proactive Aggression (RPQ)</td>
<td>$0.42^a$</td>
<td>$0.94^b$</td>
<td>$2.00^c$</td>
<td>$0.35^a$</td>
<td>$0.66$</td>
<td>$14.58$</td>
<td>$3, 226$</td>
<td>$&lt;.001$</td>
</tr>
<tr>
<td>Jealousy (PAVE)</td>
<td>$9.47^a^c$</td>
<td>$4.33$</td>
<td>$11.98^b$</td>
<td>$8.06^c$</td>
<td>$3.69$</td>
<td>$6.51$</td>
<td>$3, 229$</td>
<td>$&lt;.001$</td>
</tr>
<tr>
<td>Control (PAVE)</td>
<td>$16.06^a^c$</td>
<td>$7.40$</td>
<td>$21.62^b$</td>
<td>$13.88^c$</td>
<td>$5.94$</td>
<td>$10.81$</td>
<td>$3, 226$</td>
<td>$&lt;.001$</td>
</tr>
<tr>
<td>Verbal Abuse (PAVE)</td>
<td>$8.14^a^c$</td>
<td>$3.09$</td>
<td>$10.68^b$</td>
<td>$3.72^c$</td>
<td>$2.87$</td>
<td>$8.20$</td>
<td>$3, 225$</td>
<td>$&lt;.001$</td>
</tr>
<tr>
<td>Acceptance of Abuse (IPVAS)</td>
<td>$10.83^a$</td>
<td>$3.35$</td>
<td>$12.24^b$</td>
<td>$9.39^c$</td>
<td>$1.96$</td>
<td>$8.06$</td>
<td>$3, 226$</td>
<td>$&lt;.001$</td>
</tr>
<tr>
<td>Acceptance of Control (IPVAS)</td>
<td>$9.54$</td>
<td>$11.01$</td>
<td>$10.80$</td>
<td>$9.10$</td>
<td>$3.12$</td>
<td>$4.09$</td>
<td>$3, 224$</td>
<td>$0.007$</td>
</tr>
<tr>
<td>Acceptance of Violence (IPVAS)</td>
<td>$5.39$</td>
<td>$5.26$</td>
<td>$6.04$</td>
<td>$4.78$</td>
<td>$1.39$</td>
<td>$2.87$</td>
<td>$3, 228$</td>
<td>$0.038$</td>
</tr>
</tbody>
</table>

*Note.* Means with a common superscript do not significantly differ from one another ($ps > .05$). Bonferroni corrected alpha value = .006.

**Family of Origin Variables.**

Next, groups were compared on variables assessing various forms of childhood maltreatment, maternal and paternal warmth and comparison, and violent socialization.

Significant group differences were present for child emotional abuse, child emotional neglect,
and paternal control. Groups did not significantly differ on child physical abuse, child physical neglect, child sexual abuse, violence socialization, maternal warmth, maternal control, or paternal warmth (see Table 7). The BD and GV groups endorsed more emotional abuse/neglect experiences than the LP or Non-Violent Comparison groups and the greatest amounts of paternal controlling behaviors. Overall examination of mean group differences on variables that significantly differed or trended toward significance (i.e., Child Physical Abuse/Neglect, Maternal Warmth) lends additional support for the notion that members of the BD and GV groups may be more likely to come from family environments characterized by abusive, neglectful, controlling, or less warm parenting tactics. Effect sizes are smaller for these variables than for some of the proximal variables, which may be due to the fact that these are more distant, developmental experiences with a more indirect relationship to subgroup membership. Findings for each of the variables assessed are presented below, and results of ANOVAs and post hoc tests are presented in Table 7.

**Childhood Emotional Abuse and Neglect.** For childhood emotional abuse (EA) and neglect (EN), the BD group reported the highest levels of victimization (EA: $M = 8.4$, $SD = 3.60$; EN: $M = 8.7$, $SD = 4.11$) and was significantly greater than the LP (EA: $M = 6.5$, $SD = 2.68$; EN: $M = 6.6$, $SD = 2.71$) and the Non-Violent Comparison group means (EA: $M = 6.6$, $SD = 2.31$; EN: $M = 7.0$, $SD = 3.33$). In both cases, the GV group reported an intermediate level of these forms of abuse (EA: $M = 7.4$, $SD = 2.81$; EN: $M = 7.7$, $SD = 3.49$), and did not differ significantly from any of the other groups. For child physical neglect, the BD and GV groups endorsed the greatest level of experience (BD: $M = 6.1$, $SD = 1.90$; GV: $M = 6.3$, $SD = 2.63$), and were significantly greater than the LP group ($M = 5.2$, $SD = 0.74$). The Non-Violent Comparison
group was intermediate ($M = 5.8, SD = 1.66$) and did not differ significantly from any of the group means.

Table 7. Comparisons of female clusters on family of origin variables.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1: LP ($n = 64$)</th>
<th>Cluster 2: BD ($n = 70$)</th>
<th>Cluster 3: GV ($n = 46$)</th>
<th>Non-violent comparison ($n = 50$)</th>
<th>$F$</th>
<th>$df$</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
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<tr>
<td>Child Physical Abuse (CTQ)</td>
<td>5.89 ± 1.72</td>
<td>6.49 ± 2.47</td>
<td>6.89 ± 2.25</td>
<td>6.06 ± 2.36</td>
<td>2.14</td>
<td>3,  226</td>
<td>.096</td>
<td>.03</td>
</tr>
<tr>
<td>Child Physical Neglect (CTQ)</td>
<td>5.16 ± 0.74</td>
<td>6.06 ± 1.90</td>
<td>6.28 ± 2.63</td>
<td>5.78 ± 1.66</td>
<td>4.13</td>
<td>3,  228</td>
<td>.006</td>
<td>.05</td>
</tr>
<tr>
<td>Child Emotional Abuse (CTQ)</td>
<td>6.52 ± 2.68</td>
<td>8.39 ± 3.60</td>
<td>7.44 ± 2.81</td>
<td>6.58 ± 2.31</td>
<td>5.64</td>
<td>3,  227</td>
<td>.001</td>
<td>.07</td>
</tr>
<tr>
<td>Child Emotional Neglect (CTQ)</td>
<td>6.55 ± 2.71</td>
<td>8.70 ± 4.11</td>
<td>7.67 ± 3.49</td>
<td>6.96 ± 3.33</td>
<td>4.79</td>
<td>3,  227</td>
<td>.003</td>
<td>.06</td>
</tr>
<tr>
<td>Child Sexual Abuse (CTQ)</td>
<td>5.92 ± 3.67</td>
<td>6.46 ± 4.26</td>
<td>5.72 ± 2.16</td>
<td>5.37 ± 1.70</td>
<td>1.14</td>
<td>3,  228</td>
<td>.336</td>
<td>.02</td>
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<tr>
<td>Maternal Warmth (PBI)</td>
<td>31.68 ± 5.80</td>
<td>28.27 ± 7.35</td>
<td>30.51 ± 5.43</td>
<td>31.63 ± 6.06</td>
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<td>3,  212</td>
<td>.01</td>
<td>.05</td>
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<tr>
<td>Maternal Control (PBI)</td>
<td>12.90 ± 6.96</td>
<td>15.45 ± 7.01</td>
<td>14.12 ± 6.00</td>
<td>13.34 ± 6.75</td>
<td>1.70</td>
<td>3,  215</td>
<td>.169</td>
<td>.02</td>
</tr>
<tr>
<td>Paternal Warmth (PBI)</td>
<td>27.95 ± 8.22</td>
<td>27.00 ± 8.21</td>
<td>25.63 ± 6.80</td>
<td>28.79 ± 9.23</td>
<td>1.19</td>
<td>3,  206</td>
<td>.314</td>
<td>.02</td>
</tr>
<tr>
<td>Paternal Control (PBI)</td>
<td>10.78 ± 6.13</td>
<td>13.97 ± 7.64</td>
<td>14.43 ± 7.40</td>
<td>10.36 ± 5.17</td>
<td>4.82</td>
<td>3,  202</td>
<td>.003</td>
<td>.07</td>
</tr>
<tr>
<td>Violent Socialization (PRP)</td>
<td>10.72 ± 3.32</td>
<td>11.66 ± 2.87</td>
<td>12.00 ± 4.20</td>
<td>10.96 ± 3.65</td>
<td>1.60</td>
<td>3,  225</td>
<td>.191</td>
<td>.02</td>
</tr>
</tbody>
</table>

*Note.* Means with a common superscript do not significantly differ from one another ($ps > .05$). Bonferroni corrected alpha value = .005.

**Paternal Control.** The GV and BD subgroups endorsed the greatest amount of paternal control in childhood (BD: $M = 14.0, SD = 7.64$; GV: $M = 14.4, SD = 7.40$) and were significantly elevated relative to both the LP ($M = 10.8, SD = 6.13$) and Non-Violent Comparison groups ($M = 10.4, SD = 5.17$; see Table 7).
CHAPTER 9
DISCUSSION

In a commentary written for a 2005 special issue of *Violence and Victims* addressing female perpetration of IPV, Amy Holtzworth-Munroe observed that “…in the research field of male intimate partner violence, our understanding of heterogeneity among aggressive men is advancing rapidly […] Yet, we do not know if the dimensions along which violent men differ will also prove useful in understanding female offenders” (Holtzworth-Munroe, 2005a, p. 255). In the five years since this observation, very limited research has addressed this question empirically. The research that has begun to examine this question provides preliminary evidence that the dimensions that capture the heterogeneity in men’s perpetration of IPV can also be useful in describing women, suggesting global similarities in terms of patterns of subgroups among the two genders (e.g., Walsh et al., in press). The current study examined whether subgroups of IPV perpetrators observed in previous studies would be present among a nonclinical sample of young adult dating IPV perpetrators. Additionally, given the limited research addressing female subgroups of IPV perpetrators, we wished to examine whether the variables that successfully differentiate male perpetrators (i.e., violence severity, generality, and personality pathology) would similarly differentiate female perpetrators. Finally, we examined variables that may reflect different developmental factors and contextual factors that characterize the members of each subgroup.

*Summary of Findings*

The first important finding from this study was the observation that this sample of young adult male and female dating IPV perpetrators contains individuals who systematically differ
from one another in ways that are consistent with the findings of several previous studies
(Hamberger, Lohr, Bonge, & Tolin, 1996; Holtzworth-Munroe et al., 2000; Johnson et al., 2006;
Saunders, 1992; Walsh et al., in press; Waltz, Babcock, Jacobson, & Gottman, 2000). For female
IPV perpetrators, the results of the present study suggested the presence of three different
subgroups within the total perpetrator sample. One of these subgroups, the Low Pathology group,
exhibited low levels of personality pathology, the least amount of physical aggression, and very
little aggression outside of their relationship. A second group, the Borderline/Dysphoric group,
was characterized by high levels of personality pathology (with a relative elevation on the MCMI
Borderline PD scale), low-moderate levels of physical aggression perpetration in their
relationship, and low levels of generalized aggression. Finally, a third group, the Generally
Violent group, exhibited moderate levels of personality pathology (with a relative elevation on
the MCMI Antisocial PD scale), the highest levels of relationship aggression perpetration, and
high levels of aggression perpetrated outside of their relationship. This general pattern of clusters
is consistent with findings from other studies using samples of male IPV perpetrators drawn from
clinical or community samples. Results of this study thus provide support for using these
variables in differentiating subtypes of female IPV perpetrators. This study is also one of the first
to attempt to replicate this particular typology among a female sample (see Walsh et al., in press
for another typological study using a sample of female psychiatric patients), and is the very first
to identify these subgroups among a sample of young adult dating women.

For the men in our sample, the cluster solution appeared similar to that obtained for the
female perpetrators. Further, no significant differences were found between the standardized
scores of each of the perpetrator clusters for men and women for any of the cluster defining
variables. This may suggest that personality pathology, violence generality, and IPV level in the
relationship are variables that are important in describing the characteristics of both male and female IPV perpetrators, and further, describe relatively similar cluster patterns among young adult dating aggressors of both genders. However, we must be careful to not inaccurately accept the null hypothesis. Alternate explanations are possible, including the possibility that we were unable to detect significant differences due to limited power of some of our group comparisons. Further research that attempts to identify cluster solutions among men and women will be needed to strengthen the assertion that men and women who perpetrate IPV may be characterized by similar classifications of subgroups.

For the women, approximately a third of the sample (35.6%) fell into the Low Pathology group. This group did not differ from Non-Violent Comparison group on any of the included measures of psychopathology, attachment style, level of relationship distress, endorsement of reactive and proactive aggression tactics, proximal antecedents of aggression, or developmental factors such as childhood emotional abuse or paternal control. Thus, the violence perpetrated by members of this group may result from factors other than individual-level personality/psychopathology. Notably, the LP group did endorse more anxiety about their relationship and greater acceptance of abuse tactics relative to the Non-Violent Comparison group daters. These variables, anxiety about the relationship and greater acceptance of abuse tactics, may serve as risk factors for these individuals or mechanisms whereby relationship conflict can lead to relationship aggression in relatively isolated and infrequent incidents. This explanation is similar to that put forward by other researchers who hypothesize the presence of infrequent relationship aggression that results from inadequate conflict resolution skills and escalating conflict among a subsample of IPV perpetrators (i.e., Johnson’s Situational Couples’ Violence; Holtzworth-Munroe and Stuarts’ Family Only perpetrators).
In contrast to the LP group, which did not drastically differ from the Non-Violent Comparison group, the Generally Violent (25.6%) and Borderline/Dysphoric (38.9% of the sample) groups displayed the highest levels of the risk factors measured in this study. Relative to the LP and Non-Violent Comparison groups, the BD and GV groups contained individuals who were generally more likely to endorse perpetration of psychological aggression, injury, and sexual coercion against their partners. Members of these two groups appeared similar in regard to their scores on several of the validating variables. For example, members of these two groups did not differ in regard to the amount of psychological abuse and sexual coercion they perpetrated in their relationships. Further, members of both of these groups endorsed higher levels of substance abuse, greater difficulty regulating emotions, greater levels of relationship anxiety and distress, more insecure attachment, greater levels of reactive aggression, greater acceptance of abuse, and more prevalent emotional abuse/neglect and paternal control in childhood. However, these two groups were differentiated by several variables that may reflect important differences between these two groups.

First, the BD group endorsed the greatest levels of all forms of psychopathology. Specifically, the individuals in this subgroup endorsed the highest levels of posttraumatic stress symptomatology, depressive symptoms, dysthymia, and anxiety. The individuals falling into this group appear to demonstrate the greatest difficulty with negative emotionality and associated psychopathology, which may reflect a temperamental vulnerability underlying or contributing to their relationship aggression. This group may have difficulty managing and dealing effectively with relationship conflict and thus they may be more prone to use physically aggressive tactics when confronted with conflict in their relationships. Other researchers theorize that IPV perpetrators contained in BD subgroups, or characterized by borderline personality organization
(Dutton, 1994), may be insecurely attached to or more dependent upon a romantic partner, and thus have an increased propensity to perpetrate aggression against that person when prompted by negative emotion in conflict situations (Dutton, 1994; Holtzworth-Munroe & Stuart, 1994). Thus, their violence is less likely to be generalized to others outside of the relationship due to the centrality of the attachment figure in the violence itself. Consistent with this explanation, the BD subgroup observed in this study endorsed minimal levels of generalized aggression.

Alternately, the GV group endorsed fewer symptoms of PTSD, depression, and dysthymia relative to the BD group. Further, the levels of anxiety endorsed by members of this group did not differ from the Non-Violent Comparison group, suggesting that anxiety or negative emotionality may be an important differentiating variable between the BD and GV groups, with BD groups endorsing high levels of anxiety and GV groups endorsing much lower levels of anxiety. Other important features among the members of the GV group emerged when looking at the proximal antecedents of aggression and the type of aggression perpetrated by members of this subgroup. Specifically, this group endorsed the greatest likelihood of perpetrating aggression when prompted by feelings of jealousy, receipt of verbal abuse from their partner, and in effort to control their partner. They also endorsed the greatest likelihood to engage in proactive or instrumental aggression, which is consistent with previous examinations of partner-only versus generalized female aggressors (Babcock et al., 2003). This description is consistent with hypothesized characteristics of a generally violent group that may be more likely to endorse acceptance of violent tactics and use violence in a more instrumental or proactive manner (Holtzworth-Munroe & Stuart, 1994). Additionally, relationship violence perpetrated by members of this subgroup may just be one manifestation of a globally increased propensity to perpetrate antisocial or aggressive behavior (Holtzworth-Munroe et al., 2003).
In summary, the BD and GV groups appear to differ importantly in regard to their experiences of anxiety and internalizing psychopathology and the nature of their violence, with BD perpetrators exhibiting more anxiety/negative affectivity and GV perpetrators endorsing greater likelihood to use violence in an instrumental manner and in attempt to control their partner or in a response to verbal insult from their partner. The LP subgroup appears to be characterized by low-level risk factors, with the exception of elevated levels of relationship anxiety and acceptance of abusive behavior in relationships.

The present study lends support to the hypothesis that female perpetration is not a homogenous construct, and those dimensions that appear relevant for understanding male perpetration also effectively differentiate subgroups of female IPV perpetrators. This finding echoes the interpretations of the other study to accomplish this (Walsh et al., in press), who found a similar patterning of subgroups in their sample of female psychiatric patients. One important difference between the Walsh et al. study and the current study is that results from Walsh et al. also suggested the presence of two additional female perpetrator subgroups: a low-level antisocial group and a high victimization group. This difference in cluster solution may be due to differences in methodology between the two studies (i.e., different variables used to differentiate subgroups and different clustering procedures conducted), or reflect a difference in regard to the composition of the samples (i.e., a sample of young adult daters versus a sample of older women from a psychiatric patient sample).

Limitations and Qualifications of the Present Study

As mentioned previously, findings from the men in our study lend preliminary support to expectations in regard to cluster profiles on the cluster differentiating variables. However, the study is presently limited in its ability to detect differences among the subgroups on the
validating variables due to insufficient sample size and corresponding low power (see Appendix A). This reflects one of the largest limitations of the present study, and the lack of power prohibits the ability to draw strong conclusions regarding how the male perpetrator subgroups may or may not differ on the variables of interest. Future research will continue to collect data from young adult men in order to strengthen this portion of the study.

Additional limitations of the present study include the reliance on retrospective self-report measures. Given the sensitive nature of the topics addressed in this study (i.e., aggressive behaviors, negative childhood experiences, substance use, psychological difficulties, etc.) and the retrospective nature of the constructs of interest (i.e., those assessing childhood experiences and family of origin variables), our results may be limited somewhat by failures or inaccuracies in reporting, desirability biases, and other forms of response bias that may potentially differ among individuals in each cluster. Though certain aspects of the survey administration were controlled in order to minimize some of these biases (e.g., assuring anonymous responses, administering the survey in a controlled setting to maximize privacy), future research could use additional methodologies (i.e., observations of couples’ interactions; real-time behavioral sampling with use of PDAs or other monitoring) in order to further eliminate some of the issues of retrospective self-reporting. Further, use of data from a large sample obtained beginning in childhood and followed over time could provide measurement of the family of origin variables at an earlier time point, and thus potentially limit inaccuracies in reporting such distal developmental experiences.

Implications of Findings and Future Directions

Despite the aforementioned limitations, the present study has a number of important contributions. First and most importantly, this study is only the second to examine the
Holtzworth-Munroe and Stuart (1994) typology in a sample of female IPV perpetrators. Moreover, we compared this solution to the preliminary cluster solution of a sample of male IPV perpetrators, and no significant differences were found by gender on each of the clusters’ standardized scores on IPV, generalized aggression, and Borderline and Antisocial characteristics. Thus, results obtained in the present study suggest that violence generality/severity and personality pathology are important in the description of different subtypes of perpetrators for both men and women. The present study and others of its kind do much to contribute understanding to the understudied nature of female IPV perpetration, and provide qualified evidence that female IPV perpetrators may be understood and characterized by the same dimensions used for male IPV perpetrators.

This study also lends support to the reliability of and construct validity of typological descriptions of IPV perpetrator subgroups by replicating the cluster solution in a sample characterized by generally lower levels of aggression and pathology than those found among clinical, community or forensic samples. Given that the dimensions that differentiate IPV perpetrators are continuous in nature, it is not surprising that even in a sample of men and women who perpetrate relatively lower levels of aggression compared to samples drawn from clinical or forensic settings we find systematic differences among the perpetrators of relationship aggression. However, the extension of this typological approach to this new sample (i.e., men and women in dating relationships) certainly represents an extension of the present literature examining subgroups of IPV perpetrators using the Holtzworth-Munroe and Stuart (1994) typology.

Why is it important to identifying subgroups among IPV perpetrators in young adult women? The existence of IPV subgroups is important for several reasons. First, current attempts
to understand the etiology of IPV perpetration are likely impeded by the heterogeneous nature of IPV perpetration. Given the differences found among some of the developmental, psychopathology, and relationship variables in this and other typology studies, it becomes apparent that the construct of IPV perpetration is not entirely uniform in nature. Thus, it is plausible that different factors predict IPV perpetration among the members of each subgroup (e.g., interactions between temperamental vulnerability and adverse experiences in childhood that either model violence or predispose individuals to accept violence in their own relationships could predict perpetration among BD subgroup members; while temperamental predispositions to exhibit more callous/unemotional traits interacting with certain parenting styles or maltreatment experiences could predict perpetration among GV group members). Typological studies like the current study and other efforts to characterize the heterogeneity among IPV perpetrators will inform future efforts to build and test models in order to identify the most salient predictors of violence for members in each subgroup. Further, longitudinal studies following perpetrator subgroups over time suggest that members of the BD and GV subgroups are more likely to recidivate in the follow up period (Holtzworth-Munroe et al., 2003), suggesting that subgroup membership can provide predictive information that is relevant for risk assessment efforts. Thus, accurate descriptions of IPV subtypes are important for theory building and eventually lead to advances in the field that could have immense societal impact.

With better understanding of the most relevant mechanisms or risk factors for IPV perpetration, efforts to remediate or prevent relationship aggression can be improved. Current batterer treatment interventions are marked by low adherence rates and generally high recidivism rates post-treatment (Cavanaugh & Gelles, 2005). Among studies that investigate the efficacy of batterer treatment programs on abuse perpetration following treatment completion, only small
effect size differences in post-treatment abuse are found (Babcock, Green, & Robie, 2004; Cavanaugh & Gelles, 2005; Eckhardt, Murphy, Black, & Suhr, 2006). One of the aims of typological efforts to characterize perpetrators is to design better interventions that meet the diverse needs of IPV perpetrators. The effectiveness of batterer treatment programs is underwhelming, and existing research suggests that personality factors (such as antisocial and borderline personality characteristics) negatively impact post-treatment recidivism rates (Dutton, Bodnarchuk, Kropp, Hart, & Ogloff, 1997). Thus, efforts to understand different types of perpetrators and match them to more appropriate treatment outlets could potentially improve treatment efficacy and retention (Saunders, 1996).

Future directions of this research could include research with follow-up contact of individuals as they move to different relationships or across time more generally to determine the temporal stability of subgroup membership. Research examining this question has already demonstrated that group membership stays relatively consistent across time (Holtzworth-Munroe et al., 2003); however, previous research examining this question used a relatively older sample of men (mean age was 36 years old) who were in married relationships. Examining whether the subgroup membership of young adult dating aggressors is stable would emphasize the importance of being able to identify subgroup membership at an earlier age and potentially offer an ability to identify high-risk IPV perpetrators. Interventions earlier in development could potentially have greater effect on remediating problematic relationship patterns before they become more severe or more resistant to change.

In summary, the present study lends insight to the nature of women who display physically aggressive relationship behaviors. Women’s aggression in relationships is an understudied phenomenon that is just beginning to receive the empirical attention that men’s
violence has been receiving for the past forty years. Although it is not the objective of this paper to argue that the construct of women’s violence is equivalent or identical in nature to the construct of men’s violence, the findings of the present study strongly suggest that female perpetrators of relationship violence may contain a heterogeneous group of women, whose diversity can be characterized in a manner similar to samples of male IPV perpetrators. Thus, the present study suggests that future efforts to understand women’s IPV should take these factors into account when examining etiology of IPV perpetration, prediction of future aggression, and identification of potential treatment- and intervention-relevant mechanisms and modifiable risk factors for aggression.
REFERENCES


between generally and partner-only violent subgroups: Lifetime antisocial behavior,

partners. *Family Relations, 57*, 72-83.


APPENDIX A

GROUP DIFFERENCES ON VALIDATING VARIABLES – MALE PERPETRATORS

Analyses conducted with the male perpetrators suffer from insufficient power due to the limited number of men who participated in this study. Tabled results are presented here for those readers interested in examining group means obtained thus far for the men in each cluster. These results will not be interpreted or discussed due to the limited power to detect group differences.

Table A-1. Comparisons of male clusters on psychopathology variables.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1: LP (n = 14)</th>
<th>Cluster 2: BD (n = 30)</th>
<th>Cluster 3: GV (n = 9)</th>
<th>Non-violent comparison (n = 50)</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>η²</th>
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<tbody>
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<td><strong>PTSD Checklist (PCL-C)</strong></td>
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*Note.* Means with a common superscript do not significantly differ from one another (ps > .05). Bonferroni corrected alpha value = .008.
Table A-2. Comparisons of male clusters on relationship variables.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1: LP (n = 14)</th>
<th>Cluster 2: BD (n = 30)</th>
<th>Cluster 3: GV (n = 9)</th>
<th>Non-violent comparison (n = 50)</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure Attachment (RSQ)</td>
<td>15.50 ± 2.71</td>
<td>16.57 ± 2.76</td>
<td>17.78 ± 2.64</td>
<td>17.52 ± 2.87</td>
<td>2.36</td>
<td>3,100</td>
<td>0.08</td>
<td>0.10</td>
</tr>
<tr>
<td>Preoccupied Attachment</td>
<td>12.15 ± 3.05</td>
<td>11.31 ± 2.66</td>
<td>12.22 ± 3.19</td>
<td>11.31 ± 2.82</td>
<td>0.54</td>
<td>3,99</td>
<td>0.65</td>
<td>0.02</td>
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<tr>
<td>Fearful Attachment (RSQ)</td>
<td>9.00 ± 2.51</td>
<td>10.63 ± 3.24</td>
<td>10.44 ± 2.88</td>
<td>9.14 ± 2.79</td>
<td>2.10</td>
<td>3,101</td>
<td>0.11</td>
<td>0.07</td>
</tr>
<tr>
<td>Dismissing Attachment</td>
<td>15.38 ± 2.84</td>
<td>15.59 ± 3.56</td>
<td>15.22 ± 4.41</td>
<td>14.37 ± 3.52</td>
<td>0.84</td>
<td>3,99</td>
<td>0.48</td>
<td>0.01</td>
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<tr>
<td>(RSQ)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Anxiety</td>
<td>17.00 ± 5.43</td>
<td>17.90 ± 5.73</td>
<td>18.11 ± 4.78</td>
<td>16.72 ± 6.01</td>
<td>0.34</td>
<td>3,102</td>
<td>0.79</td>
<td>0.02</td>
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<tr>
<td>(RAI)</td>
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<td>Relationship Distress</td>
<td>16.50 ± 3.08</td>
<td>15.40 ± 3.80</td>
<td>17.33 ± 4.72</td>
<td>15.22 ± 4.45</td>
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<td>3,98</td>
<td>0.44</td>
<td>0.03</td>
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<td>(PRP)</td>
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*Note.* Means with a common superscript do not significantly differ from one another (ps > .05). Bonferroni corrected alpha value = .008.

Table A-3. Comparisons of male clusters on perpetration of other forms of relationship aggression.

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1: LP (n = 14)</th>
<th>Cluster 2: BD (n = 30)</th>
<th>Cluster 3: GV (n = 9)</th>
<th>Non-violent comparison (n = 50)</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Dominance</td>
<td>9.36 ± 2.79</td>
<td>10.37 ± 3.11</td>
<td>10.67 ± 3.46</td>
<td>9.10 ± 2.82</td>
<td>1.56</td>
<td>3,102</td>
<td>0.20</td>
<td>0.06</td>
</tr>
<tr>
<td>Isolation (PMWI)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological Emotional</td>
<td>10.93 ± 2.59</td>
<td>13.37 ± 4.22</td>
<td>13.11 ± 5.25</td>
<td>10.02 ± 3.24</td>
<td>5.94</td>
<td>3,102</td>
<td>0.001</td>
<td>0.17</td>
</tr>
<tr>
<td>Verbal (PMWI)</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Psychological Aggression</td>
<td>7.21 ± 4.00</td>
<td>8.70 ± 5.47</td>
<td>9.89 ± 4.28</td>
<td>4.94 ± 4.69</td>
<td>5.30</td>
<td>3,102</td>
<td>0.002</td>
<td>0.14</td>
</tr>
<tr>
<td>(CTS-2)</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Injury (CTS-2)</td>
<td>0.50 ± 1.34</td>
<td>0.33 ± 1.06</td>
<td>0.67 ± 0.9</td>
<td>0.20 ± 1.02</td>
<td>0.64</td>
<td>3,101</td>
<td>0.59</td>
<td>0.02</td>
</tr>
<tr>
<td>Sexual Coercion (CTS-2)</td>
<td>2.43 ± 3.80</td>
<td>3.00 ± 3.16</td>
<td>5.11 ± 5.13</td>
<td>1.36 ± 2.41</td>
<td>4.40</td>
<td>3,101</td>
<td>0.006</td>
<td>0.13</td>
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*Note.* Means with a common superscript do not significantly differ from one another (ps > .05). Bonferroni corrected alpha value = .01.
Table A-4. Comparisons of male clusters on variables related to aggressive relationship behavior.

<table>
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<th>Variable</th>
<th>Cluster 1: LP ((n = 14))</th>
<th>Cluster 2: BD ((n = 30))</th>
<th>Cluster 3: GV ((n = 9))</th>
<th>Non-violent comparison ((n = 50))</th>
<th>(F)</th>
<th>(df)</th>
<th>(p)</th>
<th>(\eta^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive Aggression (RPQ)</td>
<td>7.14 2.96</td>
<td>7.88 4.06</td>
<td>9.50 3.38</td>
<td>6.49 3.49</td>
<td>2.00</td>
<td>3.92</td>
<td>.12</td>
<td>.06</td>
</tr>
<tr>
<td>Proactive Aggression (RPQ)</td>
<td>2.07 2.64</td>
<td>2.84 3.28</td>
<td>2.00 2.33</td>
<td>1.78 2.75</td>
<td>0.77</td>
<td>3.92</td>
<td>.51</td>
<td>.03</td>
</tr>
<tr>
<td>Jealousy (PAVE)</td>
<td>9.36 3.18</td>
<td>10.27 4.10</td>
<td>10.13 5.28</td>
<td>7.96 3.26</td>
<td>2.51</td>
<td>3.92</td>
<td>.06</td>
<td>.08</td>
</tr>
<tr>
<td>Control (PAVE)</td>
<td>13.43 5.15</td>
<td>14.69 5.85</td>
<td>16.13 9.28</td>
<td>12.71 3.84</td>
<td>1.42</td>
<td>3.92</td>
<td>.24</td>
<td>.05</td>
</tr>
<tr>
<td>Verbal Abuse (PAVE)</td>
<td>8.36 3.52</td>
<td>8.96 4.15</td>
<td>8.88 4.64</td>
<td>6.98 1.85</td>
<td>2.59</td>
<td>3.92</td>
<td>.06</td>
<td>.08</td>
</tr>
<tr>
<td>Acceptance of Abuse (IPVAS)</td>
<td>13.86&lt;sup&gt;a&lt;/sup&gt; 4.47</td>
<td>13.81&lt;sup&gt;a&lt;/sup&gt; 3.77</td>
<td>15.38&lt;sup&gt;a&lt;/sup&gt; 3.66</td>
<td>11.40&lt;sup&gt;b&lt;/sup&gt; 2.96</td>
<td>4.96</td>
<td>3.92</td>
<td>.003</td>
<td>.14</td>
</tr>
<tr>
<td>Acceptance of Control (IPVAS)</td>
<td>11.00 4.06</td>
<td>10.19 3.36</td>
<td>9.63 3.62</td>
<td>9.84 2.73</td>
<td>0.53</td>
<td>3.92</td>
<td>.66</td>
<td>.02</td>
</tr>
<tr>
<td>Acceptance of Violence (IPVAS)</td>
<td>6.36 4.52</td>
<td>5.92 3.97</td>
<td>4.63 1.19</td>
<td>5.62 3.81</td>
<td>0.38</td>
<td>3.92</td>
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Note. Means with a common superscript do not significantly differ from one another \((ps > .05)\). Bonferroni corrected alpha value = .006.
Table A-5. Comparisons of male clusters on family of origin variables.

<table>
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<tr>
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<th>Cluster 1: LP (n = 14)</th>
<th>Cluster 2: BD (n = 30)</th>
<th>Cluster 3: GV (n = 9)</th>
<th>Non-violent comparison (n = 50)</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Physical Abuse (CTQ)</td>
<td>6.09 ± 1.64</td>
<td>8.00 ± 2.99</td>
<td>7.38 ± 2.88</td>
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<td>3,85</td>
<td>.23</td>
<td>.05</td>
</tr>
<tr>
<td>Child Physical Neglect (CTQ)</td>
<td>5.73 ± 1.27</td>
<td>6.35 ± 2.53</td>
<td>5.50 ± 1.41</td>
<td>5.68 ± 1.37</td>
<td>0.89</td>
<td>3,85</td>
<td>.45</td>
<td>.03</td>
</tr>
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<td>Child Emotional Abuse (CTQ)</td>
<td>6.09 ± 1.58</td>
<td>7.23 ± 2.58</td>
<td>7.63 ± 3.29</td>
<td>6.68 ± 2.35</td>
<td>0.90</td>
<td>3,85</td>
<td>.45</td>
<td>.03</td>
</tr>
<tr>
<td>Child Emotional Neglect (CTQ)</td>
<td>7.91 ± 3.27</td>
<td>9.04 ± 4.13</td>
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<td>7.02 ± 2.57</td>
<td>2.07</td>
<td>3,85</td>
<td>.11</td>
<td>.07</td>
</tr>
<tr>
<td>Child Sexual Abuse (CTQ)</td>
<td>5.09 ± 0.30</td>
<td>5.54 ± 1.30</td>
<td>5.88 ± 1.8</td>
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<td>3,85</td>
<td>.82</td>
<td>.01</td>
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<tr>
<td>Maternal Warmth (PBI)</td>
<td>31.45 ± 4.48</td>
<td>30.12 ± 5.19</td>
<td>28.50 ± 5.71</td>
<td>30.46 ± 5.72</td>
<td>0.48</td>
<td>3,85</td>
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<td>.02</td>
</tr>
<tr>
<td>Maternal Control (PBI)</td>
<td>13.55 ± 6.80</td>
<td>17.35 ± 7.47</td>
<td>18.25 ± 4.98</td>
<td>12.73 ± 6.25</td>
<td>3.47</td>
<td>3,85</td>
<td>.02</td>
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</tr>
<tr>
<td>Paternal Warmth (PBI)</td>
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<td>26.08 ± 7.03</td>
<td>26.63 ± 7.98</td>
<td>27.76 ± 6.73</td>
<td>0.31</td>
<td>3,85</td>
<td>.82</td>
<td>.01</td>
</tr>
<tr>
<td>Paternal Control (PBI)</td>
<td>9.36 ± 4.57</td>
<td>10.23 ± 5.98</td>
<td>7.88 ± 4.76</td>
<td>9.22 ± 4.78</td>
<td>0.48</td>
<td>3,85</td>
<td>.70</td>
<td>.02</td>
</tr>
<tr>
<td>Violent Socialization (PRP)</td>
<td>13.82 ± 3.89</td>
<td>16.00 ± 3.96</td>
<td>14.63 ± 2.77</td>
<td>14.63 ± 4.26</td>
<td>0.98</td>
<td>3,85</td>
<td>.41</td>
<td>.04</td>
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Note. Means with a common superscript do not significantly differ from one another (ps > .05). Bonferroni corrected alpha value = .005.