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Experiences of Dating Violence in Emerging Adult Couples: The Role of Attachment Style and Emotion Regulation

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by

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ABSTRACT

In the current study, relations between risk factors of dating violence perpetration and victimization were assessed at the couple-level. Attachment style and emotion regulation are among various factors that have been associated with dating violence and were recently included in an empirically-based model of bi-directional couple violence model (Langhinrichsen-Rohling, 2005/2010). This study was designed to assess the following research questions: (a) Does attachment style predict individuals' abilities to regulate their emotions?; (b) Does attachment style predict individuals' own, as well as their partners', reports of dating violence?; (c) Does ability to regulate emotions predict individuals' own, as well as their partners', reports of dating violence?; (d) Is emotion regulation a mechanism through which attachment style relates to individuals' own, as well as their partners', reports of dating violence?; and (e) Are higher levels of dating violence more likely to occur among couples for whom both partners report emotion regulation difficulties? Participants (158 heterosexual dating couples; $N = 316$) completed online measures of attachment style, emotion regulation, and dating violence. Using the actor-partner interdependence model (Kenny, Kashy, & Cook, 2006), results from multilevel models indicated that insecure attachment was associated with increased difficulty regulating emotions and difficulty regulating emotions was associated with dating violence perpetration and victimization. However, findings were mixed regarding the relation between attachment style and dating violence, and many models revealed significant interactions with participants' sex. Although mediation hypotheses were not supported in this study, it is possible that the proposed mediation is moderated by sex.

Finally, the hypothesis that couples would report increased dating violence if both members had difficulties regulating their emotions was not supported. In fact, results suggested that sex-specific differences in emotion regulation abilities may actually increase risk. Future research should strive to conceptualize and evaluate separate models for men and women or collect data from samples large enough to conduct complex dyadic moderated-mediation analyses. Overall, both attachment style and emotion regulation appear to play important roles in predicting both perpetration and victimization and continued research is warranted.

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CHAPTER I

Introduction

Overview

Intimate partner violence (IPV) is a widespread social concern that directly and indirectly affects the lives of individuals across the lifespan. Dating violence, a subset of IPV, refers to aggressive behaviour directed toward a romantic partner who is by definition not a marital partner. Victims of dating violence typically experience the most salient emotional and physical consequences; however, perpetrators, family members, health care organizations, law enforcement, and the general population also endure associated costs (Coker, 2004; Plichta, 2004). Successful intervention and preventative efforts have been demonstrated at both the individual and couple-level (Foshee et al., 2004; O'Leary, Heyman, & Neidig, 1999; Langhinrichsen-Rohling & Turner, 2012; Wolfe et al., 2003), and increased effort should be placed on identifying risk and protective factors that may serve to increase the effectiveness of these efforts. Indeed, the identification of factors that place individuals at risk for experiencing dating violence has been identified as a research priority (Lewis & Fremouw, 2001).

Although a myriad of sociodemographic, individual, situational, and contextual variables have been explored as risk factors for partner violence (see Lewis & Fremouw, 2001; Murray & Kardatzke, 2007; Vézina & Hébert, 2007 for reviews), most research focuses on male-perpetration of violence toward women. This creates a large gap in our understanding of dating violence, as other studies have demonstrated that violence in relationships is most often bidirectional and females and males are equally likely to perpetrate and be victims of dating violence (e.g., Desmarais, Reeves, Nicholls, Telford

& Fiebert, 2012, Gray & Foshee, 1997). Although the consequences of victimization may be different for men and women (e.g., Foshee, 1996), the factors that increase the likelihood of behaving aggressively or of receiving aggression may be similar for both sexes.

Two individual-level factors that may be especially relevant for prevention and intervention efforts are attachment style and emotion regulation. Both of these variables are rooted in early childhood experiences, are amendable to change, and have been included in Langhinrichsen-Rohling's (2005/2010) empirically based dyadic/reciprocal couple violence model. Many studies have demonstrated an association between insecure attachment style and partner violence perpetration and victimization, with the strongest and most consistent links emerging between anxious attachment and perpetration (see Mikulincer & Shaver, 2007 for a summary). Poor ability to regulate emotions is a plausible mechanism through which attachment style may lead to an increased risk of dating violence. Individuals who experienced an unresponsive caregiver in early life may not have developed the capacity or skills to adaptively manage their own emotional responses during periods of distress. When these individuals experience conflict or attachment-related threats in their romantic relationships, their limited access to emotion regulation strategies, poor ability to understand or accept their emotions, and difficulty managing their behaviour while experiencing negative emotions may increase the likelihood of an aggressive interaction. Indeed, separate studies have found that poor ability to regulate emotions is associated with insecure attachment (e.g., Esbjørn, Bender, Reinholdt-Dunne, Munck, & Ollendick, 2011; Feeney, 1995) and dating violence (e.g., Gratz, Paulson, Jakupcak, & Tull, 2009).

The purpose of the current study is to more thoroughly explore the relations among attachment style, emotion regulation, and dating violence with the intent of elucidating the mechanism by which these variables relate. Efforts were made to improve methodological limitations of past research, especially in regards to obtaining dyadic data (i.e., information from both members in the romantic partnership). The more systemic exploration of risk factors is expected to result in a richer understanding of bidirectional violence and less commonly researched topics, such as female-perpetration and male-victimization. The ultimate value of research aimed at identifying risk factors for dating violence is that knowledge gained can be used to develop more effective intervention and prevention strategies.

Literature Review

Definition and prevalence rates. The study of dating violence is complicated by both the lack of a universally accepted definition and the interchangeable use of the terms dating violence, IPV, partner abuse, dating aggression, and couple violence. Two common elements of the above-mentioned terms that warrant specificity are: (1) the relationship status of the individuals involved and (2) what denotes aggressive or violent behaviour.

Relationship status of couples under study, whether dating, married, or cohabiting, is important to specify, as differences have been found in the prevalence and type of violence experienced by couples depending on their relationship status and presumed level of relationship commitment (Archer, 2000; Stets & Straus, 1989). For example, Stets and Straus (1989) found that cohabiting couples reported more physical violence than married couples. Similarly, Archer's (2000) meta-analysis revealed that

there are higher rates of female-perpetrated dating violence in younger dating couples as compared to married couples. Recognizing that couples may interact differently as a function of relationship status adds an additional level of complexity to the study of partner violence because researchers often vary in how they define a romantic partner; some restrict their sample to individuals in heterosexual monogamous dating relationships, whereas others include nonexclusive, same-sex, cohabiting, or engaged couples. Furthermore, commitment level is often presumed rather than measured and may relate to couple violence in important ways.

Unlike relationship status, defining aggression or violence is more complex. Archer (1994) argues that "aggression" and "violence" are objectively distinct, such that aggression pertains solely to the act itself (e.g., hitting), whereas the term violence implies a consequence (e.g., aggression that leads to injury or death). Conversely, Sugarman and Hotaling's (1989) widely adopted definition of dating violence – "the use or threat of physical force or restraint carried out with intent of causing pain or injury to another" (p. 5) – specifies an intent to harm, but does not require that harm actually occur. Emery (1989) argues that distinguishing between aggression and violence requires subjective judgment and that the responsibility of the researcher is simply to provide a clear operational definition of whichever term they utilize. Overall, most researchers define dating violence by the intent of the act or tactic (i.e., potential for harm) rather than the consequence (e.g., injury).

Further complicating the study of dating violence are the inconsistencies in what is considered violence. Some researchers narrow their definition of violence to only include physical (e.g., hitting) and/or sexual aggression (e.g., forced penetration),

whereas other researchers view dating violence as a "continuum of unsafety" (Stanko, 1990) and choose a broad, multidimensional definition, that includes psychological aggression or threat. Through an extensive consultation process, the National Centre for Injury Prevention and Centers for Disease Control and Prevention developed a set of recommendations to improve the accuracy and reliability of data collected on partner violence (Saltzman, Fanslow, McMahon, & Shelley, 1999/2002). They recommend that term violence include physical violence, sexual violence, threat of physical or sexual violence, and psychological/emotional abuse.

Because dating violence has been conceptualized differently among researchers, the prevalence rates reported in the literature vary widely. Amar and Gennaro (2005) cite dating violence rates ranging from 8% to 90%. In a landmark study, Makepeace (1981) found that 61% of participants reported knowing a victim of dating violence and one in five college students had experienced physical abuse in a dating relationship. Nearly 50% of college-aged women in one study had been a victim of physical or sexual dating violence in the past school year and 13% of those women reported experiencing both forms of violence (Smith, White, & Holland, 2003). In 2006, 29% of a nationally representative sample of Canadian women reported being physically assaulted by a romantic partner at some point after the age of 16 years (Lips, 2006). Straus (2004) reported that within a university sample, 29% of students reported using physical aggression toward a partner within the past year. Results from the most recent National Intimate Partner and Sexual Violence Survey reveal that 1 in 4 women (22.3%) and 1 in 7 men (14.0%) have been the victim of severe physical violence by an intimate partner (including acts such as being hit with something hard, being kicked or beaten, or being

burned on purpose; Breiding, 2014). Given the subjectivity in definitions of violence and the susceptibility of self-reports to socially desirable response styles, the alarmingly high reported prevalence rates are likely underestimates.

Gender symmetry and mutual violence. Frequency, type, and consequences of dating violence may also differ by biological sex or gender[1]. Some researchers argue that female- and male-perpetrated violence are of equal concern because there is evidence that female-perpetrated violence occurs as frequently as male-perpetrated violence and women commit "severe" aggressive acts (e.g., choking, punching) as often, if not more often, than men (Archer, 2000; Katz, Kuffel, & Coblentz, 2002; Straus, 2011). Indeed, Archer's (2000) meta-analysis of 82 studies of physical violence supports the importance of studying female perpetration, as 50% of the reported acts of violence were committed by women and women committed more physical aggressive acts than men, especially in young, dating couples compared to married couples. Thus, researchers who focus on the prevalence and intention of aggressive acts rather than their consequences tend to downplay the importance of gender and social roles in the study of partner violence and assert that both male- and female-perpetrated violence is concerning behaviour and worthy of study.

Despite the gender symmetry in prevalence and severity of dating violence reported above, researchers that take a more feminist perspective often claim that female-

[1] At present, most dating violence research pertains to opposite-sex couples and relies on biological sex categories for comparison rather than gender. Nonetheless, these terms are often used interchangeably. I have chosen to use these terms interchangeably throughout the introduction to keep with common phrasing of certain concepts (e.g., "gender asymmetry" rather than "sex asymmetry"); however, when I present results from this current study, I refer to comparisons between men and women as "sex" differences because couples were recruited based on their biological sex (i.e., heterosexual couples).

perpetrated violence is of lesser social concern because of the gender asymmetry in the consequences to victim (e.g., Hamberger, 2005). The overall difference in strength and size of men versus women alone would predict greater negative consequences of dating violence victimization for women. Indeed, physical violence or threat of physical violence has been shown to result in greater physical and psychological harm when perpetrated by men compared to women (e.g., Anderson 2002; Foshee, 1996; Katz et al., 2002; Stets & Straus 1990).

These researchers also argue that partner violence is not a unitary phenomenon and gender symmetry in perpetration rates does not hold across different samples. Higher ratios of male-to-female violence have been found in studies that relied on agency data (e.g., courts, police reports, hospitals, and shelters) rather than community samples (Johnson, 2006; see Langhinrichsen-Rohling, Misra, Selwyn, & Rohling, 2012 for review). However, there are a variety of reasons why women may report to agencies more than men, altering the ratio of male-to-female violence in agency versus community samples.

One way to reconcile the dispute between gender symmetry and asymmetry in perpetration rates is to propose that there are different subtypes of perpetrators. Johnson (2011) outlines three different types of partner violence: (1) intimate terrorism, (2) violent resistance, and (3) situational couple violence. He states that intimate terrorism, a pattern of violent coercive control, is often what comes to mind when one thinks of "domestic violence" and is the type of violence that is likely reported to agencies (e.g., hospitals, shelters, police). In heterosexual relationships, perpetrators of intimate terrorism are primarily male (Johnson, 2006). Johnson describes violent resistance as a

victim's reaction to intimate terrorism, a response that is primarily used by females. On the other hand, situational couple violence is described as not involving a pattern of control and occurs when couple conflict escalates to violence. Johnson (2011) states that situational couple violence is the most common form of partner violence and unlike intimate terrorism and violent resistance, is roughly symmetrical in terms of male and female perpetration.

Another way to reconcile the dispute between gender symmetry and asymmetry is a proposed "moderate asymmetry" approach (Hamby, 2009). Hamby hypothesized that if the measurement of physical partner violence was altered to include injury, sexual assault, and a better screen for false positives (e.g., hitting or kicking during horseplay), then findings would show a decrease in female perpetration from 50% to between 20 – 35%. She concludes that it would be truly remarkable if intimate partner violence was unique from all other forms of violent behaviour, which consistently find that women commit 20 – 35% of aggressive crimes. In relevance to dating violence during emerging adulthood, Hamby notes that gender differences might be smaller in younger samples and the greatest amount of female perpetration is often found in young adult samples.

Overall, review of the current literature supports that dating violence is often perpetrated by both sexes and likely stems from conflict escalation rather than a purposeful attempt to control one's partner. Furthermore, the gender symmetry debate may be reconciled by a decision to focus on the frequency of aggressive acts rather than the consequences of aggressive acts, as well as recognition that partner violence is not a unitary phenomenon and that sex-specific prevalence rates may differ as a function of subtype of partner violence. All in all, it is clear that women are more likely to

experience greater harm from male-perpetrated dating violence, but as Straus aptly states, arguing that female-perpetrated violence is not of concern "…is like arguing that cancer is not an important medical problem because many more die of heart disease" (2011, p. 284).

In addition to acknowledging the gender symmetry in prevalence rates and severity of acts in the most common form of partner violence, it is also important to note that when dating violence occurs, it is often mutual or bidirectional between partners (Capaldi & Crosby, 1997; Gray & Foshee, 1997; Katz et al., 2002). Thus, within violent relationships, men and women are often both victims and perpetrators. Further, although the rates of female-perpetration and bidirectional violence may be inflated by acts of self-defense, research shows that the percentage of aggression that is used for defense is low and that men and women in violent relationships initiate and receive equal amounts of violence (Gray & Foshee, 1997; Straus, 2011). These findings highlight the benefit of adopting a gender-sensitive view when studying dating violence by examining both genders as potential victims and perpetrators.

Review of risk factors. We know that developing romantic relationships is a healthy and normative experience for many adolescents and emerging adults, but for those who experience violence in these early relationships, dating may result in devastating consequences. Dating violence has been associated with physical injury, mortality (due to injury), suicide, substance use, pregnancy complications, unhealthy weight control, sexually transmitted infections, and risky sexual behaviour (see Plichta, 2004; Silverman, Raj, Mucci, & Hathaway, 2001). Furthermore, research has consistently shown that experiencing dating violence places individuals at a heightened

risk for revictimization in both the same and future partnerships (Himelein, 1995; Humphrey & White, 2000; Smith et al., 2003). The high rate of dating violence in emerging adulthood, as well as the associated negative consequences, underscores the importance of identifying factors that place individuals or couples at a heightened risk for experiencing dating violence. To be clear, a risk factor or marker is an experience, exposure, or attribute which results in an increased probability of the expression or receipt of dating violence (Sugarman & Hotaling, 1989).

Recent reviews of risk factors associated with dating violence (see Lewis & Fremouw, 2001; Schumacher, Feldbau-Kohn, Slep, & Heyman, 2001; Vézina & Hébert, 2007) are rife with contradictory findings. Many studies are limited by the inherent drawbacks of cross-sectional research designs. However, some factors are consistently associated with dating violence, and many are similarly associated with both perpetration and victimization (likely because most individuals who perpetrate violence, also receive violence, as discussed earlier). Although some studies and reviews are gender specific (e.g., Vézina & Hébert, 2007), it is important to explore gender differences, especially in strength of predictability, as this information would likely impact the focus of targeted intervention strategies. Below is a discussion of factors commonly explored and/or associated with dating violence. The purpose of this review is three-fold: (a) it serves to demonstrate the large degree of interest and previous effort placed on understanding partner violence, (b) to present the commonly studied variables and the current state of the risk-related literature, and (c) to highlight the complications and complexity of studying individual and partner-specific variables (see Lewis & Fremouw, 2001; Schumacher et al., 2001; Vézina & Hébert, 2007, for more comprehensive reviews).

An ecological model (Bronfenbrenner, 1977) serves as the framework for presenting risk factors in an organized and intuitive manner, with variables categorized into four categories: sociodemographic factors, individual factors, situational factors, and contextual factors. It is important to note that dating violence is a multidetermined phenomenon, meaning that multiple characteristics or experiences combine to create different pathways that lead to the same or similar outcomes of experienced dating violence. Thus, no one factor should be considered in isolation and mixed findings may indicate a need to consider the possibility of moderating variables.

Sociodemographic factors. Sociodemographic factors commonly consist of variables such as: sex and/or gender, age, socioeconomic status, ethnicity, area of residency, and religion. For the most part, sociodemographic factors have been weakly or inconsistently related to dating violence. As described earlier, men are often perceived as perpetrators and women as victims, but some findings reveal that both men and women equally initiate and receive violence (Katz et al., 2002). For the most part, studies exploring age, socioeconomic status, and religious practices have found nonsignificant relations to dating violence (Lewis & Fremouw, 2001; O'Keefe, 2005; Vézina & Hébert, 2007). Some studies report that living in rural areas (e.g., Spencer & Bryant, 2000) or identifying as African American, Hispanic, or Asian ethnicity (e.g., Howard & Wang, 2003; O'Keefe & Triester, 1998) are risk factors for dating violence, whereas other researchers report that those residing in urban areas are at an increased risk (e.g., Makepeace, 1987) and that individuals coming from African American, Hispanic, and Asian backgrounds may be at a reduced risk compared to other ethnic groups (e.g., Silverman et al., 2001). Overall, sociodemographic information is relatively easy to

obtain and can be evaluated alongside variables that are more likely to be strong predictors of dating violence.

Individual factors. Individual factors can be conceptualized as "features of an individual's developmental experience or personality that shape his or her response to microsystem [i.e., the immediate context of the dating violence, such as the romantic relationship] and exosystem [i.e., the distal context that influences the interactions within the romantic relationship, such as the surrounding formal and informal social structures] stressors" (Heise, 1998, p. 266). Historically, variables that have been widely studied and found to be clearly related to partner violence include childhood maltreatment and witnessing violence between parents (i.e., intergenerational transmission of violence) (Egeland, 1993; Stith, Smith, Penn, Ward, & Tritt, 1997). Some researchers have found that a history of child abuse or harsh discipline by parents increases the likelihood of both perpetrating and being a victim of dating violence (e.g., Ehrensaft et al., 2003; Magol, Moffit, Caspi, & Silva, 1998; Makepeace, 1987, O'Keeffe, Brockopp, & Chew, 1986). Others, however, have found that childhood maltreatment is associated solely with dating violence victimization (e.g., Coffey, Leitenberg, Henning, Bennett, & Jankowski, 1996); and still others have found that childhood maltreatment is predictive of perpetration and victimization in females but not males (e.g., O'Keefe, 1998). Overall, most research reveals an association between experiencing childhood maltreatment or witnessing violence in the family-of-origin and later experiences of dating violence (Cantrell, MacIntyre, Sharkey, & Thompson, 1995; Stith et al., 1997; Vézina & Hébert, 2007). Moreover, witnessing interparental violence has been shown to strengthen the relation between childhood maltreatment and dating violence (O'Keefe, 1998). Alexander (2009)

found that women who were victims of dating violence in multiple romantic relationships were more likely to have experienced childhood abuse and witnessed parental violence than women who had only experienced violence in one relationship.

As previously mentioned, prior experiences of dating violence victimization increases the risk of additional experiences of aggression (Himelein, 1995; Humphrey & White, 2000; Smith et al., 2003). In a prospective study, Smith and colleagues (2003) demonstrated that the risk of experiencing dating violence decreases over time for those who have never experienced partner aggression, but actually increases for those who reported victimization within the past year. Furthermore, it has been demonstrated that experiencing one form of violence increases the risk of experiencing other forms (Howard & Wang, 2003; Smith et al., 2003).

In addition to distal variables such as experiences from early childhood and past romantic relationships, numerous personality and intrapersonal variables have been explored as more proximal indicators or moderators of risk of dating violence. Variables such as low self-esteem, depression, attitudes toward dating violence, substance abuse, and personal competencies, have been the focus of many studies, as these variables significantly impact the functioning of individuals and can be responsive to intervention.

Internalizing problems, such as low self-esteem and depressed affect have been shown to increase the risk of both perpetration (Magdol et al., 1997; O'Keefe, 1998) and victimization (e.g., Cascardi & O'Leary, 1992, Sharpe & Taylor, 1999). Although internalizing problems are likely consequences of dating violence, low self-esteem has been shown to mediate the relation between early childhood experiences (e.g., witnessing interparental violence) and experiences of dating violence (O'Keefe, 1998) and the

relation between depression and dating violence has been demonstrated longitudinally (Foshee, Benefield, Ennett, Bauman, & Suchindran, 2004), suggesting that internalizing problems can also precede dating violence.

Substance use and accepting attitudes toward dating violence are two other individual characteristics that have been investigated as variables that may increase one's propensity to initiate and receive violence within romantic relationships. Individuals who view violence as an acceptable conflict-resolution strategy are more likely to perpetrate (O'Keefe, 1998) and be a victim (O'Keefe & Treister, 1998) of dating violence. Substance use has been consistently shown to increase the risk of receipt and initiation of dating violence for both men and women (O'Keefe, 1997; Silverman et al., 2001). In a longitudinal study, Roberts, Klein, and Fisher (2003) demonstrated that risk behaviours (which included substance use, antisocial behaviour, suicidality, and depression) increased the likelihood of being involved in a violent relationship for both men and women. Furthermore, they found that following the receipt of dating violence, women exhibited an increase in all risk behaviours; however, men experienced an increase in depressed mood only.

There is emerging evidence to suggest that deficits in personal competencies, such as problem solving and communication skills, may increase the risk of dating violence victimization and perpetration, but increased research in this domain is warranted (Lewis & Fremouw, 2004). Recently, a brief dating violence prevention program (*Building A Lasting Love*, Langhinrichsen-Rohling, McGowan, & Turner, 2005) that targets poor communication skills, emotion regulation difficulties, and lack of skills to cope with high stress levels was found to significantly reduce perpetration of psychological dating

violence and the receipt of severe victimization in a sample of at-risk adolescent girls (Langhinrichsen-Rohling & Turner, 2012). A limitation of the above-mentioned intervention program is that it only targeted at-risk adolescent girls. Thus, it appears that further research in this domain is warranted and could have important clinical implications for decreasing the risk of both perpetration and victimization.

Situational factors. Situational variables are variables that refer to the immediate context of the dating violence; in other words, relationship characteristics and interactions between partners. At this point, relatively little is known about the relationship dynamics of emerging adults that may contribute to dating violence. Compared to individual factors (discussed above) and contextual factors outside the relationship (e.g., social support, peer group), the study of couple functioning using proper methodology (i.e., data obtained from both partners and analyzed using an interdependence model) is relatively scarce.

Mixed results have been reported for the associations between dating violence and length of relationship, time spent with partner, and emotional attachment to partner (Vézina & Hébert, 2007). A perceived power differential between partners, having an older partner, and attending dates in isolated settings have been more consistently linked to an increased risk of victimization. As previously documented, violence within a relationship is often bidirectional (Straus, 2011). Thus, inflicting violence upon one's partner is a risk factor for subsequent victimization.

Cleveland, Herrera, and Stuewig (2003) have suggested that seriousness of the relationship may be associated with dating violence due to the increased investment, expression of intense emotions, and opportunities for conflict. However, they found that

seriousness itself did not predict dating violence, but might moderate the relationship between individual-level risk factors and violence. Furthermore, they speculated that at the couple-level, problematic dynamics and the risk of violence could increase as individual risk factors between partners interact.

Although relationship satisfaction would intuitively appear to decrease as a consequence of experiencing dating violence, there is emerging evidence that low relationship satisfaction may predict both perpetration and victimization (Lewis & Fremouw, 2001). Findings from the marital literature suggest a strong link between marital conflict (e.g., verbal arguments over division of labour, finances, or perceived transgressions) and partner violence. Babcock, Waltz, Jacobson, and Gottman (1993) found that husband-to-wife physical abuse increased as husband's decision-making power decreased and husband demand/wife withdraw interactions increased. Gottman (1994, 1999) later developed couple-conflict types. "Hostile" or "nonregulated" couples were more likely to engage in negative behavioural processes labeled criticism, contempt, defensiveness, and withdrawal. Unfortunately, this research is limited to marital couples and did not explore female perpetration. Ultimately, more couple-level research is needed in this area to truly understand the dynamic that exists between dating partners.

Contextual factors. Contextual variables refer to variables or interpersonal interactions that occur outside of the relationship and that may influence or determine the dynamic between partners. Stressful life events and one's social network have been associated with dating violence. Some evidence suggests that significant life stress (e.g., major financial loss or personal failure) is associated with both dating violence perpetration and victimization (Marshall & Rose, 1987).

Quality of social supports and characteristics of peer groups have both been explored as variables that can increase the likelihood of experiencing violence within a relationship. Limited social resources (e.g., emotional support, companionship) have been associated with male perpetration and victimization (Magdol et al., 1997), whereas poor quality in peer relations has been associated with female victimization (Sharpe & Taylor, 1999). Moreover, having peers who have experienced violence in their own relationships has been shown to increase the risk for male and female dating violence perpetration, and female-only victimization (Arriaga & Foshee, 2004). Peer delinquency also has been consistently linked with an increased risk for dating violence (Howard, Qui, & Boekeloo, 2003). However, with respect to qualities of the peer group, it is difficult to determine whether peers influence the individual's risk for dating violence or if individuals experiencing dating violence seek out a peer group that may be involved with dating violence and other problematic behaviours. Thus, further longitudinal research in this domain is needed to best understand the larger context in which violence occurs.

Overall, many factors at multiple levels of an ecological framework have been explored as risk factors for both male and female dating violence perpetration and victimization. The ability to draw strong conclusions from prior research is limited by cross-sectional designs, self-report measures that assess only one partner, and inconsistencies between studies. These inconsistencies may be the result of differing definitions and methodologies, but they also may be due to difficulty in capturing the complex interplay between multiple risk factors within the individual and between partners. Thus, replication of findings and continued research on the interaction between risk factors at both the intra- and inter-personal level is warranted. A meta-analysis of 85

studies specific to physical partner violence revealed that individual and situational variables have the strongest effect sizes and are thus important in understanding victimization and perpetration (Stith et al., 2004). Stith and colleagues also identified a significant void in research pertaining to male victims and female perpetrators. This information will be essential to correctly identify and treat individuals and couples at risk for experiencing dating violence.

The ultimate goal of identifying risk factors is to better understand the factors that predispose individuals or couples to an increased likelihood of violence so that the initiation of violence can be averted. Throughout the years, the focus of research has shifted from marital violence in adulthood to dating violence in adolescence and emerging adulthood. Many of the individual and situational factors reviewed are identifiable in young dating couples and amenable to intervention, which suggests they may be useful variables to target in adolescents and emerging adults. However, it may be most effective to broaden the focus to include factors that stem from negative early childhood experiences (e.g., harsh parenting, parental neglect, witnessing interparental violence, childhood maltreatment, lack of a nurturing environment). If risk factors that meet these criteria can be identified, then the goal of preventing the onset of dating violence may be more attainable; interventions could be aimed not only at at-risk adolescents and emerging adults, but also at new parents who may be experiencing difficulty in providing a positive environment for their children.

It is widely accepted that interpersonal behaviours and expectations, as well as the ability to regulate emotions, are largely shaped during infancy and early childhood through interactions with and between primary caregivers (Chen, 2015; Gilliom, Shaw,

Beck, Schonberg, & Lukon, 2002; Kopp, 1989; Maughan & Cicchetti, 2002). It has been long proposed that children whose parents are warm, nurturing, and responsive to their needs grow to develop positive expectations of others (Bowlby, 1969/1982). These children gradually internalize positive interactions with their caregiver (Bowlby, 1988) and may be better able to cope with negative emotions on their own (Carlson & Sroufe, 1995; Fish et al., 2004, Gunnar, 2005; Hershenberg et al., 2011; Zimmer-Gembeck et al., 2015). In contrast, children whose parents are neglectful, violent toward each other, or who struggle to regulate their own emotions, grow to develop poor expectations of others and may be less equipped to adaptively cope with negative emotions.

Thus, attachment style and emotion regulation skills are two individual-level factors that are rooted in early childhood experiences and may be especially relevant for dating violence prevention and intervention. Furthermore, both of these variables are included in Langhinrichsen-Rohling's (2005/2010) empirically based dyadic/reciprocal couple violence model, which was developed to help understand the cycle of bidirectional aggression that is typical of most violent dating relationships. In this model, the development, occurrence, and persistence of dating violence are a function of both partners' individual characteristics (emotion regulation skills, attachment style, among others), environment, and culture. The dyadic/reciprocal couple violence model appears to expand upon Riggs and O'Leary's (1989) "background-situational" model of dating violence, which proposed that background characteristics (e.g., interparental aggression) establish an individual's pattern of behaviour and situational variables (e.g., relationship characteristics, such as communication skills) which heighten the likelihood of relationship conflict by including the characteristics of both partners. In a more recent

article, Langhinrichsen-Rohling (2010) describes multiple models of mutual aggression, one of which proposes that a subtype of couples experience mutual violence because of both partners' deficits in regulating their emotions and behaviours. She coins this subtype "mutually dysphoric violent relationships or dyadic-dysregulation" (p. 186). It would thus appear that emotion regulation and attachment style are key variables in understanding dating violence perpetration and victimization for both partners within a relationship. An in-depth discussion of each of these variables follows.

Attachment style. During infancy and early childhood, the function of Bowlby's (1969/1982) "attachment behavioural system" is to ensure that children remain close to their primary caregivers for safety, protection, and ultimately, survival. Although it is presumed that most children are born with a normal attachment system, the quality of the interactions with the attachment figure will result in individual differences in the functionality of this system. If the caregiver is warm, affectionate, and responsive to the infant's attempts to seek closeness during distress, the child will experience the caregiver as a reliable and effective emotion regulation strategy. In contrast, if the attachment figure is experienced as physically distant, emotionally unavailable, or otherwise incapable of effectively alleviating distress, the child will begin to doubt both the capabilities of others to provide relief and their own capabilities of effectively regulating their emotions.

Repeated failures to attain security through proximity-seeking will result in hyperactivation (i.e., persistent attempts to obtain care and support from a caregiver) or deactivation (i.e., an over reliance on self to avoid additional frustration caused by an unavailable caregiver) of the attachment system. Gradually, these attachment-related

experiences form increasingly stable "working models" of self and others and are used to make predictions about future interpersonal exchanges (Bowlby, 1969/1982). Bowlby (1988) hypothesized that this behavioural system remains active throughout the lifespan and that the "working models" of self and others operate unconsciously and are fairly stable throughout development. He noted that individuals often assimilate new people (e.g., a romantic partner) with the dominant working models they developed during childhood, and will interpret and recall this person's behaviour in a manner that confirms their expectations, ultimately strengthening their working model (Bowlby, 1979).

Patterns that emerge in the thoughts and expectations one has about self and others, as well as associated emotions and behaviours, are referred to as attachment styles. Attachment styles were first described by Ainsworth to classify infants' reactions to their mothers during the Strange Situation assessment procedure (Ainsworth, Blehar, Waters, & Wall, 1978). During the 1980s, new measures were constructed to extend the early work on parent-child attachment into adolescence and adulthood (see Hesse, 1999, for a review). Hazan and Shaver (1987) extended Bowlby's ideas into the realm of romantic relationships by creating a self-report measure that placed individuals into one of three categories (i.e., anxious, avoidant, or secure). Since then, many additional models of adult attachment have been put forth (Bartholomew, 1990; Collins & Read, 1990; Simpson, 1990), all of which have been found to consist of the same two underlying dimensions: avoidance and anxiety (Brennan, Clark, & Shaver, 1998). Although attachment styles are often spoken of as if they were discrete categories, psychometric research has determined that attachment styles are best conceptualized as continuous regions in a two-dimensional space (Fraley & Waller, 1998).

In sum, attachment styles are shaped by attachment-relevant events in early childhood, and in turn, shape current or imagined relational behaviour. Within a close relationship (e.g., romantic partner), behaviour is shaped by a partner's response to an individual's action, which then affects the individual's thoughts, feelings, and behaviours, and ultimately future interactions (Mikulincer & Shaver, 2007). For example, a woman may experience her partner as distant and aloof and may become overly clingy and demanding in response. Her partner may then withdraw further, causing her to experience distressing thoughts or feelings. This cycle of relational behaviours could continue, leading to increased distress and heightened relational conflict.

Attachment style and dating violence. One such interpersonal outcome that has been repeatedly associated with individual differences in attachment style is dating violence. Individuals who are anxiously attached may aggress against their partners when they feel abandoned, rejected, or ignored, with the conscious or unconscious goal of achieving security in their relationship. On the other hand, it has been proposed that individuals who have an avoidant attachment style may be less likely to aggress against their partner due to their tendency to withdraw and suppress emotion (Bartholomew & Allison, 2006). However, should avoidant individuals perceive their partners as overly demanding, they may act aggressively toward their partners to achieve distance.

Consistent with these theoretical predictions, many studies have found associations between insecure attachment styles and partner violence perpetration and victimization (Alexander, 2009; Bond & Bond, 2004; Bookwala, 2002; Doumas, Pearson, Elgin, Mckinley, 2008; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Follingstad, Bradley, Helff, & Laughlin, 2002; Fournier, Brassard, & Shaver, 2011;

Godbout, Dutton, Lussier, and Sabourin, 2009; Henderson, Bartholomew, Twinke, & Kwong., 2005; Higginbotham et al., 2007; Lafontaine & Lussier, 2005; Péloquin, Lafontaine, & Brassard, 2011; Roberts & Noller, 1998; Sandberg, Suess, & Heaton., 2007; Tracy, Shaver, Albino, & Cooper, 2003; Wekerle & Wolfe, 1998; Yarkovsky & Fritz, 2013), with the strongest and most consistent links emerging between anxious attachment and perpetration (see Mikulincer & Shaver, 2007 for a summary).

To date, most research exploring attachment style and couple violence has assessed the contribution of attachment style to relationship outcomes at the individual level. That is, they evaluate the effect of one partner's attachment style on their self-report of relationship outcomes. This is problematic because, as Simpson and Howland (2012) point out, "…in close and long-standing relationships, partners facilitate, alter, or impede the most cherished plans and goals that individuals have, regardless of whether individuals have a secure, an avoidant, or an anxious attachment orientation" (p. 282). Therefore, whether or not an insecurely attached individual perpetrates or is victim of dating violence largely depends on their partner's attachment style and associated interpersonal wishes and behaviours.

There are a few studies that have advanced beyond the individual level and assessed dyadic effects of attachment style and couple violence. These studies take a systemic approach to couple violence by using the dyad as the unit of analysis and approaching dating violence as an outcome of problematic dynamics stemming from the family of origin and currently occurring within the romantic relationship. Roberts and Noller (1998) conducted one of the first studies to assess "couple-type effects" between attachment style and partner violence (i.e., the extent to which particular pairs of secure

and insecure attachment styles impact relationship functioning). Participants were 181 married couples or couples who had been living together for at least 12 months. Roberts and Noller (1998) found that anxious, but not avoidant, attachment was associated with perpetration by both male and female partners and that having a male partner with an anxious attachment style significantly added to the prediction of female perpetration. Furthermore, they found an interaction effect between attachment styles and violence such that the pairing of one partner high in attachment anxiety with another high in attachment avoidance was a particularly volatile dynamic.

These findings were corroborated by Doumas, Pearson, Elgin, and McKinley (2008), who examined a sample of 70 couples that had been dating for at least six months and found that an anxiously attached woman paired with an avoidantly attached man was predictive of bidirectional physical violence. In a qualitative study of 23 couples identified for male-to-female relational violence, Allison, Bartholomew, Mayseless, and Dutton (2005) demonstrated that, in addition to the "mispairing" between anxious and avoidant attachment, the pairing of two anxiously attached individuals can also significantly interfere with relationship functioning. Overall, there is strong evidence at both the individual and couple level to suggest that insecurely attached individuals are at a greater risk for experiencing dating violence within their romantic relationships. One plausible mechanism by which attachment style may lead to an increased risk of couple violence is through the development of poor emotion regulation skills.

Individuals who experience an emotionally unresponsive or distant caregiver in childhood may not have developed the capacity or skills to adaptively manage their emotional responses during periods of distress. When these individuals experience

conflict or attachment-related threats within their romantic relationship, their limited ability to access emotion regulation strategies, understand or accept their emotions, and pursue goal-directed behaviour while experiencing negative emotions may result in an increased likelihood of an aggressive interaction occurring between partners. Indeed, poor ability to regulate emotions has been linked to both insecure attachment (Feeney, 1995; Gillath, Bunge, Shaver, Wendelken, & Mikulincer, 2005) and dating violence (Bushman, Baumeister, & Phillips, 2001; Gratz et al., 2009; Jakupcak, 2003; Tull, Jakupcak, Paulson, & Gratz, 2007).

Emotion regulation. Emotion regulation is one of the fastest growing areas of study in psychology (Koole, 2009), with thousands of articles published each year on the topic (Gross, 2013). A review of the literature reveals emotion regulation's wide applicability to individuals across the lifespan and to many diverse phenomena; however, the concept remains plagued by definitional and conceptual issues (Cole, Martin, & Dennis, 2004). Paralleling the difficulties with the literature on dating violence, the literature on emotion regulation is convoluted by a plethora of terms that are used interchangeably, such as affect regulation, emotional control, emotion management, negative-mood regulation, and emotion dysregulation. Furthermore, some researchers use the term emotion regulation to refer to one specific domain of regulation (e.g., suppressing negative emotion, rumination), whereas others use the term more broadly to refer to a repertoire of strategies or abilities that enhance or inhibit emotions (Gross, 1998).

Generally speaking, emotion regulation refers to the "processes that influence which emotions we have, when we have them, and how we experience or express these

emotions" (Gross, 1998, p. 275). Adaptive regulation provides individuals with the tools needed to respond flexibly to their environment (Thompson, 1994). One major conceptual debate within the field of emotion regulation is whether or not experienced emotion and emotion regulation occur sequentially (individuals experience intense emotion and then attempt to alter their emotional response, termed a two-factor model) or if these entities are concurrent processes (one-factor model; Campos, Frankel, & Camras, 2004; Putnam & Silk, 2005). J. Gross (1998), a notable theorist in the emotion regulation field, conceptualizes emotion regulation using a two-factor model (see Thompson, 1994 for a similar two-factor model). He views emotion regulation as a form of affect regulation that is closely related to coping, mood regulation, and defenses, and thinks of the processes as existing on a continuum from explicit and effortful to unconscious and automatic. J. Gross (1998) states that emotion regulation requires the up-regulation or down-regulation of both positive and negative emotions, and is accomplished by using strategies that are either antecedent-focused (occur before an emotional response is fully activated, such as reappraisal) or response-focused (occur after the activation of an emotional response, such as suppression).

Though acknowledging that emotion regulation occasionally occurs in a sequential step-like fashion, proponents of the one-factor model assert that emotion regulation most often takes place simultaneously across levels of the emotion process (Campos et al., 2005). Campos and colleagues define emotion regulation as "the modification of any process in the system that generates emotion or its manifestation in behavior," (p. 380). They propose that the same processes generate and regulate emotions, and thus view their model as more integrative and better able to incorporate

context, as well as social, cultural, and historical influences (e.g., past experiences with caregiver).

Regardless of whether or not the processes involved in emotion regulation occur sequentially or simultaneously, theorists tend to agree that emotion regulation is a multidimensional phenomenon that involves both emotions and behaviours. Some theorists emphasize the functionality of all emotions (positive and negative) and suggest that emotion regulation involves the awareness, understanding, and acceptance of emotions, and is best reflected by ability to manage and direct behaviour while experiencing negative emotions, rather than the ability to control specific emotions (Gratz & Roemer, 2004; Linehan, 1993). In fact, research has shown that controlling, avoiding, or suppressing negative emotions can have negative consequences (e.g., Butler et al., 2003; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Richards & Gross, 1999)

One conceptualization that appears to capture the complexity of emotion regulation and account for the various processes that contribute to adaptive functioning, defines emotion regulation as a "multidimensional construct involving the awareness, understanding, and acceptance of emotions; ability to engage in goal-directed behaviours and inhibit impulsive behaviours when experiencing negative emotions; flexible use of situationally appropriate strategies to modulate the intensity or duration of emotional responses, rather than to eliminate emotions entirely; and willingness to experience negative emotions as part of pursuing meaningful activities in life" (Gratz & Tull, 2010, p. 111, paraphrased from Gratz & Roemer, 2004). The authors view deficits in any or all of these areas as indicative of difficulties with emotion regulation.

Despite the varying definitions and conceptual issues of emotion regulation, as well as its seemingly endless and diffuse applicability, Cole, Martin, and Dennis (2004) argue that the construct is worthy of continued study because it offers insight into how emotions can direct attention and behaviours to achieve purposeful goals, solve problems, and maintain well-being, while at the same time, cloud judgment and reasoning, impair relationships, and lead to other detrimental behaviours. Furthermore, in addition to being associated with insecure attachment (Feeney, 1995; Gillath et al., 2005) and dating violence (Bushman et al., 2001; Gratz et al., 2009; Jakupcak, 2003; Tull et al., 2007), difficulties in emotion regulation have been linked to self-harm (e.g., Buckholdt, Parra, & Jobe-Shields, 2009, Gratz & Roemer, 2008), binge eating (e.g., Whiteside et al., 2007), substance abuse (e.g., Fox, Axelrod, Paliwal, Sleeper, & Sinha, 2007; Kun & Demetrovics, 2010), symptoms of depression and anxiety (e.g., Cisler, Olatunji, Feldner, & Forsyth, 2010; Gross & John, 2003; Tull, Stipelman, Salters-Pedneault, & Gratz, 2009), and borderline personality disorder (e.g., Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006), among others.

Emotion regulation and attachment style. How do individual differences in emotion regulation arise? Although most individuals fluctuate in their use of emotion regulation strategies across different contexts, they typically develop a consistent style of regulation (Bridges, Denham, & Ganiban, 2004). Individual differences in emotion regulation styles have been proposed to have both intrinsic (e.g., temperament; Rothbart & Sheese, 2007; Rothbart, Sheese, & Posner, 2014; Southam-Gerow & Kendall, 2002) and extrinsic (e.g., parent-child attachment bond and early experiences in other significant relationships; Bowlby, 1969/1982; Mikulincer, Shaver, & Pereg, 2003;

Sroufe, 2005) underpinnings. Although historically, temperament and attachment were competing theories (i.e., nature versus nurture) to explain socio-emotional development, it is now believed that they operate in conjunction with one another. Indeed, infants are not simply passive recipients of their caregivers' behaviour; their response to their caregivers – which is constrained by temperament, among other variables – influences the attachment bond. Ultimately, there is likely a complex interplay of variables that feedback or influence the parent-child bond, but this bond has been consistently shown to impact the development of emotion regulation skills and is a malleable variable that could serve as an intervention target.

Thus, patterns or characteristic styles of managing emotions and behaviours during distress likely arise from a combination of individuals' views of their capacity to self-regulate and individuals' views of other people's capacity or willingness to assist in regulation, views which are shaped during formative relationships. Sroufe (2005) states that one of the clearest hypotheses derived from Bowlby's attachment theory is that a history of secure attachment between child and caregiver will provide the framework necessary for healthy emotion regulation. As summarized by Sroufe (2005), Bowlby (1969/1982) further conceived that working models of the self and others are complimentary; as individuals gain confidence in their caregiver's ability to help soothe their emotional distress, they also gain confidence in their own emotion regulation abilities.

Theory purports that individuals who have developed a secure attachment will come to expect that their emotional displays will be met with sensitivity and acceptance, and will subsequently share their emotions freely and directly (Cassidy, 1994). These

individuals will be more likely to believe that turning to others is a helpful coping mechanism, have effective problem-solving skills due to decreased self-doubt and improved flexibility, and be better able to reappraise situations or utilize what Gross (1999) called "antecedent-focused emotion regulation" due to their strongly-held positive beliefs about self and others (Mikulincer & Shaver, 2007). In turn, secure individuals will be better able to acknowledge and accept negative emotions, and be less likely to regulate their emotions through suppression, denial, or avoidance (Mikulincer & Shaver, 2007).

On the other hand, individuals with an insecure attachment will come to expect that their emotional signals will be met inconsistently or with judgment. Theory suggests that in times of distress, individuals with an avoidant attachment style will likely suppress or deny their emotions, a process Gross (1999) called "response-focused emotion regulation," and minimize attention to the attachment relationship. Individuals with an anxious attachment style are hypervigilant to potential threats and may use emotional expressivity to solicit attention, support, and closeness that they feel may otherwise disappear (Cassidy, 1994). In essence, these individuals *up*-regulate their emotions and inhibit problem-solving, amplify threats, jump to catastrophic conclusions, and maintain pessimistic views of self and others (Mikulincer & Shaver, 2007). Thus, the attachment figure's availability is the major source of differences in emotion regulation strategies (Mikulincer et al., 2003). Indeed, there is a large body of research that supports the association between emotion regulation and attachment style (Bouthillier, Julien, Dubé, Bélanger, & Hamelin, 2002; Cooper, Shaver, & Collings, 1998; Feeney, 1995; Fuller & Fincham, 1995; Gillath et al., 2005; Kobak & Sceery, 1988; Lanius, Frewen, Vermetten,

& Yehuda, 2010; Mikulincer, Dolev, & Shaver, 2004; Mikulincer et al., 2003; Roisman, Tsai, & Chiang, 2004; Sroufe, 2005; see Mikulincer & Florian, 1998 and Mikulincer & Shaver, 2007, for review).

Researchers have demonstrated that attachment security is associated with positive beliefs about self-capacity to manage distress, stress reducing appraisals, acknowledgment and sharing of emotions, and a greater likelihood of support-seeking (e.g., Fuendeling, 1998; Myers & Vetere, 2002; Vogel & Wei, 2005). For anxious and avoidant attachment styles, the consistency in findings differs as a function of the specific component of emotion regulation measured. Nevertheless, converging evidence suggests that individuals with avoidant attachment show a decreased tendency to seek-support, difficulty accessing attachment-related worries and reliance on other distancing coping strategies, and increasingly pessimistic views of stressful events (e.g., Berant, Mikulincer, & Florian, 2001; Feeney, 1998; Lopez, Mauricio, Gormley, Simko, & Berger, 2001; Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Vogel & Wei, 2005). Anxiously attached individuals are more likely to have rejection-related thoughts, manifest the tendency to intensify threats, view their coping resources as inadequate, and mainly use emotion-focused coping strategies such as ruminating about potential situations (e.g., Berant et al., 2001; Mikulincer et al., 2000; see Mikulincer & Shaver, 2007 for a review). Furthermore, most studies assessing attachment style and ability to identify and describe emotions have identified deficits in both anxiously attached and avoidant individuals (e.g., Mallinckrodt & Wei, 2005).

Simpson, Collins, Tran, and Haydon (2007) provide longitudinal evidence to support the hypothesis that the experience and expression of emotions in adult romantic

relationships reflects earlier experiences with attachment figures (e.g., to parent-child relationships, peer-adolescent relationships). They used data collected from 78 target individuals who were followed from infancy into their mid-20s as part of the Minnesota Study of Risk and Adaptation from Birth to Adulthood (see Sroufe, Egeland, Carlson, & Collins, 2005). In addition, Simpson and colleagues (2007) asked individuals and their romantic partners (of at least four months) to complete a series of self-report relationship measures and a conflict resolution task. Results indicated that the relation between attachment style at 12 months of age and emotional experience and expression during a conflict resolution with a romantic partner was mediated by both social competence during early elementary school and attachment to close friends at age 16 years. It is important to note that this study only assessed the experience and expression of positive and negative emotions, with the assumption that a greater ratio of positive to negative emotions was indicative of better functioning, and thus these findings are limited in their applicability to the overarching construct of emotion regulation. Nonetheless, this study is believed to be the first to demonstrate that attachment relationships earlier in development systematically influence emotional experience in adult romantic relationships (as indicated by self-report, partner-report, and observations).

Other studies have extended the literature on emotion regulation and attachment by considering emotion regulation as an explanatory mechanism by which attachment style relates to various maladaptive outcomes (e.g., Mallinckrodt & Wei, 2005; Tasca et al., 2009; Ty & Francis, 2013; Wei, Vogel, Ku, & Zakalik, 2005). For example, a recent study conducted by Marganska, Gallagher, and Miranda (2013) examined emotion regulation as a mediator between adult attachment style and symptoms of depression and

anxiety using a sample of 284 university students. Findings corroborated the link between emotion regulation and attachment style, such that secure attachment was associated with adaptive emotion regulation and lower psychopathology, whereas insecure attachment styles were associated with greater difficulties in emotion regulation and higher levels of psychopathology. Although the outcome variable in this study is not of particular relevance to dating violence, this study is highlighted because of the authors' multidimensional conceptualization of emotion regulation, which included awareness, understanding, and acceptance of emotions; ability to inhibit impulses during distress; ability to initiate goal-directed behaviour while experiencing distress; and the ability to flexibly use emotion regulation strategies. As such, the authors were able to specifically conclude that nonacceptance of negative emotions, inability to inhibit impulses, and perceived inability to effectively regulate emotions mediated the relationship between attachment style and symptoms of anxiety, whereas only perceived inability to regulate emotions mediated the relationship between attachment style and symptoms of depression.

Emotion regulation and dating violence. Turning to the relation between emotion regulation and partner violence, it appears that despite the demonstrated impact of emotion regulation on intrapersonal and interpersonal functioning, limited research has explored its role in aggression beyond those that specifically assess anger dysregulation (Davey, Day, & Howells, 2005). Nonetheless, there are a few studies that have demonstrated a relation between a broad conceptualization of emotion regulation and aggressive behaviour in children (e.g., Izard et al., 2008), adolescents (e.g., Sullivan, Helms, Kliewer, & Goodman, 2010), and adults (e.g., Cohn, Jakupcak, Seibert,

Hildebrandt, & Zeichner, 2010), and toward romantic partners (e.g., Tager, Good, & Brammer, 2010). It has been further suggested that aggression may serve a regulatory function in and of itself (Bushman et al., 2001; Jakupcak, 2003).

In a review of the role of emotion regulation in aggression, Roberton, Daffern, and Bucks (2012) summarized empirical evidence to support that both over- and under-regulation of emotions contribute to aggression. Individuals who are unable to contain difficult emotions in a manner that allows them to engage in goal-directed behaviour (i.e., individuals who under-regulate) may be more likely to act aggressively as a means of avoiding, changing, or terminating the uncomfortable experience. On the other hand, individuals who use emotion regulation strategies (e.g., avoidance and suppression) in an inflexible manner to consistently thwart emotional experiences (i.e., individuals who over-regulate) may also be more likely to aggress due to a paradoxical increase in negative emotion; compromised decision-making, problem-solving, and meaningful thought processes; diminished quality of interpersonal relationships; and increased physiological arousal (e.g., Butler et al., 2003; Richards & Gross, 1999; see Roberton et al., 2012 for review).

In addition to providing explanatory evidence for how both under- and over-regulation may lead to aggression, Roberton and colleagues (2012) distilled from the literature three skills thought to underlie emotion regulation and aggression: emotional awareness, emotional acceptance, and access to a variety of emotion regulation strategies. A study conducted by Tull and colleagues (2007) examined the role of emotional inexpressivity and experiential avoidance as explanatory variables through which symptoms of posttraumatic stress disorder (PTSD) relate to interpersonal aggression in a

sample of 225 men. Their findings revealed that suppression and avoidance of emotions (i.e., nonacceptance, unawareness) accounted for significantly more unique variance than PTSD symptoms and trait anger. In contrast, Neumann, van Lier, Gratz, and Koot (2010) assessed the relation between emotion regulation and aggression using a multidimensional conceptualization of emotion regulation. They found that difficulties controlling impulses and engaging in goal-directed behaviour when distressed predicted aggression in adolescents, whereas awareness, acceptance of negative emotions, and perception of ability to effectively manage emotions did not. Thus, the specific components of emotion regulation that contribute to aggressive behaviour remain unclear.

Although the literature on aggression and emotion regulation is restricted, studies reveal that the relation between difficulty regulating emotions and aggression persists when applied specifically to partner violence (Gratz et al., 2009; Hughes, Stuart, Gordon, & Moore, 2007; McNulty & Hellmuth, 2008; Stuart, Moore, Hellmuth, Ramsey, & Kahley, 2006; Tager et al., 2010). Tager et al. (2010) assessed emotion regulation, conformity to masculine norms, and partner violence in 108 men from three batterer intervention programs. Poor emotion regulation (as measured by the Difficulty in Emotion Regulation Scale [DERS, Gratz & Roemer, 2004]) emerged as the strongest predictor of aggression, uniquely accounting for 18% of the variance. The authors suggested that adherence to masculine norms (e.g., belief that men should not acknowledge emotions) may indirectly influence partner violence through emotion regulation deficits. Furthermore, in Holman and Jarvis's (2003) investigation of Gottman's (1994, 1999) couple-conflict types, they found that unmarried hostile types

had the lowest soothing (i.e., ability to calm their own and their partners' emotional reactivity) and the highest criticism, contempt, defensiveness, and emotional flooding (i.e., emotionally overwhelmed by their partners' negative affect). These same behaviours found in the "unmarried hostile types" (i.e., Gottman's maladaptive communication behaviours) have been linked to increased violence in dating couples (Cornelius, Shorey, & Beeb, 2010).

Researchers have demonstrated the association between difficulties in emotion regulation and female-perpetration of partner violence. Stuart and colleagues (2006) assessed factors that influenced violence in 87 women who were also referred to batterer intervention programs. Women were allowed to select multiple reasons for why they believed they aggressed against their partner. The most frequently reported reasons for violent occurrences were: to show anger (39.4%), because their partner pushed them over the edge (38.9%), self-defense (38.7%), to show feelings that could not be explained in words (38.0%), stress (36.5%), retaliation for being emotionally hurt (35.3%), and not knowing what to do with their feelings (35.2%). McNulty and Hellmuth (2008) conducted the only known study that assessed emotion regulation and intimate partner violence using both relationship partners ($N = 72$ newlywed couples). Main effects between negative affect and husbands' and wives' self-report of perpetration of physical violence were nonsignificant; however, wives' report of perpetration of physical violence was found to moderate the relation between husbands' negative affect and self-reported perpetration. More specifically, husbands' variability in negative affect was positively associated with self-reported perpetration only when wives also reported that they physically aggressed against their partner. It is important to note that these authors used

multiple regression analyses rather than a more suitable technique for analyzing dyadic data (e.g., the actor-partner interdependence model [APIM; Kenny, Kashy, & Cook, 2006]) and relied solely on variability in negative affect as a measure of emotion regulation. Nevertheless, there is evidence to suggest that difficulty regulating emotions may increase the likelihood of perpetration for both men and women. Furthermore, characteristics of one partner may moderate the relation between emotion regulation and partner violence in the other.

Emotion regulation has also been explored as mediating the relationship between intimate partner violence and more distal variables. Using a sample of 341 male and female undergraduates, Gratz and colleagues (2009) explored emotion regulation difficulties as a potential explanatory mechanism for the robust relation between childhood maltreatment and intimate partner violence. Results indicated that difficulties in emotion regulation mediated the relationship between childhood maltreatment and perpetration of physical intimate partner violence for men, but that emotion dysregulation was not associated with physical intimate partner violence in women. Interestingly, an evaluation of a brief partner violence prevention program (*Building a Lasting Love*, Langhinrichsen-Rohling et al., 2005) that targets emotion regulation skills, communication skills, and skills for coping in high-stress environments was found to significantly reduce perpetration of psychological abuse and the severity of victimization in at-risk adolescent girls (Langhinrichsen-Rohling & Turner, 2012), suggesting that improving emotion regulation skills in women may be an effective strategy for decreasing dating violence. Overall, findings regarding emotion regulation and dating violence are limited and appear to be focused on perpetration rather than victimization.

Furthermore, few studies have employed a multidimensional conceptualization of emotion regulation and only one known study (McNulty & Hellmuth, 2008) simultaneously explored emotion regulation and intimate partner violence using romantic dyads.

Attachment, emotion regulation, and dating violence. Prior research has demonstrated that both attachment style and emotion regulation are related to dating violence, and that both avoidant and anxious attachment styles relate to difficulties in emotion regulation. However, the mechanism by which attachment style and emotion regulation increase the likelihood of dating violence is not well understood. Indeed, both of these variables are included in recent theoretical models of bidirectional dating violence (see Langhinrichsen-Rohlings, 2005, for discussion of dyadic/reciprocal couple violence model; see Langhinrichsen-Rohling, 2010, for description of "mutually dysphoric violent relationships or dyadic-dysregulation"). There are only a few known studies that have explored emotional regulation in conjunction with attachment style and intimate partner violence (Babcock, Jacobson, Gottman, & Yerington, 2000; Dankoski et al., 2006). Other studies have explored alternative explanatory mechanisms through which attachment style and intimate partner violence relate, such as empathy (Péloquin et al., 2011) and communication style (Fournier et al., 2011); examined attachment style and emotion regulation as they relate to childhood aggression and peer relationships (Chang, Schwartz, Dodge, & Mcbride-Chang, 2003; Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000); and perhaps most relevant, investigated the relations among attachment style, emotion regulation, and adult romantic relationship satisfaction (Brennan & Shaver, 1995; Feeney, Noller, & Roberts, 1998).

Through two separate studies, Feeney, Noller, and Roberts (1998) tested the hypothesis that affect (defined as experience or expression of emotion) mediates the relation between attachment style and relationship functioning. In their first study, the authors analyzed previously collected data from dating couples that participated in Feeney's (1995) earlier study of attachment and emotional control ($N = 72$). Here, the authors found some support for their proposed mediational model, such that men high in comfort with closeness (i.e., secure attachment) reported a greater likelihood of open expression of negative emotions (specifically, sadness), which was in turn associated with higher relationship satisfaction as reported by their female partner.

Feeney, Noller, and Robert's (1998) second study examined the explanatory role of experience of emotion (defined as physiological arousal and self-report of overall affect) in relation to attachment style and relationships satisfaction using 48 married or cohabiting couples. Here, the mediational hypothesis was not supported, primarily because the authors found a nonsignificant relation between attachment and emotional experience. Although the outcomes of these two relatively early studies provided only partial support of the authors' theoretically based hypotheses, the results revealed the complexity involved in assessing the relation between multiple risk factors that are inconsistently defined within the literature and that not only operate within the individual, but also influence the romantic partner's functioning. These findings are limited by the authors' use of a one-dimensional rather than a multidimensional conceptualization of emotion regulation (i.e., expression in Study 1 and experience in Study 2).

It is worth noting that Brennan and Shaver (1995) also explored the three variables—attachment style, emotion regulation, and relationship satisfaction—in a

sample that included 94 romantic couples. Unlike Feeney and colleagues (1995), Brennan and Shaver (1995) did not consider the possible mediating role of emotion regulation and instead sought to explore attachment style differences in emotion regulation strategies (specifically, fantasizing or engaging in casual sex, using alcohol to decrease tension, or over- or undereating in response to anxiety) and to assess how one's own and one's partner's attachment style affected relationship satisfaction. Findings revealed that individuals' insecure attachment was associated with decreased ability to regulate their emotions (as indicated by a greater report of casual sex, alcohol consumption, and disordered eating) and contributed to their partners' relationship dissatisfaction more so than their partners' own insecure attachment. Although consistent with the state of the field at the time of study, these findings are limited by the measurement of attachment style and emotion regulation, which have since undergone significant improvement.

Although the above-mentioned studies are relevant in that they pertain to romantic relationship dynamics, they are limited in that they do not speak directly to intimate partner violence. Only two known studies assessed attachment style, emotion regulation, and intimate partner violence (Babcock et al., 2000; Dankoski et al., 2006). Babcock and colleagues (2000) investigated behavioural differences in emotion regulation strategies in a sample of nonviolent, unhappily married husbands (n = 13) and physically violent husbands (n = 23), who differed in attachment styles. Findings revealed that violent men were more likely to have an insecure attachment style than nonviolent men and emotion regulation (operationalized as the valence of affect [e.g., positive, anger, defensiveness] displayed during marital interaction) differed as a function

of attachment style. Avoidantly attached husbands were more likely to use distancing strategies (e.g., stonewalling) and violent behaviour in response to wives' defensiveness during conflict, whereas anxiously attached husbands lacked distancing behaviours and acted violently in response to their wives' attempts to withdraw from conflict. The authors interpreted these findings as indicative of two functions of violence: *instrumental* violence used by avoidantly attached husbands to achieve a goal of distance and control and *expressive* violence displayed by anxiously attached husbands as an attempt to quell negative affect. Interestingly, regardless of whether the violence is instrumental or expressive, the likelihood of either occurring appears to be influenced by the romantic partner's emotion regulation during conflict (i.e., wife's defensiveness or withdrawal). Unfortunately, like Brennan and Shaver (1995), Babcock and colleagues (2000) did not test if emotion regulation mediated or moderated the relation between attachment style and violence. Moreover, they only assessed male-perpetrated intimate partner physical violence and did so by using the Conflict Tactic Scales (Straus, 1979), which has since been improved upon (e.g., added sexual coercion and injury scales; Revised Conflict Tactics Scales [CTS2; Straus, Hamby, Boney-McCoy, & Sugarman 1996]).

Dankoski and colleagues (2006) conducted the second known study to assess all three variables of interest. Their study used secondary longitudinal data collected from the 1940s to 1960s (Glueck & Glueck, 1950, 1968) to investigate whether emotion regulation mediated the effects of attachment to caregiver and family of origin chaos on subsequent perpetration of violence against women. They used a sample of 344 men, who were first interviewed in adolescence (age 11 – 17 years) and reassessed in their mid-twenties (*M*age = 25 years) and early-thirties (*M*age = 31 years). Structural equation

modeling revealed that the relations between attachment and family chaos and later violence against women were mediated by emotion regulation. Their mediational model accounted for 79% of the variance in emotion regulation and 29% of the variance in later violence against women. It is important to note that the results of this study are limited in their applicability to current day intimate partner violence research largely because the authors were bound by the coding decisions made by the original authors and the constructs were operationalized in a manner consistent with the time period during which they were measured. Other limitations of the study include that many of the items within measures were dichotomous (yes/no), violence against women was assessed by criminal record and included domestic violence (i.e., assault, abandonment) in and amongst other violent crimes toward female children and adults, attachment was rated by psychiatrists and social investigators who completed 3-item measures of family cohesiveness and parent-child affection, and teachers's ratings of behaviours, which were mapped onto internalizing and externalizing scales of the Child Behavior Checklist (Achenbach, 1994) served as a proxy for emotion regulation. Although this study provides rich longitudinal evidence supporting the role of emotional regulation as an explanatory mechanism for partner violence, methodological problems limit its generalizability.

Current Study

Overall, there is mounting evidence to suggest that emotion regulation plays an important role in the relationship between attachment style and dating violence; however, the mechanism of influence remains poorly understood and the existing literature in this area is small and suffers from methodological limitations. Of the few studies that have attempted to elucidate the relations among attachment style, emotion regulation, and

intimate partner violence, none have examined emotion regulation as an explanatory mechanism through which attachment relates to dating violence, specifically. Moreover, studies in which attachment, emotion regulation, and partner violence have been assessed generally suffer from one or more limitations: (a) the focus has been restricted to male-perpetration; (b) single informants report on constructs that pertain to a couple; (c) measures are comprised of single or dichotomous items, measures are (often arbitrarily) categorical or outdated, and/or have poor psychometrics; (d) constructs are poorly defined or definitions are inconsistent with widely adopted conventions; (e) there is failure to control for possible confounds (e.g., social desirability); and/or (f) there is excessive reliance on correlational designs.

Although in the current study I rely on a correlation design, I address the remaining aforementioned limitations and add to the existing literature on risk factors associated with dating violence by assessing perpetration and victimization as reported by both members of romantic relationships. Romantic relationships were limited to dating relationships in emerging adulthood due to the increased prevalence of partner violence in younger dating relationships compared to marital relationships (Archer, 2000; Stets & Straus, 1990). In keeping with the majority of research that has been conducted in the area of emotion regulation and partner violence, the scope of the current study is limited to the investigation of physical violence. In regard to attachment style, the focus of the current study was to improve upon limitations of the above-mentioned studies, which have relied on forced-choice, categorical, or proxy measures of attachment. Furthermore, a more recent measure of attachment was included to better account for the developmental context of emerging adulthood.

Because there is no "gold standard" method for studying emotion (Cole et al., 2004), there has been no "gold standard" for studying emotion regulation, resulting in a wide assortment of conceptualizations and varying methods of measurement. Instead of focusing on the mere valence of emotion, or the specific strategies used to manage emotions (e.g., suppression), the respondent's overall ability to adaptively regulate their emotions was assessed. Thus, consistent with other researchers (see Cole et al., 2009, Gratz, Jakupack, Tull 2009; Gratz & Roemer, 2004; Mennin, Heimberg, Turk, & Fresco, 2005; Thompson, 1994), emotion regulation was defined as a multidimensional construct that involves awareness, acceptance, and understanding of experienced emotions; flexible use of appropriate strategies to regulate the intensity or duration of emotional responses; willingness to experience negative emotions; and overall ability to manage and direct behaviour while experiencing emotional distress.

Above and beyond the improved operationalization of key variables, the current study makes a major contribution to the literature in that reports of dating violence, attachment style, and emotion regulation are obtained from both romantic partners. Obtaining information from both partners increases our understanding of the bidirectional nature of dating violence, as it is possible to examine how individuals' own attachment styles and emotion regulation skills affect their risk of dating violence and also how individuals' partners' attachment styles and emotion regulation skills influence the likelihood of dating violence occurring. Knowing that, among many couples, both men and women report both perpetration and victimization on frequency-based measures of dating violence, and recognizing that there may be gender differences in the severity and consequences of dating violence, it follows that to best understand the complexities of

dating violence, researchers must move beyond assessing how individual differences in characteristics (e.g., attachment style, emotion regulation) contribute to individuals' likelihood of perpetrating or being victim of dating violence and strive to understand the relationships between each partner's characteristics and behaviours within the couple system.

In addition to obtaining reports of dating violence from both partners, Feeney (2003) and Mikulincer, Florian, Cowan, and Cowan (2002) argue that assessing both partners' attachment styles is necessary to better understand romantic relationships. Simpson and Howland (2012) note that there are few studies that account for attachment in both partners and suspect that this is due to the complexity involved in collecting and analyzing dyadic data, and the previous lack of accessible data-analytic models such as the actor-partner interdependence model (APIM; Kenny et al., 2006). These same factors, as well as the relative recent emergence of the study of emotion regulation, likely contribute to the lack of research assessing emotion regulation in both partners. Although the effect of individuals' attachment styles and/or emotion regulation on their partners' relationship satisfaction has been assessed using dyadic data (Brennan & Shaver, 1995; Feeney et al., 1998), there are no existing dyadic studies that evaluate the relation between these same predictor variables with dating violence as the outcome variable. By taking a dyadic approach, this study allows for examinations of the relation between individuals' characteristics and their own experiences of dating violence, individuals' characteristics and their partners' experiences of dating violence, and the interaction of both partners' characteristics and their reports of dating violence.

Furthermore, assessing reports of dating violence from both partners also addresses the lack of research on female-perpetrated violence and male victimization. The focus of most research on intimate partner violence has been on identifying risk factors for male perpetration and female victimization, with less attention paid to identifying characteristics associated with female perpetration and male victimization. This may relate to fears that research findings might be interpreted as blaming or faulting victims of dating violence (male or female) or might downplay differences in the consequences of male- versus female-perpetrated violence. No blaming or fault-finding is intended by this study. The choice to assess female-perpetrated violence in the current study was simply to address an area of research that has been identified as a research priority (Lewis & Fremouw, 2001) and to gain a better understanding of factors associated with increased likelihood of violence within romantic relationships with the goal of improving violence prevention and intervention strategies.

Finally, topics such as victimization and perpetration of dating violence, thoughts and behaviours in relationships with close others, and the ability to regulate emotions are sensitive in nature and vulnerable to socially desirable response biases. Although reports of dating violence within a relationship can be compared between partners to assess for consistency, one partner's report cannot be deemed more reliable than the other's, as both partners are subject to under- or over-reporting experiences of dating violence. Thus, a measure of social desirability was included to control for possible response bias.

Research questions and hypotheses. Research questions based on a dyadic data model, such as the APIM (Kenny et al., 2006), consider the dyad as the unit of analyses and can address the relation between individuals' predictor variables and their own

outcome variables (i.e., actor effects), individuals' predictor variables and their partners' outcome variables (i.e., partner effects), and the interaction between individuals' and their partners' predictor variables and outcome variables (i.e., actor-partner effects). In the current study, the relation among individuals' and their partners' attachment styles, emotional regulation, and experiences of dating violence is examined.

Research question 1. Does attachment style predict individuals' abilities to regulate their emotions?

Hypothesis 1.

(a) Higher levels of anxious attachment will predict higher levels of emotion regulation difficulties (actor effect).

(b) Higher levels of avoidant attachment will predict higher levels emotion regulation difficulties (actor effect).

Research question 2. Does attachment style predict individuals' own, as well as their partners', reports of dating violence?

Hypothesis 2.

(a) Higher levels of anxious attachment will predict higher levels of individuals' own reports of dating violence perpetration (actor effect) and their partners' reports of dating violence perpetration (partner effect).

(b) Higher levels of anxious attachment will predict higher levels of individuals' own reports of dating violence victimization (actor effect) and individuals' partners' reports of dating violence victimization (partner effect).

(c) Higher levels of avoidant attachment will predict higher levels of individuals' own reports of dating violence perpetration (actor effect) and their partners' reports of dating violence perpetration (partner effect).

(d) Higher levels of avoidant attachment will predict higher levels of individuals' own reports of dating violence victimization (actor effect) and their partners' reports of dating violence victimization (partner effect).

Research question 3. Does ability to regulate emotions predict individuals' own, as well as their partners', reports of dating violence?

Hypothesis 3.

(a) Higher levels of difficulty regulating emotions will predict higher levels of individuals' own reports of dating violence perpetration (actor effect) and individuals' partners' reports of dating violence perpetration (partner effect).

(b) Higher levels of difficulty regulating emotions will predict higher levels of individuals' own reports of dating violence victimization (actor effect) and their partners' reports of dating violence victimization (partner effect).

Research question 4. Is emotion regulation a mechanism through which individuals' attachment styles relate to their own, as well as their partners', reports of dating violence?

Hypothesis 4.

(a) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of anxious attachment and their own reports of dating violence perpetration (actor-actor mediation), as well as their partners' reports of dating violence perpetration (actor-partner mediation).

(b) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of anxious attachment and their own reports of dating violence victimization (actor-actor mediation), as well as their partners' reports of dating violence victimization (actor-partner mediation).

(c) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of avoidant attachment and their own reports of dating violence perpetration (actor-actor mediation), as well as their partners' reports of dating violence perpetration (actor-partner mediation).

(d) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of avoidant attachment and their own reports of dating violence victimization (actor-actor mediation), as well as their partners' reports of dating violence victimization (actor-partner mediation).

Research question 5. Are higher levels of dating violence more likely to occur among couples for whom both partners report emotion regulation difficulties?

Hypothesis 5.

(a) Individuals will report higher levels of dating violence perpetration if both partners in the relationship report higher levels of emotion regulation difficulties difficulty (actor-partner interaction).

(b) Individuals will report higher levels of dating violence victimization if both partners in the relationship report higher levels of emotion regulation difficulties difficulty (actor-partner interaction).

Sex differences are explored in all of the above-mentioned hypotheses; however, no sex-specific hypotheses are put forth as there is relatively little research pertaining to

relations among attachment style, emotion regulation, and dating violence. Despite sex-symmetry and mutuality in dating violence perpetration and victimization, men have been shown to be more prone to act aggressively outside of romantic relationships (e.g., physical assault, stalking, peer violence; Tjaden & Thoennes, 2000) and may differ in their emotion regulation abilities.

CHAPTER II

Method

Participants

Participants were eligible to participate in this study if they were between the ages of 18 to 29 years of age and were in a heterosexual romantic relationship of at least two months duration. Commitment levels were permitted to range from casual dating to cohabiting or engaged, but excluded marital relationship. A total of 183 individuals signed up for the study and provided their partner's contact information ($N = 366$). Four couples cancelled their participation before accessing the questionnaire ($n = 8$). Another 16 individuals never accessed the study, even though their partners did. Care was taken to preserve as much data as possible. Cases were only removed from the data file if they were missing an entire measure or more (i.e., $n = 2$), if they completed the study in less than 10 minutes ($n = 3$), or if they did not have corresponding partner data ($n = 21$). Cases were also assessed to ensure that eligibility criteria were met. All individuals reported being between ages 18 – 29 years of age and involved in a heterosexual dating relationship of at least 2 months duration. There was only one couple for whom both partners indicated that they did not spend any physical time together; data from this couple were removed as physical aggression would not be possible. The final sample consisted of 158 heterosexual couples (male-female dyads; $N = 316$) and was deemed large enough to have sufficient power to detect hypothesized effects.

At present there are no known well-developed models for assessing statistical power of APIMs. Thus, to serve as a rough guideline for sample size, I conducted a statistical power analysis for the actor-actor mediation hypothesis. Consistent with

previous research, moderate effect sizes (i.e., $r = .30$) were estimated for the paths between attachment style and emotion regulation, and emotion regulation and dating violence. A small to moderate effect size (i.e., $r = .20$) was used as an estimate for the relation between attachment style and dating violence after controlling for emotion regulation. Estimated effect sizes, a proposed statistical power of .80, and an alpha level of .05 (Cohen, 1992) were inputted into the R program PowMedR, and it was determined that a sample size of at least 69 couples was necessary. Because effect sizes used in the power analyses were merely estimates derived from similar studies, and in response to suggestions that researchers hypothesizing partner effects should use a minimum sample size of 100 couples (Ackerman, Donnellan, & Kashy, 2011), a larger sample size was obtained in the current study. Given that other researchers conducting dyadic studies with similar constructs found partner effects with sample sizes ranging from 72 to 200 couples (McNulty & Hellmuth, 2008, Péloquin et al., 2011; Richards & Hackett, 2012; Riggs, Cusimano, & Benson, 2011; Schnurr, Mahatmya, & Basche, III, 2012), the current sample size of 158 couples was deemed sufficient.

Participants ranged in age from 18 to 29 years old ($M = 20.87$, $SD = 2.15$) and predominantly described their romantic relationship as a "committed relationship" ($n = 280$; 88.6%). Romantic relationships varied in length from 2 to 110 months ($M = 26.63$, $SD = 20.00$). Overall, participants reported high levels of relationship commitment ($M = 7.54$, $SD = 1.10$, on a scale from 0 to 8 with higher scores denoting higher commitment) and satisfaction ($M = 7.17$ $SD = 1.24$, on a scale from 0 to 8 with higher scores denoting higher satisfaction). As expected, participants generally reported that it was unlikely that they would end their relationship in the next three months ($M = 1.08$, $SD = 2.20$, on a

scale from 0 to 8 with higher scores denoting greater likelihood). See Table 1 for a summary of detailed demographic information.

Table 1

Demographic Information

Variable	*n*	*%*
Highest Level of Education Completed		
Less than high school	1	0.3
High school diploma	**239**	**75.6**
Vocational/technical school	3	0.9
College diploma	40	12.7
Bachelor's degree	29	9.2
Master's degree	3	0.9
Total	315	99.6
Ethnicity		
Arab/Middle Eastern	19	6.0
Black/African Canadian	8	2.5
East Asian/Pacific Islander	18	5.7
South Asian	4	1.3
White/Caucasian/European Canadian	**248**	**78.5**
Aboriginal/Native Canadian/Inuit/Metis	1	0.3
Hispanic/Latino	4	1.3
Biracial/Multiethnic	14	4.4
Total	316	100.0
Religious Affiliation		
Protestant Christian	36	11.4
Roman Catholic	**126**	**39.9**
Evangelical Christian	6	1.9
Jewish	1	0.3
Muslim	12	3.8
Buddhist	6	1.9
Atheist	38	12.0
Agnostic	38	12.0
Other/Multi-faith	44	13.9
Total	307	97.1
Sexual Orientation		
Heterosexual	**309**	**97.8**
Gay	0	0.0
Bisexual	4	1.3
Other/Unknown	1	0.3
Total	314	99.4

Con't

Variable	*n*	%
Estimate Annual Income		
Under $20,000	**258**	**81.6**
$20,000 to $39,999	43	13.6
$40,000 to $59,999	12	3.8
$60,000 to $79,999	2	0.6
$80,000 to $99,999	1	0.3
Total	316	100.0
Parents' Combined Income		
Under $20,000	7	2.2
$20,000 to $39,999	17	5.4
$40,000 to $59,999	38	12.0
$60,000 to $79,999	49	15.5
$80,000 to $99,999	49	15.5
$100,000 or greater	**109**	**34.5**
Don't know	47	14.9
Total	316	100.0
Parents' Marital Status		
Married	**200**	**63.3**
Separated/Divorced	85	26.9
Never married and not living together	14	4.4
Never married and living together	5	1.6
One or both parents have died	11	3.5
Total	315	99.7
Current Living Partner(s)		
Nobody	15	4.7
Dating partner	31	9.8
Friend or roommate	40	12.7
Parent(s) or family member(s)	**216**	**68.4**
Other/Multiple selections	14	4.4
Total	316	100.0
Relationship Status		
Casual Dating	9	2.8
Exclusive Dating	19	6.0
Committed Relationship	**282**	**89.2**
Engaged	6	1.9
Total	316	99.9

Con't

Variable	*n*	*%*
Sexually active with current partner?		
Yes	**263**	**83.2**
No	33	10.4
Prefer not to say	18	5.7
Total	314	99.4

Note. The most commonly endorsed response category is presented in bold font. % = percentage of total sample.

Measures

Demographics (Appendix A). A demographic questionnaire was included to acquire information on participant characteristics, including age, sex, ethnicity, and religion. Questions pertaining to romantic relationships such as length of relationship, commitment level, and relationship satisfaction were also included as potential covariates.

Dating violence. The Revised Conflict Tactics Scales (CTS2; Straus et al., 1996) is a 78-item self-report questionnaire designed to measure the frequency of psychological, physical, sexual, and injurious perpetration and victimization in romantic relationships within the last year. Instructions were modified to only assess violence in participants' current relationships. The measure also includes assessment of the use of negotiation to manage conflicts. Straus and colleagues (1996) report evidence of construct and discriminant validity by comparing the measure to theoretically associated and irrelevant variables, respectively. Furthermore, these psychometric analyses were conducted using data from university student couples. Due to the complexity of analyses in the current study, I examined the 12-item Physical Assault subscale only. This subscale has demonstrated adequate internal reliability (Cronbach's alpha = .86; Straus et al., 1996). In the current study, good internal reliability was demonstrated for both physical abuse perpetration (Cronbach's alpha = .88) and victimization (Cronbach's alpha = .88).

The midpoint of the range of the response choices for each item are summed to create a total score with higher scores denoting a greater number of aggressive acts: *Never* (0)*, Once in the past year* (1), *Twice in the past year* (2), *3 – 5 times in the past*

year (4), *6 – 10 times in the past year* (8), *11 – 20 times in the past year* (15), *More than 20 times in the past year* (25), *Not in the past year, but it did happen before* (7), and *This has never happened* (0). The response choice "*Not in the past year, but it did happen before"* is scored as 0 when only scores for the previous year are desired.

The CTS2 has received considerable criticism for not considering the context or consequences of violence (see Langhinrichsen-Rohling, 2010 for summary). For example, this measure does not address who initiated the violence, whether actions were in response to previously received violence or in self-defense, or how harmful specific actions were. Although this is a significant limitation of this measure, it continues to be the most widely used measure of intimate partner violence in research and its continued use will allow for easier comparisons across studies.

Attachment style. Both the Experiences in Close Relationships – Relationship Structures (ECR-RS; Fraley, et al., 2011) and the Experiences in Close Relationships Scale (ECR; Brennan et al., 1998) were administered to participants to assess attachment style, as at the time of this study, the ECR-RS was relatively new and less researched in comparison to the widely used ECR. The characteristics of both measures are described below.

The Experiences in Close Relationships Scale (ECR; Brennan et al., 1998) is a self-report attachment questionnaire designed to assess how individuals generally feel in close relationships (e.g., with romantic partners, close friends, or family members). The ECR consists of two 18-item scales: one measuring Attachment Anxiety (Cronbach's alpha = .91) and one measuring Avoidant Attachment (Cronbach's alpha = .94). Individuals who score low on both scales are thought to be securely attached, whereas,

individuals who score high on either of the other scales are insecurely attached. Although attachment styles are often spoken of as if they were discreet categories (e.g., secure, anxious, avoidant), psychometric research has determined that attachment styles are best conceptualized as continuous regions in a two-dimensional space (Fraley & Waller, 1998).

The Attachment Anxiety and Avoidant Attachment dimensions have been demonstrated to be uncorrelated with each other (r = .11), to have moderate test-retest reliability (alpha range = .50 - .75), and to be highly correlated with scales measuring similar constructs (Brennan et al., 1998). In the current study, good internal reliability was demonstrated for both Attachment Anxiety (Cronbach's alpha = .91) and Avoidance Attachment (Cronbach's alpha = .89).

The ECR has been reliably used in hundreds of studies, with alpha coefficients always near or above .90 and has served as a benchmark for evaluating other attachment measures (Mikulincer & Shaver, 2007). In 2000, minor revisions were made to the ECR in an attempt to improve discrimination at the secure ends of both scales; however, Mikulincer and Shaver (2007) found that the anxiety and avoidance scales on the revised measure (i.e., the ECR-R; Fraley et al., 2000) correlated slightly more with each other than they did on the original ECR, and the new scales did not improve validity. Furthermore, the items on the ECR-R were reworded to specify 'partner' or 'romantic partner' rather than simply 'close others.' Mikulincer and Shaver (2007) were not persuaded to use the revised measure and believe that because the new and old scale correlate highly together (i.e., always around .95), the findings from either measure can be interpreted similarly.

Participants are asked to reflect on how they generally feel in close relationships by rating each item on a 7-point Likert scale (ranging from 1 = *disagree strongly* to 7 = *agree strongly*). Examples of Attachment Anxiety items include: "I worry about being abandoned"; "I worry about being alone"; and "My desire to be very close sometimes scares people away." Examples of Avoidant Attachment items include: "I don't feel comfortable opening up to romantic partners"; "I try to avoid getting too close to my partner"; and "I find it difficult to allow myself to depend on romantic partners." Separate scores are computed for Anxious Attachment and Avoidant Attachment by averaging the 18 items in each scale, with higher scores reflecting greater anxiety and avoidance.

The Experiences in Close Relationships – Relationship Structures (ECR-RS; Fraley et al., 2011) is a recent adaptation of the revised version of the Experiences in Close Relationships (ECR-R; Fraley et al., 2000), and is designed to assess adult attachment style across multiple close relationships. Recent research suggests that individuals may hold relationship-specific attachment styles and that assessing attachment generally or only in one context may be inadequate (e.g., Baldwin et al., 1996). Furthermore, because emerging adulthood is a transition period between adolescence and adulthood, individuals in this developmental stage may continue to report their caregivers as primary attachment figures, others may report peers or romantic partners as serving as their primary attachment figures, and still others may identify strong attachments to both. The questionnaire consists of four identical sets of nine items designed to assess attachment style with respect to mother (or mother-like figure), father (or father-like figure), romantic partner, and closest friend. For each relationship type, the ECR-RS items consist of two scales: one measuring attachment-related anxiety and

one measuring attachment-related avoidance. Although each scale consists of relatively few items, the reliability estimates are high and comparable to the lengthier ECR-R, with Cronbach's αs ranging from .87 to .92. To assess attachment style more globally, the items across all four relationships can be pooled together to create composite scores for anxiety (Cronbach's α = .85) and avoidance (Cronbach's α = .88). In the current study, hypotheses pertained only to global attachment styles. Good internal reliability of items was demonstrated for both attachment-related anxiety (Cronbach's alpha = .88) and attachment-related avoidance (Cronbach's alpha = .90) composites.

Participants are asked to rate each item on a 7-point Likert scale (ranging from 1 = *strongly disagree* to 7 = *strongly agree*) based on how they experience each relationship. Examples of attachment-related anxiety items include: "I often worry that this person doesn't really care for me"; "I'm afraid this person may abandon me"; and "I worry that this person won't care about me as much as I care about him or her." Examples of attachment-related avoidance items include: "I don't feel comfortable opening up to this person"; "I prefer not to show this person how I feel deep down"; and "I find it easy to depend on this person" (reverse scored). Separate scores are computed for attachment-related anxiety and attachment-related avoidance for each type of relationships (e.g., mother, romantic partner) as well as across relational domains (i.e., global attachment-related anxiety, global attachment-related avoidance).

After data were collected for this study, revisions were made to the recommended use of the ECR-RS as a measure of global attachment. Fraley (2014) suggested that rather than pooling subscales to create a composite, an additional set of items be administered to assess general or global attachment. Based on this update and a

preliminary review of the distributions of ECR and ECR-RS data collected in this study (see results section), it was decided that the original ECR would be used as the measure of general attachment.

Emotion regulation. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item self-report questionnaire developed to assess difficulties with emotion regulation in a more comprehensive manner than existing measures. The DERS is based on Gratz and Roemer's multidimensional conceptualization of emotion regulation that, in addition to modulation of emotional arousal, also consists of acceptance, awareness, and understanding of emotions, and the ability to engage in goal-directed behaviour during adverse emotional states. Factor analysis of the DERS items revealed that the measure is comprised of six subscales: (a) nonacceptance of emotions (6 items; e.g., "When I'm upset, I become angry with myself for feeling that way"), (b) difficulties engaging in goal-directed behaviour (5 items; e.g, "When I'm upset, I have difficulty concentrating"), (c) impulse control difficulties (6 items; e.g., When I'm upset, I feel out of control"), (d) lack of emotional awareness (6 items; e.g., "I have no idea how I'm feeling"), (e) limited access to emotion regulation strategies (8 items; e.g., "When I'm upset, it takes me a long time to feel better"), and (f) lack of emotional clarity (5 items; e.g., "I have no idea how I'm feeling"). The DERS has demonstrated high internal consistency (Cronbach's $\alpha = .93$), with adequate internal consistency within each subscale (Cronbach's $\alpha > .80$ for each subscale), good test–retest reliability ($\rho_I = .88$, $p < .01$), and adequate construct and predictive validity. In the current study, the DERS demonstrated high internal reliability (Cronbach's $\alpha = .94$), with

adequate to high internal reliability within each subscale ranging (Cronbach's α = ranging between .73 and .89).

Participants are asked to rate how often each statement applies to them when they are upset. Response choices for each item are *almost never (0-10%)* (1), *sometimes (11-35%)* (2), *about half the time (36-65%)* (3), *most of the time (66-90%)* (4) and *almost always (91-100%)* (5). Item scores are summed to create subscale scores. The subscale scores are then summed to create a total score, with higher scores indicative of greater difficulty with emotion regulation.

Social desirability. The Marlowe-Crowne Social Desirability Scale Short Form C (MCSDS Form C; Reynolds, 1982) is a widely used condensed version of the original 33-item Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960). It consists of 13 true-false items that describe culturally appropriate behaviours that occur at a low frequency, and thus is designed to measure a socially desirable response style. When compared to five other shortened versions of the MCSDS, the MCSDS Form C proved to be a more reliable (internal consistency of 0.76, as measured by the Kuder-Richardson Formula 20 which is analogous to Cronbach's α) and efficient means of measuring social desirability (Reynolds, 1982). In the current study, the internal reliability of MCSDS Form C items was questionable (Cronbach's alpha = .65). An examination of inter-item correlations and item-total statistics did not reveal any problematic items that could be removed to improve the internal reliability of the scale. As such, the total social desirability scores were calculated using all 13 items in the current study analyses.

Example items selected for the MCSDS-Form C include: “I'm always willing to admit it when I make a mistake,” “I sometimes feel resentful when I don’t get my way,” and “I am sometimes irritated by people who ask favors of me.” True or false responses are coded 1 or 0 and summed to create a total score ranging from 0 to 13 (with 5 reverse coded items). Higher scores indicate an increased tendency to respond in a desirable manner instead of an honest manner. Due to the sensitive nature of both perpetration and victimization of dating violence, as well as self-report of affect regulation and attachment style, it is necessary to control for a socially desirable response style.

Procedure

Following clearance from both the Research Ethics Board (REB) and the University of Windsor Psychology Participant Pool, a pool of students who receive bonus points in their courses in exchange for their participation in research, an advertisement was placed on the participant pool website inviting students to complete a web-based study (Appendix G). The advertisement provided a description of the study, duration, and the number of credits awarded. Interested participants signed up for the study and were contacted by the primary researcher. Prior to obtaining study information, interested participants were requested to discuss the study with their partner and then provide the researcher with their romantic partner’s email address. Both members of the couple were then contacted and provided with the study’s URL and a unique research identification number. This email response (Appendix H) also served as a personal communication to inform the participant of the importance of completing the questionnaires independently and of refraining from discussing the questionnaire contents until after both partners had completed it. Participants’ research identification numbers

were linked to their romantic partner's identification number so that data could be appropriately paired during analyses. Following receipt of the study information, participants were requested to complete the study within one week. Participants who did not complete the study within three days were issued a brief reminder email (Appendix I).

After logging in to the study's website, participants were presented with an Information Letter/Consent Form (Appendix J) and provided informed consent before proceeding. All participants completed the demographic questionnaire first, followed by the five remaining questionnaires (CTS2, ECR, ECR-RS, DERS and MCSDS Form C) in a randomized order. Randomized distribution controlled for possible order effects and decreased the risk of couples completing the study in tandem.

Upon completion, participants were provided with a debriefing letter outlining the purpose of the study (Appendix L). This letter also contained information regarding internet security and a list of community counselling resources. Due to the nature of the online study and method of compensation, complete anonymity could not be offered as names and email addresses were required to provide compensation; however, participants were assured that all data would be handled in a confidential manner.

Individual participation was estimated to take up to 60 minutes to complete. Individuals recruited through the participant pool received 1 bonus point for their participation and their partner received their choice of 1 bonus points (if they were also registered in the participant pool) or entry into a draw for one of five $50.00 gift certificates (e.g., Future Shop, Cineplex Odeon, Superstore).

CHAPTER III

Results

Data Management and Statistical Assumptions

Examination of data. Prior to data analyses, data points were examined for accuracy (e.g., values were within appropriate ranges, means and standard deviations were plausible), unusual patterns of responses (e.g., repeated values, short completion time, consecutive partner completion, identical responses between partners on open-ended questions), and completeness.

Missing data. The Missing Value Analysis (MVA) module in SPSS version 22.0 was used to determine the amount and pattern of missing data. To date, there is no empirical consensus as to what constitutes excessive missingness, with suggested cut-offs ranging from 5% (Schafer, 1999) to 20% (e.g., Peng, Harwell, Liou, & Ehman, 2006). In the current dataset, only 0.37% of the total data were missing. Missingness within each measure varied from as little as 0.15% to 0.60%, with no measure exceeding a total of 1% missing data. Furthermore, no individual item in the total dataset had greater than 1.5% missing.

The pattern of missing data was also examined using the MVA module. Missing data can either be missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR), with MNAR considered problematic and requiring careful consideration of data imputation procedures. Little's (1988) MCAR test was used to determine whether missingness was related to other variables in the dataset. Nonsignificant findings on this test suggest that missing values were dispersed randomly and that there was minimal potential for biased results. In the current study, the Little's

MCAR test was significant when all variables of interest were included in the analysis, suggesting that values were not missing *completely* at random. Unfortunately, there is no true test for discerning if data are MAR or MNAR, as we would need to know the actual values of the missing data (i.e., follow-up with participants).

As such, patterns of missingness were further assessed by subscale/measure (Table 2). Data on the MCSDS and both scales of the CTS-2 were found to be MCAR, but potentially problematic patterns existed on the ECR and DERS. Nevertheless, Tabachnik and Fidell (2013) and Roth and Switzer (1995) suggested that choice of imputation technique is of little importance if the amount of missing data is low (less than 5%) as the resulting bias would be inconsequential. Furthermore, Shrive, Stuart, Quan, and Ghali (2006) found that various imputation methods (namely, multiple imputation, single regression, individual mean substitution, overall mean substitution, and participant's preceding responses) yielded "near perfect" agreement when only 10% of data were missing.

Table 2

Amount and Pattern of Missing Data Due to Item Nonresponse

	Item nonresponse per case		Little's MCAR Test		
Variables	Min (%)	Max (%)	χ^2	*df*	*p*
PERP	0.0	0.90	55.78	77	0.967
VIC	0.0	1.40	1.87	98	1.000
ANX	0.0	0.30	25.03	9	0.003
AVOID	0.0	0.60	43.52	26	0.017
EMO REG	0.0	1.40	172.23	123	0.002
SOC DES	0.0	0.60	64.24	71	0.702

Note. PERP = Physical Assault Perpetration subscale of CTS2 (Straus et al., 1996); VIC = Physical Assault Victimization subscale of the CTS2; ANX = Anxious Attachment subscale of the ECR (Brennan et al., 1998); AVOID = Avoidant Attachment subscale of the ECR; EMO REG = all items from the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004); SOC DES = all items from the Marlowe Crowne Social Desirability Scale Subscale Form C (Reynolds, 1982).

Multiple imputation and maximum likelihood approaches are considered state-of-the-art procedures and generally preferable to older imputation methods (Graham, 2009). Both techniques were considered in the current study; however, multiple imputation is considerably more complex and requires that parameters and standard errors be averaged or converged across multiple datasets. Given the complexity of the APIMs, the expectation-maximization (EM), a type of maximum likelihood approach available in the missing values analysis module of SPSS 22.0, was deemed most appropriate for the current study.

Outliers. The presence of univariate and multivariate outliers was assessed for all key study variables. Outliers were assessed separately by participants' sex as analyses for distinguishable dyads (described below) treat male and female data as separate variables. Standardized residuals (*z* scores) were screened and cases outside the absolute value of 3.29 were considered univariate outliers. For men, univariate outliers were detected on the dating violence perpetration (CTS; $n = 2$) and victimization scales ($n = 1$). No univariate outliers were detected on the social desirability, emotion regulation, or attachment measures. For women, univariate outliers were detected on measures of emotional regulation difficulties (DERS; $n = 1$), dating violence perpetration ($n = 4$), and dating violence victimization ($n = 3$). Again, no univariate outliers were detected on the social desirability or attachment measures. Overall, there were 0 to 4 outliers on each measure and three cases had outliers on multiple measures. Tabachnick and Fidell (2013) advise that with a large sample size, a few standardized scores outside the recommended range are expected and may not be indicative of true outliers. Because higher scores on the dating violence scales were expected to be rare, but of interest, these cases were

retained unadjusted in the data set. The one outlier on the emotion regulation measure was also retained without adjustment.

Multivariate outliers and influential observations were assessed using Mahalanobis' distance scores exceeding 24.32 (cut-off obtained from chi-square table with $p < .001$) and Cook's values exceeding one, respectively. Three men and five women were identified as multivariate outliers; however, no cases were deemed to be influential observations. Main analyses conducted with and without outliers yielded negligible differences; therefore, all dyads with potential outliers were retained to maximize sample size and preserve power.

Normality. Distribution of all variables was assessed through histograms, probability plots (P-P plots), and skewness and kurtosis values. With the exception of dating violence perpetration and victimization, plots of all main study variables appeared normally distributed and skewness and kurtosis values were less than an absolute value of one. Scores on the perpetration and victimization scales of the CTS2 were over-dispersed (i.e., variance exceeded the mean) and positively skewed for both men and women (male skewness = 9.12; female skewness = 3.96). An inverse transformation of both scales was conducted, but unable to fully correct for non-normality. Thus, nonparametric analyses for positively skewed and over-dispersed data were used for subsequent analyses.

As previously mentioned, distributions of data from both attachment measures (ECR and ECR-RS) were evaluated to aid in determining which attachment measure to retain for main analyses. Although the avoidant and anxious scales of the ECR were normally distributed for both men and women, the anxiety scale of the ECR-RS was unexpectedly positively skewed for both men and women. This finding, combined with

above-mentioned changes to the ECR-RS' recommended use, contributed to the decision to retain the ECR over the ECR-RS in main analyses.

Multicollinearity. Multicollinearity was assessed by examining the correlation matrix of predictor variables in each model (actor and partner effects). Correlations between predictor variables did not exceed an absolute value of .9, indicating no issues with multicollinearity. Examination of collinearity statistics also indicated that this assumption was upheld, as tolerance values were all greater than .10 and variance inflation factor (VIF) values did not exceed 10 (Field, 2013). All main study variables and covariates were grand-mean centered prior to the main analyses to buffer against potential multicollinearity when creating interaction terms (Campbell & Kashy, 2002; Kenny et al., 2006).

Tests of nonindependence. The degree to which outcome data were independent between participants was assessed to determine if the APIM was an appropriate statistical model. Spearmans' rank correlation coefficients between romantic partners' reports of perpetration and victimization were significant ($r_s = .226, p < .001$ and $r_s = .302, p < .001$, respectively), indicating that the data were nonindependent and the dyad, rather than the individual, is the appropriate unit of analyses.

Distinguishability. The decision to treat dyad members as distinguishable or indistinguishable from one another can be theoretically or empirically (i.e., significant differences in means, variance, or covariance terms) driven. Even though members of heterosexual dyads are distinguishable by sex, their data may be statistically indistinguishable. In the current study, the decision was made to use analyses for distinguishable data due to interest in sex differences and interactions between key

variables and sex. Furthermore, heterosexual couples are most commonly treated as distinguishable dyads in dating violence research due to measured and unmeasured differences between sexes.

Data structure. With dyadic data, care must be taken to organize the data set in a manner that will allow for the appropriate statistical techniques to be applied. Data were organized using a pairwise structure design, in which each record includes the individual's data as well as their partner's data. Thus, each row had a single score for dyad-level variables (e.g., dyad ID) and two scores for individual-level variables (e.g., attachment anxiety, which would differ for each partner). This organization structure was chosen because the main analyses require the use of the generalized estimating equations (GEE) module in SPSS, and this module requires the specification of both a participant number and a dyad number.

Descriptive Statistics

Means, standard deviations, and range of scores for key variables and possible covariates are provided in Table 3. In terms of dating violence, 10% of men reported perpetrating at least one act of physical aggression in the preceding year (with 27% of these men engaging in at least one severe act of aggression [e.g., choked, kicked, punched, beat up]). In comparison, 23% of women reported perpetrating at least one act of physical aggression in the preceding year (with 41% of these women engaging in at least one severe act of aggression).

Table 3

Descriptive Statistics for Predictor Variables by Participant Sex

	Men		Women		
Variables	*M* (*SD*)	Range	*M* (*SD*)	Range	*t*(*df* = 157)
Age	21.31 (2.35)	18 – 29	20.44 (1.80)	18 – 29	-6.58***
Relationship length	26.79 (20.01)	2 – 108	26.47 (20.05)	2 – 110	-1.41
Satisfaction	7.23 (1.25)	1 – 8	7.10 (1.22)	2 – 8	-1.15
Commitment	7.55 (1.13)	1 – 8	7.53 (1.08)	2 – 8	-0.25
Social desirability	6.27 (2.66)	0 – 12	6.59 (2.84)	0 – 13	1.17
Anxious attachment	3.06 (1.02)	1.00 – 5.22	3.04 (1.14)	1.22 – 6.33	3.84***
Avoidant attachment	3.04 (0.81)	1.22 – 5.50	2.86 (0.94)	1.11 – 5.39	-2.07*
Emotion regulation	76.64 (19.72)	36 – 124	83.37 (19.72)	36 – 124	2.71**
					Z(*df* = 158)
Physical perpetration	2.11 (14.32)	0 – 158	1.49 (4.24)	0 – 27	-2.75**
Physical victimization	2.09 (12.77)	0 – 144	1.18 (3.76)	0 – 25	-0.60

Note. Age = age in years; Relationships length = relationship length in months; Satisfaction = rating on 8-point Likert scale; Commitment = rating on 8-point Likert scale; Social desirability = all items from the Marlowe Crowne Social Desirability Scale Subscale Form C (Reynolds, 1982); Anxious attachment = Anxious Attachment subscale of the ECR (Brennan et al., 1998); Avoidant attachment = Avoidant Attachment subscale of the ECR; Emotion regulation = all items from the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004); Physical perpetration = Physical Assault Perpetration subscale of CTS2 (Straus et al., 1996); Physical victimization = Physical Assault Victimization subscale of the CTS2;
*$p < .05$. **$p < .01$. ***$p < .001$.

With regard to reported victimization, 13% of men reported being victims of at least one act of physical aggression in the preceding year (with 38% of these men experiencing at least one severe act of aggression). Among women, 18% reported being victims of at least one act of physical aggression in the preceding year (with 50% experiencing at least one severe act of aggression).

To gain a more in-depth understanding of the severity of violence reported in the current sample, responses on the 6-item Injury subscale of the CTS2 were also evaluated. On average, 1% of men and 3% of women reported injuring their partners at least once in the preceding year. The same percentages, 1% of men and 3% of women, reported being injured by their partners at least once. In total, .6% (n = 1) of men and 2.5% (n= 4) of women reported that the injuries that were inflicted on them were severe (e.g., lost consciousness, required attention from a physician).

Overall, 43 out of the 158 (27.2%) couples reported physical violence within their relationship based on at least one partner's self-report of perpetration. Of these couples reporting violence, 9 (20.9%) couples reported mutual perpetration (i.e., both partners reported perpetrating at least one act of physical aggression in their relationship at some point in the past year). Given that there are generally low levels of interpartner agreement on experiences of dating violence in the field (Bohannon, Dosser, & Lindley, 1995; Perry & Fromuth, 2005), mutuality in perpetration also was considered by examining sex-specific reports of perpetration and victimization. Here, 13 couples were considered mutually violent based on men's self-report of perpetration and victimization, whereas 26 couples were considered mutually violent based on women's self- report of same.

In order to better understand the subset of 43 couples who experienced violence in their relationship, I conducted comparative analyses between violent and nonviolent couples (Table 4). Between-group comparisons using *t* tests were conducted to assess mean differences between women in violent relationships versus women in nonviolent relationships, as well as between men in violent relationships versus men in nonviolent relationships. Total mean scores for violent and nonviolent couples were not computed as couple data were not independent.

Overall, women in violent relationships reported significantly higher levels of anxious attachment compared to women in nonviolent relationships. No statistically significant differences were found between men in violent relationships and men in nonviolent relationships.

Furthermore, individuals in relationships that contained violence ($n = 86$) were comparable to individuals who were in violence-free relationships ($n = 230$) on a variety of demographic variables. The majority of individuals described their relationships as "committed" (violent = 86.05%, nonviolent = 89.57%), reported high school as their highest level of education (violent = 76.74%, nonviolent = 75.22%), described their ethnicity as White (violent = 76.74%, nonviolent = 82.61%), and reported an income less than $20,000 (violent = 81.40%, nonviolent = 81.74%). For both groups, approximately half of individuals reported that they came from families with a combined income less than $100,000 (violent = 52.30%, nonviolent = 50.00%). Within violent couples, 43.02% of individuals reported their religion as Catholic or Christian and 33.71% described themselves as Atheist or Agnostic, whereas within nonviolent couples, 53.48% of individuals reported their religion as Catholic or Christian and 23.48% described

themselves as Atheist or Agnostic. Finally, most individuals reported living with their parents or other family members (violent = 66.28%, nonviolent = 69.13%), with the remaining living with their dating partner (violent = 9.30%, nonviolent = 10.00%), other roommates (violent = 13.95%, nonviolent = 12.17%), or by themselves (violent = 6.98%, nonviolent = 3.91%).

Table 4

Means and Standard Deviations for Violent and Nonviolent Couples

	Violent couples ($N = 43$)		Nonviolent couples ($N = 115$)		
Variable	*M* (*SD*)	Range	*M* (*SD*)	Range	$t(df = 156)$
Age					
Women	20.53 (1.71)	18 – 26	20.40 (1.84)	18 – 29	0.42
Men	21.60 (2.29)	18 – 28	21.20 (2.37)	18 – 29	0.96
Length					
Women	25.40 (21.31)	2 – 110	26.73 (19.51)	2 – 90	-0.37
Men	25.53 (21.37)	3 – 108	27.23 (19.47)	2 – 88	-0.47
Satisfaction					
Women	6.91 (1.21)	3 – 8	7.17 (1.22)	2 – 8	-1.22
Men	7.02 (1.32)	1 – 8	7.31 (1.22)	1 – 8	-1.30
Commitment					
Women	7.26 (1.29)	4 – 8	7.63 (0.98)	2 – 8	-1.93
Men	7.40 (1.22)	1 – 8	7.61 (1.09)	2 – 8	-1.06
Desirability					
Women	6.44 (2.73)	0 – 12	6.64 (2.89)	0 – 13	-0.40
Men	5.79 (2.86)	0 – 11	6.44 (2.58)	1 – 12	-1.38
Anxious					
Women	3.84 (1.05)	1.67 – 5.94	3.37 (1.15)	1.22 – 6.33	2.35*
Men	3.25 (0.89)	1.50 – 4.89	2.98 (1.06)	1.0 – 5.22	1.50
Avoidant					
Women	2.93 (0.93)	1.50 – 5.22	2.83 (0.95)	1.11 – 5.39	0.59
Men	3.17 (0.90)	1.89 – 5.50	2.99 (0.77)	1.22 – 5.00	1.25
Regulation					
Women	86.37 (19.57)	51 – 138	82.24 (23.48)	44 – 158	1.03
Men	78.60 (18.69)	43 – 119	75.90 (20.12)	36 – 125	0.78

Note. Length = Relationship length; Desirability = Social desirability; Anxious = Anxious attachment; Avoidant = Avoidant attachment; Regulation = Emotion regulation.
*$p < .05$. **$p < .01$. ***$p < .001$.

Comparisons between men and women. I conducted comparisons between men and women on key study variables to further characterize the study sample. For normally distributed variables, I used paired *t* tests to assess mean differences, whereas for non-normally distributed data (i.e., physical perpetration and victimization), I used Wilcoxon signed rank sum tests. Overall, men were more likely to be older in age and report more avoidant attachment than their female partners, whereas women were more likely to report higher levels of anxious attachment, greater difficulty regulating their emotions, and a greater degree of perpetration of physical violence than their male partners (Table 3). Although the mean for perpetration was higher for men compared to women (Table 3), when data were compared within the partnership there were significantly more couples for whom the female partner reported more perpetration than the male partner.

Bivariate Correlations

A series of bivariate correlations were conducted to determine whether significant relations exist among study variables (Table 5). Three types correlations were conducted: within-male (below diagonal), within-female (above diagonal), and between dyad members (i.e., interpartner; bolded along diagonal). The interpartner correlations serve as a measure of the degree of nonindependence of observations between the two dyad members. Pearson product-moment correlations were conducted between normally distributed variables, whereas Spearmans' rank correlation coefficients were calculated when variables were non-normally distributed. Participants' age, relationship length, relationship satisfaction, relationship commitment and social desirability also were included in the correlational analyses to assess whether they should be included in the main analyses as covariates.

Table 5

Within-Female, Within-Male, and Within-Dyad Correlations among Key Study Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Age	**.62*****	.35***	.05	.01	.01	-.18*	-.02	-.18*	.05	.06
2. Relationship length	.21**	**.98*****	.01	.02	-.06	-.00	-.02	-.06	-.03	.00
3. Satisfaction	-.16*	-.05	**.31*****	.64***	.21**	-.42***	-.31***	-.35***	-.16*	-.22**
4. Commitment	-.16*	-.03	.75***	**.32*****	.04	-.23**	-.25**	-.19*	-.17*	-.19*
5. Social desirability	-.03	-.00	-.04	.04	**.20*****	-.43***	-.20*	-.41***	-.05	-.07
6. Anxious attachment	-.24**	-.20*	-.10	-.10	-.17*	**.07**	.42***	.63**	.19*	.20*
7. Avoidant attachment	.03	-.13	-.24**	-.21**	-.09	.28***	**.17****	.48***	.14	.09
8. Emotion regulation	-.09	-.05	-.17*	-.20*	-.24**	.51***	.31***	**-.11**	.18*	.18*
9. Physical perpetration	.04	-.09	-.10	-.10	-.09	.11	.07	.18*	**.23*****	.79***
10. Physical victimization	-.00	.00	-.10	-.11	-.10	.10	-.02	.15	.72***	**.30*****

Note. In the matrix, correlations for men appear below the diagonal; correlations for women appear above the diagonal. Bolded values along the diagonal are correlations between dyad members.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Within-male. Among men in the current study, anxious attachment was significantly associated with avoidant attachment ($r = .28$, $p < .001$) and emotion regulation difficulties ($r = .52$, $p < .001$), suggesting that men who reported greater levels of anxious attachment also reported greater levels of avoidant attachment and greater difficulty regulating their emotions. Likewise, men who reported greater levels of avoidant attachment also reported greater difficulty regulating their emotions ($r = .31$, $p < .001$). In terms of dating violence, self-report of perpetration was significantly associated with emotion regulation difficulties ($r_s = .18$, $p = .027$), such that males who reported increased levels of perpetration tended to have greater difficulty regulating their emotions. Self-reports of perpetration were also significantly correlated with self-reports of victimization ($r_s = .72$, $p < .001$), suggesting the men who reported perpetrating aggression more frequently against their female partner also reported experiencing more frequent acts of violence directed toward them from their female partner. As shown in Table 5, many extraneous variables (e.g., age, satisfaction, commitment, social desirability) were significantly associated with key study variables; however, for men, none of these were significantly associated with dating violence perpetration or victimization. Thus, there were no potential identified confounds for males in this study when predicting dating violence; however, when predicting emotion regulation difficulties, social desirability was identified as a potential confound and included as a covariate.

Within-female. Among women in the current study, higher levels of anxious attachment were significantly associated with higher levels of all main study variables: avoidant attachment ($r = .42$, $p < .001$), emotion regulation difficulties ($r = .63$, $p < .001$),

dating violence perpetration (r_s = .19, p = .015), and dating violence victimization (r_s = .20, p = .010). Higher levels of avoidant attachment were also associated with higher levels of emotion regulation difficulties (r = .48, p < .001), but no significant associations were found between avoidant attachment and dating violence perpetration or victimization. For women, emotion regulation difficulties were significantly correlated with self-reports of both perpetration (r = .18, p = .027) and victimization (r = .18, p = .022), such that women who reported greater difficulty regulating their emotions also reported perpetrating more frequently against their male partners and experiencing more frequent acts of violence directed toward them from their male partners. Similar to men, reports of perpetration and victimization were also significantly associated among women (r_s = .79, p < .001). Correlations between extraneous variables and predictor and outcomes variables were assessed for potential confounds. Among women, lower ratings of relationship satisfaction and commitment were significantly associated with higher ratings of anxious attachment and dating violence perpetration and victimization (see Table 5). As such, relationship satisfaction and commitment were included as covariates in the analyses predicting dating violence. Furthermore, social desirability was included as a covariate in the model predicting emotion regulation difficulties, as significant correlations were found between social desirability, both forms of attachment, and emotion regulation.

Interpartner. As previously mentioned, positive and significant interpartner associations were found for self-reports of dating violence perpetration (r_s = .23, p < .001) and victimization (r_s = .30, p < .001), thereby indicating that outcome data were not independent and use of a statistical model that accounts for statistical interdependence

was necessary. Interpartner correlations were also positive and significant for several covariate and predictor variables (see Table 5) which indicated a great deal of statistical interdependence between romantic partners' responses.

Interpartner Agreement on Dating Violence

I adopted a multidimensional approach to assessing interpartner agreement, as no single index of agreement is likely to fully capture the true prevalence of dating violence (Armstrong, Wernke, Medina, & Schafer, 2002). As such, percentage of occurrence agreement, kappa statistics to assess agreement about the occurrence of male- and female-perpetrated dating violence, and correlation coefficients to assess agreement about the frequency of male- and female-perpetrated dating violence were calculated.

Percentage of occurrence agreement is the percentage of couples who agreed that dating violence had or had not occurred in their relationships. Eighty-four percent of women in the current study agreed with their male partner's self-report of whether he had or had not perpetrated violence, whereas 80% of men agreed with their female partner's self-report of whether she had or had not perpetrated violence. However, given the low base rates of dating violence in the current study sample, agreement between partners would be inflated by agreement on nonoccurrence of physical violence. Close inspection of the 43 couples in the current study for whom at least one partner self-reported perpetration revealed that only 22 couples demonstrated interpartner agreement (51%). Among the 37 women who reported perpetrating at least one act of physical violence, 13 of their male partners agreed (35% interpartner agreement); among the 15 men who reported perpetrating at least one act of physical violence, nine of their female partners agreed (60% interpartner agreement).

The kappa statistic (k) is one of the most widely used measures of interpartner agreement as it adjusts for the agreement expected by chance. It has been suggested that a limitation of k, however, is that it can be influenced by trait prevalence and base rates (Thompson & Walter, 1988) and may provide underestimates of interpartner agreement in low-base rate behavoiur. According to standard conventions (Fleiss, Levin, & Paik, 2013; Landis & Koch, 1977), couples in the current study demonstrated poor agreement for the occurrence of both male-perpetrated (k = .18) and female-perpetrated (k = .22) violence.

Lastly, Spearman's rank correlation coefficients were used to assess agreement about the frequency of male- and female-perpetrated dating violence. Couples' reports were positively and significantly correlated for male-perpetrated violence, $r_s = .36$, $p < .001$, and female-perpetrated violence, $r_s = .37$, $p < .001$. The magnitude of these correlations suggested low to moderate interpartner agreement.

Overall, multiple indices of interpartner agreement indicate poor to moderate levels of interpartner agreement on the occurrence and/or frequency of dating violence in the current study. As such, couples' responses to the CTS2 were modeled as separate outcome variables in the main study analyses.

Planned Analyses

Actor-partner interdependence model (APIM). As previously mentioned, the APIM has been proposed as the most appropriate model for assessing dyadic data in the current study. The APIM considers the dyad as the unit of analyses and appropriately controls for interdependence of data collected from individuals within a romantic relationship. This model simultaneously measures three types of effects: actor effects,

partner effects, and actor-partner effects. Actor effects address the relation between individuals' predictor variables and their own outcome variables. Partner effects address the relation between individuals' predictor variables and their partners' outcome variables. Actor-partner effects address the interaction between individuals' and their partners' predictor variables and outcome variables. Although, there are several statistical procedures for estimating the APIM, multilevel modelling (MLM) was deemed most appropriate for this study, as there are modules available in SPSS to accommodate the nonnormal distributions present. Finally, the APIM can be extended to assess both mediation and moderation.

To test APIM hypotheses, I conducted a series of multilevel modeling analyses for distinguishable data using SPSS version 22.0. I used the generalized estimating equations (GEE) module available in SPSS when hypotheses related to dating violence perpetration or victimization, as this procedure extends the generalized linear module to allow for mixed effects models (i.e., multilevel or nested models) and the non-normal distributions (e.g., positively skewed) of variable scores. As previously mentioned, dating violence scores were positively skewed and overdispersed, necessitating a negative binomial (NB) regression model. Participants' sex was included in all models as the distinguishing within-dyad variable and the dependent variable was the actor's score for dating aggression perpetration, dating aggression victimization, or difficulties in emotion regulation. Covariates were evaluated separately for each model and included if they correlated significantly with both predictor and outcome variables for men or women (Table 5). I centered all predictor variables on the grand sample mean and effect coded sex (men = -1, women = 1). Models 1 – 2 included sex, actor and partner effects

(main effects), sex by actor and sex by partner (2-way) interactions, and covariates. Model 3 was identical in format to Models 1 – 2, but also included hypothesized actor by partner effects (2-way interaction). Model 4 was identical to Model 3, but included avoidant attachment as a covariate rather than anxious attachment. This model was necessary to provide additional information needed to assess mediation.

Overall, a total of 10 multilevel models were conducted to assess the five APIM hypotheses. Two separate MLMs were conducted to assess the relation between each type of attachment style (i.e., anxious and avoidant) and emotion regulation (Model 1a and 1b, respectively; hypothesis 1). Here, linear mixed-models were used because predictor and outcome variables were normally distributed. Four NB regression models were conducted to separately assess the relation between each type of attachment style and dating violence perpetration and victimization (Model 2a, 2b, 2c, and 2d; hypothesis 2). Two NB regression models were conducted to assess the relation between emotion regulation and both dating violence outcomes (Model 3a and 3b; hypotheses 3 and 5). Finally, two additional NB regression models were conducted to assess the final mediation models predicted for both dating violence perpetration and victimization (Model 4a and 4b; hypothesis 4).

To account for the increased risk of observing a Type 1 error (i.e., false positive) that occurs when evaluating several hypotheses, the significance levels were adjusted using the sequential Bonferroni procedure available in SPSS. Thus, each *p* value reported is the adjusted *p* value. I also reported confidence intervals to aid in the interpretation of statistical significance.

Kenny et al. (2006) outline a procedure to calculate a *pseudo* R^2 as a measure of the fit of a linear multilevel model. The *pseudo* R^2 is calculated by dividing the estimates of variance and covariance from the full model by the variance and covariance from the unrestricted model and subtracting this value from one. For distinguishable dyads, there are two error variances reported for each model, one for men and one for women. I used this procedure in the present study to determine the variance explained for Model 1a and 1b, as these were the only two linear models.

For the remaining nonlinear models, I calculated a *pseudo* R^2 using a procedure outlined by Hilbe (2011). Here, *pseudo* R^2 is obtained by dividing the log-likelihood of the unrestricted model by the log-likelihood of the restricted model and subtracting this value from one. This procedure provided an overall estimate of the fit of the model (i.e., it did not provide separate values for men and women).

Attachment style and emotion regulation (hypothesis 1). As show in Table 6, the results of the first two MLMs (Models 1a and 1b) supported hypothesis 1 which stated that higher levels of reported anxious and avoidant attachment would predict greater reported difficulties in emotion regulation (actor effects). Relationship satisfaction, relationship commitment, and social desirability were controlled for in both models because of their significant associations with both the predictor and outcome variables. Avoidant attachment was controlled for in Model 1a and anxious attachment was controlled for in Model 1b because both forms of attachment were significantly correlated with each other as well as with emotion regulation difficulties (Table 5). This process for determining covariates was used throughout remaining analyses.

Social desirability was also a significant predictor of emotion regulation difficulties, such that higher levels of reported social desirability were associated with lower levels of reported emotion regulation difficulties. No significant effects were found for sex or sex interaction terms for anxious attachment (Model 1a); however, sex emerged as a significant main effect for avoidant attachment (Model 1b). Thus, when avoidant attachment and avoidant attachment interaction terms were included in the model, women reported significantly more difficulties in emotion regulation compared to men. Partner effects were included in the model only to control for nonindependence in data. No significant partner effects were hypothesized or found. Social desirability emerged as a significant predictor of emotion regulation difficulties in both models. Using the formula for pseudo R^2 provided by Kenny et al., (2006), the anxious (Model 1a) and avoidant (Model 1b) attachment models explained 32.7% and 31.5% of the variance in the outcome variable for men, respectively, and 46.5% and 47.2% of the variance in the outcome variable for women, respectively.

Table 6

Multilevel Models for Anxious and Avoidant Attachment Predicting Emotion Regulation Difficulties

Predictors	*b*	SE_b	95% *CI*
Anxious (Model 1a)			
Intercept	**80.20*****	**0.95**	**78.33 – 82.08**
Sex	1.70	1.00	-0.26 – 3.67
Actor anxious attachment	**8.56*****	**0.97**	**6.65 – 10.47**
Partner anxious attachment	-1.60	0.87	-3.31 – 0.11
Sex x Actor anxious attachment	0.17	0.88	-1.57 – 1.90
Sex x Partner anxious attachment	1.09	0.87	-0.62 – 2.80
Covariate relationship satisfaction	-1.36	1.08	-3.49 – 0.78
Covariate relationship commitment	-0.19	1.17	-2.48 – 2.11
Covariate avoidant attachment	**5.01*****	**1.15**	**2.73 – 7.28**
Covariate social desirability	**-1.28*****	**0.36**	**-1.98 – -0.58**
Avoidant (Model 1b)			
Intercept	**80.12*****	**0.92**	**78.31 – 81.93**
Sex	**2.29***	**0.98**	**0.35 – 4.23**
Actor avoidant attachment	**5.20*****	**1.19**	**2.87 – 7.52**
Partner avoidant attachment	-2.00	1.09	-4.14 – 0.14
Sex x Actor avoidant attachment	1.15	1.08	-0.98 – 3.28
Sex x Partner avoidant attachment	-0.10	1.08	-2.23 – 2.03
Covariate relationship satisfaction	-1.13	1.06	-3.22 – 0.96
Covariate relationship commitment	-0.32	1.16	-2.61 – 1.96
Covariate anxious attachment	**8.44*****	**0.97**	**6.53 – 10.34**
Covariate social desirability	**-1.22*****	**0.35**	**-1.92 – -0.53**

Note. Sex is coded men = -1 and women = 1. Significant findings are presented in bold font.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Attachment style and dating violence (hypothesis 2). Four MLMs (Models 2a, 2b, 2c, and 2d) analyses were conducted to test hypothesis 2 which stated that higher levels of insecure attachment would be associated with higher levels of individuals' own report of dating violence (actor effects) and their partners' reports of dating violence (partner effects). Relationship satisfaction and relationship commitment were controlled for in all four models. Anxious attachment was controlled for in the two models with avoidant attachment predicting dating violence. As shown in Table 7, there was mixed support for this overall hypothesis.

Contrary to hypotheses, no significant actor or partner effects were found for the relation between anxious attachment style and dating violence perpetration or victimization (Models 2a and 2b, respectively). However, consistent with predictions, a significant actor effect was found when predicting dating violence perpetration from avoidant attachment, such that men and women who reported greater levels of avoidant attachment were more likely to report greater amounts of perpetration (Model 2c). However, no significant partner effects emerged when predicting perpetration from avoidant attachment nor were there any significant actor or partner effects when predicting victimization from avoidant attachment (Model 2d). Thus, out of the eight hypothesized actor and partner effects across the four models, only one significant finding emerged – one's self-reported avoidant attachment was predictive of dating violence perpetration, Wald = 4.91, p = .027, Exp(B) = 1.71.

In addition to the hypothesized actor and partner effects, I also explored sex by actor and sex by partner interactions. The opposite pattern of findings resulted for anxious versus avoidant attachment. That is, significant sex by actor interaction effects

emerged when predicting both perpetration and victimization from anxious attachment but not from avoidant attachment. In contrast, significant sex by partner effects were found when predicting perpetration and victimization from avoidant attachment, but no significant sex by partner interaction emerged when predicting perpetration and victimization from anxious attachment (see Models 2a – 2d in Table 7). Using the formula for pseudo R^2 provided by Hilbe (2011), Models 2a, 2b, 2c, and 2d explained 6.64%, 7.36%, 6.64%, and 10.41% of the variance in the outcome variable, respectively.

Table 7

Summary of Negative Binomial Mixed-Model Regressions Predicting Dating Violence Perpetration and Victimization from Insecure Attachment

Predictors	Perpetration			Victimization		
	b (SE)	Wald	Exp*(B)* [95% CI]	*b (SE)*	Wald	Exp*(B)* [95% CI]
	Anxious (Models 2a and 2b)					
Intercept	0.27 (0.27)	1.03	1.31 [0.78 – 2.21]	0.00 (0.32)	0.00	1.00 [0.53 – 1.89]
Sex	0.12 (0.51)	0.05	1.12 [0.42 – 3.03]	0.44 (0.50)	0.78	1.56 [0.58 – 4.15]
Actor anxious attachment	0.22 (0.19)	1.44	1.25 [0.87 – 1.80]	0.20 (0.19)	1.14	1.22 [0.85 – 1.75]
Partner anxious attachment	0.24 (0.20)	1.47	1.28 [0.86 – 1.90]	0.29 (0.25)	1.41	1.34 [0.83 – 2.18]
Sex x Actor anxious attachment	**-0.83 (0.31)**	**7.26****	**0.44 [0.24 - 0.80]**	**-0.65 (0.27)**	**5.91***	**0.52 [0.31 – 0.88]**
Sex x Partner anxious attachment	0.07 (0.30)	0.05	1.07 [0.59 – 1.94]	-0.04 (0.33)	0.01	0.97 [0.50 -1.85]
Covariate relationship satisfaction	-0.30 (0.31)	0.94	0.74 [0.40 – 1.37]	-0.35 (0.30)	1.40	0.70 [0.39 – 1.26]
Covariate relationship commitment	0.11 (0.24)	0.23	1.12 [0.71 – 1.78]	0.10 (0.22)	0.18	1.10 [0.71 – 1.71]
	Avoidant (Models 2c and 2d)					
Intercept	0.33 (0.22)	2.38	1.40 [0.91 – 2.13]	-0.05 (0.27)	0.03	0.95 [0.56 – 1.63]
Sex	0.00 (0.39)	0.00	1.00 [0.47 – 2.14]	0.42 (0.41)	1.07	1.53 [0.68 – 3.40]
Actor avoidant attachment	**0.54 (0.24)**	**4.91***	**1.71 [1.06 – 2.77]**	0.44 (0.24)	3.48	1.55 [0.98 – 2.46]
Partner avoidant attachment	0.28 (0.31)	0.83	1.32 [0.72 – 2.42]	0.43 (0.37)	1.34	1.54 [0.74 – 3.19]
Sex x Actor avoidant attachment	-0.01 (0.54)	0.00	0.99 [0.34 – 2.86]	0.08 (0.47)	0.03	1.08 [0.43 – 2.70]
Sex x Partner avoidant attachment	**-0.92 (0.44)**	**4.36***	**0.40 [0.17 – 0.95]**	**-0.98 (0.45)**	**4.75***	**0.40 [0.16 – 0.91]**
Covariate relationship satisfaction	-0.28 (0.23)	1.57	0.75 [0.48 – 1.17]	-0.31 (0.22)	1.94	0.74 [0.48 – 1.13]
Covariate relationship commitment	0.25 (0.24)	1.05	1.29 [0.80 – 2.08]	0.14 (0.23)	0.34	1.15 [0.72 – 1.81]
Covariate anxious attachment	-0.22 (0.24)	0.81	0.81 [0.50 – 1/29]	-0.13 (0.22)	0.35	0.88 [0.56 – 1.36]

Note. Sex is coded men = -1 and women = 1. Significant findings are presented in bold font.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

To further examine significant interactions in negative binomial models, I calculated incidence rate ratios (IRRs), standard errors, and confidence intervals for a range of possible scores (i.e., -2 *SD*, mean, + 2 *SD*) on the continuous predictor variable (e.g., anxious and avoidant attachment). Exponentiated interactions were considered significant if the confidence interval did not include 1.0. The number of men and women found at the tail ends of the distribution (i.e., ±1.5 *SD*s) was also reported to better qualify the findings.

Anxious attachment. First, I examined the sex by actor interaction effects in the models predicting dating violence perpetration and victimization from anxious attachment (Models 2a and 2b). When anxious attachment was held constant at low levels (see -2 *SD* along horizontal axis on both graphs; Figure 1), men reported significantly higher levels of perpetration (*IRR* = 6.99, 95% CI = [1.18 – 40.96]) and victimization (*IRR* = 6.46, 95% CI = [1.24 – 33.57]) compared to women. In other words, among those with low levels of anxious attachment, men were 6.99 times more likely to perpetrate and 6.46 times more likely to experience victimization than women.

Conversely, when anxious attachment was held constant at high levels (see +2 *SD* along horizontal axis on both graphs; Figure 1), women reported significantly higher levels of perpetration compared to men, *IRR* = 0.18, 95% CI = [0.04 – 0.83], but there were no significant sex differences for victimization, *IRR* = 0.37, 95% CI = [0.10 – 1.46]. Thus, among those with high levels of anxious attachment, men perpetrated dating violence 0.18 times as much as women. Said differently, women with high levels of anxious attachment were 5.56 times more likely to perpetrate dating violence than men with high levels of anxious attachment.

In terms of representation of men and women at the tail ends of the distribution of anxious attachment scores, there were 13 men and 10 women with scores below 1.5 *SD*s and 6 men and 20 women with scores above 1.5 *SD*s. Thus, more than twice as many women than men had scores above 1.5 *SD*s.

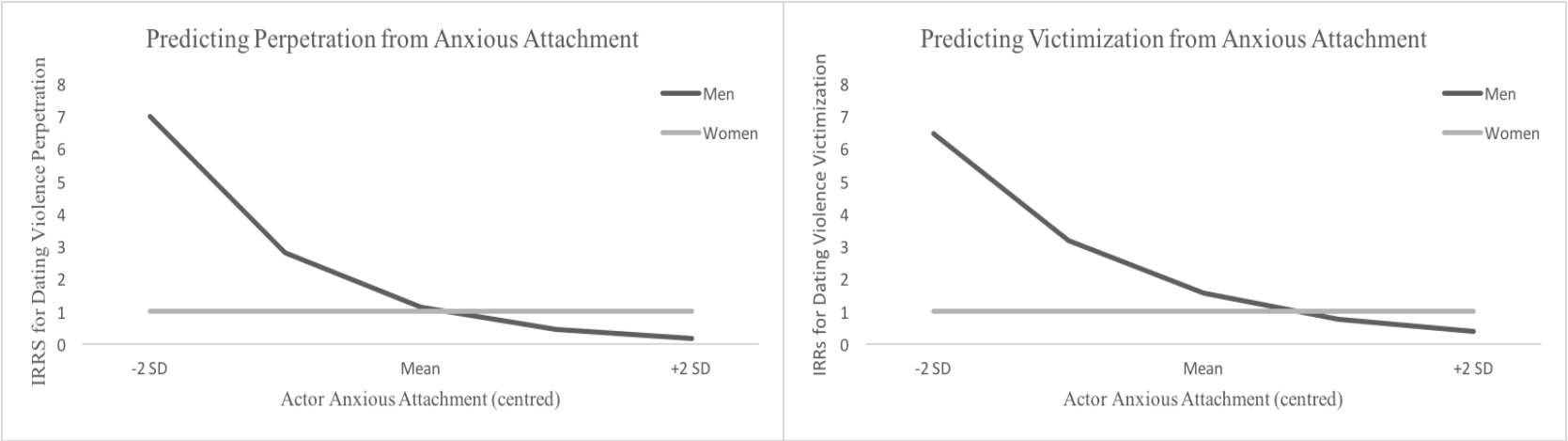

Figure 1. Examination of significant sex by actor interaction effects predicting dating violence perpetration and victimization from anxious attachment.

Note. The dark line labeled "men" is a plot of the multiple IRRs that were calculated across a range of anxious attachment scores. IRRs are ratios of men compared to women, therefore a line labeled "women" was added to ease interpretation.

Avoidant attachment. Next, I examined the significant sex by partner interaction effects in the models predicting dating violence perpetration and victimization from avoidant attachment (Models 2c and 2d). In regards to perpetration, no significant sex differences emerged when partner's avoidant attachment was held constant at low levels (*IRR* = 5.03, 95% CI = [0.87 – 28.94]) or high levels (*IRR* = 0.20, 95% CI = [0.04 – 1.03]). Thus, although initial results indicated a significant sex by partner interaction for perpetration, further investigation using Hilbe's (2011) methodology revealed that the interaction was actually nonsignificant.

Conversely, dating violence victimization was significantly higher for men when their partners' avoidant attachment was held constant at low levels, *IRR* = 8.49, 95% CI = [1.27 – 56.90] (see -2 *SD* along horizontal axis; Figure 2), but there were no significant sex differences when avoidant attachment was held constant at high levels, *IRR* = 0.27, 95% CI = [0.06 – 1.31] (see +2 *SD* along horizontal axis; Figure 2). In other words, when partner's avoidant attachment was held constant at low levels, men were 8.49 times more likely to experience dating violence victimization than women. No other sex differences were found in regards to the prediction of perpetration or victimization from partner's avoidant attachment.

In terms of representation of men and women at tail ends of the distribution of avoidant attachment scores, there were 4 men and 17 women with scores below 1.5 *SD*s and 12 men and 12 women with scores above 1.5 *SD*s. Thus, there were relatively more men than women who had low avoidance partners.

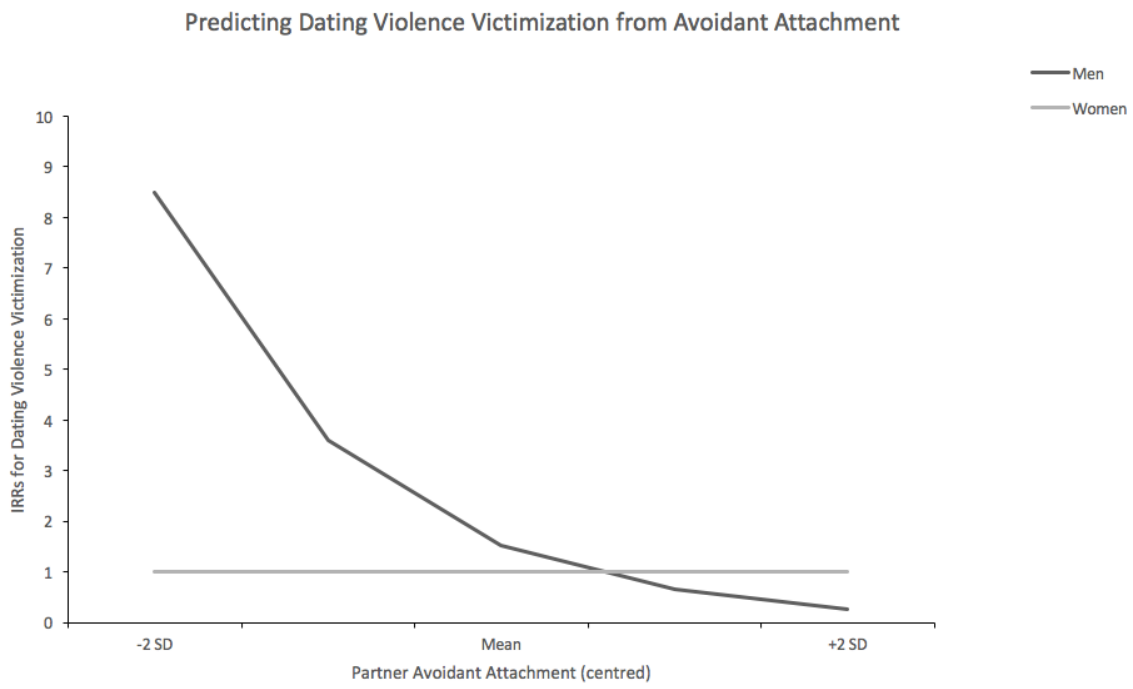

Figure 2. Examination of significant sex by partner interaction effect predicting dating violence victimization from avoidant attachment.

Note. The dark line labeled "men" is a plot of the multiple IRRs that were calculated across a range of anxious attachment scores. IRRs are ratios of males compared to females, therefore a line labeled "women" was added to ease interpretation.

Emotion regulation and dating violence (hypothesis 3). As shown in Table 8, two MLM analyses (Models 3a and 3b) were conducted and mixed support was found for the hypothesis that emotion regulation difficulties would be positively associated with an individual's own report of dating violence (actor effects) and their partner's report of dating violence (partner effects). Relationship satisfaction, relationship commitment, and anxious attachment were controlled for in both models. Significant actor effects emerged when predicting both dating violence perpetration and victimization, such that individuals who reported difficulties with emotion regulation were more likely to report greater levels of perpetration and victimization. Using the formula for pseudo R^2 provided by Hilbe (2011), Models 3a and 3b explained 7.41% and 9.14% of the variance in the outcome variable, respectively.

Table 8

Summary of Negative Binomial Mixed-Model Regressions Predicting Dating Violence Perpetration and Victimization from Emotion Regulation (Models 3a and 3b)

	Perpetration			Victimization		
Predictors	*b (SE)*	Wald	Exp*(B)* [95% CI]	*b (SE)*	Wald	Exp*(B)* [95% CI]
Intercept	0.30 (0.24)	1.57	1.36 [0.84 – 2.18]	-0.01 (0.29)	0.00	0.99 [0.56 – 1.74]
Sex	0.25 (0.50)	0.24	1.28 [0.48 – 3.42]	0.59 (0.50)	1.42	1.81 [0.68 – 4.78]
Actor emotion regulation	**0.03 (0.01)**	**5.00***	**1.03 [1.00 – 1.06]**	**0.03 (0.01)**	**5.42***	**1.03 [1.00 – 1.05]**
Partner emotion regulation	0.01 (0.01)	0.40	1.01 [0.98 – 1.03]	0.01 (0.01)	0.85	1.01 [0.99 – 1.04]
Sex x Actor emotion regulation	-0.01 (0.02)	0.39	1.00 [0.96 - 1.02]	-0.01 (0.02)	0.56	0.99 [0.96 – 1.02]
Sex x Partner emotion regulation	**-0.04 (0.01)**	**10.09****	**0.96 [0.93 – 0.98]**	**-0.04 (0.01)**	**8.79****	**0.96 [0.93 – 0.99]**
Actor x Partner emotion regulation	0.00 (0.00)	2.20	1.00 [1.00 – 1.00]	0.00 (0.00)	0.05	1.00 [1.00 – 1.00]
Covariate Relationship satisfaction	-0.38 (0.36)	1.09	0.69 [0.34 – 1.40]	-0.39 (0.33)	1.45	0.68 [0.36 – 1.28]
Covariate Relationship commitment	0.24 (0.32)	0.57	1.27 [0.68 – 2.39]	0.15 (0.28)	0.31	1.17 [0.68 – 2.01]
Covariate Anxious attachment	-0.28 (0.40)	0.50	0.76 [0.35 – 1.63]	-0.21 (0.36)	0.34	0.81 [0.40 – 1.65]

Note. Sex is coded men = -1 and women = 1. Significant findings are presented in bold font.
*$p < .05$. **$p < .01$. ***$p < .001$.

As in previous models, I explored sex by actor and sex by partner interactions. Although no significant sex by actor effects emerged, significant sex by partner effects were found when predicting both perpetration and victimization from emotion regulation difficulties.

As shown in Figure 3, when partner's difficulties in emotion regulation was held constant at low levels (see -2 *SD* along horizontal axis on both graphs), men reported significantly higher levels of perpetration (*IRR* = 8.36, 95% CI = [2.08 – 33.50]) and victimization *(IRR* = 10.90, 95% CI = [2.38 – 49.95]). In other words, among those who had partners with low levels of emotion regulation difficulties, men were 8.36 times more like to perpetrate and 10.90 times more likely to be victims than women.

Conversely, when partner's difficulties in emotion regulation was held constant at high levels, women reported significantly higher levels of perpetration (*IRR* = 0.19, 95% CI = [0.05 – 0.82], see +2*SD* along horizontal axis) and victimization *(IRR* = 0.12, 95% CI = [0.02 – 0.94], see +3*SD* along horizontal axis). In other words, among those who had partners with high levels of emotion regulation difficulties, women were 5.26 times more likely to perpetrate and 8.33 times more likely to be victims than men.

In terms of representation of men and women at the tail ends of the distribution of difficulties in emotion regulation scores, there were 8 men and 4 women with scores below 1.5 *SD*s and 9 men and 15 women with scores above 1.5 *SD*s. Thus, there were relatively more men than women who had partners with high levels of emotion regulation difficulties and relatively more women than men who had partners with low levels of emotion regulation difficulties.

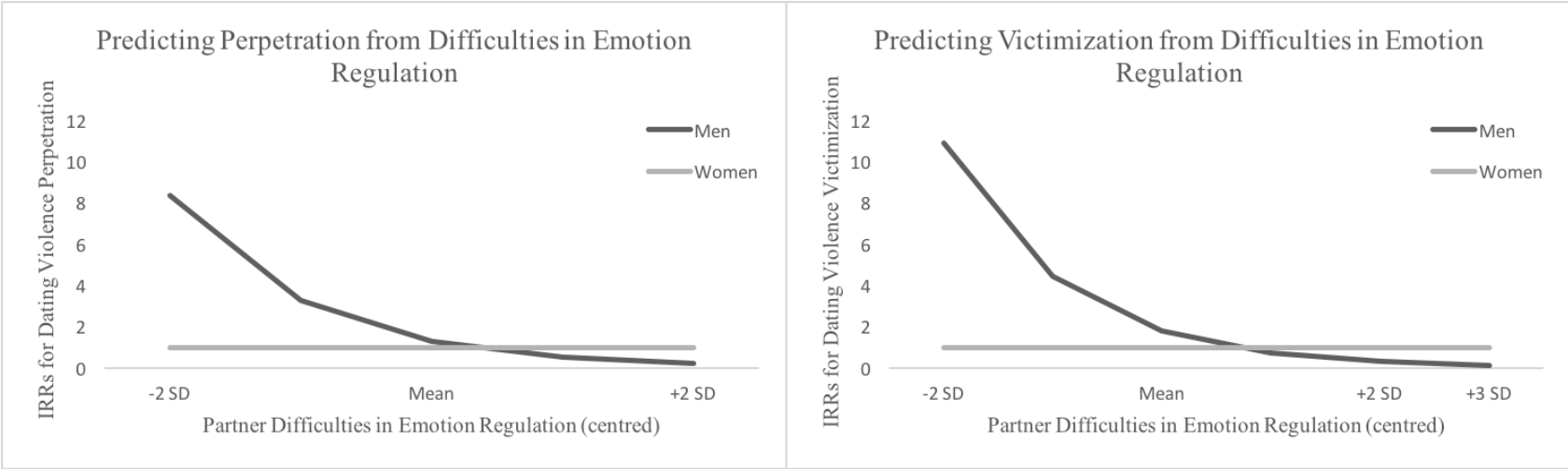

Figure 3. Examination of significant sex by partner interaction effects predicting dating violence perpetration and victimization from emotion regulation difficulties.

Note. The dark line labeled "men" is a plot of the multiple IRRs that were calculated across a range of anxious attachment scores. IRRs are ratios of males compared to females, therefore a line labeled "women" was added to ease interpretation.

Mediation models (hypothesis 4). Following procedures for testing mediation in dyadic data (Kenny, Korchmaros, & Bolger, 2003; Riggs et al., 2011; West, Popp, & Kenny, 2008), I conducted several steps to assess actor and partner level mediators. Because the effects in the indirect path are fixed when using MLM with dyadic data, the ordinary procedures for assessing mediation can be used (Kenny et al., 2003). Baron and Kenny's (1986) four step procedure for testing mediation (Figure 6) continues to be a widely adopted statistical method for assessing mediation, but more contemporary analyses focus on the significance of the indirect effect and do not necessitate a significant finding for the total effect (i.e., path c in Figure 6; Hayes, 2009). Indeed, Field (2013) states that estimating indirect effects is becoming increasingly common and is preferable to Baron and Kenny's four step regression model. To remain consistent with the bulk of the literature on mediation, Baron and Kenny's (1986) four step approach was initially employed; however, the initial criteria (i.e., significance of the total effect, path c) was not met for seven of the eight mediation models. As such, significance of the indirect effect was also used to evaluate mediation in each of the models.

Eight separate mediation hypotheses were evaluated using MLM and are discussed below. Figure 7 shows all eight proposed indirect effects (paths a and b). For simplicity, paths c and c' are not displayed in the model. Separate hypotheses for men and women were not explored, as APIM mediation models moderated by participants' sex (i.e., moderated-mediation) were beyond the complexity of the current study.

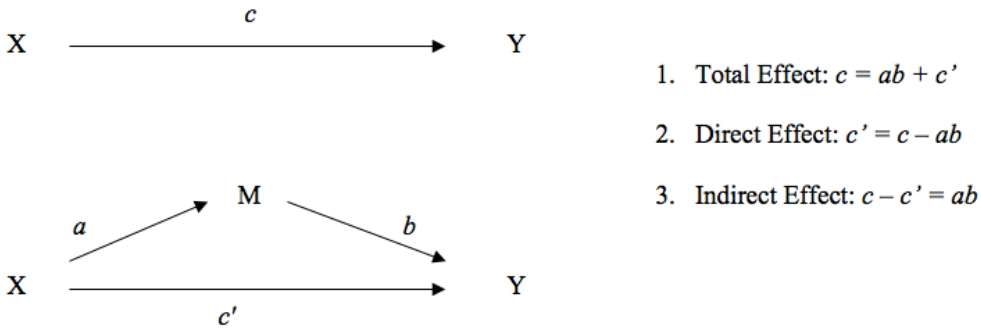

Figure 4. Baron and Kenny's (1986) mediation model.

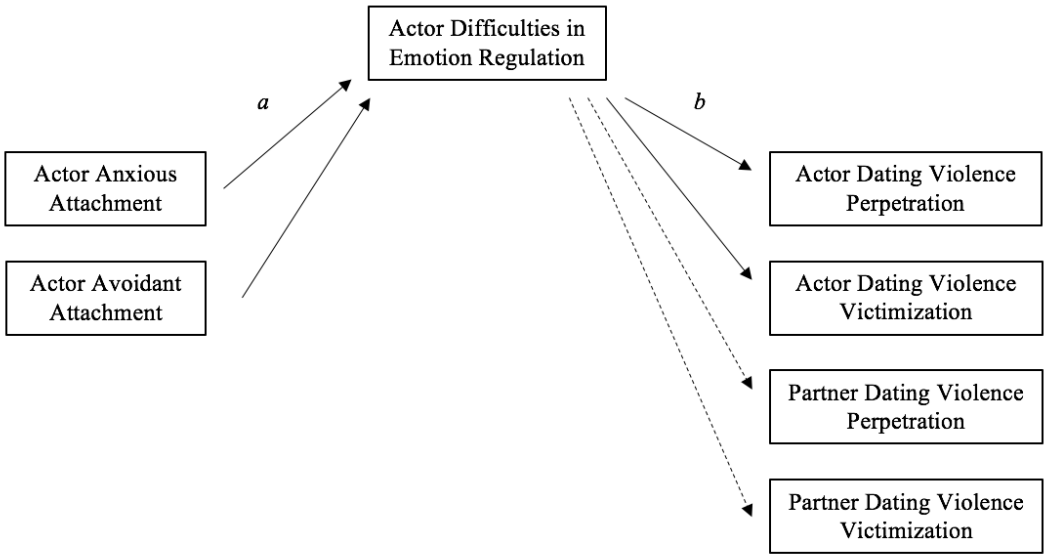

Figure 5. Actor-actor and actor-partner mediation hypotheses showing emotion regulation mediating the relation between attachment style and dating violence. Solid line = actor effect; dashed line = partner effect.

Actor-actor mediation. First, I assessed the hypothesis that individuals' own reports of difficulties regulating their emotions would partially mediate the relation between their own reported anxious attachment style and their report of dating violence perpetration (actor-actor mediation). In Step 1, I examined the relation between anxious attachment and dating violence perpetration (path c). As previously shown, individuals' own anxious attachment style did not significantly predict their reports of dating violence perpetration (see Actor anxious attachment, Table 7). Thus, according to Baron and Kenny's (1986) model, the initial criteria for mediation was not met. However, because contemporary analysts argue that this step is not essential when testing mediation (e.g., Hayes, 2009), I evaluated the remaining steps.

In Step 2, I assessed the relation between anxious attachment and difficulties in emotion regulation. Path a was supported (see, Actor anxious attachment, Table 6), as individuals' own reports of anxious attachment significantly predicted their report of emotion regulation difficulties. In Step 3, I examined the relation between emotion regulation difficulties and dating violence perpetration while controlling for anxious attachment (path b). Support was found for path b (Actor emotion regulation, Table 8), as emotion regulation difficulties significantly predicted dating violence perpetration while controlling for anxious attachment. Finally, in Step 4, I assessed the direct effect (path c') of anxious attachment on dating violence perpetration, controlling for difficulties in emotion regulation. Steps 3 and 4 were examined within the same model. The results in Table 8 (see Covariate anxious attachment) show that an individual's anxious attachment style did not significantly predict dating violence perpetration when emotion regulation difficulties was added to the model.

The indirect effect was estimated by multiplying the parameter estimates of paths a and b together. Confidence intervals for the indirect effect were generating using the Monte Carlo method (Selig & Preacher, 2008). The indirect effect of anxious attachment on dating violence perpetration through emotion regulation was not statistically significant, $b = 0.26$, 95% CI = [-1.417 – 1.965].

The same steps outlined above were used to assess the remaining three actor-actor mediation hypotheses. The hypothesis that individuals' difficulties regulating their emotions would partially mediate the relation between their own reported anxious attachment style and their report of dating violence victimization was not supported, as the indirect effect of anxious attachment style on dating violence victimization through emotion regulation was not statistically significant, $b = 0.26$, 95% CI = [-1.417 – 1.965].

To assess Steps 3 and 4 in the third and fourth actor-actor mediation hypotheses, a new model was created (Table 9) which was nearly identical to the one shown in Table 8 except that avoidant attachment was substituted for anxious attachment. Recall that avoidant attachment was not included as a covariate in Models 3a and 3b (Table 8) because it was not significantly correlated with both the predictor and outcome variables. The hypothesis that individuals' difficulties regulating their emotions would partially mediate the relation between their degree of avoidant attachment and their report of dating violence perpetration or victimization was not supported, as emotion regulation difficulties did not predict dating violence perpetration or victimization while controlling for avoidant attachment style (path b; see Actor emotion regulation, Table 9). Because path b was nonsignificant, the parameter estimates for the indirect effects were not calculated or further evaluated for these two models.

In summary, path a was supported for all four actor-actor mediation models and path b was supported for two of the four actor-actor mediation models. The indirect effect was estimated and found to be nonsignificant for the two models where paths a and b were significant. Thus, counter to the fourth set of hypotheses, there were no significant actor-actor mediations. Using the formula for pseudo R^2 provided by Hilbe (2011), Models 4a and 4b explained 8.91% and 10.33% of the variance in the outcome variable, respectively.

Table 9

Summary of Negative Binomial Mixed-Model Regressions Predicting Dating Violence Perpetration and Victimization from Emotion Regulation (Models 4a and 4b)

	Perpetration			Victimization		
Predictors	*b (SE)*	Wald	Exp*(B)* [95% CI]	*b (SE)*	Wald	Exp*(B)* [95% CI]
Intercept	0.29 (0.23)	1.48	1.33 [0.84 – 2.11]	-0.01 (0.28)	0.00	0.99 [0.57 – 1.73]
Sex	0.27 (0.46)	0.34	1.31 [0.53 – 3.26]	0.58 (0.45)	1.68	1.78 [0.74 – 4.27]
Actor emotion regulation	0.01 (0.01)	0.75	1.01 [0.99 – 1.03]	0.01 (0.01)	1.46	1.01 [0.99 – 1.03]
Partner emotion regulation	0.00 (0.01)	0.08	1.00 [0.98 – 1.03]	0.01 (0.01)	0.47	1.01 [0.98 – 1.04]
Sex x Actor emotion regulation	0.01 (0.02)	0.26	1.01 [0.97 - 1.05]	0.00 (0.02)	0.03	1.00 [0.97 – 1.04]
Sex x Partner emotion regulation	**-0.04 (0.01)**	**9.80****	**0.96 [0.93 – 0.98]**	**-0.04 (0.01)**	**8.16****	**0.96 [0.93 – 0.99]**
Actor x Partner emotion regulation	0.00 (0.00)	0.70	1.00 [1.00 – 1.01]	0.00 (0.00)	0.05	1.00 [1.00 –1.00]
Covariate relationship satisfaction	-0.24 (0.27)	0.79	0.79 [0.46 – 1.33]	-0.29 (0.25)	1.35	0.75 [0.46 – 1.22]
Covariate relationship commitment	0.19 (0.27)	0.51	1.21 [0.71 – 2.07]	0.13 (0.25)	0.29	1.14 [0.70 – 1.86]
Covariate avoidant attachment	0.39 (0.31)	1.61	1.48 [0.81 – 2.71]	0.35 (0.28)	1.57	1.42 [0.82 – 2.47]

Note. Sex is coded men = -1 and women = 1. Significant findings are presented in bold font.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Actor-partner mediation. Next, I assessed the hypothesis that individuals' own reports of difficulties regulating their emotions would partially mediate the relation between their own reported attachment style and their partners' reports of dating violence (actor-partner mediation). All four of the actor-partner mediation hypotheses were evaluated by following the same procedure outlined above. Path a of the actor-partner mediations remains identical to that presented above; thus only path c, path b, and path c' were evaluated below.

Similar to the actor-actor mediations presented above, path c (Step 1), the total effect of attachment style on dating violence was not significant for any of the four actor-partner mediation models (see Partner anxious attachment and Partner avoidant attachment in Models 2a – 2d, Table 7). Although path a was significant in all four models (Step 2, see Actor anxious attachment and Actor avoidant attachment, Models 1a and 1b, Table 6), path b (Step 3) was not significant in any of the four models (see Partner emotion regulation in Table 8 and Table 9). Thus, the parameter estimates for the indirect effects were not calculated or further evaluated for these four models. Thus, contrary to hypotheses, none of the actor-actor or actor-partner mediation hypotheses were supported in the current study.

Moderation model (hypothesis 5). Finally, I assessed the hypothesis that individuals would report greater amounts of perpetration and victimization of dating violence if both partners in the relationship reported difficulty regulating their emotions (actor-partner interaction). Contrary to predictions, as previously shown in Table 8, no significant actor-partner interactions were found.

Post-Hoc Analysis

Sex differences in emotion regulation. When evaluating the relation between attachment style and emotion regulation difficulties (hypothesis 1), participants' sex emerged as a significant predictor of emotion regulation in the avoidant attachment model (Model 1b) and was a nonsignificant predictor in the anxious attachment model (Model 1a). To better understand the significance of participants' sex in predicting emotion regulation difficulties, an additional model was created with sex, anxious attachment, and avoidant attachment as main effects (Table 10). This model excluded the sex by actor and sex by partner interactions that were previously found to be nonsignificant. Results indicated that when anxious and avoidant attachment were considered within the same model, participant's sex was not a significant predictor of emotion regulation difficulties.

Table 10

Multilevel Model for Anxious and Avoidant Attachment Predicting Emotion Regulation Difficulties

Predictors	*b*	SE_b	95% *CI*
Intercept	**80.00*****	**0.92**	**78.22 – 81.78**
Sex	1.91	1.01	-0.09 – 3.92
Actor anxious attachment	**8.61*****	**0.97**	**6.70 – 10.52**
Partner anxious attachment	-1.32	0.92	-3.13 – 0.48
Actor avoidant attachment	**5.29*****	**1.17**	**2.99 – 7.59**
Partner avoidant attachment	-1.45	1.14	-3.69 – 0.80
Covariate relationship satisfaction	-1.26	1.06	-3.36 – 0.83
Covariate relationship commitment	-0.24	1.16	-2.52 – 2.04
Covariate social desirability	**-1.26*****	**0.35**	**-1.95 – -0.56**

Note. Sex is coded men = -1 and women = 1. Significant findings are presented in bold font.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Summary of Main Analyses

Overall, there was mixed support for study hypotheses and several interesting and novel findings emerged. A summary of the main results in relation to research questions and hypotheses is presented in Table 11.

Table 11

Summary of Results in Relation to Research Questions and Hypotheses

Research questions and hypotheses	Results	Hypotheses supported?
Research question 1: Does attachment style predict individuals' abilities to regulate their emotions?		
Hypothesis 1:		
(a) Higher levels of anxious attachment will predict higher levels of emotion regulation difficulties (actor effect)	• Participants with higher levels of anxious attachment reported higher levels of emotion regulation difficulties	Yes
(b) Higher levels of avoidant attachment will predict higher levels emotion regulation difficulties (actor effect).	• Participants with higher levels of avoidant attachment reported higher levels of emotion regulation difficulties	Yes

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Research question 2: Does attachment style predict individuals' own, as well as their partners', reports of dating violence?		
Hypothesis 2:		
(a) Higher levels of anxious attachment will predict higher levels of individuals' own reports of dating violence perpetration (actor effect) and their partners' reports of dating violence perpetration (partner effect).	• No significant actor or partner main effects • However, significant sex by actor interaction emerged. Of the participants who reported higher levels of anxious attachment, women reported significantly more perpetration than men. Of the participants who reported lower levels of anxious attachment, men reported significantly more perpetration than women. • No significant sex by partner interaction	No Partial
(b) Higher levels of anxious attachment will predict higher levels of individuals' own reports of dating violence victimization (actor effect) and their partners' reports of dating violence victimization (partner effect).	• No significant actor or partner main effects • However, significant sex by actor interaction emerged. Of the participants who reported higher levels of anxious attachment, women reported significantly more victimization than men. Of the participants who reported lower levels of anxious attachment, men reported significantly more victimization than women. • No significant sex by partner interaction	No Partial

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Hypothesis 2: (c) Higher levels of avoidant attachment will predict higher levels of individuals' own reports of dating violence perpetration (actor effect) and their partners' reports of dating violence perpetration (partner effect).	• Participants who reported higher levels of avoidant attachment reported higher levels of dating violence perpetration • No significant partner effects or sex by partner interactions	Yes No
(d) Higher levels of avoidant attachment will predict higher levels of individuals' own reports of dating violence victimization (actor effect) and their partners' reports of dating violence victimization (partner effect).	• No significant actor or partner main effects • However, significant sex by partner interaction emerged. Men and women with partners who reported higher levels of avoidant attachment were equally likely to report victimization, but when a participant's partner reported lower levels of avoidant attachment, men were more likely to report victimization compared to women.	No Partial

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Research question 3: Does ability to regulate emotions predict individuals' own, as well as their partners', reports of dating violence?		
Hypothesis 3: (a) Higher levels of difficulty regulating emotions will predict higher levels of individuals' own reports of dating violence perpetration (actor effect) and their partners' reports of dating violence perpetration (partner effect).	• Participants who reported higher levels of emotion regulation difficulties reported higher levels of perpetration • No significant partner effect. • However, significant sex by partner interaction effect emerged. Of the participants with partners who reported higher levels of emotion regulation difficulties, women were more likely than men to perpetrate. Of the participants with partners who reported lower levels of emotion regulation difficulties, men were more likely than women to perpetrate.	Yes Partial

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Hypothesis 3: (b) Higher levels of difficulty regulating emotions will predict higher levels of individuals' own reports of dating violence victimization (actor effect) and their partners' reports of dating violence victimization (partner effect).	• Participants who reported higher levels of emotion regulation difficulties reported higher levels of victimization • No significant partner effect. • However, significant sex by partner interaction effect emerged. Of the participants with partners who reported higher levels of emotion regulation difficulties, women were more likely than men to report victimization. Of the participants with partner's who reported lower levels of emotion regulation difficulties, men were more likely that women to report victimization.	Yes Partial

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Research question 4: Is emotion regulation a mechanism through which attachment style relates to individuals' own, as well as their partners', reports of dating violence?		
Hypothesis 4: (a) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of anxious attachment and their own reports of dating violence perpetration and victimization (actor-actor mediations).	• Anxious attachment did not predict perpetration or victimization (i.e., path c was not supported in either model) • Higher levels of anxious attachment predicted higher levels of emotion regulation difficulties (i.e., path a was supported in both models) • Higher levels of emotion regulation difficulties predicted higher levels of reported perpetration and victimization, when controlling for anxious attachment (i.e., path b was supported in both models) • However, the combined indirect effect was not significant.	No

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Hypothesis 4: (b) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of avoidant attachment and their own reports of dating violence perpetration and victimization (actor-actor mediations).	• Avoidant attachment predicted perpetration (i.e., path c was supported), but did not predict victimization (i.e., path c was not supported) • Higher levels of avoidant attachment predicted higher levels of emotion regulation difficulties (i.e., path a was supported in both models) • Higher levels of emotion regulation difficulties did not predict higher levels of reported perpetration and victimization, when controlling for avoidant attachment (i.e., path b was not supported in either model) • Thus, the indirect effect was not calculated.	No
(c) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of anxious attachment and their partners' reports of dating violence perpetration and victimization (actor-partner mediations).	• Participants' partner's anxious attachment did not predict perpetration or victimization (i.e., path c was not supported in either model) • Higher levels of anxious attachment predicted higher levels of emotion regulation difficulties (i.e., path a was supported in both models) • Higher levels of emotion regulation difficulties did not predict higher levels of partner's reported perpetration or victimization, when controlling for anxious attachment (i.e., path b was not supported in either model). • Thus, the indirect effect was not calculated.	No

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Hypothesis 4: (d) Individuals' emotion regulation difficulties will partially mediate the relation between their own reports of avoidant attachment and their partners' reports of dating violence perpetration and victimization (actor-partner mediations).	• Participants' partner's avoidant attachment did not predict perpetration or victimization (i.e., path c was not supported in either model) • Higher levels of avoidant attachment predicted higher levels of emotion regulation difficulties (i.e., path a was supported in both models) • Higher levels of emotion regulation difficulties did not predict higher levels of partner's reported perpetration or victimization, when controlling for avoidant attachment (i.e., path b was not supported in either model). • Thus, the indirect effect was not calculated.	No

Con't

Research questions and hypotheses	Results	Hypotheses supported?
Research question 5: Are higher levels of dating violence more likely to occur among couples for whom both partners report emotion regulation difficulties?		
Hypothesis 5: (a) Individuals will report higher levels of dating violence perpetration if both partners in the relationship report higher levels of emotion regulation difficulties difficulty (actor-partner interaction).	• No significant actor by partner effect was found.	No
(b) Individuals will report higher levels of dating violence victimization if both partners in the relationship report higher levels of emotion regulation difficulties difficulty (actor-partner interaction).	• No significant actor by partner effect was found.	No

CHAPTER IV

Discussion

Objective

The aim of the current study was to explore risk factors associated with dating violence at the couple-level. I sought to more thoroughly explore the relations among attachment style, emotion regulation, and dating violence with the intent of elucidating the mechanism by which these variables relate. Associations between attachment style and emotion regulation, attachment style and dating violence, and emotion regulation and dating violence were assessed independently, as well as within an overall mediation model. The associations between pairs of variables in the overall mediation model were considered significant contributions in their own right, not solely as steps of evaluating a larger explanatory model. A subsidiary objective was to explore whether one's partner's emotion regulation difficulties moderated the relation between one's own emotion regulation difficulties and dating violence. Potential sex differences were explored in all models.

Review of Main Results

Attachment and emotion regulation. The first hypothesis was that higher levels of insecure attachment style would predict higher levels of emotion regulation difficulties. Results indicated that both anxious attachment and avoidant attachment were predictive of individuals' own emotion regulation difficulties. Furthermore, the relation between attachment style and emotion regulation was strong for both men and women, with attachment style explaining approximately 30% of the variance in emotion

regulation difficulties for men and nearly 50% of the variance in emotion regulation for women.

Of note, participants' sex was found to be a significant predictor of emotion regulation difficulties in one of the two emotion regulation models. In the model evaluating the relation between avoidant attachment and emotion regulation difficulties, women were more likely to report emotion regulation difficulties than men. However, this effect was not present in the model evaluating anxious attachment and emotion regulation difficulties. In a post-hoc multilevel model that included participants' sex, actor, and partner effects for both anxious and avoidant attachment, as well as all covariates (Table 10), sex was no longer a significant predictor of emotion regulation difficulties, b = 1.91, 95% CI = [-0.09 – 3.92]. Thus, although preliminary analyses found that women reported significantly more emotion regulation difficulties than men (Table 3), this difference appears best accounted for by variance in other variables, such as attachment. These actor-oriented findings are consistent with previous research (Berant et al., 2001; Contreras et al., 2000; Gilliom et al., 2002; Mikulincer et al., 2000; see Mikulincer & Shaver, 2007 for a review) and suggest a strong relation between attachment style and emotion regulation for both men and women.

It is important to note that only actor effects were hypothesized because theory suggests that emotion regulation skills derive from one's own social and biological factors (Cassidy, 1994; Thompson, 1994). Hence it would not make sense to expect one's attachment style to predict one's partner's emotion regulation capacity. This, too, was demonstrated, as partner effects were not significant in either model.

Attachment and dating violence. The second hypothesis was that higher levels of insecure attachment style would predict higher reports of dating violence perpetration and victimization. Although most main effects were nonsignificant, significant sex by actor and sex by partner interactions provided partial support for hypotheses and highlighted important sex difference in the prediction of dating violence. Results are discussed by style of attachment.

Anxious attachment. Although there were no significant main effects between anxious attachment and perpetration or victimization, higher levels of self-reported anxious attachment were significantly more predictive of perpetration for women compared to men. In contrast, lower levels of self-reported anxious attachment were significantly more predictive of perpetration and victimization for men than women. Taken at face value, this means that women who report higher levels of anxious attachment are more likely to engage in dating violence than men who report higher levels of anxious attachment and men who report lower levels of anxious attachment are more likely to engage in violence than women who report lower levels of anxious attachment. This interpretation is inconsistent with the literature on attachment style and dating violence, which has generally found that anxious attachment is predictive of dating violence for both men and women (e.g., Henderson et al., 2005; see Mikulincer & Shaver, 2007 for a summary).

An alternate explanation for the finding that the relationship between anxious attachment and dating violence was modified by participants' sex is simply that this outcome is an artifact of relatively few men reporting high levels of anxious attachment compared to women. Indeed, women were significantly more likely than men to report

higher levels of anxious attachment (Table 3). Recall that of the individuals who reported higher levels of anxious attachment (+ 1.5 *SD*s), there were 6 men and 20 women. With physical dating violence being such a low-frequency event in this sample, it is possible that the significance of this interaction was driven by a small number of anxiously attached women who reported perpetration.

In addition to actor effects for anxious attachment, partner effects were also hypothesized; however, no support was found for partner effects or partner interactions. These findings indicate that having a partner with anxious attachment style does not increase one's risk for experiencing dating violence. This is unexpected given the above finding that anxiously attached women reported significantly more dating violence perpetration and victimization. We would expect that men with an anxiously attached female partner would also report higher levels of perpetration and victimization. This discrepant finding is likely due to the low partner concordance rate found for dating violence in this study. Another possibility is that men with anxiously attached partners underreported their experiences of perpetration and victimization or women who reported higher levels of anxious attachment over-reported their experiences of perpetration and victimization. Finally, partner effects are often weaker than actor effects (Ackerman et al., 2011) and there may not have been enough statistical power to detect partner effects.

Avoidant attachment. As hypothesized, higher levels of one's own avoidant attachment style was predictive of higher self-reports of perpetration; however, it was not predictive of higher reports of victimization. Given the dearth of research on factors associated with victimization and the repeated finding that risk factors for perpetration and victimization are similar (Fite et al., 2008; Gray & Foshee, 1997; Kessler, Molnar,

Feurer, & Appelbaum., 2001; Straus, 2008; Whitaker, Haileyesus, Swahn, & Saltzman, 2007), separate hypotheses for perpetration and victimization were not made. Although studies have found that avoidant attachment is associated with an increased risk for dating violence (e.g., Doumas et al., 2008), the majority of studies evaluating attachment style and dating violence do not find this link (Mikulincer & Shaver, 2007). Mikulincer and Shaver (2007) postulated that if distinctions were made between fearful and dismissing forms of avoidance, that individuals who are fearful (i.e., a combination of anxious and avoidant attachment) would be more at risk for dating violence than dismissing individuals (i.e., low anxious-high avoidant) because they would be more prone to withdraw. In this study, anxious and avoidant attachment were significantly correlated for both men and women (Table 5); however, anxious attachment was controlled for in the avoidant models, thereby indicating that avoidant attachment was predictive of perpetration above and beyond the contributions from attachment anxiety.

In terms of hypothesized partner effects, having a partner who reports higher levels of avoidant attachment was not predictive of perpetration or victimization. As previously described, lack of corresponding partner effects could be due to low interpartner agreement, over- or under-reporting, or lack of statistical power necessary to detect partner effects. In this case, an interesting sex by partner interaction emerged such that men and women were equally likely to report higher levels of victimization if their partners reported higher levels of avoidant attachment, but men and women were not equally likely to report lower levels of victimization if their partners' reported lower levels of avoidant attachment. Here, men who had partners with lower levels of avoidant attachment (i.e., more secure partners) were significantly more likely to report

victimization than women. However, like the previous interactions, the significance of this effect may be an artifact of relatively more women compared to men who reported low scores on avoidant attachment. Recall that of the individuals who reported lower levels of avoidant attachment (- 1.5 *SD*s), there were 4 men and 17 women. Thus, just as previously described, it is simply more probable for a man to be partnered with a low avoidant partner than it is for a woman to be partner with a low avoidant partner and because the outcome variable is zero-inflated, only a small number of reports of victimization could drive this interaction.

To summarize, it appears that higher levels of anxious attachment are more predictive of dating violence perpetration for women than they are for men. Indeed, comparative analyses between the 43 "violent" couples and 115 "nonviolent" couples (Table 4) did reveal that women in violent relationships were more likely to be anxiously attached than women in nonviolent relationships. This pattern was not found when comparing men in violent relationships to men in nonviolent relationships. Thus, anxious attachment may be a predictor for women, but not men. It could be that women's engagement in dating violence is more likely to stem from attachment-related threats than men's is. Anxiously attached women may be more likely than anxiously attached men to engage in violence when they perceive a threat to their relationship, be it in the form of self-defense or as an exaggerated protest behaviour to keep their partner close (Bartholomew & Allison, 2006). There may be other mediating or moderating variables, like temperament, need for control, attitude toward dating violence, or gender role beliefs that are more implicated in the prediction of men's role in dating violence. Said

differently, the population of men who experience dating violence in their relationships may be more heterogeneous than the population of women.

In terms of avoidant attachment, higher levels of avoidant attachment were predictive of dating violence perpetration for both men and women, but were less implicated in the prediction of victimization. Avoidant attachment remained predictive of perpetration when anxious attachment was controlled for, indicating that this relation is not driven by underlying high levels of anxious attachment. Thus, individuals with higher levels of avoidant attachment may be using physical violence to gain distance from their partner. In this regard, it may be considered successful (albeit dysfunctional) as the lack of association between higher levels of avoidant attachment and victimization suggests that these individuals are able to withdraw and achieve physical space they desire. Of course, due to sex differences in the distribution of these variables, these results should be interpreted with caution. In order to draw these conclusions, more information is needed about the context of the violent interactions (e.g., who initiated, motivating factors).

Emotion regulation and dating violence. The third hypothesis was that higher levels of difficulties in emotion regulation would predict higher levels of perpetration and victimization for individuals and their partners. Hypothesized actor effects were supported, such that one's own report of emotion regulation difficulties predicted one's own report of perpetration and victimization. Furthermore, a significant sex by partner interaction emerged when predicting dating violence from one's partner's emotion regulation difficulties. Women were more likely than men to report dating violence perpetration and victimization if their partner reported high levels of emotion regulation

difficulties. In contrast, men were more likely than women to report dating violence perpetration and victimization if their partner reported low levels of emotion regulation difficulties.

The significance of this interaction does not suffer the same limitations as prior interactions in this study. Recall that women were significantly more likely than men to report emotion regulation difficulties (Table 3); thus there are more men than women with partners who have emotion regulation difficulties. In terms of sheer probability, one would expect violence to be more likely to emerge in the group of men with emotionally dysregulated partners, when in fact the opposite pattern is true.

One way to interpret this finding is that men with difficulty regulating their emotions may pose an attachment-related threat to their female partners. Thus, women are more likely to experience dating violence perpetration or victimization as part of an attempt to regulate their relationship with their partner. In contrast, female partners who are highly skilled at regulating their emotions (i.e., lower levels of emotion regulation difficulties) may actually be threatening to their male partners. Although initially counter-intuitive, previous research has demonstrated that male-perpetration is associated with a *lack* of perceived power (e.g., Anderson, 1997; Sagrestano, Heavey, & Christensen, 1999). Violence used in reaction to threat of power and control is consistent with the feminist perspective that partner violence stems from patriarchal norms and beliefs that men should show dominance and control (Bartholomew & Allison, 2006).

A recent review of risk factors associated with dating violence (Dardis, Dixon, Edwards, & Turchik, 2014), revealed mixed findings for sex differences in motivating factors; some studies found similar motives for men and women, whereas others found

that women report more emotional and relational motives for violence, and men report more power and control motives. Hamberger and Larsen's (2015) recent review of sex differences in intimate partner violence focused solely on comparative studies conducted in the past decade. They concluded that women were more likely than men to use violence in *response* to violence used against them (i.e., self-defense or retaliation) and that their violence was more reactive. They did not, however, find sex differences in the use of control as a motivation for using violence. They suggest this as an area of future research and highlight the need to distinguish control as a motivation from control as an outcome.

Although I hypothesized that relationships would be more prone to violence when both partners reported emotion regulation difficulties (hypothesis 5, discussed later), it appears that discrepancy in emotion regulation skills may be more problematic, and that these discrepancies may be sex-specific, such that violence is more likely to occur when women are perceived to have stronger emotion regulation capabilities than men. Women with strong emotion regulation abilities may not buffer the risk in their relationship; in fact, their ability to regulate their emotions and remain engaged with their partners during conflict may actually increase their risk of violence.

The mediating effect of emotion regulation on the relation between attachment style and dating violence. An overarching purpose of this study was to evaluate an explanatory mechanism by which attachment style, emotion regulation, and dating violence relate. The hypothesis that emotion regulation mediates the relation between attachment style and one's own report of dating violence (actor-actor mediation), as well as one's partner's report of dating violence (actor-partner mediation)

was not supported. This is surprising given that both anxious and avoidant attachment were predictive of greater emotion regulation difficulties and greater emotion regulation difficulties were predictive of both perpetration and victimization. Nonetheless, useful information can be gleaned from these results.

First, in order to demonstrate that mediation has occurred, the relationship between attachment style and dating violence must be weakened after including emotion regulation difficulties into the model. In this study, higher levels of anxious attachment style were predictive of dating violence for women, but not men. Thus, a mediation model moderated by participants' sex would be needed to more accurately test this hypothesis. Given previously discussed findings, it may be the case that emotion regulation mediates the relationship between anxious attachment and dating violence perpetration for women, but not men.

Another important step of testing this mediation model was demonstrating that the emotion regulation remained a significant predictor after controlling for attachment style. Although this was true when controlling for anxious attachment, emotion regulation did not remain a significant predictor of perpetration or victimization when controlling for avoidant attachment. This suggests that the mechanisms by which anxious and avoidant attachment relate to dating violence may differ. Avoidant individuals who engage in dating violence may do so in a more instrumental and cognizant way, rather than stemming from an emotionally dysregulated attempt to keep a partner close. Here, variables such as perceived power and need for control may serve as mediators or moderators of the relation between avoidant attachment and dating violence.

Finally, the actor-partner mediation hypothesis that one's own emotion regulation difficulties would mediate the relation between one's own attachment style and one's partner's report of dating violence, may differ by sex and by type of attachment style. Taking all of the above results into consideration, it may be the case that women are more likely to report increased perpetration and victimization when their male partners report higher levels of anxious attachment and emotion regulation difficulties (i.e., the actor-partner mediation hypothesis may be supported for men, but not women, and only when evaluating anxious attachment style). This is an area of future research, as APIM moderated-mediation models were beyond the scope of this study. A larger sample size would be necessary to obtain enough statistical power to properly evaluate these relations.

The moderating role of partner's emotion regulation on the relation between one's own emotion regulation and dating violence. As mentioned above, the hypothesis that relationships would be more prone to violence when both partners report emotion regulation difficulties was not supported. In fact, it appears there may be a three-way interaction between participants' sex, emotion regulation difficulties, and dating violence. Partners who have differences in their emotion regulation abilities, rather than partners who have similarly poor emotion regulation abilities, may be most at risk factor for violence. Furthermore, this discrepancy may be moderated by participants' sex, such that women who have lower difficulties in emotion regulation paired with men who have higher difficulties in emotion regulation may be more at risk than the reverse pairing. A recent study that investigated the relation between self-reported negative emotions (e.g., anger, jealousy, rejection, abandonment, betrayal, and embarrassment),

social information processing deficits, and intimate partner violence at the couple-level similarly found that partners who reported discrepant levels of negative emotions experienced in hypothetical situations were at greater risk for intimate partner violence than partners who reported similar levels of negative emotions (Setchell, 2014). Thus, discrepancies in partners' emotional competence might be a particularly important factor to consider when predicting intimate partner violence.

Given the exploratory nature of this hypothesis and the unanticipated sex differences, three-way interaction terms (i.e., sex by actor by partner) were not included in the model. Furthermore, constructing and interpreting three-way interaction terms in the context of negative binomial regressions with an APIM model was beyond the scope of this study.

Strengths of the Current Study

The current study extends previous literature on intimate partner violence by examining the relations among two risk factors, attachment style and emotion regulation, during a developmental period where individuals are most at risk for partner violence (Archer, 2000). Not only were these risk factors examined at the individual-level, but complex dyadic analyses were utilized to understand risk at the couple-level, thereby exploring the arguably more important question – what factors place *relationships* (rather than individuals) at greater risk? Recognizing that dating violence is often bidirectional (Straus, 2011), I expanded a literature that has historically focused on male-perpetration by exploring risk factors for both male and female perpetration and victimization. A more in-depth discussion of these strengths follows.

Although there was evidence to suggest that emotion regulation plays an important role in the relation between attachment style and dating violence, this was the first known study to examine emotion regulation as an explanatory mechanism through which the two variables relate. By evaluating mediation hypotheses with both anxious and avoidant attachment, it became apparent that these two forms of insecure attachment style relate differently to dating violence. Furthermore, emotion regulation is one of the fastest growing areas of research (Koole, 2009), and findings from this study highlight its role as an independent predictor of dating violence, as well as its potential as a sex-specific mediator of the relation between anxious attachment style and dating violence, and sex-specific moderator of the risk of dating violence. Despite lack of support for the proposed mediation models, these findings support and give guidance to a more refined evaluation of the mechanism.

As mentioned, a major contribution of this study was that reports of dating violence, attachment style, and emotion regulation were obtained from both romantic partners. By taking a dyadic approach, this study allowed for examinations of the relation between individuals' characteristics and their own experiences of dating violence, individuals' characteristics and their partners' experiences of dating violence, and the interaction of both partners' characteristics and their reports of dating violence. Furthermore, obtaining data from both partners ensured that their own perception of dating violence could be used in these analyses, rather than relying on the report from only one partner.

Knowing that both men and women perpetrate and are often victims of dating violence, obtaining reports of dating violence from both partners addresses the lack of

research on female-perpetrated violence and male victimization. The focus of past research was largely on male-perpetration in marital relationships and it has become increasingly clear that dating violence is most often bidirectional within the relationship. Of the 43 couples in this study who reported violence in their relationship, 30% of men reported bidirectional violence and 60% of women reported bidirectional violence. Furthermore, 10% of men and 23% of women reported perpetration, while 13% of men and 18% of women reported victimization. By overcoming past fears of victim blaming or fault finding, these findings offer a richer understanding of factors associated with increased likelihood of violence within romantic relationships. Understanding factors associated with victimization and gaining a closer look at differences in male- versus female-perpetration only serves to strengthen prevention and intervention efforts.

Clinical Implications

These findings contribute to the development of prevention and intervention efforts by highlighting the relations between attachment style, emotion regulation skills, and dating violence. Women with higher levels of anxious attachment style and both men and women with higher levels of avoidant attachment style were found to be more likely to perpetrate violence. Given that attachment style is considered to be a stable trait developed in infancy, this finding emphasizes the importance of early-intervention for at-risk families. Families at-risk for developing poor parent-child relationships could be offered parenting classes aimed at strengthening their bond. Indeed, knowing that insecure attachment is a risk factor for future dating violence can bolster support for existing interventions already aimed at improving the parent-child bond.

In terms of emotion regulation, difficulty in emotion regulation was linked to increased perpetration and victimization for both sexes; however, important sex differences emerged once their partners' skills were also evaluated. Women were more likely than men to perpetrate and receive violence if their partner had high levels of emotion regulation difficulties, but men were more likely than women to perpetrate and receive violence if their partner had well-developed emotion regulation abilities. These findings suggest that both men and women would benefit from intervention aimed at building their capacity to regulate emotions (e.g., Dialectical Behavior Therapy [DBT]; Linehan, 1987) and building healthy relationships. In particular, women may benefit from education around the risk of continuing to engage with a partner who is emotionally dysregulated even when they themselves have well-developed emotion regulation abilities, while men may benefit from education around the continued risk of violence even when their partner has strong emotion regulation abilities. Given that this sample consisted of university students and their partners, school campuses may be an ideal location for workshops, presentations, and posters aimed at building healthy relationships and recognizing the signs of emotional dysregulation.

To date, several prevention and intervention programs have been developed and implemented, with widely varying outcomes (see Cornelius & Resseguie, 2007 for review). In a recent review that examines new avenues for dating violence prevention programs, Shorey and colleagues (Shorey et al., 2012) highlight the potential of a modified DBT protocol that includes emotion regulation skills (among other skills) and education on aggression. Although DBT was originally developed to treat individuals with borderline personality disorder (BPD; Linehan, 1993), many perpetrators of dating

violence have been shown to share traits characteristic of BDP (e.g., emotion dysregulation, intense anger; Gratz et al., 2009; Shorey, Cornelius, et al., 2011; Waltz, 2003).

Furthermore, the recently developed dating violence prevention program, Building A Lasting Love (BALL; Langhinrichsen-Rohling et al., 2005), was found to significantly reduce perpetration of psychological dating violence and the receipt of severe victimization in a sample of at-risk adolescent girls (Langhinrichsen-Rohling & Turner, 2012). This program specifically targeted poor communication skills, emotion regulation difficulties, and lack of skills to cope with high stress levels. Although this program was designed for at-risk adolescent females, it demonstrates the potential of a brief, targeted prevention program that could reasonably be extended to male and female emerging adults.

Limitations and Implications for Future Research

Despite the significant contributions this study makes to our understanding of dating violence perpetration and victimization, there are notable limitations that affect the interpretation and generalizability of the results. A discussion of the most significant limitations and suggestions for future research follows.

One major limitation of this study was the sole reliance on self-report measures of constructs. Using only self-report measures increases the likelihood of overestimating observed associations due to the possibility of shared reporter and method variance. Although observing or eliciting episodes of partner violence poses obvious ethical concerns, researchers could strive to obtain more valid information by conducting participant interviews or asking participants to keep logs of incidents over a period of

time. Furthermore, reliance on the CTS2 as a measure of partner violence limits the ability to interpret sex differences, as it lacks information on the motivations behind violent behaviours (e.g., self-defense, retaliation, control, playfulness), who most often initiated the violence, and the true extent of physical and mental health impacts. Recent reviews (Dardis et al., 2014; Larsen & Hamberger, 2015) have highlighted the gender asymmetry in these aspects of partner violence, and failing to account for these areas may result in partner violence appearing falsely symmetrical.

Although direct observation of dating violence poses many challenges, direct measurement of emotion regulation skills is ethical and would improve accuracy. Indeed, research on a subtype of emotion regulation (i.e., coping) suggests that self-reports of strategy utilization are frequently inaccurate (Ptacek, Smith, Espe, & Rafferty, 1994). By recruiting couples into the laboratory, researchers would have the opportunity to observe both intrapersonal and interpersonal emotion regulation during dyadic interaction. Indeed, a similar construct (namely, displayed affect during interactions) has been observed in laboratory settings and related to relationship outcomes such as satisfaction, separation, and intimate partner violence (Gottman, 1994; Gottman & Levenson, 2000; Shortt, Capaldi, Kim, & Laurent, 2010).

In addition to improving the measurement of constructs, future researchers should strive to obtain larger sample sizes when conducting dyadic research. Although the sample size in this study was sufficient to provide the statistical power needed to detect partner effects, some researchers recommend obtaining much larger sample sizes when using dyadic data (Ackerman et al., 2011). Increased statistical power would allow for more complex analyses (e.g., moderated mediation) and a wider array of variables to be

included in the model. Risk factors such as communication skills, biological temperament, attitudes and beliefs about violence, adherence to stereotypical gender roles, and need for control are consistent with Langhinrichsen-Rohling's (2005/2010) dyadic/reciprocal couple violence model and would greatly deepen our understanding of partner violence.

Furthermore, with a larger sample size, models could include multiple forms of violence (e.g., emotional, sexual) and strive to differentiate different types violent couples. It is important to note that the measure of dating violence used in this study did query multiple forms of violence; however, due to the nature and scope of this study, analyses were conducted using only the physical abuse subscale. With a larger sample size and more resources, comparative analyses between multiple forms of violence would be beneficial.

Alternatively, if future researchers are seeking a less skewed outcome variable, they could focus participant recruitment to couples who are at a heightened risk for dating conflict (e.g., those receiving couples counselling) or remove couples from analyses if they do not report violence. This could afford other types of analyses that may be better suited for evaluating sex differences (e.g., structural equation modelling). In the current study, I did not limit analyses solely to couples who reported violence because variability in the outcome variable was desired in order to properly assess risk factors associated with dating violence. Different research questions may warrant a more specialized sample.

Although use of the APIM is a significant step in the study of couple violence, having both partners complete the same set of questionnaires and evaluating their

responses in the same model may not sufficiently capture partner differences in heterosexual dyads. There may be variables implicated in the prediction of male-perpetration or victimization that are not implicated in the prediction of female-perpetration or victimization. For example, a recent evaluation of Riggs and O'Leary's (1989) well-known model of dating violence found that the model accurately classified 83% of violent women, but only 30% of violent men (Luthra & Gidycz, 2006). These authors concluded that different constructs predict violence for each sex.

Furthermore, although researchers are encouraged to continue using dyadic models when analyzing couple violence, the complexity of the APIM model should not be discounted. There is often a lack of concordance in reports of partner violence (Armstrong et al., 2002) and without objective or more detailed accounts of partner violence, drawing strong conclusions from conflicting reports of perpetration and victimization can be difficult. As in this study, decisions regarding whose report to rely on will need to be made *a priori*.

Unfortunately, this study does not escape the implicit limitations of conducting cross-sectional research with a convenience sample. In terms of sample characteristics, this study collected data from university students and their partners (who may or may not have been similarly educated). Participants were mostly White young adults from middle- to upper-class family backgrounds. The majority of participants had a minimum of a high school education and continued to live with parents or family members. All participants were currently in a heterosexual relationship and only about 10% resided with their dating partner. Thus, it is unclear whether findings from this study can be

generalized to dating couples from more varied ethnic, socio-economic, or educational backgrounds or to same-sex or cohabiting couples.

Furthermore, cross-sectional research is inherently limited by inability to determine causality. This becomes especially problematic when testing mediational hypotheses, given the desire to demonstrate a sequential order or mechanism by which variables relate. Thus, use of concurrent data can result in biased and inaccurate estimates of mediational effects. Although this study conceptualized attachment style and emotion regulation as predictive of dating violence, it is possible that positive or negative experiences within a significant relationship could alter an individual's attachment style or emotion regulation skills. Thus, future research should use random sampling methods and prospective longitudinal study designs when possible.

Finally, it is conceivable that some may suspect the validity of online-research to suffer from additional disadvantages above and beyond those inherent in self-report pencil-and-paper methods (e.g., the lack of the physical presence of the investigator or research assistant may increase the participant's likelihood of being dishonest). However, the advantages to internet-based research are many and include the possibility that individuals may feel more comfortable disclosing vulnerable information online rather than in-person. Indeed, some researchers have found that individuals were more forthcoming when disclosing information online versus over the telephone (Parks, Pardi, & Bradizza, 2006), whereas others have found no significant differences in response patterns across data collection methodology (Hamby, Sugarman, & Boney-McCoy, 2006; Knapp & Kirk, 2003). Steps were taking to evaluate the veracity of reports in this study (e.g., removing data from participants who completed the survey in less than 10 minutes),

and it is believed that these results are as valid, if not more valid, than questionnaires completed in person.

Conclusion

In conclusion, findings from the current study illustrate the importance of taking a couple-level approach when studying risk factors associated with dating violence. This study moves away from a narrow focus on factors that place individuals at risk (particularly males) and towards a larger understanding of what places *couples* at risk. By evaluating variables that are inherently interpersonal and amenable to intervention, this study not only increases our understanding of why some couples resort to violence, but also allows researchers and clinicians to envision fruitful avenues for intervention.

In particular, this study illuminated complex relations between attachment style, emotion regulation skills, and dating violence perpetration and victimization and adds to the growing body of dyadic couple research. Future research can build off these findings to evaluate more complex dyadic models that will afford a better understanding of male and female risk factors or risk pathways.

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APPENDIX A

Demographics Questionnaire

1. Are you male or female?
   - Male
   - Female
   - Other (specify)

2. How old are you (in years)?

3. Are you currently enrolled as a student at the University of Windsor?
   - Yes
   - No

4. Are you currently enrolled as a student at another college or university?
   - Yes (specify)
   - No

5. What is the highest level of education you have completed?
   - Less than High School
   - High School Diploma
   - Vocational / Technical School
   - College Diploma
   - Bachelor's Degree
   - Master's Degree
   - Doctoral Degree
   - Professional Degree (e.g., MD)
   - Other (specify)

6. What is your racial or ethnic identity (check all that apply)?
   - Arab / Middle Eastern
   - Black / African-Canadian / Carribean-Canadian
   - East Asian / Pacific Islander
   - South Asian
   - White / Caucasian / European Canadian
   - Aboriginal / Native Canadian / Inuit / Metis
   - Hispanic / Latino
   - Biracial / Multiethnic (specify)
   - Other (specify)

7. What, if any, is your religious affiliation (check all that apply)?
   - Protestant Christian
   - Roman Catholic
   - Evangelical Christian
   - Jewish

Muslim
Hindu
Buddhist
Atheist
Agnostic
Other (specify)

8. What is your sexual orientation (check all that apply)?
   Heterosexual
   Lesbian/Gay
   Bisexual
   Other (specify)
   Unknown

9. What is your own yearly income?
   Under $20,000
   $20,000 to $39,999
   $40,000 to $59,999
   $60,000 to $79,999
   $80,000 to $99,999
   $100,000 or Greater

10. What is your parents' current marital status?
    Married to each other
    Separated
    Divorced
    Never married to each other and not living together
    Never married to each other and living together
    One or both parents have died

11. What is parent 1's highest level of education?
    Less than high school
    High School Diploma
    Vocational / Technical School
    College Diploma
    Bachelor's Degree
    Master's Degree
    Doctoral Degree
    Professional Degree (e.g., MD)
    Other (specify)
    Don't know

12. In question 18, who is parent 1?
    Mother
    Father
    Grandparent

Other (specify)

13. What is parent 2's highest level of education?
    Less than high school
    High school graduate
    Vocational/technical school
    College
    Bachelor's degree
    Master's degree
    Doctoral degree
    Professional degree (e.g., MD)
    Other (specify)
    Don't know

14. In question 20, who is parent 2?
    Mother
    Father
    Grandparent
    Other (specify)

15. What is your parents' combined income (make your best estimate)?
    Under $20,000
    $20,000 to $39,999
    $40,000 to $59,999
    $60,000 to $79,999
    $80,000 to $99,999
    $100,000 or Greater
    Don't know

16. Who do you currently live with (check all that apply)?
    Nobody
    Dating partner
    Roommate(s) who is not my current dating partner.
    Parent(s) or other Family Member(s)
    Other (specify)

17. Is your current dating partner male or female?
    Male
    Female
    Other (specify)

18. How long have you been in this relationship with your current dating partner?
    _____ Years
    _____ Months

19. How would you classify your relationship with your current dating partner?

Casual Dating
Exclusive Dating
Committed Relationship
Engaged
Married
Other (specify)

20. On average, approximately how many hours per week do you and your partner spend:
    Physically together (i.e., in the same room) _____
    On the telephone _____
    Communicating through text messages _____
    Communicating through the Internet (e.g., Facebook, Skype, etc.) _____

21. Are you involved in a long distance relationship?
    Yes
    No
    If yes, what proportion of your relationship has occurred over long distance?
    [ ] 100%
    [ ] 75%
    [ ] 50%
    [ ] 25%
    [ ] Less than 25%

22. Is sex a part of your relationship with your current dating partner?
    Yes
    No
    Prefer not to say

23. How committed are you to your relationship with your current dating partner?

0	1	2	3	4	5	6	7	8
Not at all Committed								Extremely Committed

24. How satisfied are you with your relationship with your current partner?

0	1	2	3	4	5	6	7	8
Not at all Satisfied								Extremely Satisfied

25. How likely is it that you will end your relationship with your current partner in the next three months?

0	1	2	3	4	5	6	7	8

Not at all Likely	Extremely Likely

26. Where did you access the computer you used to fill out this survey?
    - Home
    - Work
    - Public Access (e.g., school, library)
    - Other _____

Thank you for providing us with some background information.

APPENDIX B

Psychology Participant Pool Description

Study name: Dating Experiences during Emerging Adulthood

Description: For this study, we are looking for individuals between the ages of **18 – 29 years** who are currently in a **heterosexual romantic relationship**. This study will assess how personality and emotions relate to experiences with dating and relationship outcomes. If you volunteer to participate in this study, **you and your romantic partner** will be asked to **separately** complete a series of 5 questionnaires each. The questionnaires will be accessible online and you can complete them from a location of your choosing. Participants will receive 1 bonus point for up to 60 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses. If your romantic partner is not eligible for participant pool points, he or she will receive the opportunity to enter a draw for one of five $50.00 gift certificates (e.g., Future Shop, Cineplex Odeon, Superstore). Remember, because we are hoping to better understand romantic relationships, we are asking that **BOTH you and your partner** complete the questionnaires. Your participation as a couple will help improve our understanding of romantic relationships.

Eligibility requirements: aged 18-29 years, currently in a heterosexual romantic relationship of a minimum of 2 months in length, not legally married, not in a long distance or purely online relationship.

APPENDIX C

Email Response to Interested Participants

Hello *inserted First Name*,
You are receiving this email because either you, or your romantic partner, indicated interest in participating in online couples research being conducted at the University of Windsor. Thank you in advance for your interest in my study, and for contributing to scientific advancements being made at the University of Windsor! My name is Nicole Yarkovsky and I am currently conducting a research study entitled, "Dating Experiences during Emerging Adulthood." This study has been cleared by the Research Ethics Board (REB) at the University of Windsor. To qualify for this study, you and your partner need to have been in a heterosexual romantic relationship for at least 2 months and you both must be between the ages of 18 – 29 years. You must not be legally married and your relationship must not be long distance or exist solely online. If you are eligible to participate, you and your partner will independently complete a series of online questionnaires that inquire about thoughts, feelings, and behaviours related to yourself and your current romantic relationship.

For you to participate in this study, please visit the study website at website *inserted*.

You will be asked to input your research identification number which is listed below.
RESEARCH IDENTIFICATION NUMBER: *inserted*

- Please complete the online questionnaires within the next 7 days.
- Please complete the questionnaires separately from your partner and please do not discuss your responses.
- The total length of time for completion of questionnaires is up to 60 minutes per partner.
- Any information that you provide in connection with this study will remain confidential.
- If you are registered in the psychology participant pool and enrolled in one or more eligible courses, you will receive 1 bonus point for completion of the study. If you are not registered in the psychology participant pool and enrolled in one or more eligible courses, you will receive entry into a draw for one of five $50.00 gift certificates (e.g., Future Shop, Cineplex Odeon, Superstore) for completion of the study.
- **We ask that BOTH members of the couple fill out the questionnaires**
- **You must complete at least 90% of questions asked in order to receive full compensation.**

Please contact me if you have any questions or concerns. Thank you for your time! Your participation will help me with my dissertation and is greatly appreciated!
Nicole

APPENDIX D

Reminder Email for Study Completion

Hello *inserted First Name*,

You are receiving this email because you have not yet completed the online study entitled ***Dating Experiences during Emerging Adulthood***.

This is just a reminder email should you and your partner still be interested in participating in this research project. Below is the information that you will need to participate. Remember for this study, we need information from both members of the romantic relationship in order to best understand couple functioning.

Thanks again for your interest in my project and I appreciate your time.

Nicole

Note. Original Email with study website and research identification number will be forwarded.

APPENDIX E

Letter of Information/Consent Form

CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: **Dating Experiences during Emerging Adulthood**

You are asked to participate in a research study conducted by Nicole Yarkovsky, a graduate student in the Department of Psychology at the University of Windsor. Information gathered from this study will be used as part of her doctoral dissertation. This research will be supervised by Dr. Patti Timmons Fritz, a professor in the Department of Psychology at the University of Windsor. You may wish to print this form for your records.

If you have any questions or concerns about the research, please feel to contact:

Nicole Yarkovsky
E-mail: yarkovs@uwindsor.ca
Phone: 519-253-3000 ext. 4887

Dr. Patti Timmons Fritz
E-mail: pfritz@uwindsor.ca
Phone: 519-253-3000 ext. 3707

PURPOSE OF THE STUDY

The purpose of this study is to better understand young adults' dating behaviour. More specifically, this study will investigate how men's and women's personalities and emotional responses affect outcomes in their dating relationships.

PROCEDURES

If you volunteer to participate in this study, we would ask that you and your dating partner separately complete a series of online questionnaires. You both will be provided with a unique research identification number and may access the study's website from a location of your choosing. The study procedures should take up to 60 minutes to complete. Once you have completed the survey or exited the survey, you will be provided with a research summary and a list of local resources.

POTENTIAL RISKS AND DISCOMFORTS

There are some potential risks or discomforts that may come from your participation in this study that are important to note. Due to the sensitive and personal nature of this study, you may experience negative thoughts or emotions (e.g., anxiety, sadness, embarrassment, anger) related to some of your past or current experiences in dating relationships. In addition, you may want to know how your partner responded to the study questionnaires and in turn, your partner may want to know how you responded to the study questionnaires. We encourage you and your partner to keep your responses private; however, you ultimately choose whether or not you will share your responses with your partner. Please keep in mind that discussing your responses could lead to disagreement and/or conflict in your relationship. Should you experience any form of distress following your participation in this study, please either contact someone from the community resource list that you can access at the bottom of this form and at the end of the study, or contact Nicole Yarkovsky, yarkovs@uwindsor.ca, 519-253-3000 ext. 4887 or Dr. Patti Fritz, pfritz@uwindsor.ca, 519-253-3000 ext. 3707.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Although the potential benefits of participating in this study vary from person to person, research has found that some individuals report feeling closer to their romantic partners after participating in couple research. By participating in this study, you will help increase our knowledge about how young adults' personality and emotions affect experiences that may occur in their dating relationships. This research may ultimately inform treatment programs aimed at improving relationship quality and satisfaction among young dating couples.

PAYMENT FOR PARTICIPATION

You will receive 1 bonus point up to 60 minutes of participation toward the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses. If your partner asked you to participate in this study and you are not signed up for the participant pool and/or do not attend the University of Windsor, you will receive the opportunity to enter a draw for one of five $50.00 gift certificates (e.g., Future Shop, Cineplex Odeon, Superstore). You must complete at least 90% of questions asked in order to receive full compensation.

CONFIDENTIALITY

Any information that is collected in connection with this study and that can be associated with you will remain private and will not be disclosed. You will not be asked to give any identifying information on the survey and your survey responses will be identified by a code number, not your name. Your answers will not be matched to your identity or location and will be released only as summaries with other participants' responses. Once the surveys have been submitted, your responses will not be attached to your name and your survey responses will be stored in a non-identifiable data file with other participants' responses, separate from your personal information. This data file will be

downloaded onto a password-protected computer on a secure computer accessed only by the researchers in this study.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without penalty. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you or your data from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

It is expected that the results of this study will be available on the University of Windsor Research Ethics Board (REB) website (http://www.uwindsor.ca/reb) by fall of 2015.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the Dating Experiences during Emerging Adulthood as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given the opportunity to print this form. By clicking "I Agree" I am giving consent to participate in this study.

["I Agree" Button] ["I do not wish to participate] button]

["Resource List and Web Safety Instructions" Button]

APPENDIX F

Screening Questions

1. Are you currently in a heterosexual romantic relationship that has lasted at least 2 months?

[ ] Yes
[ ] No

2. Are you married?

[ ] Yes
[ ] No

3. If you are in a romantic relationship, are both you and your partner between the ages of 18 – 29 years?

[ ] Yes
[ ] No

APPENDIX G

Research Summary

Thank you for participating in this study. We are interested in studying factors that are related to experiences with aggression in dating relationships. In particular we are focusing on how people's personality characteristics and ability to regulate their emotions influence their likelihood of experiencing dating violence.

To ensure that your responses to the online study questionnaires remain private, it is recommended that you take a moment to clear your web browser's cache and cookies. Steps to do so differ by web browser (e.g., Firefox, Chrome) and operating system (e.g., Windsor, Mac). The following website provides detailed directions for a variety of browsers and operating systems: https://kb.wisc.edu/page.php?id=12384

Please take a look at the list of resources that is provided to you below. This list contains contact information for various community services in case you wish to contact someone to talk about some of your current or past dating experiences.

Student Counseling Centre, University of Windsor

The Student Counseling Centre (SCC) provides assessment, crisis, and short term counseling. If longer term therapy is indicated, the SCC will provide a referral to the Psychological Services and Research Centre. All services are confidential and offered free to students. The SCC is open Monday to Friday (8:30 – 4:30). The SCC is located in Room 293, CAW Centre.

519-253-3000, ext. 4616 or email at *scc@uwindsor.ca*

Psychological Services and Research Centre, University of Windsor

The Psychological Services and Research Centre offers assistance to University students in immediate distress and to those whose difficulties are of longer standing. They also seek to promote individual growth and personal enrichment.

519-973-7012 or 519-253-3000, ext. 7012

Windsor Essex Community Health Centre - Teen Health Centre
The Teen Health Centre is dedicated to helping Essex County's young people achieve physical and emotional health and well-being through education, counseling, and support.

519-253-8481

Sexual Assault / Domestic Violence & Safekids Care Center

This care center is located in the Windsor Regional Hospital and provides assessment, counseling, and treatment for domestic violence, sexual assault, and child abuse. It is open Monday to Friday (8 – 4), or 24 hours, 7 days a week through emergency services.

519-255-2234

Distress Centre Line Windsor / Essex

The Distress Centre of Windsor-Essex County exists to provide emergency crisis intervention, suicide prevention, emotional support and referrals to community resources by telephone, to people in Windsor and the surrounding area. The Distress Centre of Windsor-Essex County provides an anonymous, confidential telephone services from 12 pm to 12 am, seven days a week.

519-256-5000

Community Crisis Centre of Windsor-Essex County

A partnership of hospital and social agencies committed to providing crisis response services to residents of Windsor and Essex counties. Crisis center is open Monday to Friday (9 – 5) at Hotel-Dieu Grace Hospital – Ouelette Campus Jeanne Mance Building, in Windsor, ON.

24 Hour Crisis Line

24 Hour crisis telephone line provides an anonymous, confidential service from 24 hours, 7 days a week. The 24 Hour Crisis Line serves Windsor and Leamington areas.

519-973-4435

Thank you for your participation!

VITA AUCTORIS

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