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# The Role of Pornography Consumption in Intimate Partner Aggression/Violence in Emerging Adult Couples: A Prospective Longitudinal Study

By

Katherine Jongsma

A Dissertation

Submitted to the Faculty of Graduate Studies

through the Department of Psychology

in Partial Fulfillment of the Requirements for

the Degree of Doctor of Philosophy

at the University of Windsor

Windsor, Ontario, Canada

2019

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The Role of Pornography Consumption in Intimate Partner Aggression/Violence in Emerging Adult Couples: A Prospective Longitudinal Study

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## ABSTRACT

The current study examined pornography consumption, intimate partner aggression/violence (IPAV), and other relevant variables in emerging adult heterosexual couple dyads on two separate occasions over a span of four months. This study had four main objectives: (a) to examine the association between frequency of pornography consumption and IPAV (physical, sexual, and psychological) at the couple-level, (b) to test the moderating effects of coercive control and a composite of several behavioural and experiential risk factors for aggression (e.g., violence in the family of origin, delinquency, history of aggression) on the relation between frequency of pornography use and IPAV, (d) to assess the mediating effects of benevolent and hostile sexism on the relation between frequency of pornography consumption and IPAV, and (d) to evaluate if frequency of pornography consumption predicts IPAV four months later while controlling for baseline levels of IPAV. Participants completed online measures of pornography consumption, IPAV, and other relevant factors at baseline (254 couples; $N = 508$) and a 4-month follow-up (132 couples; $N = 264$). Using the actor-partner interdependence model (APIM; Kenny, Kashy, & Cook, 2006), results from the analyses at baseline indicated that men's and women's frequency of pornography use did not significantly predict their rate of IPAV perpetration or victimization, but bivariate analyses showed a positive relation between frequency of pornography use and IPAV perpetration among both men and women. The moderations with coercive control and composite risk of aggression were statistically significant, but contrary to expectations, frequent pornography use

predicted higher levels of IPAV for those with low levels of coercive control and composite risk of aggression. Women who were very controlling of their partners or were at high risk of aggression had a lower risk of IPAV if they heavily consumed pornography. Men who frequently used pornography had an elevated risk of experiencing IPAV if their female partners had a high risk of aggression but had a lower risk of IPAV victimization when their female partners were quite controlling of them. The proposed mediations with benevolent and hostile sexism were not supported. Results from the longitudinal APIM across baseline and the 4-month follow-up showed that men who frequently consumed pornography at baseline had higher rates of IPAV perpetration and victimization at the 4-month follow-up when their initial levels of IPAV were controlled for as did their female partners, but women's pornography consumption at baseline did not predict changes in IPAV. Future research should aim to evaluate how frequency of pornography consumption predicts different types of IPAV (e.g., physical, sexual, psychological) and evaluate separate models for men and women as it seems that there may be sex-specific pathways for the risk factors for IPAV examined in this study. Overall, findings from this study indicated that frequent pornography consumption in men predicts couples' rates of IPAV increasing over time, but the association between pornography consumption and IPAV is nuanced, and it seems that pornography consumption can serve as a risk factor or a mitigating factor for IPAV depending on the context of what other risk factors for IPAV are present.

*Keywords: pornography, intimate partner violence, intimate partner aggression, coercive control, ambivalent sexism, couple dyads.*

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# CHAPTER 1

## Introduction

Pornography consumption has increased over the past two decades as pornography has become more accessible on the Internet (Buzzell, 2005). Among college students, 86.1% of men and 31.0% of women reported using pornography (Carroll et al., 2008). Before pornography was widely available, pornography use was largely considered to be deviant by researchers and was associated with violence in clinical and criminal samples (Simons, Simons, Lei, & Sutton, 2012; Twohig & Crosby, 2010). Given that pornography consumption is now quite common, research is needed on the effects of pornography use within nonclinical samples.

Little research has examined the effects of pornography consumption on committed romantic relationships (Simons et al., 2012). Although Maddox, Rhoades, and Markman (2011) found that pornography usage among 1,291 adults from the United States who were in romantic relationships and viewed pornography together was related to improved sexual satisfaction, the majority of researchers have shown pornography use to be related to negative aspects of intimate relationships. For instance, pornography users report lower relationship quality, lower relationship dedication, more negative communication, and lower relational adjustment compared to individuals who have never viewed pornography (Maddox et al., 2011; Manning, 2006). Furthermore, women who consumed higher rates of pornography held more negative self-perceptions than women who consumed less pornography (Daneback, Træen, & Mansson, 2009). Similarly, high pornography usage among men was related to lower relationship commitment, less fidelity, problems with sexual arousal, and increased sexual coercion and violence

(Daneback et al., 2009; Lambert, Negash, Stillman, Olmstead, & Fincham, 2012; Shope, 2004). In addition, intimate partners of heavy pornography users reported negative perceptions of their intimate partner, themselves, and their relationship (Bergner & Bridges, 2002; Schneider, 2000). Thus, pornography usage within intimate relationships has been associated mostly with negative outcomes.

Pornography consumption has also been empirically linked to aggression. In a meta-analysis of experimental studies (Allen, d'Alessio, & Brezgel, 1995), both men ($r$ = 0.11) and women ($r$ = 0.21) were found to have heightened rates of aggression after viewing pornography. A meta-analysis of nonexperimental studies found that higher rates of pornography usage in men were related to greater endorsement of attitudes supporting physical aggression (Hald, Malamuth, & Yuen, 2009). Further, pornography consumption seems to be more strongly predictive of heightened sexual aggression for men with a history of aggressive behaviours (Malamuth, Addison, & Koss, 2000; Vega & Malamuth, 2007). Although pornography consumption has been associated with aggression, there are no known studies to date that examined if pornography consumption is also associated with intimate partner aggression or violence (IPAV).

Pornography seems to be connected with coercive control, which refers to behavioural patterns used to exert and demonstrate power over another person (Stark, 2007) and is a key element in the development and maintenance of IPAV. Mainstream pornography often depicts coercive control (Garlick, 2010), and pornography consumption in men is associated with heightened coercion of women (Malamuth, et al., 2000), suggesting that coercive control may play a role in the link between pornography consumption and violence. Viewing pornography is also associated with a greater degree

of sexist beliefs in both men and women (Garos, Beggan, Kluck, & Easton, 2004; Hald, Malamuth, & Lange, 2013), which has been found to predict rates of IPAV (Allen, Swan, & Raghavan, 2009; Forbes, Adam-Curtis, & White, 2004; Lee, Begun, DePrince, & Chu, 2016). This suggests that sexist beliefs could be a potential mediator between pornography consumption and IPAV.

The current study aimed to gain a nuanced view of the association between pornography consumption and IPAV by examining pornography consumption, IPAV, and other relevant variables (e.g., history of exposure and/or use of aggression, sexist beliefs) in emerging adult heterosexual couple dyads on two separate occasions over a span of four months. The first objective of this study was to examine the association between frequency of pornography consumption and IPAV at Time 1 from a dyadic perspective, in order to determine whether or not frequency of pornography consumption predicts higher rates of IPAV and if romantic partners' frequency of pornography consumption predicts their own rates of IPAV as well as that of their partners. Second, this study aimed to test the potential moderating effects of coercive control and composite risk of aggression on the relation between frequency of pornography consumption and IPAV in order to provide a deeper understanding of the type of couples for whom the relation between frequency of pornography consumption and IPAV is strongest. The third objective of the study was to examine ambivalent sexism as a potential mediator, in order to further our understanding of the mechanisms through which pornography consumption may affect IPAV. The fourth and final objective of the study was to evaluate frequency of pornography consumption at Time 1 as a predictor of IPAV at Time 2 while controlling for the level of IPAV at Time 1. The current study

aimed to answer a novel question about whether frequency of pornography consumption predicts rates of IPAV, gain a rich understanding of the contribution of other key variables to this relation, improve methodological limitations of past research (i.e., obtaining dyadic data and investigating understudied topics such as female IPAV perpetration and male IPAV victimization), and, in a broader sense, contribute to the ongoing debate as to whether pornography is beneficial or harmful in romantic relationships.

# CHAPTER 2

## Review of the Literature

This section provides a targeted review of the relevant literature on IPAV and pornography to provide a rationale for the current study, and includes the definitions of key terms, prevalence rates, risk factors, relevant etiological theories, and pertinent research studies. Next, an in-depth description of the premise and grounds for examining the association between pornography consumption and IPAV is discussed. Last, the rationale, purpose, and contributions of the current study are provided with specific hypotheses.

### Intimate Partner Aggression/Violence (IPAV)

**Definition of IPAV.** Several terms have been used to refer to violence that takes place within romantic relationships (Nicolaidis & Paranjape, 2009), including domestic violence/abuse, relationship violence/abuse, spouse abuse and battering, and dating violence. These terms are typically not considered synonymous with one another; rather, they refer to specific aspects of violence within intimate relationships or are labels used in particular research areas (Nicolaidis & Paranjape, 2009). Given that there is little research on the relation between pornography consumption and IPAV, this study focuses broadly on diverse types of aggression, conflict, and violence between intimate partners. I thus use the term intimate partner aggression/violence, which combines the widely accepted terms, “intimate partner aggression” and “intimate partner violence” (English et al., 2009). Although many researchers have used the terms *aggression* and *violence* interchangeably, others (e.g., Archer, 1994) have made the distinction that aggression refers only to the specific aggressive act or behaviour, whereas violence includes the

consequences of the aggressive act (e.g., physical and psychological harm). Another consideration is the type of IPAV assessed in studies. Some researchers have focused on physical violence only, whereas other researchers also have incorporated nonphysical types of conflict (e.g., verbal abuse). Although researchers vary in their conceptualizations of both intimate partner violence and aggression, in this research project, IPAV is defined as harmful physical, sexual, or emotional behaviours committed by a current or former spouse or romantic partner (Breiding, Basile, Smith, Black, & Mahendra, 2015; Dutton & Goodman, 2005; Saltzman, Fanslow, McMahon, & Shelley, 2002). The current conceptualization of IPAV in the research literature is neutral with respect to gender and includes nonphysical types of violence and both married and dating relationships (Dutton, 2011).

**Prevalence of IPAV**. Violence within intimate relationships is a widespread social problem that is considered a significant public health concern worldwide (World Health Organization, 2002). The prevalence rates of IPAV perpetration and victimization vary somewhat between nations but remain relatively high across countries (Chan, Straus, Brownridge, Tiwari, & Leung, 2008). Among university students in 16 countries across Asia, the Middle East, Europe, North and South America, and Australia-New Zealand, the annual prevalence of physical IPAV perpetration ranged from 17% to 45% (Straus, 2004). In a meta-analysis of studies in English-speaking countries measuring lifetime prevalence of IPAV, 28.3% of women and 21.6% of men endorsed physical IPAV perpetration (Desmarais, Reeves, Nicholls, Telford, & Fiebert, 2012a) and 23.1% of women and 19.3% of men reported having experienced physical IPAV victimization (Desmarais, Reeves, Nicholls, Telford, & Fiebert, 2012b). In a study of IPAV prevalence

rates among 10,565 American college students, researchers reported the following proportions of men and women, respectively, that endorsed experiencing different types of IPAV at least once during their time in college: 33.8% and 38.1% endorsed physical IPAV perpetration, 41.9% and 32.4% endorsed physical IPAV victimization, 23.0% and 13.6% endorsed sexual IPAV perpetration, 27.0% and 30.1% endorse sexual IPAV victimization, 86.5% and 86.4% endorsed psychological IPAV perpetration, and 86.5% and 83.0% endorsed psychological IPAV victimization (Fass, Benson, & Leggett, 2008). A population-level study in Canada revealed that 8.6% of women and 7.0% of men reported having experienced physical IPAV victimization by their partner and 1.7% of women and 0.2% of men reported having been victims of sexual IPAV within the last five years (Romans, Forte, Cohen, Mont, & Hyman, 2007). In Canada, 28.6% of female and 37.4% of male adolescents in dating relationships reported physically aggressing toward a romantic partner within the last six months (Connolly et al., 2010). In summary, the current study examined IPAV as it is a widespread social problem that affects a significant proportion of couples within Canada and worldwide.

Some research has found IPAV prevalence rates to differ among individuals from varying socioeconomic status levels (SES), employment statuses, and education levels, though results are mixed. For instance, although Cunradi, Caetano, and Schafer (2002) identified an association between low SES and increased risk of partner violence, Moagi-Gulubane (2010) found no relationship between SES and IPAV prevalence. With regard to education and employment, education is more strongly associated with decreased risk of IPAV than employment status (Cunradi et al., 2002). Due to time and resource constraints, the current study used a university sample, which likely lacks the

heterogeneity in SES, employment status, and level of education found in community samples. Given that IPAV rates vary across these factors, results of the current study may not generalize to populations with differing demographics.

**IPAV victimization**. As the current study examined both IPAV victimization and perpetration, a brief description of each is provided. IPAV victimization describes being the target of physically, sexually, or emotionally harmful behaviours by one's current or previous romantic partner (Saltzman et al., 2002). The subsequent sections describe the relevant risk factors for IPAV victimization followed by the potential outcomes of IPAV victimization.

***Risk factors.*** In both men and women, a wide range of risk factors for IPAV victimization have been identified, including impulsivity, alcohol use, depression, younger age, witnessing parental IPAV, childhood physical abuse, childhood sexual abuse, and parental boundary violations (Halpern, Spriggs, Martin, & Kupper, 2009; Kim, Laurent, Capaldi, & Feingold, 2008; Linder & Collins, 2005; Lipsky, Caetano, Field, & Larkin, 2005; Renner & Slack, 2006; Schafer, Caetano, & Cunradi, 2004). In general, negative childhood experiences increase the likelihood of experiencing IPAV victimization. The risk of IPAV victimization for women increased two-fold with each violent childhood experience (Whitfield, Anda, Dube, & Felitti, 2003). Women are also at increased risk of experiencing physical IPAV victimization if they also perpetrate physical IPAV (Stith, Smith, Penn, & Ward, 2004).

***Potential outcomes of IPAV victimization.*** IPAV victimization is an important topic of study because it is associated with a host of physical and psychological consequences or negative correlates (Lawrence, Orengo-Aguayo, Langer, & Brock,

2012). With respect to physical health correlates, in both women and men, physical IPAV victimization has been associated with injury, poor physical health (e.g., arthritis, chronic pain, cardiovascular problems), and increased risk of developing a chronic disease (Coker et al., 2002; Lawrence et al., 2012). Male and female victims were found to have similar injury rates in cases of mild to moderate physical IPAV, but women had higher rates of injury than men with severe physical IPAV victimization (Lawrence et al., 2012). Psychological IPAV victimization in women has been associated with headaches, stomach ulcers, spastic colon, gastrointestinal symptoms, and sexually transmitted infections (Coker, Smith, Bethea, King, & McKeown, 2000).

Besides negative physical correlates, IPAV victimization also is associated with negative mental health outcomes. For both women and men, physical IPAV victimization is associated with higher risk of depressive symptoms, chronic mental illness, and substance use (Coker et al., 2002). The psychological consequences of IPAV victimization are thought to have a cumulative impact (Follette, Polusny, Bechtle, & Naugle, 1996), and even when IPAV has ceased, the psychological distress continues (Lerner & Kennedy, 2000). The numerous negative outcomes associated with IPAV victimization highlight the importance of better understanding IPAV victimization so that it can be more effectively prevented.

**IPAV perpetration**. IPAV perpetration refers to the use of physically, sexually, or psychologically harmful behaviours against one's current or previous romantic partner (Saltzman et al., 2002). The subsequent sections will describe the relevant risk factors and potential outcomes of IPAV perpetration.

***Risk factors***. As with IPAV victimization, childhood maltreatment also is a risk factor for IPAV perpetration. The risk of IPAV perpetration in men and women increases with childhood maltreatment, including antisocial parental behaviour, witnessing parental IPAV, parental boundary violations, and childhood abuse and neglect (Ehrensaft et al., 2003; Linder & Collins, 2005; Roberts, Gilman, Fitzmaurice, Decker, & Koenen, 2010; White & Widom, 2003). For women in particular, risk factors for physical IPAV perpetration include emotional abuse, forced sex, drug use, traditional gender-role attitudes, problems with anger management, history of physical IPAV perpetration, alcohol use, depression, and career stress (Stith et al., 2004). In one study, low verbal intellect in men was associated with IPAV perpetration (Lussier, Farrington, & Moffitt, 2009). Delinquency (Ehrensaft et al., 2003; Malamuth, Sockloskie, Koss, & Tanaka, 1991; Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Vega & Malamuth, 2007) and history of aggression (O'Leary, Slep, & O'Leary, 2007; Riggs & O'Leary, 1996) also are associated with increased risk of IPAV perpetration among both men and women.

***Potential outcomes of IPAV perpetration.*** IPAV perpetration also has been associated with negative outcomes for the perpetrators themselves. IPAV perpetration is associated with increased risk for depression for both men and women (Anderson, 2002). Male IPAV perpetrators are at increased risk for posttraumatic stress disorder, suicidality, and sexually transmitted infections (Decker et al., 2009; Rhodes et al., 2009). As IPAV perpetration is associated with negative outcomes, the current study examined both IPAV perpetration and victimization, whereas some studies only measure one or the other.

**Gender differences in IPAV.** IPAV was historically conceptualized as violence against women perpetrated by men. Consistent with this conceptualization, a number of

studies have found that women experience higher prevalence rates of IPAV victimization than men (Breiding Black, & Ryan, 2008; Schneider, Burnette, Ilgen, & Timko, 2009; Tjaden & Thoennes, 2000). In the same vein, physical IPAV perpetrated by men (rather than women) is more physically injurious when incidents do not involve knives or guns (Archer, 2000; Felson, 1996). In contrast, other studies find that women perpetrate higher levels of IPAV than men. For example, Schwartz, O'Leary, and Kendziora (1997) found that female adolescents were more likely to perpetrate physical IPAV than male adolescents. Furthermore, Hines and Saudino (2003) found that women reported engaging in higher rates of psychological aggression such as verbal threats than men.

Adding to the mixed findings, many research studies show equal proportions of IPAV perpetration and victimization between men and women. Dutton and Nicholls (2005) reported that over 159 family conflict studies have revealed equivalent rates of physical IPAV perpetration between men and women (e.g., Busch & Rosenberg, 2004; Melton & Belknap, 2003; Straus & Ramirez, 2007). Archer (2000) conducted a meta-analysis of 82 studies and found that comparisons of the unweighted effect sizes showed that men's and women's rates of IPAV perpetration were similar, but weighted effects sizes indicated higher rates of physical IPAV perpetration for women. With respect to the gender debate in the IPAV research literature, Dutton and Nicholls (2005) posit that the gender asymmetry shown in other studies is due to men underreporting IPAV victimization (Brown, 2004) and higher rates of physical injury following perpetration by men than women. However, Hamby (2009) argues that the studies finding gender asymmetry in IPAV cannot simply be discounted as a measurement artifact. Rather, she purports that the explanation that best fits the data is a moderate asymmetry in IPAV

rates between genders, with women perpetrating IPAV less than men. Hamby (2009) posits that moderate asymmetry is consistent with the broader context of research on gender differences in behaviour, personality, relationships, and violence. Hamby (2009) argues that the IPAV research on gender prevalence appears discrepant because most IPAV studies do not measure key contextual factors, such as fear, manipulation, and self-defense. By measuring IPAV apart from important contextual factors, meaningful patterns of IPAV cannot be identified, and instead the IPAV research literature is muddled by variable findings. Consistent with this, the current study takes the perspective that IPAV is determined by a number of interrelated factors, which may differ between men and women, and measuring IPAV without accounting for these key contributing factors might account for the seemingly discrepant findings on gender symmetry in the prevalence of IPAV.

**Role of coercive control.** Most theories of IPAV address the central role of power and control in the development and maintenance of IPAV (Dutton & Goodman, 2005; Leininger & McFarland, 2006). Pence and Dasgupta (2006) go so far as to incorporate control into their definition of IPAV, describing IPAV as a pattern of manipulative control in which perpetrators exert power over their intimate partners to trigger or dissuade responses/behaviours, or to demonstrate dominance using various means including physical violence, threats, isolation, intimidation, abuse of others (i.e., children, pets), and the withdrawal of resources. Although the terms used to describe the concept of control in IPAV vary across the literature, the term “coercive control” is used for the purposes of this study, as it is a widely accepted term within the literature (e.g., Dutton & Goodman, 2005, Tanha, Beck, Figueredo, & Raghavan, 2010). It is defined as

behavioural patterns used to exert and demonstrate power over another person (Stark, 2007). In addition to being important in theories of IPAV, coercive control has been empirically supported in research studies as a key contributor to IPAV (Bates, Graham-Kevan, & Archer, 2014; Beck & Raghavan, 2010; Ellis & Stuckless, 2006; Próspero, 2008; Tanha et al., 2010). The current study measured coercive control in addition to IPAV, given the theoretical and empirical basis for considering coercive control when studying IPAV. This study conceptualized coercive control as a key process and means of IPAV (Dutton & Goodman, 2005; Pence & Paymar, 1993) as well as a factor affecting the presentation and severity of IPAV (Johnson, 1995).

**Relevant theories of IPAV and coercive control.** Although many theories have been proposed to explain processes that create and perpetuate IPAV (Kelly, Gonzalez-Guarda, & Taylor, 2011), no one theory has consistently outperformed the others or gained consensus as being the dominant theory within the field. This is likely a product of IPAV being a complex, dynamic process that is multi-determined. The current study drew upon several relevant theories of IPAV that were helpful in accounting for the mixed research findings on gender differences in IPAV as well as in theorizing the association between pornography consumption and IPAV.

***Feminist theories of IPAV.*** Feminist theorists typically view IPAV as resulting from societal power imbalances that generate and perpetuate violence against women. These power imbalances play out on both a societal level and in the interpersonal relationships between women and men (Connell, 1987). The patriarchal society is argued to instill men with the view that they are more powerful than women, and as a result, men try to exert power over women across contexts and situations (Kurz, 1989). Thus, IPAV

results when men resort to violence to exert power and control over women, which theoretically supports the notion that power and control may play a role in IPAV. The feminist theoretical models of IPAV are supported by research studies demonstrating that male-perpetrated violence against women is associated with men's position of power over women. In one such research study, Kim and Emery (2003) found an association between IPAV and power imbalance. Another study based on interviews with 33 heterosexual male IPAV perpetrators found that the men viewed violence as a way to control their female partners (Anderson & Umberson, 2001). The theoretical link between sexist attitudes and IPAV is further supported by a study that found an association between beliefs in male domination and incidence of male perpetrated IPAV (Xu, Campbell, & Zhu, 2001). This theory is also consistent with findings in the sexual aggression literature, which have shown that misogynistic, hostile beliefs are associated with male perpetration of violence against women (e.g., Malamuth et al., 1991).

One widely cited feminist theory of IPAV is the power and control wheel theory of coercive control (Pence & Paymar, 1993), which was developed in the Duluth Domestic Abuse Intervention Project. This model posits IPAV as a pattern of abusive behaviours that function to control and dominate intimate partners and make partners vulnerable to physical and sexual violence. Control and power are exerted using eight main tactics (Pence & Paymar, 1993): intimidation, emotional abuse, isolation, denying, (control of) children, privilege, economic abuse, and coercion and threats. Recently, the power and control wheel was updated to demonstrate how types of oppression — such as sexism and racism — also contribute to IPAV (Chavis & Hill, 2008). Seven types of interconnected oppression were added to the model, which included sexism,

heterosexism, ageism, racism/ethnocentrism, disability/ableism, classism, and spirituality/religion (Chavis & Hill, 2008). The particular control tactics utilized by the perpetrator depend on the specific oppressive systems that apply to the victim's situation. For instance, the partner of an undocumented immigrant could threaten to report the undocumented immigrant's 'under the table' work to authorities (Glass, Annan, Bhandari, Bloom, & Fishwick, 2011). Pence and Paymar (1993) assert that coercive control can have a heterogeneous presentation that is dependent on the particular vulnerabilities of the victim, which accounts for how coercive control can impact a wide varies of factors — ranging from societal to behavioural level.

However, despite a strong theoretical framework and empirical support, feminist theories of IPAV have been criticized for not accounting for female-perpetrated violence against men and gender symmetry in IPAV prevalence (Archer, 2000). In response, feminist proponents argue that the apparent gender symmetry in IPAV prevalence fails to consider that some of women's violence toward their male partners is in self-defense (Walker, 2000). They argue that by solely studying IPAV from an act-based perspective (which is the most frequent way IPAV is measured), important factors such as the motivation for the violence (e.g., self-defense) can be lost. To address this issue, the current study measured coercive control in addition to acts of IPAV in order to provide valuable information about the potential context and motivations occurring behind the observable aggressive actions of IPAV.

***Family violence theory.*** In contrast to feminist perspectives of IPAV (Kurz, 1989), family violence theory is not gendered. Proponents of the family violence perspective argue that family dynamics account for IPAV (Straus, 2011). The family

violence approach predicts gender symmetry in IPAV prevalence rates and theoretically accounts for research findings that IPAV perpetration rates are symmetric between women and men (Archer, 2000; Dutton & Nicholls, 2005). However, feminist researchers typically find that women are more often victims of IPAV than men (Tjaden & Thoennes, 2000), and this discrepancy has been the focus of much debate (Dutton, 2011).

***Johnson's response to gender symmetry debate.*** In response to these discrepant research findings on gender symmetry in IPAV prevalence rates, Johnson (1995) reviewed the relevant studies and data from both feminist and family violence camps. Johnson found that both sets of researchers came to valid conclusions, with proponents of family violence finding gender symmetry and feminist researchers finding gender asymmetry. Johnson (1995) argued that the differences in IPAV prevalence between theoretical perspectives was due to differences in sampling methods, with family violence researchers typically using randomly sampled community samples, whereas feminist researchers focused primarily on nonrepresentative samples with extremely high levels of violence (e.g., data collected in shelters or emergency rooms). The relationship dynamics differ between samples, with a higher degree of control and violence in shelter and judicial samples compared to community samples. Johnson (1995) concluded that feminist and family violence research studies do not examine the same type of violence, which he argues accounts for the seemingly discrepant research findings on gender symmetry in IPAV. Family violence researchers are more likely to study violence resulting from escalated arguments between romantic partners, whereas feminist researchers examine more severe and patriarchal violence characterized by men controlling their female partners. Further, Johnson (1995) argues that women in these

more violent and controlling relationships (who tend to be studied by feminist researchers in protected settings such as women's shelters), would be unlikely to risk the consequences of completing a family violence IPAV survey while in a relationship with their abusive partners. Thus, such women are likely not represented in community based surveys.

Johnson (1995) also found different courses of violence between the feminist and family violence samples. Consistent with findings from feminist research, Johnson (1995) found that in relationships with highly violent and controlling men, the degree of violence escalates over time. In contrast, in family violence studies using community samples, the violence does not increase; in fact, severe violence decreases over time. In summary, Johnson (1995) posits that the differences in research findings between feminist and family violence researchers are due to sampling different types of violent relationships, with feminists looking at controlling, highly violent relationships and family violence researchers studying couples with situational violence. Johnson's research highlights control as a key factor in IPAV. Importantly, Johnson (1995) theorizes that those high versus low in coercive control have different types and courses of IPAV, which contribute to the conceptualization of coercive control as a potential moderator between pornography consumption and IPAV in the current study.

***Johnson's typology.*** Consistent with his claim that there are different types of violent relationships, Johnson (1995) posits an IPAV relationship typology. Johnson's IPAV typologies place the couple as the unit of analysis rather than individual intimate partners and help account for the variation in IPAV patterns.

*Initial two-category version.* In the earliest version, the typology included two types of IPAV (Johnson, 1995). First, intimate terrorism (formerly patriarchal terrorism) refers to violence that occurs within a pattern of controlling behaviour (Johnson & Leone, 2005). Johnson argues that intimate terrorism is more commonly researched within the feminist IPAV literature than by family violence researchers. The other IPAV subtype, situational couple violence (formerly common couple violence), refers to IPAV that does not occur within a general pattern of control and typically arises out of escalating arguments. Johnson contends that family violence studies using community samples primarily assess couples with situational couple violence rather than intimate terrorism.

Research evidence supporting Johnson's original two-type typology of IPAV (1995) has been mixed. Some studies have found no relationship between coercive control and the degree of violence in IPAV (Bates & Graham-Kevan, 2016; Bates, Graham-Kevan, & Archer, 2014). In contrast, Johnson and Leone (2005) found that victims of intimate terrorism were at higher risk of injury, posttraumatic stress disorder, and absence from work than victims of situational couple violence sample, which provided support for Johnson's theory that violence occurring in the context of a controlling intimate relationship is associated with more deleterious effects than for intimate relationships with less control. Similarly, a study by Rosen, Parmley, Knudson, and Fancher (2002) using a sample of married male U.S. Army soldiers found that the pattern of controlling behaviours of IPAV perpetrators was associated with more severe violence.

*Johnson's four category typology.* Johnson later expanded his IPAV typology to include four types of IPAV (Johnson, 2006). Rather than only categorizing violent

relationships by the degree of control as in his previous typology, this dyadic typology of partner aggression is also based on the degree of violence. Intimate terrorism describes couples for whom one partner is controlling and violent but the other is not. In violent resistance, one partner is violent but not controlling, whereas the other partner is both controlling and violent. In situational couple violence, neither partner is controlling, but at least one of the partners is violent (Johnson, 2006). Lastly, mutual violent control describes couples for whom both partners are violent and controlling.

When Johnson compared results from the four-subtype version between a community and court sample, a higher proportion of the court sample met criteria for IPAV subtypes characterized by a high degree of control compared to the community sample (Johnson, 2006). This supported his position that coercive control of intimate partners is more frequent in forensic IPAV samples compared to community samples of IPAV. The generalizability of Johnson's four-type IPAV typology has received empirical support for psychiatric (Walsh et al., 2010) and adolescent samples (Messinger, Rickert, Catallozzi, & Davidson, 2014; Zweig, Yahner, Dank, & Lachman, 2014). However, Gulliver and Fanslow (2015) completed a latent class analysis on population level data from New Zealand to evaluate the validity of Johnson's four category typology using measures of IPAV and control. Their analysis yielded three classes of negligible, moderate, and severe levels of IPAV, which were not consistent with Johnson's typology. The authors argued against the utility of the categorical classification of IPAV types (Gulliver & Fanslow, 2015).

*Johnson's five category version.* Kelly and Johnson (2008) proposed a five category model of the typology, which included coercive controlling violence, situational

couple violence, violent resistance, mutual violent control, and separation-instigated violence. Separation-instigated violence, the new addition to Johnson's typology, refers to violence that is triggered when a couple separates, but did not occur prior to the relationship separation (Kelly & Johnson, 2008). In an epidemiological study of divorcing couples, only two of the five IPAV categories were consistent with Johnson's five category typology, including coercive control and violent resistance (Beck, O'Hara, & Benjamin, 2013).

In summary, though they have received mixed support, Johnson's typologies of IPAV were seminal in recognizing control as a potential contributor to IPAV. As indicated above, Johnson's (1995) theory of coercive control also contributed to the current study's conceptualization of coercive control as a potential moderator of the association between frequency of pornography consumption and IPAV.

***Dutton and Goodman's (2005) conceptualization of coercive control.*** Dutton and Goodman (2005) developed another influential model of control in IPAV. They describe coercive control as a process in which the IPAV perpetrator makes a demand that is linked with an explicit or implicit threatened negative consequence if the victim does not comply. Prior experience with IPAV serves to increase victims' susceptibility to future IPAV because victims come to believe that the coercive threat is credible. When the victim views the threat as credible, the perpetrator has "set the stage" for vulnerability to coercion by creating the expectancy for coercive outcomes. For instance, a perpetrator could set the stage for a coercive outcome by threatening to kill a pet if the victimized partner visits a friend. IPAV perpetrators can also create or exploit vulnerabilities in their partners (e.g., using the IPAV victim's substance abuse as a means of control). Another

avenue to set the stage for coercive control is to wear down the victim's resistance (e.g., depleting an intimate partner's financial resources or personal determination). Last, by fostering an extreme degree of emotional dependency between intimate partners, perpetrators can exploit the emotional attachment of their partners (Dutton & Goodman, 2005). For example, IPAV perpetrators can physically injure their intimate partners and then care for the resulting injuries.

With respect to how coercive control plays out once the stage is set, a key factor in coercion is surveillance, as surveillance is needed to determine if the demand has been complied with and whether the threat should be enacted. With respect to the short-term reactions of victims to coercive behaviours, Dutton and Goodman (2005) postulate cognitive, emotional, and behavioural categories of responses. Cognitive responses refer to the victim's cognitive evaluation of the coercive threat as signifying a credible risk. Emotional responses encompass fear arousal, which when repeatedly activated can lead to posttraumatic stress disorder (Piotrkowski & Brannen, 2002) and emotional schemas fostering global fear and distress with limited ability to problem-solve (Dutton & Goodman, 2005). The behavioural response to coercive threat involves resistance or compliance with the demand.

Consistent with Dutton and Goodman's (2005) theory of coercive control, in the current study, coercive control is conceptualized as a multidimensional variable, which can play out in various contexts (e.g., appearance, workplace) and involves several elements (e.g., threat, surveillance). In addition, their theory was extremely influential in the development of their theory-driven measure of coercive control (Coercion in Intimate

Partner Relationships; CIPR; Dutton, Goodman, & Schmidt, 2006), which is the measure for coercive control used in the current study.

***Multivariate models of IPAV.*** Multivariate models of IPAV acknowledge that IPAV is likely not caused by one particular construct, but that IPAV is instead determined by a number of interrelated factors. This section will briefly review two important multivariate models of IPAV and discuss how they contribute to the current study's theoretical understanding of IPAV.

*Background-situation model.* Riggs and O'Leary's (1996) background-situation model of IPAV is a theory-driven multivariate model that asserts that IPAV is determined by both background factors, which establish aggressive behavioural patterns, and situational factors, which amplify relationship conflict and situational aggression. The model consists of one situation construct (i.e., relationship conflict) and four background constructs (viz., past IPAV, child abuse perpetrated by parent[s], attitudes supportive of IPAV, and prior aggressive behaviour). The model was evaluated using structural equation modeling (SEM) in a study of 345 university students (Riggs & O'Leary, 1996), and researchers found that attitudes supportive of IPAV, family of origin violence, history of aggression, and relationship conflict were significantly related to rates of IPAV in both men and women, and predicted 60% and 32% of their respective variances in IPAV rates. The background-situation model provides theoretical grounding and empirical support for the current study's perspective that IPAV is caused by an interplay of multiple factors. Importantly, this model provided evidence that violence in the family of origin and history of aggression were significant predictors of IPAV in the context of several other situational and background factors. Given such evidence, I included these

variables in a risk of aggression composite variable and tested the composite variable as a potential moderator in the relation between pornography consumption and IPAV in the current study (Objective 2).

*O'Leary, Slep, and O'Leary's (2007) multivariate model of IPAV*. O'Leary, Slep, and O'Leary (2007) developed another multivariate theory of IPAV, based on risk factors from three ecological levels (i.e., societal, relational, and individual). Potential factors were included in their model based on prior research studies, and grouped into one of the three ecological levels. The multivariate model was evaluated in a representative sample of 453 heterosexual couples from the U.S. Northeast (O'Leary et al., 2007). Although their structural equation models contained numerous (viz., 13-15) variables, a key finding with respect to the current study was that the dominance/jealousy variable, which was a proxy variable for coercive control, was identified as a key predictor of IPAV perpetration in the models for both men and women as represented by strong direct effects. In addition, although not directly related to IPAV, power imbalance between members of the couple was also retained as a variable in both the models for men and women. These findings suggest that even when considering a vast array of demographic and societal, relational, and individual level predictors concurrently, variables related to coercive control rise to the top as key predictors. This provides support for the notion that coercive control contributes to IPAV in both men and women, which was an expectation in this study.

*Theoretical implications of multivariate models of IPAV*. Research studies point to a vast array of variables as predictors of IPAV, and the multivariate models of IPAV address these research findings, by proposing direct and indirect pathways for how

different types of factors contribute to IPAV. The multivariate models of IPAV are influential in the current study in theorizing how pornography consumption might relate to IPAV and what other predictors might contribute to this association.

However, both of the multidimensional models of IPAV (O'Leary et al., 2007; Riggs & O'Leary, 1996) reviewed above have several weaknesses. As a result, the current study does not draw solely from either of them. First, there is limited empirical support for the causal mechanisms assessed in the models. Second, both models have been empirically supported in studies with only one time point using SEM; neither model has been tested longitudinally in order to establish that the predictors of IPAV do in fact precede and predict rates of IPAV at a later date. Last, given that neither of the models have directly evaluated whether or not pornography consumption predicts IPAV, it is unclear how to conceptualize the relation between pornography and IPAV within these theoretical frameworks. In the next section, I will introduce a multidimensional model from outside of the IPAV literature, which valuably contributes to this study, as it improves upon the aforementioned limitations of the multidimensional studies of IPAV.

***Hierarchical-mediational confluence model of sexual aggression.*** This study also theoretically draws on the hierarchical-mediational confluence (HMC; Malamuth, 2003) model, which comes from the sexual aggression research literature. This section will describe the HMC model, review the empirical support for the model, and explain why this model is theoretically relevant to the current study.

*Description of the HMC model.* The HMC model posits that a number of behavioural and attitudinal risk factors converge in a hierarchical manner and lead to sexual aggression in men (Malamuth et al., 1991). The model incorporates two largely

independent constellations (impersonal sex and hostile masculinity), which are each made up of pathways of distal variables that impact proximate factors that then lead to sexual aggression. The model uses the term “confluence” to emphasize that the combinations of the factors within each of these constellations is the optimal predictor of sexual aggression, rather than the independent predictive value of each of the factors within the constellations (Malamuth, 2003). The term “hierarchical” in the name of the model refers to how the factors encompassed by the higher order constellations are included at the levels that optimize the variance accounted for by the factors in the constellation and their ability to predict sexual aggression (Malamuth, 2003). Early versions of the HMC model conceptualized coercive control as a central common factor underlying each of the constellations (Malamuth et al., 1991), which was supported by research findings. This provides support for the perspective in the current study that coercive control is a key factor in violence.

The factors in the impersonal sex constellation (previously called the sexual promiscuity pathway; Malamuth et al., 1991) are experiential and behavioural. The hierarchical first step in the impersonal sex constellation is the parental violence/childhood abuse factor. Given that early childhood experiences impact enduring cognitive and behavioural responses (Dodge, Bates, & Pettit, 1990), Malamuth argues that experiencing abuse by and/or witnessing violence between caregivers during childhood can lead to the formation of adversarial cognitive schemas (Huesmann, 1988), which can then result in antisocial tendencies leading to adolescent delinquency. The next factor, delinquency, is hypothesized to lead to sexual “acting out” (Malamuth et al., 1991) due to a focus on sexual conquest as a source of status and personal esteem

(Malamuth, Heavey, & Linz, 1996). This sexual promiscuity and acting out is associated with an impersonal approach to sex (the third factor in the impersonal sex constellation), which interacts with the hostile masculinity constellation, yielding an increased risk for being sexually coercive (Malamuth et al., 1991). Those who engage in impersonal sex are more at risk for being sexually coercive, and in turn, sexually aggressive compared to men whose sexual pleasure is more dependent on the interpersonal connection with and pleasure of their sexual partner (Malamuth et al., 1996). Thus, according to the HMC model of sexual aggression, the following pattern of effects is predicted for the impersonal sex constellation: family of origin aggression is postulated to lead to delinquency which is believed to lead to impersonal sex, and in turn, to sexual aggression. This is consistent with the current study's perspective that behavioural and experiential risk factors for IPAV can have compounding effects in increasing the risk of IPAV.

The hostile masculinity constellation consists of various personality traits and attitudes (Malamuth, 2003). The first factor in this constellation is attitudes accepting of violence against women (Malamuth et al, 1991). Similar to the processes outlined above in relation to cognitive schema, Malamuth et al. (1991, 2003) argue that believing that women and femininity are devalued and that it is acceptable to denigrate, mistreat, and aggress against women can then result in a general disposition of hostility toward women. Thus, holding such attitudes, beliefs, and values is believed to contribute to a general hostile masculinity factor, which then leads to sexual (Malamuth et al., 1991) and nonsexual (i.e., psychological and physical) aggression (Malamuth et al., 2000) toward women through an interaction with the impersonal sex constellation. The HMC's hostile

masculinity constellation supports the current study's notion that sexist and hostile attitudes can lead to IPAV.

*Empirical support for HMC model of sexual aggression.* With an American sample of 2,652 college men who aggressed (sexually and nonsexually) against women, Malamuth and colleagues (1991) developed the model using SEM in the first half of the sample, and found that risk factors for sexual aggression coalesced into two constellations. This model was replicated using the second half of the sample, and both the impersonal sex ($b$ = 0.22; small effect size) and hostile masculinity ($b$ = 0.36; small effect size) pathways were found to increase the risk of sexual aggression. Subsequently, the causal mechanism of the HMC model was empirically supported in a longitudinal study (Malamuth, Linz, Heavey, Barnes, & Arcker, 1995). Malamuth and colleagues (1995) recontacted a sample of men who had attended a Canadian university 10 years prior ($N$ = 423 at Time 1), and asked the men to complete the second portion of the study and also requested their female partners participate if they were in a relationship (176 men and 91 female partners at Time 2). Female partners' data were used to compare to their male partner's data to determine interpartner agreement about the level of male-perpetrated sexual aggression, but data were not analyzed in a dyadic manner. Results indicated that the HMC model predicted sexual aggression at Time 2 when accounting for sexual aggression at Time 1, supporting the casual mechanism as proposed by the hierarchical mediation of sexual aggression. Additionally, the greater the total number of risk variables with high scores the men had at Time 1, the higher the risk of sexual aggression at Time 2. It is noteworthy that several researchers outside of Malamuth's

research group have replicated and extended the model (e.g., Hall, Sue, Narang, & Lilly, 2000; Johnson & Knight, 2000; Wheeler, George, & Dahl, 2002).

*Implications of the HMC model in the current study.* Although the HMC model focuses on sexual aggression in men and has only been extended to nonsexual (psychological and physical) aggression in a limited capacity (Malamuth et al., 1991; Malamuth, et al., 2000), the HMC model has several advantages over current multivariate models of IPAV. First, causal modeling was found to predict later rates of sexual aggression in a longitudinal study (Malamuth et al., 1995), which provides strong support for the model's proposed latent mechanisms. Second, the HMC model posits that an interaction of a constellations of characteristics best predicts sexual aggression, which Malamuth (1991) argues occurs through development of associative cognitive networks that account for the different constellations of risk factors. This interactive and cognitive theoretical perspective may extend to IPAV and be useful in accounting for the role of pornography consumption. Third, the HMC model has a hierarchical theoretical framework of contributing factors, which provides a detailed conceptualization of how factors contribute to one another via step-by-step processes that lead to sexual aggression. The model explains how early experiences (e.g., child abuse) contribute to the development of behaviours and attitudes that lead to sexual aggression. I similarly theorized that both developmental experiences (e.g., child abuse, delinquency, and history of aggression) and characterological factors contribute to the development and priming of associative cognitive networks consisting of controlling and adversarial cognitive schemas and attitudes, which then elicit controlling and aggressive behaviours. Finally, the HMC model already has been examined with pornography consumption (e.g.,

Malamuth et al., 2000), which will be reviewed in more detail in a subsequent section. Importantly, the HMC model provides a theoretical and empirically-supported account for how pornography consumption may predict aggressive behaviours.

However, the HMC model of sexual aggression cannot simply be generalized to the current study, as it has limited purview. First, IPAV and sexual aggression are not equivalent constructs as IPAV could relate to any physical, psychological, or sexual aggression toward a romantic partner, whereas sexual aggression may or may not be perpetrated toward an intimate partner. Second, the HMC model was developed from and tested with samples of men. There are several risk factors from the HMC model that are unlikely to apply to women (e.g., hostile masculinity). Therefore, the current study draws theoretically on the HMC model in developing a theoretical approach to the relation between pornography consumption and aggression (e.g., that exposure to factors supportive of violence, devaluing others, and/or misogyny may lead to the development of values, beliefs, and attitudes supportive of aggression and subsequently to aggressive behaviour) that applies to women and men in heterosexual intimate relationships.
Over and above the theoretical influence the HMC model had on the current study, Malamuth et al.'s (1995) longitudinal study was able to demonstrate robust support for the HMC model's proposed mechanism and this study significantly influenced the decision to use a longitudinal design in the current study in order to provide strong evidence for whether or not frequency of pornography consumption predicts changes in IPAV over time.

## Pornography

**Definitions of pornography.** The term "pornography" has been used to describe generally sexually explicit material, sexually explicit material used primarily by the viewer for sexual arousal, and sexually explicit material that is objectifying of or degrading to women and/or children (Hald, 2006; Lindgren, 1993; Paolucci, Genuis, & Violato, 1997). However, researchers vary widely in their conceptualizations of pornography. This study operationalizes pornography as sexually explicit material that depicts or describes individuals engaged in sexual or erotic activities (i.e., foreplay, sexual intercourse) and is primarily intended as a means of sexual arousal (Sneed, 2006). Pornography consumption is defined as the viewing/use of pornography.

**Brief history of pornography and sexually explicit material.** Pornography has been created and consumed by many societies throughout human history, with the earliest sexually explicit material possibly dating back to Paleolithic era cave drawings (White et al., 2012). Early confirmed examples of pornography were found in ancient Greek and Roman cultures (Johns, 1982). With the rise of Judeo-Christian religions, society came to view pornography as immoral (Talvacchia, 1999). Yet, even in the Victorian era that idealized virtue and chastity, sexually explicit works remained popular (Heins, 2006). Pornography viewing in North America increased in the 1960s when pornographic materials were more accessible to the public and further increased in the 1970s when adult theaters (showing pornography films) became more abundant (Kleinhans, 2006). In the 1980s, viewing of video pornography increased with the transition of video pornography being watched in theatres to in the home (Kleinhans, 2006). With the advent of the Internet and proliferation of Internet usage, the availability and usage of

pornography exploded (Cronin & Davenport, 2001). The Internet provides pseudo-anonymity and pornography catering to seemingly every sexual preference (Cronin & Davenport, 2001; Döring, 2009). Currently, the global profits of the pornography industry are estimated at $97 billion a year (Wosick, 2014).

Today, the creation and consumption of pornography is common and carries less stigma than in years past (Carroll et al., 2008), but researchers and clinicians continue to debate about how to conceptualize pornography use, particularly heavy pornography consumption that has negative consequences to the user's life (i.e., problematic pornography use). Some conceptualize this as an addiction to pornography, and draw on research findings that men with problematic pornography use had activation of the ventral striatum for cues predicting erotic pictures as is seen in substance use (Gola et al., 2016) and those with problematic pornography use had higher levels of experiential avoidance and sexual compulsivity (Wetterneck, Burgess, Short, Smith, & Cervantes, 2012), consistent with the notion that people turn to addictions for both positive reinforcement (i.e., sexual gratification) and negative reinforcement (i.e., to avoid negative emotions or thoughts). Others argue that conceptualizing heavy pornography use as an addiction lacks enough research evidence and serves to maintain moralist fears about the impacts of pornography use (Clarkson & Kopaczewski, 2013). Expanding the term "addiction" from biological dependency on a substance is still quite contentious and the subject of ongoing debate (Bancroft & Vukadinovic, 2004).

**Prevalence and frequency of pornography consumption.** Previously, pornography viewing was considered to be deviant behaviour, and researchers tended to associate pornography use with violence in clinical and criminal samples (Simons et al.,

2012; Twohig & Crosby, 2010). However, in the past few decades, pornography consumption has become more common and accepted in North American society. Yet, there are surprisingly few research studies on the prevalence of pornography consumption in community samples despite claims that pornography consumption in on the rise. An estimated 20 million individuals in Canada and the United States visit adult pornography websites per year (Thornburg & Lin, 2002). According to the Pornhub pornography website (Pornhub, 2018), Canada was the country with the fifth highest traffic to the site in 2017, with Canadians spending an average of 10 minutes and 10 seconds on the site per visit.

***Age of consumer.*** Older adolescents consume more pornography than younger adolescents (Wolak, Mitchell, & Finkelhor, 2007), whereas younger adults view more pornography than older adults (Traeen, Nilsen, & Stigum, 2006). Researchers of a study of 1,445 adolescents (12-17 years old with a mean age of 14.49 years) and 833 adults (over 17 years with a mean age of 47.89 years) in the Netherlands compared the prevalence of pornography consumption between adolescents and adults (Peter & Valkenburg, 2011). The frequency of pornography usage did not significantly differ between adolescents and adults. Specifically, 29% of male adolescents, 10% of female adolescents, 37% of male adults, and 12% of female adults endorsed having consumed pornographic videos at some point in their lives (Peter & Valkenburg, 2011). In terms of the frequency of pornography consumption, 10% of both male and female adolescents consumed video pornography less than once per month, 4% used video pornography one to three times per month, and 6% used it once a week or more. Of the adult men and women, 10% consumed video pornography less than once a month, 6% used video

pornography one to three times per month, and 8% used it once a week or more (Peter & Valkenburg, 2011). Given that pornography use is more frequent in emerging adults than younger adolescents or older adults, the current study used a sample of emerging adults.

***Gender of consumer.*** There is gender asymmetry in pornography consumption, with men using pornography more frequently than women. In 2009, Canadian sociologist Simon Lajeunesse received media attention when he attempted to research men in their 20s who had not previously consumed pornography, but he could not find any such men, which was argued to be a testament to the wide prevalence of pornography consumption among young adults (Dunn, Seaburne-May, & Gatter, 2012). Among American college students, 86.1% of men and 31.0% of women reported using pornography within the preceding 12 months (Carroll et al., 2008), with 16.8% of men and 2.7% of women watching pornography once a month or less, 21.0% of men and 7.1% of women viewing pornography two to three days a month, 27.1% of men and 2.2% of women using pornography one or two days a week, 16.1% of men and 0.8% of women using pornography three to five days a week, and 5.2% of men and 0.2% of women watching pornography every day or almost every day. Based on these research findings, men were expected to consume pornography more frequently than women in the current study.

**Pornography content.** The types of sexual acts and the themes depicted in pornography varies widely. Modern pornography contains the general themes of body ideals, aggression, objectification, and gender disparities that are typically at the expense of women (Bridges, Wosnitzer, Scharrer, Sun, & Liberman, 2010). The relevant themes for the current study are discussed in more detail below.

***Aggression.*** It has been estimated that 1.9% (McKee, 2005) to 26.9% (Barron & Kimmel, 2000) of pornography videos contain physical aggression. A content analysis study on popular pornography videos found high levels of physical and verbal aggression (Bridges et al., 2010), with 88.2% of scenes containing physical aggression and 48.7% containing verbal aggression (e.g., name calling). Researchers reported that perpetrators of aggression were typically men and recipients of aggression were predominantly women, and the targets of aggression typically responded neutrally or positively to the aggression (Bridges et al., 2010). However, extreme violence, such as use of weapons or depictions of rape or murder, is unusual in pornographic videos (Barron & Kimmel, 2000).

***Sexual behaviour.*** The typical gender inequalities in pornography appear to be catering to male viewers and their sexual pleasure (Bridges et al., 2010). For instance, men receive oral sex from women more than they perform oral sex on women (McKee, 2005). Also, most sexual encounters in pornographic videos end with a man's visible ejaculation (Williams, 1999), reinforcing male sexual pleasure and especially male orgasm as the driving force and goal of sexual activities in pornography. Gender inequality is further exhibited in men being depicted as more dominant than women in sexual activities (Barron & Kimmel, 2000). A content analysis on gender equality of popular Internet pornography videos also revealed that during sexual activities, women were depicted as more submissive and men as more dominant. In addition, women are instrumentally objectified more than men, but men are dehumanized more than women (Klaassen & Peter, 2015). Nonconsensual sex is uncommon in pornography (Klaassen & Peter, 2015). Gender inequality elevating men at the expense of women was more

common in amateur pornography than professional pornography. A particularly common and arguably degrading practice in mainstream pornographic videos is showing the male ejaculating on a woman's body (i.e., face or back), occurring in about 85% of pornographic scenes (Monk-Turner & Purcell, 1999). Theorists argue this practice embodies the misogyny, degradation, and objectification of women in pornography (Wright, Sun, Steffen, & Tokunaga, 2015).

***Popular pornography genres.*** The Pornhub pornography website reports that in 2017 the most popular pornography search terms on their website were, from most to least common: lesbian, hentai, MILF, step-mom, step-sister, mom, teen, Japanese, massage, anal, ebony, and cartoon (Pornhub, 2018). The use of the search term "porn for women" increased over 1,400% from 2016 to 2017. Research studies reveal that compared to women, men consume a wider range of pornography, are more sexually aroused by pornography, and prefer pornography depicting little emotional attachment and relationship context (Chivers, Seto, Lalumiere, Laan, & Grimbos, 2010; Hald & Malamuth, 2008).

**Predictors of pornography consumption.** Several variables were found to predict pornography consumption. A study of Greek adolescents found that predictors of pornography consumption included conduct problems, male gender, use of chat rooms, and Internet use for sex education (Tsitsika et al., 2009). Higher rates of pornography use are associated with previous experience with group sex and number of sexual partners (Janghorbani & Lam, 2003). Individuals with liberal sexual attitudes, inclinations to be sexually aggressive (Lam & Chan, 2007), childhood exposure to sexually explicit material (Hunter, Figueredo, & Malamuth, 2010), and weak ties to religion (Stack,

Wasserman, & Kern, 2004) are more likely to consume pornography. Although sexual desire is not predictive of pornography consumption for men, women with higher levels of sexual desire are more likely to consume pornography than women with lower sexual desire (Poulsen, Busby, & Galovan, 2013).

**Correlates of pornography consumption.** Despite the widespread nature of pornography consumption, it has been associated with only a few positive correlates but numerous negative ones, which are reviewed below.

***Age of onset.*** A study on the progression of pornography consumption revealed that men and women who started consuming pornography at an earlier age were more likely to consume deviant pornography (e.g., child pornography) than those who started using pornography at a later age (Seigfried-Spellar & Rogers, 2013). Young men first exposed to pornography at a younger age had lower levels of sexual satisfaction and intimacy but higher levels of sexual education than those exposed to it when they were older (Stulhofer, Busko, & Landripet, 2010). Some researchers argue that adolescents are more vulnerable than adults to the potential negative effects of pornography, given that adolescent brains are still developing key neuropathways associated with motivation, inhibition, cognition, and emotional arousal (Owens, Behun, Manning, & Reid, 2012). Consequently, adolescents are biased toward emotionally salient stimuli over inhibitory control given that the limbic system matures earlier than the prefrontal cortex (Casey, Jones, & Somerville, 2011), and pornography may be particularly salient to adolescents as sexual stimuli are thought to be emotionally processed with limbic structures and the amygdala (Ferretti et al., 2005).

***Body image and self-esteem.*** Relatively few studies have explored the association between pornography consumption and self-esteem or body image. In a Dutch sample, male pornography consumption was associated with penis dissatisfaction, whereas female pornography consumption was not related to breast-size dissatisfaction (Cranney, 2015). For Canadian men in college, higher frequency of pornography consumption was associated with lower levels of sexual and genital self-esteem (Morrison, Ellis, Morrison, Bearden, & Harriman, 2006). Pornography consumption thus appears to have a particularly negative association with body- and self-esteem among men.

***Gender-related attitudes and beliefs.*** Some research has also examined the link between pornography consumption and gender-related attitudes and beliefs. Men who consumed more pornography described women's qualities in a more sexualized (e.g., attractive, sexy) and positive manner (e.g., hard-working, smart) and endorsed more traditional gender roles than men who consumed pornography less frequently (Burns, 2001). For both male and female adolescents, pornography exposure was related to less progressive gender-role beliefs (Brown & L'Engle, 2009) and beliefs that women are sex objects (Peter & Valkenburg, 2007). In men, higher rates of pornography consumption, especially violent pornography use, have been found to be related to acceptance of female rape victim blaming and violence against women (Hald et al., 2009; Seto, Maric, & Barbaree, 2001; Vega & Malamuth, 2007). Thus, research has shown quite consistently that pornography consumption is associated with more traditional gender role attitudes and beliefs.

***Aggression and violence.*** Although the topic of whether or not pornography consumption leads to more violent behaviour is contentious, the majority of the relevant

research literature has found a positive relationship between pornography use and aggression. In a meta-analysis of 30 experimental studies (Allen et al., 1995), both men and women were found to have heightened rates of aggression after viewing pornography, and the effect sizes were small and did not significantly differ between men ($r$ = 0.11) and women ($r$ = 0.21). Both nonviolent and violent sexual behaviour in pornography were associated with higher aggression, whereas nudity in pornography (defined as a naked person not engaged in sexual activity) was associated with lower rates of aggression (Allen et al., 1995). A meta-analysis of nine nonexperimental studies found that higher rates of pornography usage in men were related to greater endorsement of attitudes supporting physical aggression ($r$ = 0.13; Hald et al., 2009). In studies by Boeringer (1994), Malamuth and colleagues (2000), and Vega and Malamuth (2007), college men with high rates of pornography consumption, especially violent pornography, also self-reported using more coercive sexual behaviour and sexual aggression. However, other studies have not found a relationship between pornography consumption and sexual offending in nonforensic samples (Blalock, 2008; Schuler, 2014). Thus, much of the research has shown that more frequent pornography consumption is associated with higher rates of aggression among nonforensic samples, but there have been some mixed findings.

When considering high risk nonforensic samples, several studies found that pornography consumption increases the risk of aggression for men already at high risk for perpetrating sexual aggression based on the risk factors included in the HMC model of sexual aggression. For example, Baer, Kohut, and Fisher (2015) found that men high in sexual promiscuity and hostile masculinity (i.e., those at high risk of sexual

aggression) who consumed higher levels of pornography were more likely to report being sexually coercive than those who consumed lower levels of pornography. These same at-risk men consumed more violent pornography than men low in sexual promiscuity and hostile masculinity. Similarly, higher rates of violent pornography consumption in men in college at risk for perpetrating sexual aggression were associated with more support of violence against women (Hald et al., 2009). Another study of college men revealed that pornography consumption was associated with more deviant behaviours and fantasies for those with psychopathic personality traits (Williams, Cooper, Howell, Yuille, & Paulhus, 2009). With respect to sexual offenders who are considered to be particularly at-risk for aggression, Kingston, Fedoroff, Firestone, Curry, and Bradford (2008) found that pornography consumption increased the risk of recidivism for sexual offenders of children. Marshall (1988) similarly found that sexual offenders reported pornography consumption increased their proclivity to offend. When comparing high-risk versus low-risk offenders, higher frequency of pornography consumption was associated with an increased risk of recidivism in high-risk offenders compared with low-risk offenders, and consuming deviant pornography content increased the risk of recidivism for both high and low risk offenders (Langevin & Curnoe, 2004). These findings are consistent with the idea that for those with a high risk for aggression, pornography consumption is positively associated with violence. In summary, research findings support the positive relation between pornography consumption and aggression, and the notion that the degree of violence portrayed in the pornography and the composite risk of aggression based on the HMC model appear to strengthen this relationship.

***Sexual arousal, attitudes, and behaviours.*** Pornography consumption has been associated with various sexual behaviours. Higher levels of pornography consumption have been associated with lower age of first sexual experience, higher rates of premarital sex, more sexual partners, not using contraception, higher rates of sexually transmitted infections, wider ranges of sexual activities, and higher risk for developing sexually deviant tendencies (Braun-Courville & Rojas, 2009; Brown & L'Engle, 2009; Lo & Wei, 2005; Morgan, 2011; Paolucci et al., 1997; Stulhofer et al., 2010; Traeen et al., 2006; Wingood et al., 2001). Consistent with these findings, in a study of 433 adolescents aged 12 to 22 years, adolescents who consumed more pornography reported having engaged in more risky sexual behaviours, such as anal sex, drug use during sex, and sex with multiple partners than adolescents who consumed lower levels of pornography (Braun-Courville & Rojas, 2009). Pornography consumption also has been found to be associated with instrumental attitudes regarding sex and the perceived realism of pornography, which is how realistic consumers think the content depicted is compared to real life (Peter & Valkenburg, 2010). For young men, higher rates of pornography consumption also were associated with their perceptions related to sex, including more positive views of adolescents having sex, premarital sex, and extramarital affairs (Wright, 2013). This study also found an association between the use of pornography and paying for sex and having more sexual partners.

In terms of research on individuals' perceptions of the impact of pornography consumption, a survey of Australians who consumed pornography revealed that 58.8% of respondents thought that pornography consumption positively affected their attitudes on sex, 34.6% thought pornography did not affect their sexual attitudes, and 6.8% felt it had

a negative effect (McKee, 2007). The self-reported positive effects, in descending frequency, included: less sexual repression, more open-minded sexual attitudes, increased tolerance of others' sexualities, greater sexual pleasure, and improved sexual education (McKee, 2007). Commonly reported negative effects of pornography consumption included increased objectification of others, unrealistic sexual expectations, loss of interest in sex, and addiction to pornography. Thus, taken together, research suggests that pornography use is related to attitudes about sex, sexual arousal, and sexual behaviours.

***Nonromantic social relationships.*** Some research also has examined the potential impact of pornography consumption on consumers' nonromantic social relationships. Adolescents who consumed more pornography had lower levels of social bonding (Mesch, 2009) and social adjustment (Tsitsika et al., 2009) than adolescents who consumed less pornography. A study of male and female adolescents in Hong Kong found that high rates of pornography consumption were associated with lower quality family functioning and less adaptive youth development (Ma & Shek, 2013). Thus, among the limited research conducted on this topic, pornography consumption has been found to be related to negative outcomes in consumers' social relationships.

***Intimate relationships.*** Given that the current study examines the role of pornography use on IPAV, a brief review of the existing research literature on the potential impacts of viewing pornography on intimate relationships is provided. Across several studies using self-report, observational, and experimental manipulation of pornography consumption in young adults in romantic relationships, pornography use was associated with weakened relationship commitment, higher levels of flirtation with nonpartners, and higher rates of infidelity for young adult couples in intimate

relationships (Lambert et al., 2012). Among married men, those who consumed more pornography were more likely to endorse having engaged in extramarital sex (Wright, 2013).

According to ratings from both intimate partners, mixed findings have been found. Higher rates of pornography consumption have been associated with a fair number of negative aspects in relationships, including unrealistic sexual expectations, relationship conflict, and decreasing interest in sex according to self-reports (McKee, 2007). For men, high levels of pornography consumption are associated with fewer secure attachment behaviours between intimate partners (Brown, 2011), lower levels of men's personal sexual satisfaction (Brown, 2014), decreased sexual interest for female partners (Schneider, 2000), lower sexual quality for men and their female partners, and more negative communication in the intimate relationship (Poulsen et al., 2013). In a qualitative study where women in couples therapy were interviewed about their partner's pornography consumption, Zitzman and Butler (2009) found that husband's pornography consumption and pornography-related deception impacted three key aspects of their relationships with their wives: the development of distanced attachment due to perceived infidelity, a widening attachment rift resulting from the wives' feeling of disconnection from their partners, and attachment estrangement due to the wives' experience of feeling insecure and "emotionally and psychologically unsafe" within the relationship. Few studies have examined female pornography consumption in intimate relationships, and given the findings of one study that found that high female pornography consumption was related to lower sexual satisfaction for women (Brown, 2014), it appears that high levels of female pornography use may also be associated with relationship dysfunction.

Furthermore, couples for whom only one partner used pornography had higher rates of male arousal problems and negative self-perception in female partners than for couples for whom the partners both did or did not consume pornography (Daneback et al., 2009). Thus, several studies have demonstrated that pornography has negative correlates in intimate relationships for both the pornography consumer and their partner.

Pornography usage within intimate relationships has also been linked with some positive factors, such as heightened sexual performance and increased positive attitudes regarding sex (McKee, 2007; Rogala & Tyden, 2003). In addition, pornography usage among couples who view pornography together was related to improved sexual satisfaction (Maddox et al., 2011). In another study, couples for whom one or both partners consumed pornography had a more accepting and permissive sexual dynamic in their relationship compared to couples who did not consume pornography (Daneback et al., 2009). In McKee's (2007) survey of 1,023 Australians who consumed pornography, self-reported effects on intimate relationships included the positive effect of sustained sexual interest in long-term intimate relationships. Thus, despite the numerous associations with negative outcomes, pornography consumption in romantic relationships may also have some benefits.

When considering the link between pornography use and coercive control, only one known published study was found. Simmons, Lehmann, and Collier-Tenison, (2008) surveyed 2,135 female residents in IPAV shelters ranging in age from 16 to 68 years (mean age = 31.42 years), and found that male IPAV perpetrators who used the sex industry (including pornography consumption and strip clubs) had more controlling behaviours toward their partners than male IPAV perpetrators who did not. These

findings suggest that coercive control may be a relevant factor in the relation between pornography consumption and IPAV. Interestingly, their study was based on a shelter sample similar to the feminist IPAV studies cited above, which also have linked coercive control to IPAV (Johnson, 1995). Given that Simmons et al.'s (2008) study is the only known published study to date examining the relations among pornography consumption, coercive control, and IPAV, the current study aimed to further investigate these relations.

**Theories of pornography.** Research findings on the usage and effects of pornography use have been conceptualized through several theoretical perspectives. The current study draws upon the cognitive neoassociationistic model (Berkowitz, 1993) as it is an influential and relevant theory of the effect of media violence. The cognitive neoassociationistic model posits that consuming violent or sexual media primes aggression-related cognitive constructs that subsequently become more accessible when interpreting environmental stimuli (Berkowitz, 1993). This in turn may incite aggressive behavioural responses (Kingston, Malamuth, Fedoroff, & Marshall, 2009). Consistent with the cognitive neoassociationistic model, Anderson (1997) found that viewing sexually explicit material activated relevant maladaptive cognitive schemas and beliefs. Men who were high in hostile masculinity were found to have an associative network between their cognitive schemas for power motives and sex, such that activation of power motives schemas activated sexual schemas and vice-versa (Zurbriggen, 2000).

When cognitive constructs are repeatedly activated together, the cognitive associations are strengthened (Kingston et al., 2009). Paul and Linz (2008) found that men and women who were exposed to barely legal pictures (i.e., people over age 18 who are portrayed to be under age 18) recognized sexual words more quickly after being

primed with neutral pictures of girls, compared to participants who were primed with adult pornographic pictures. This finding supports the notion that simultaneous activation of cognitive structures contributes to the development of an associated cognitive network that can impact behavioural responses.

Priming transiently increases the accessibility of a cognitive structure (Berkowitz, 1993), and constructs that are repeatedly primed over time become habitually used in perceptions and behavioural responses (Roskos-Ewoldsen, Roskos-Ewoldsen, & Carpentier, 2002). For example, an individual who holds the implicit belief that women use their sexuality to manipulate men is likely to interpret women's behaviour to be consistent with this implicit theory. Given that even nonviolent pornography often depicts women as being dominated and used by men and as extremely promiscuous (Cowan & Dunn, 1994), pornography consumption could prime and reinforce maladaptive attitudes about women and rape myths for men who already adhere to hostile or power-control attitudes associated with sexuality and women (Zurbriggen, 2000). Therefore, individuals with maladaptive cognitive attitudes of women may be more at risk for the negative behavioural effects of pornography consumption. This concept is consistent with research findings that have shown that for men at risk of aggression, pornography consumption was indeed associated with increased sexual aggression (Vega & Malamuth, 2007). In support of this view, Malamuth and Brown (1994) found that, when presented with videotaped vignettes, men with maladaptive implicit theories of women were more likely to misinterpret and misread social cues compared to men without such implicit beliefs.

The current study draws upon the cognitive neoassociationistic model in conceptualizing how pornography consumption could increase the likelihood of intimate

partner violence. Similar to the processes outlined in the HMC model, the conceptions of domination, use of women by men, and violence in pornography are theorized to prime and reinforce the cognitive structures associated with violence, sexual aggression, coercive control, and negative attitudes toward women, which then serve to increase violent and coercive behaviours among men and elicit behaviours that increase women's risk of experiencing IPAV victimization.

## IPAV and Pornography Consumption

The existing research literature shows an association between pornography consumption and both aggression and intimate relationship dysfunction. These relations provided the basis for examining the association between pornography and IPAV in the current study.

**Association between pornography use and aggression.** The association between pornography consumption and aggression has been empirically established. In a meta-analysis of experimental studies (Allen et al., 1995), both men and women were found to have heightened rates of aggression after viewing pornography. A meta-analysis of nonexperimental studies found that higher rates of pornography usage in men were related to greater endorsement of attitudes supporting physical aggression (Hald et al., 2009). In addition to being related to aggression, pornography usage also has been related to several types of dysfunction in intimate relationships, including lower relationship quality, lower relationship dedication, more negative communication, and lower relational adjustment (Maddox et al., 2011; Manning, 2006). Based on these findings, it is logical to question whether pornography consumption may impact violence in intimate

relationships. This study aimed to address this question by examining the ability of frequency of pornography consumption to predict IPAV (Objective 1).

**Pornography consumption and the HMC model.** Several studies have found that pornography consumption predicts nonsexual (Malamuth et al., 2000) and sexual aggression (Malamuth et al., 2000; Malamuth, Hald, & Koss, 2012; Vega & Malamuth, 2007) even when controlling for all the other risk factors in the HMC model (e.g., family of origin aggression, delinquency, attitudes supporting violence against women). These findings provide support for the utility in theoretically drawing on the HMC model of sexual aggression in the current study's theoretical approach.

Using a national random sample of 2,972 American university, Malamuth, Addison, and Koss (2000) assessed the association between pornography use and sexual aggression using the HMC model to group participants by risk of sexually aggressing based on the number of high scores on HMC model risk factors (calculated by multiplying the risk scores [1 = lowest 25%, 2 = middle 50%, and 3 = top 25%] for each constellation in the HMC model, yielding low-, medium-, and high-risk composite risk scores). Men with low risk of sexual aggression had a positive but weak association between pornography use and sexual aggression. In contrast, men at high risk for sexual aggression had a strong association between pornography consumption and sexually aggressive behaviours. Importantly, pornography was found to both directly and indirectly contribute to aggression through both sexist cognitive attitudes and sexually promiscuous behaviours (Malamuth et al., 2000), which supports the notion in the current study that sexist cognitive schemas may partially account for the relation between pornography consumption and IPAV. Consistent with the HMC model theoretical

perspective, I expected the relation between pornography consumption and violence may be due to activation of sexist cognitive networks. Thus, I evaluated sexist attitudes as a mediator in the relation between pornography consumption and IPAV (Objective 3).

Malamuth et al. (2000) could not differentiate if pornography use led to aggression or vice versa, and the researchers suspected that there may have been an hierarchical, compounding effect, wherein aggressive men were drawn to pornography, which then reinforced their cognitive networks containing hostile and impersonal attitudes of sex (Malamuth et al., 2000). A previous longitudinal study by Malamuth and colleagues (1995) found that the HMC model at baseline predicted sexual aggression in men at follow-up, which supported the casual mechanism proposed by the hierarchical mediation of sexual aggression, but this version of the HMC model did not address pornography consumption. The current study addressed this issue by examining the direction of the relation through a longitudinal research design to test if frequency of pornography consumption at Time 1 predicted rates of IPAV at Time 2 while controlling for the baseline level of IPAV (Objective 4).

Vega and Malamuth (2007) replicated Malamuth et al.'s (2000) findings that men's pornography use predicted higher rates of sexual aggression at higher numbers of risk factors for aggression. Malamuth, Hald, and Koss (2012) similarly found that the association between pornography use and attitudes supporting violence against women was stronger for men with more risk factors for sexual aggression.

Although Malamuth and colleagues (2000) did not directly test if risk for sexual aggression moderated the relation between pornography use and sexual aggression, their findings were consistent with the current study's prediction that risk factors for violence

have a compounding effect that may moderate the relation between pornography consumption and IPAV, with higher risk of violence expected to strengthen this relation. In particular, I theorized that behavioural and experiential risk factors for IPAV, such as a history of violence in the family of origin, delinquency, and verbal and physical aggression, would increase the extent to which pornography predicted higher levels of IPAV, thus moderating the relation between pornography consumption and IPAV. Therefore, I examined the moderating effect of composite risk of aggression (Objective 2), which I created by combining scores on several behavioural and experiential risk factors for IPAV (i.e., violence in the family of origin, delinquency, and history of aggression).

**Potential contributing variables.** From my review of the pornography and IPAV research literatures, several variables emerged that may contribute to the theorized association between pornography consumption and IPAV. These variables warranted being included in the current study in order to understand the relation between pornography and IPAV in the context of other key risk factors for IPAV and pornography consumption. Several of these potential covariates are highly theoretically relevant and have the empirical backing to warrant testing them as mediators or moderators. In addition, several potential experiential/behavioural risk factors for IPAV (viz., violence in the family of origin, delinquency, and history of aggression) were tested as covariates at Time 1, and those that were found to be significant risk factors were standardized and combined into a composite risk of aggression variable, and this composite aggression variable was examined as a moderator in Objective 2 of the study. The other potentially contributing variables (i.e., percentage of violent pornography consumed and social

desirability) were controlled for individually if found to be significantly related to both predictor and outcome variables for men and women.

***Coercive control.*** With respect to coercive control, data from female IPAV survivors show that abusive partners with higher rates of pornography and strip club use are more controlling (Simmons et al., 2008). In addition, college men who reported consuming higher rates of pornography (especially violent pornography) also self-reported greater use of coercive sexual behaviour and sexual aggression (Boeringer, 1994). Furthermore, men high in sexual promiscuity and hostile masculinity who consumed higher levels of pornography were more likely to report being sexually coercive than those who consumed lower levels of pornography (Baer et al., 2015). Therefore, the research literature suggests that pornography consumption is associated with coercive control. In addition, Simmons et al.'s (2008) research suggests that exposure to pornography that depicts men controlling and coercing women might influence men to be more controlling and violent in their intimate relationships.

Based on these research findings and the previously discussed relevant theories (Dutton & Goodman, 2005; Johnson, 2005; Malamuth, 2003; O'Leary et al., 2007; Pence & Paymar, 1993), intimate relationships with a higher degree of coercive control were theorized to have higher rates of IPAV. Further, I expected that in couples with a controlling relationship dynamic, partners' aggression and control-related cognitive constructs would be sensitized, so that the aggressive and controlling depictions in pornography would be more cognitively salient and behaviourally influential, resulting in higher levels of IPAV with pornography consumption than in couples with lower levels of coercive control. Given this theoretical and empirical basis, I expected that coercive

control would moderate the association between pornography consumption and IPAV (Objective 2). The effect of female coercive control on the relation between pornography consumption and IPAV is unclear based on the lack of relevant research, but given that coercive control predicts IPAV in both men and women (O'Leary et al., 2007), coercive control was examined as a moderator for both men and women.

***Ambivalent sexism.*** In conceptualizing how pornography consumption is associated with IPAV, ambivalent sexism emerges as a key variable. Research findings from studies on multivariate models of IPAV (O'Leary at al., 2007; Riggs & O'Leary, 1996) and sexual aggression (Malamuth et al., 2000) support the notion that sexist cognitive schemas foster aggressive behaviours and may play a role in the association between pornography use and IPAV. Ambivalent sexism (Glick & Fiske, 1997) consists of two different types of sexist beliefs, and both are associated with pornography consumption and IPAV in men and women. Therefore, ambivalent sexism appears to be an appropriate variable for examining how sexist cognitive attitudes might mediate the relation between pornography consumption and IPAV in the current study. This section introduces the concept of ambivalent sexism, then reviews the research findings linking pornography usage and IPAV with ambivalent sexism, and last describes how ambivalent sexism might contribute to the association between pornography use and IPAV.

*Ambivalent sexism theory.* According to Glick and Fiske (1997), sexism fundamentally involves ambivalent feelings towards women and consists of benevolent sexism and hostile sexism. In benevolent sexism, gender roles are more restricted, men's reliance on women is recognized, and men's sexual relationships with women are romanticized. In the case of benevolent sexism, the male sexist feels positive feelings

such as protectiveness and affection for the woman, and may not be aware of the implicit sexism assumptions that he is making (e.g., that he is more competent than her, and therefore the woman would appreciate his unsolicited help). In contrast, hostile sexism involves an emphasis on maintaining traditional gender roles, justifying male power, and men exploiting women through sexual objectification and derogation. Both benevolent and hostile sexism assume that females are the weaker sex, and seek to justify and maintain traditional gender roles as well as a patriarchal society. The two types of sexism are correlated at $r = 0.50$ for nonuniversity women and undergraduate men and women (Glick & Fiske, 1996).

*Benevolent sexism*. Benevolent sexism is associated with holding men who physically abuse their wife to a higher degree of responsibility (Sakalli, 2001). Furthermore, a study using a primarily Hispanic sample of students (92 men and 140 women) found that benevolent sexism mitigated the risk of male IPAV perpetration (Allen, Swan, & Raghavan, 2008). Specifically, men who reported higher benevolent sexism were less likely to perpetuate IPAV. In addition, women who identified more strongly with benevolent sexism reported less IPAV victimization (Harris, Firestone, & Vega, 2005). The authors explained that men may be more likely to treat their female partners with benevolence when the women conform to traditional gender roles and do not challenge the man's power. However, Harris and colleagues (2005) offer the alternative explanation that women with higher benevolent sexism may be less likely to construe aggressive male behaviour as abuse, and therefore report less IPAV victimization. Other studies, however, show nonsignificant relationships between benevolent sexism and aggressive attitudes toward women. For instance, benevolent

sexism was found to be unrelated to attitudes that justify wife abuse (Glick, Sakalli-Ugurlu, Ferreira, & Aguiar de Souza, 2002), verbal aggression (Forbes, Adam-Curtis, & White, 2004), and sexual coercion (Forbes & Adams-Curtis, 2001). In conclusion, research studies on the relation between benevolent sexism and IPAV have been mixed. Nevertheless, there were enough findings in the existing research literature to warrant benevolent sexism being tested as a possible mitigating factor against IPAV in the current study (Objective 3).

*Hostile sexism.* It has been found that men who endorse higher levels of hostile sexism hold more positive attitudes toward violence against their female partners (Forbes, Jobe, White, Bloesch, & Adams-Curtis, 2005), have higher rape proclivity (Masser, Viki, & Power, 2006), and are more likely to have been verbally aggressive and sexually coercive towards their partners (Forbes et al., 2004). In addition, endorsing hostile sexism has been correlated with minimizing the severity of sexual assaults in dating relationships, which may increase the probability of both IPAV perpetration and victimization (Yamawaki, 2007). Similarly, adolescent girls who were more accepting of hostile sexism were more accepting of dating violence, although hostile sexism was not significantly correlated with IPAV exposure (Lee, Begun, DePrince, & Chu, 2016). In contrast, however, Allen and colleagues (2008) found a nonsignificant relationship between hostile sexism and IPAV perpetration in a sample of mostly Latino males. Differences in cultural norms may explain this discrepancy, but were not explored in the study. Based on these findings, hostile sexism was considered as a possible risk factor for IPAV in the current study (Objective 3).

*Ambivalent sexism and pornography consumption.* Research findings on the relationship between ambivalent sexism and pornography consumption are mixed. Garos, Beggan, Kluck, and Easton (2008) proposed that sexism is multidimensional, which leads to inconsistent results and null results for the relationship between sexually explicit material use and attitudes towards women. In their study, a sample of undergraduate students (49 men, 95 women) in the United States were asked to report on their exposure to sexually explicit materials and ambivalent sexism. The results showed that men displayed higher levels of hostile sexism than women, but did not differ from women on benevolent sexism. For both men and women, benevolent sexism was endorsed more highly than hostile sexism. However, consumption of sexually explicit materials was positively correlated with benevolent sexism in men, whereas this relationship was not statistically significant for women. In contrast, sexually explicit material use was unrelated to hostile sexism in both men and women.

Researchers who conducted a study in Denmark found a different pattern of results (Hald et al., 2013) with a sample of 100 men and 100 women aged 18 to 30 years. The amount of pornography consumption was significantly negatively correlated ($r$ = -.21) with hostile sexism for men, but was not related to benevolent sexism or overall ambivalent sexism. In contrast, women's pornography consumption was not related to either their hostile or benevolent sexism. Although studies on the relation between ambivalent sexism and pornography consumption are quite mixed, the results give some limited empirical support for the notion that pornography consumption may play a role in both benevolent and hostile sexism.

*Theoretical importance of ambivalent sexism in the role of pornography use in IPAV.* I theorized that sexist cognitive constructs contribute to the relationship between pornography use and IPAV, and that benevolent and hostile sexism may represent these theorized relevant cognitive constructs. Based on the ambivalent sexism theory (Glick & Fiske, 1996), multivariate models of IPAV (O'Leary at al., 2007; Riggs & O'Leary, 1996), the HMC model of sexual aggression (Malamuth, 2003), and the cognitive neoassociationistic model (Berkowitz, 1993), benevolent and hostile sexist attitudes may contribute to the relation between pornography consumption and IPAV. With respect to benevolent sexism, I expected that for those with benevolent sexist attitudes consuming pornography would prime and reinforce their relevant benevolent sexist beliefs (e.g., women embody sexiness, masculinity is expressed by having sex with women, women need to be protected from other men), which would elicit behaviours motivated by idealizing and protecting women, and in turn result in reduced rates of IPAV. I anticipated that pornography use would also activate relevant hostile sexist beliefs (e.g., women manipulate men with sex, women are only good for sex, women must be punished, when woman say they do not want to have sex they do not mean it, women should be sexually dominated), which would lead to increased rates of IPAV.

***Family of origin violence.*** The current study included the violence in the family of origin as a potential experiential/behavioural risk factor for IPAV, based on prior research findings that family of origin violence predicted higher levels of aggression and IPAV in men (Malamuth et al., 1991; Malamuth et al., 1995; O'Leary et al., 2007; Vega & Malamuth, 2007), women (Riggs & O'Leary, 1996), and adolescents (Ferguson, Miguel, & Hartlet, 2009). In addition, lower quality family of origin experiences were

associated with higher rates of pornography consumption in heterosexual couples (Poulsen et al., 2013).

***Delinquency.*** Delinquency was also considered as a potential experiential/behavioural risk factor for IPAV in this study because it is associated with aggression in male and female adults and adolescents (Ehrensaft et al., 2003; Ferguson, Miguel, & Hartlet, 2009; Malamuth et al., 1991; Malamuth at al., 1995; Vega & Malamuth, 2007; Woodward & Horwood, 2002; Ybarra & Mitchell, 2005). Delinquency is also a component within in the hostile masculinity constellation of the HMC model, which is drawn upon in the current study.

***History of aggression.*** In both men and women, history of aggressive behaviour predicted higher rates of IPAV perpetration (O'Leary et al., 2007; Riggs & O'Leary, 1996). Therefore, history of aggression was included in the current study as a potential experiential/behavioural risk factor for IPAV.

***Violence of pornography consumed.*** Within the research literature on the effects of pornography consumption on sexual aggression, the degree of violence portrayed in the pornography emerges as a potential risk factor in men. As the violence in the pornography increases, the frequency of pornography consumption becomes more positively associated with both violence against women and female rape victim blaming (Hald et al., 2009). Baer and colleagues (2015) found that men at risk for aggression consumed more violent pornography than men at less risk of sexual aggression based on the HMC model's risk factors. This may suggest that a predisposition for aggression may lead to consuming more violent pornography, which is in turn could be associated with IPAV. Given that the degree of violence of the pornography consumed might affect the

relation between pornography consumption and IPAV, it was included in this study as a potential covariate.

***Social desirability***. Individuals participating in research studies have been found to underreport their aggressive behaviours, which is positively related to higher scores on social desirability response measures (Dutton & Hemphill, 1992; Saunders, 1991). Therefore, participants who are apt to respond in a socially desirable manner may be inclined to be underreport pornography use, coercive control, and IPAV. Therefore, a measure of social desirability was included in the current study as a potential covariate.

**Integrated theoretical approach.** As indicated above, the current study draws on several relevant theories, but no one theory thoroughly accounts for the hypothesized relation between frequency of pornography consumption and IPAV. Given this, rather than using a traditional segregated approach of pitting different theories against each other and comparing their abilities to account for the results, I opted to use Kalmar and Sternberg's (1988) integrated approach to theory development called "theory knitting," which posits that researchers should integrate the best aspects of competing theories to best account for the phenomena in question. Theory knitting involves identifying the common and unique features, strengths, and weaknesses of relevant theories and developing a more comprehensive model. The current study draws upon feminist theories, family violence theory, coercive control theory, multivariate models of IPAV, the HMC model of sexual aggression, and the cognitive neoassociationistic model in forming its integrated theoretical approach using the theory knitting approach. Each of these theories and its key strengths and limitations were already discussed above, and will not be repeated here. Instead, I briefly explain how these theories are knit together to

form an integrated theoretical model of how pornography consumption might predict IPAV.

The current study's integrated theoretical model posits that the explanation of IPAV is multifactorial and interactive. Relevant factors can be grouped into dynamic factors within the relationship (e.g., situational violence), individual partners' characteristics, prior experiences, and behaviours (e.g., gender effects, history of delinquency, ability to regulate emotions, pornography consumption), and broader societal and cultural factors (e.g., systemic sexism, cultures with traditional gender roles). In light of previous research and theory, pornography consumption is expected to increase the risk of IPAV by way of underlying latent variables (i.e., sexist cognitive schemas, experiential avoidance) as well as interactions with other moderating factors (i.e., coercive control and premorbid risk of aggression).

Regarding the relevant theories that are knit into this study's integrated theoretical model, the current study draws upon multivariate theories of IPAV (O'Leary et al., 2007; Riggs & O'Leary, 1996) and the HMC model of sexual aggression (Malamuth, 2003) in conceptualizing IPAV as a complex outcome determined by the combination of multiple contributing behavioural and attitudinal factors. Further, both the cognitive neoassociationistic model and the HMC model directly contribute to the cognitively-focused theoretical rationale for why pornography may affect aggression. As indicated above, the cognitive neoassociationistic model posits that because pornography often depicts violence and men controlling women's bodies (Garlick, 2010) viewing pornography primes sexist and aggression-related cognitive constructs, which subsequently become more accessible when interpreting environmental stimuli

(Berkowitz, 1993). The HMC model theorizes that within associative cognitive networks, more distal cognitive schemas hierarchically activate and prime more proximate cognitive constructs, which in turn, increase sexually aggressive behaviours (Malamuth, 2003). Importantly, the HMC model has been studied with pornography consumption (e.g., Malamuth et al., 2000), resulting in an empirically-driven theoretical account for how pornography effects sexual aggression within the framework of the HMC model, which is relevant to the current study. The HMC model conceptualizes pornography consumption as a risk factor for sexual aggression that was found to directly and indirectly contribute to sexual and nonsexual aggression through impersonal sex and hostile sexist attitudes (Malamuth et al., 2000).

Given these models and research findings, the current study's integrated theoretical model similarly posited that consuming pornography would interact with other IPAV experiential/behavioural risk factors (e.g., delinquency) in activating sexist associative cognitive networks (which were similar conceptually to Malamuth's [2003] hostile sexism constellation). For women, I expected that the activation of sexist cognitive networks involves cognitively priming for the expectation of IPAV, which then elicits behaviours that put them at a higher risk of experiencing IPAV victimization. In men, I theorized that the activation of sexist cognitive networks primes aggressive behaviours (leading to higher rates of male-perpetrated IPAV). Based on this integrated theoretical approach and research findings showing that pornography consumption contributes to aggression (e.g., Allen et al., 1995; Malamuth et al., 2000), I expected that pornography use would contribute to IPAV.

Given the theoretical perspective of this study and research findings on ambivalent sexism from the pornography and IPAV literatures, benevolent and hostile sexism emerged as potential variables representing the theorized sexist cognitive constructs accounting for the relation between pornography consumption and IPAV. Generally, studies have found that benevolent and hostile sexism are associated with IPAV and pornography consumption in men, whereas findings are inconsistent for women (Forbes & Adam-Curtis, 2001; Forbes, Adam-Curtis, & White, 2004; Hald et al., 2013). These two different types of sexist cognitive attitudes were theorized to impact IPAV in opposite ways. I anticipated that pornography consumption would activate benevolent sexist beliefs, which would lead to lower levels of IPAV. I theorized that consuming pornography would also prime and reinforce relevant hostile sexist beliefs, leading to increased rates of IPAV. Given this, benevolent and hostile sexism were examined as mediators in the relation between pornography consumption and IPAV (Objective 3).

Based on theories of coercive control (Dutton & Goodman, 2005; Simmons et al., 2008), feminist theories of IPAV (Connell, 1987), Johnson's (1995) theory and research findings, O'Leary et al.'s (2007) multivariate model of IPAV, and the HMC model of sexual aggression (Malamuth et al., 1991), the current study's integrated theoretical model posits that in couples with a controlling relationship dynamic, partners' aggression and control-related cognitive constructs would be sensitized, so the aggressive and controlling depictions in pornography (Garlick, 2010) would be more cognitively salient and behaviourally influential, resulting in higher levels of IPAV than in couples with lower levels of coercive control. Therefore, those high in coercive control were expected

to be more vulnerable to pornography consumption eliciting violence, thus moderating the association between pornography consumption and IPAV (Objective 2). I expected that those with high levels of coercive control would be more likely to engage in the type of IPAV conceptualized by feminist theories (Connell, 1987); that is, the use of violence as a means of exerting power and control over the partner (e.g., intimate terrorist as conceptualized by Johnson & Leone, 2005). In contrast, those with low coercive control would have more situational couple violence, emerging out of arguments and poor emotional regulation rather than a systematic approach to dominate a partner (Johnson & Leone, 2005).

In a similar vein, the integrated theoretical model also predicted that in individuals with several experiential/behavioural risk factors for violence (e.g., child abuse, history of aggression), these risk factors would sensitize individuals, such that the aggressive and controlling depictions in pornography are more easily cognitively activated, and elicit higher levels of IPAV. Assuming these individuals also had fewer positive experiences with healthy relationships, their cognitive networks for healthy relationship dynamics and behaviours would remain less developed compared to those with fewer risk factors for violence. This salience for violent and coercive information would likely set the stage for pornography consumption to have a greater negative influence on future use of IPAV in intimate relationships than for those with fewer risk factors for violence, thus moderating the association between pornography consumption and IPAV (Objective 2).

## Current Study

The current study aimed to gain a more nuanced view of the association between pornography consumption and IPAV by examining frequency of pornography consumption, IPAV, and other relevant variables in emerging adult heterosexual couple dyads on two separate occasions over a span of four months. Given the number and complexity of analyses that were conducted in the current study, IPAV was assessed as a composite of psychological, physical, and sexual aggression similar to Malamuth et al. (2000). One outcome variable measured overall IPAV perpetration and one measured overall IPAV victimization.

The first objective of this study was to examine the association between the frequency of pornography consumption and IPAV at Time 1 from a dyadic perspective, which addressed whether individuals' frequency of pornography consumption predicted their own and their partners' IPAV. As part of this study's second objective, I examined the moderating role of coercive control and composite aggression on the relation between frequency of pornography consumption and IPAV at Time 1, as both coercive control and composite aggression were expected to make pornography more salient and behaviourally influential. The third objective of this study aimed to assess benevolent and hostile sexist attitudes as mediators of the association between pornography consumption and IPAV at Time 1, which addressed whether sexist cognitive construct activation contribute to the relation between frequency of pornography use and IPAV. Under the fourth objective of the current study, I evaluated if frequency of pornography consumption at Time 1 predicted the rates of IPAV four months later (Time 2).

Importantly, this examined the extent to which frequency of pornography consumption preceded and predicted IPAV.

I collected data at two time points separated by a four-month interval. As no known previous research to date had examined pornography consumption and violence over time, a precedent for an appropriate time interval did not exist in the research literature. The four-month interval was partially selected with the intention that four months would be a large enough interval to capture the role of frequency of pornography consumption in predicting later rates of IPAV, while also being short enough for participants to be able to accurately recall their experiences with IPAV and pornography consumption. A four-month window between Time 1 and Time 2 was also selected due to practical reasons. Given that this study recruited participants through the Psychology Participant Pool at the University of Windsor, a four-month interval allowed the majority of the data to be collected over the autumn and winter academic semesters — when most students were be enrolled in courses that were eligible for bonus credits through the Participant Pool.

I collected data individually from both partners in each heterosexual couple dyad using an online questionnaire, which measured demographic information, pornography consumption, coercive control in the relationship, ambivalent sexist attitudes, as well as the other potential risk factors and covariates described above. Both partners in each couple individually completed the online survey at Time 1 and again four months later at Time 2.

**Dyadic nature of couples research.** Given that partners in intimate relationships can reciprocally and interactively impact one another and their relationship, partners' data

are not generally considered independent of one another. To account for the nonindependence of dyad members, I used the actor-partner interdependence model (APIM; Kashy & Kenny, 2000; Kenny et al., 2006) to analyze the data. This model allows for analysis of actors effects (i.e., how respondents' predictor variable scores affect respondents' scores on the dependent variables), partner effects (i.e., the role of respondents' partners' predictor variable scores on respondents' dependent variables), and actor-partner interactive effects (i.e., the interactive role of actor and partner effects on dependent variables). I thus examined the actor, partner, and actor-partner interactive effects of frequency of pornography consumption on IPAV perpetration and victimization. In addition, gender differences in actor and partner effects were tested, given the gender differences in pornography consumption (Hald et al., 2013) and rates of IPAV (Schneider et al., 2009; Tjaden & Thoennes, 2000). To summarize, using dyadic methods to analyze couple-level data allowed for a nuanced examination of the dynamics of frequency of pornography consumption and IPAV among heterosexual intimate partners.

**Hypotheses.** Table 1 presents hypotheses 1-10 for Objectives 1-4.

***Objective 1: Actor and partner effects at Time 1.*** The first objective was to examine the association between frequency of pornography consumption (FPC) and IPAV at Time 1 (T1) at the couple-level. Overall, I expected that high FPC would predict higher levels of IPAV. This general expectation was investigated at both the actor and partner levels.

*Actor effects.* Hypothesis 1A predicted that more frequent pornography consumption in men at T1 would be associated with higher levels of male perpetrated

IPAV at T1. This hypothesis was investigated within the APIM as an actor effect. Hypothesis 1A was consistent with the research findings that pornography consumption is associated with higher rates of aggression in men (e.g., Malamuth et al., 2000). Hypothesis 1B predicted a significant actor effect between women's FPC at T1 and their rates of IPAV victimization at T1. This prediction was based on this study's integrated theoretical approach perspective in conjunction with the research findings that women who consume pornography in intimate relationships have a greater number of total sexual partners (Poulsen et al., 2013), which is associated with increased risk of IPAV victimization (Gover, 2004). Among women, I expected that frequent pornography consumption at T1 would be associated with a greater degree of female IPAV victimization at T1. I expected this finding because women in intimate relationships who more often view pornography might be cognitively primed to expect violence and view themselves as sexual objects to be dominated due to the content of pornography (Peter & Valkenburg, 2007). These activated sexist cognitive networks might then elicit behaviours that increase their risk of experiencing IPAV victimization.

*Partner effects.* Corresponding to hypothesis 1A, hypothesis 2A contended that greater male FPC at T1 would be associated with higher levels of female IPAV victimization at T1. Similarly, hypothesis 2B predicted that frequent female pornography consumption at T1 would be associated with higher rates of male perpetrated IPAV at T1.

*Interaction effects.* Although researchers have yet to investigate the influence of FPC on IPAV at a couple level of analysis, prior research findings suggest that discrepancy in partners' consumption of pornography has been associated with poor outcomes (Maddox et al., 2011; Yucel & Gassanov, 2010). Consistent with these

findings, hypotheses 3A and 3B predicted significant interactive effects between the frequencies of pornography consumption of each partner at T1. I predicted that more frequent pornography consumption in men at T1 but infrequent pornography consumption in women at T1 would be associated with higher levels of male perpetrated IPAV at T1 (hypothesis 3A) and higher levels of female IPAV victimization at T1 (hypothesis 3B). I therefore predicted that discrepant use of pornography within couples—or more specifically, high FPC among men and low FPC among women—would predict higher levels of male IPAV perpetration and female IPAV victimization at T1.

***Objective 2: Moderating effects.***

*Coercive control.* As part of the second objective, at T1 of the study coercive control was tested as a moderator in the relation between FPC and IPAV. Overall, I expected that for those with higher levels of coercive control at T1, the positive relation between FPC and IPAV at T1 would be stronger than for those with low levels of control at T1. Hypothesis 4A addressed an actor-actor moderation for men. Based on prior research on coercion and pornography consumption in men (Boeringer, 1994; Simmons et al., 2008), hypothesis 4A specifically predicted that the positive association between male FPC at T1 and male IPAV perpetration at T1 would be stronger among men with higher rates of coercive control perpetration at T1 than among men with lower rates of coercive control perpetration at T1. The parallel male actor by female partner moderation was addressed in hypothesis 4B, which predicted a stronger positive association between male FPC at T1 and female IPAV victimization at T1 among men with higher rates of coercive control perpetration at T1 than among men with lower rates of coercive control

perpetration at T1. With respect to an actor-actor moderation for women, hypothesis 5A predicted that the positive association between female FPC at T1 and female IPAV victimization at T1 would be stronger among women with higher rates of coercive control victimization at T1. The parallel female actor-male partner moderation was addressed in hypothesis 5B, which predicted a stronger positive association between female FPC at T1 and male IPAV perpetration at T1 among women with higher rates of coercive control victimization at T1 than among women with lower rates of coercive control victimization at T1.

*Composite aggression.* Several studies have found that in men at high risk for violence (calculated as a composite of risk factors from the HMC model), higher levels of male pornography use predicted a much higher rate of sexual aggression than for men at low risk for violence (Malamuth et al., 2000; Malamuth et al., 2012; Vega & Malamuth, 2007). Similarly, I predicted that an aggression composite would moderate the relation between FPC and IPAV for both men and women. The aggression composite was calculated by testing several potential experiential/behavioural risk factors for IPAV (i.e., violence in the family of origin, delinquency, and history of aggression) as covariates at T1, and the significant experiential/behavioural factors were standardized and combined into an aggression composite variable, consistent with the procedure used by other researchers who have evaluated the HMC model (e.g., Malamuth et al., 2000). With respect to the actor-actor moderation for men, hypothesis 6A predicted a stronger positive association between male FPC at T1 and male IPAV perpetration at T1 among men with high risk according to composite aggression scores at T1 compared to men with low composite aggression scores at T1. The parallel male actor-female partner moderation

was addressed in hypothesis 6B, which predicted a stronger positive association between male FPC at T1 and female IPAV victimization at T1 among men with composite aggression scores at T1. For the actor-actor moderation for women, hypothesis 6C predicted that the positive association between female FPC at T1 and female IPAV victimization at T1 would be stronger among women with high versus low composite aggression scores at T1. Last, hypothesis 6D examined the accompanying female actor-male partner moderation, predicting that the positive association between female FPC at T1 and male IPAV perpetration at T1 would be stronger for women with high composite aggression scores at T1 compared to those with low composite aggression.

***Objective 3: Mediating effects of benevolent and hostile sexism.*** The third objective was to test the mediating role of two elements of ambivalent sexism, namely benevolent and hostile sexism, on the relation between FPC and IPAV at T1.

*Benevolent sexism.* As discussed above, based on previous research findings and relevant theories, I predicted that benevolent sexism at T1 would mediate the association between FPC at T1 and IPAV at T1. (See Figure 1 for the proposed mediation model of benevolent sexism at T1). Specifically, I expected that FPC would be related to more benevolent sexism which in turn would predict lower IPAV. Hypothesis 7A predicted that men's FPC at T1 would predict more male benevolent sexism at T1 (Path A, Figure 1), which would in turn predict lower male IPAV perpetration at T1 (Path G, Figure 1) and female IPAV victimization at T1 (Path H, Figure 1). Hypothesis 7B posited that women's FPC at T1 would predict more female benevolent sexism at T1 (Path F, Figure 1), which would in turn predict lower female IPAV victimization at T1 (Path K, Figure 1) and lower male IPAV perpetration at T1 (Path J, Figure 1).

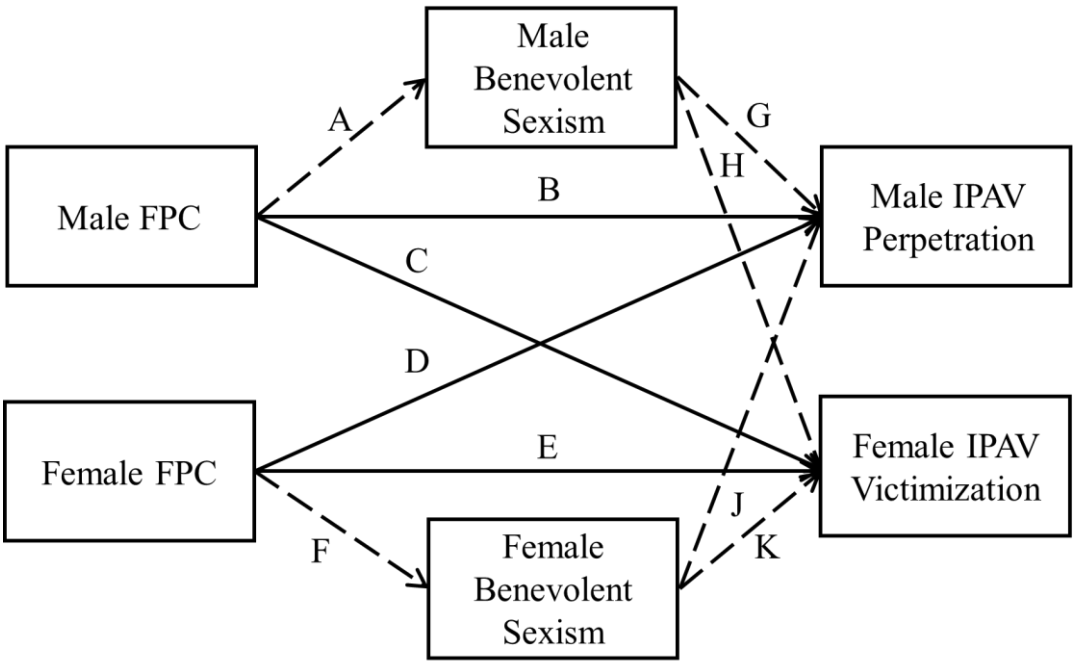


*Figure 1*. Hypothesized mediation pathways showing benevolent sexism mediating the relation between frequency of pornography consumption (FPC) and intimate partner aggression/violence (IPAV) perpetration and victimization at Time 1 of the study. Solid line = direct effect; dashed line = indirect effect.

*Hostile sexism.* Previously, I explained my rationale based on relevant theories and research findings for my prediction that hostile sexism at T1 would also mediate the relation between FPC and IPAV at T1. (See Figure 2 for the proposed mediation model of hostile sexism at T1). Hypothesis 8A predicted that men's FPC at T1 would predict more male hostile sexist attitudes at T1 (Path A, Figure 2), which would in turn predict men's self-reported IPAV perpetration at T1 (Path G, Figure 2) and their female partners' reported victimization at T1 (Path H, Figure 2). Hypothesis 8B contended that women's FPC at T1 would predict more female hostile sexist attitudes at T1 (Path F, Figure 2), in turn predicting more self-reported IPAV victimization at T1 (Path K, Figure 2) and their male partners' reported perpetration at T1 (Path J, Figure 2).

***Objective 4: Longitudinal analyses***. The fourth study objective was to evaluate whether or not pornography predicted IPAV four months later.

*Actor effects*. Generally, hypothesis 9 predicted that FPC precedes and predicts IPAV. It specifically asserted that FPC at T1 would predict higher rates of IPAV at Time 2 (T2) while accounting for IPAV at T1 with the use of a dyadic and longitudinal method of data analysis. This hypothesis is split into hypothesis 9A and 9B for men and women, respectively. Hypothesis 9A predicted that, for men, high levels of self-reported FPC at T1 would be associated with higher levels of self-reported perpetration of IPAV at T2 (accounting for male IPAV perpetration at T1). Hypothesis 9B predicted significant actor effects between women's FPC at T1 and their rates of IPAV victimization at T2 while accounting for their IPAV victimization at T1. Specifically, I expected that, for women, high levels of self-reported FPC at T1 would be associated with high levels of self-reported IPAV victimization at T2 while controlling for female IPAV victimization at T1.

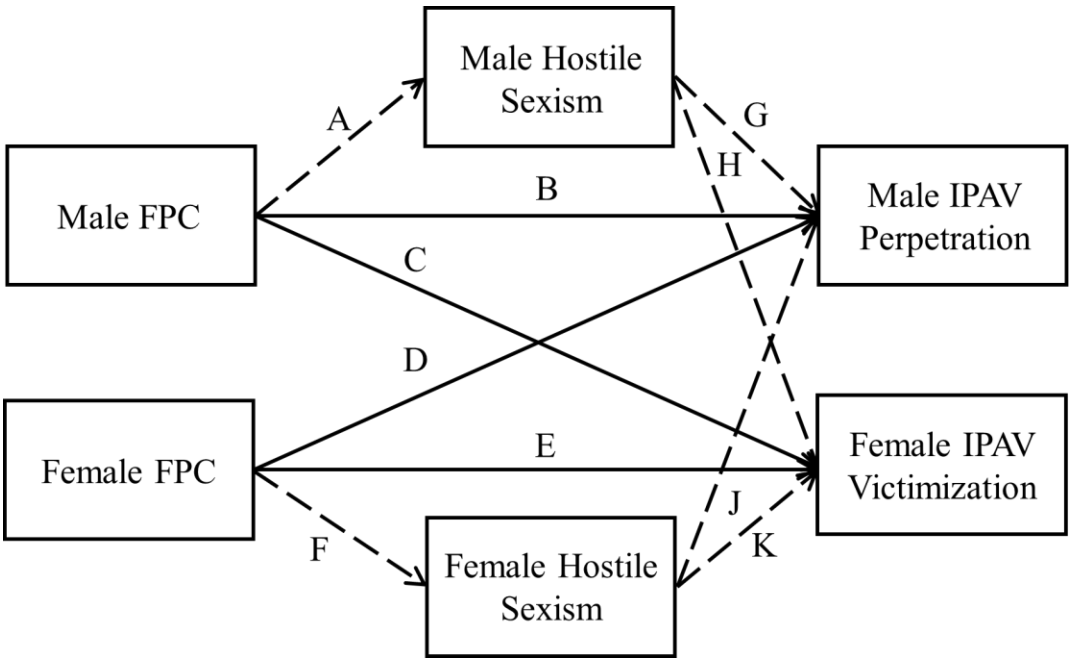


*Figure 2.* Hypothesized mediation pathways showing hostile sexism mediating the relation between frequency of pornography consumption (FPC) and intimate partner aggression/violence (IPAV) perpetration and victimization at Time 1 of the study. Solid line = direct effect; dashed line = indirect effect.

*Partner effects.* Hypothesis 10 predicted significant partner effects that correspond with hypothesis 1. In particular, hypothesis 10A contended that high levels of self-reported FPC in men at T1 would be associated with higher levels of self-reported IPAV victimization in women at T2 (accounting for female IPAV victimization at T1). Similarly, hypothesis 10B predicted that high levels of self-reported FPC in women at T1 would be associated with higher levels of self-reported IPAV perpetration in men at T2 (accounting for male IPAV perpetration at T1).

***Exploratory analyses.*** As mentioned above, aspects of this study were quite exploratory in nature. There was sparse research to draw upon in several under-studied areas, including male IPAV victimization and the effects of female pornography consumption. Therefore, I was not able to make well-guided predictions in these areas. Nevertheless, because these issues were theoretically relevant and understudied in the field, they were investigated in the current study with exploratory analyses.

Table 1

*Objectives 1-4 Hypotheses*

| Objective 1 hypotheses | | Variables |
|---|---|---|
| 1A | For men, high FPC at T1 would be associated with higher levels of IPAV perp at T1 | IV: T1 male FPC<br>DV: T1 male IPAV perp |
| 1B | For women, high FPC at T1 would be associated with higher levels of IPAV vict at T1 | IV: T1 female FPC<br>DV: T1 female IPAV vict |
| 2A | High male FPC at T1 would be associated with higher levels of female IPAV vict at T1 | IV: T1 male FPC<br>DV: T1 female IPAV vict |
| 2B | High female FPC at T1 would be associated with higher rates of male IPAV perp at T1 | IV: T1 female FPC<br>DV: T1 male IPAV perp |
| 3A | High FPC in men at T1 and low FPC in women at T1 would be associated with higher levels of male IPAV perp at T1 | IV: T1 male and female FPC<br>DV: T1 male IPAV perp |
| 3B | High FPC in men at T1 and low FPC in women at T1 would be associated with higher levels of female IPAV vict at T1 | IV: T1 male and female FPC<br>DV: T1 female IPAV vict |

*Note.* FPC = Frequency of Pornography Consumption, IPAV = Intimate Partner Aggression/Violence, perp = perpetration, vict = victimization, T1 = Time 1, IV = Independent Variable, DV = Dependent Variable.

Table 1

*Objectives 1-4 Hypotheses Continued*

| Objective 2 hypotheses | | Variables |
|---|---|---|
| 4A | The positive association between male FPC at T1 and male IPAV perp at T1 would be stronger in the context of high rates of male CC perp at T1 | IV: T1 male actor FPC<br>DV: T1 male actor perp of IPAV<br>Moderator: T1 male actor CC perp |
| 4B | There would be a stronger positive relation between male FPC at T1 and female IPAV vict at T1 in the context of high rates of male CC perp at T1 | IV: T1 male partner FPC<br>DV: T1 female actor IPAV vict<br>Moderator: T1 male actor CC perp |
| 5A | The positive association between female FPC at T1 and female IPAV vict at T1 would be stronger in the context of high rates of female CC vict at T1 | IV: T1 female actor FPC<br>DV: T1 female actor IPAV vict<br>Moderator: T1 female actor CC vict |
| 5B | The positive association between female FPC at T1 and male IPAV perp at T1 would be stronger in the context of high rates of female CC vict at T1 | IV: T1 female partner FPC<br>DV: T1 male actor IPAV perp<br>Moderator: T1 female partner CC vict |
| 6A | The positive association between male FPC at T1 and male IPAV perp at T1 would be stronger in the context of higher CA scores in men at T1 | IV: T1 male actor FPC at T1<br>DV: T1 male actor perp of IPAV<br>Moderator: T1 male actor CA |
| 6B | There would be a stronger positive relation between male FPC at T1 and female IPAV vict at T1 in the context of high rates of CA in men at T1 | IV: T1 male partner FPC<br>DV: T1 female actor IPAV vict<br>Moderator: T1 male partner CA |
| 6C | The positive association between female FPC at T1 and female IPAV vict at T1 would be stronger in the context of high levels of CA in women at T1 | IV: T1 female actor FPC<br>DV: T1 female actor IPAV vict<br>Moderator: T1 female actor CA |
| 6D | The positive association between female FPC at T1 and male IPAV perp at T1 would be stronger in the context of high CA scores in women at T1 | IV: T1 female partner FPC<br>DV: T1 male actor IPAV perp<br>Moderator: T1 female partner CA |

*Note.* FPC = Frequency of Pornography Consumption, IPAV = Intimate Partner Aggression/Violence, CC = Coercive Control, CA = Composite Aggression, perp = perpetration, vict = victimization, T1 = Time 1, IV = Independent Variable, DV = Dependent Variable.

Table 1

*Objectives 1-4 Hypotheses Continued*

| Objective 3 hypotheses | | Variables |
|---|---|---|
| 7A | Men's FPC at T1 would predict more male BS at T1, which would in turn predict lower male IPAV perp at T1 and female IPAV vict at T1 | IV: T1 male actor FPC<br>DVs: T1 male actor perp of IPAV, T1 female partner IPAV vict<br>Mediator: T1 male actor BS |
| 7B | Women's FPC at T1 would predict more female BS at T1, which would in turn predict lower female IPAV vict at T1 and male IPAV perp at T1 | IV: T1 female actor FPC<br>DVs: T1 female actor IPAV vict, T1 male partner IPAV perp<br>Mediator: T1 female actor BS |
| 8A | Men's FPC at T1 would predict more male HS at T1, which would in turn predict their self-reported IPAV perp at T1 and their female partners' reported vict at T1 | IV: T1 male actor FPC<br>DVs: T1 male actor IPAV perp, T1 female partner IPAV vict<br>Mediator: T1 male actor HS |
| 8B | Women's FPC at T1 would predict more female HS at T1, in turn predicting more self-reported IPAV vict at T1 and their male partners' reported perp at T1 | IV: T1 female actor FPC<br>DVs: T1 female actor IPAV vict, T1 male partner IPAV perp<br>Mediator: T1 female actor HS |

*Note.* FPC = Frequency of Pornography Consumption, IPAV = Intimate Partner Aggression/Violence, BS = Benevolent Sexism, HS = Hostile Sexism, perp = perpetration, vict = victimization, T1 = Time 1, IV = Independent Variable, DV = Dependent Variable.

Table 1

*Objectives 1-4 Hypotheses Continued*

| Objective 4 hypotheses | Variables |
|---|---|
| 9A For men, high levels of FPC at T1 would be associated with higher levels of IPAV perp at T2 | IV: T1 male FPC<br>DV: T2 male IPAV perp |
| 9B For women, high levels of FPC at T1 would be associated with higher levels of IPAV vict at T2 | IV: T1 female FPC<br>DV: T2 female IPAV vict |
| 10A High FPC in men at T1 would be associated with higher levels of IPAV vict in women at T2 | IV: T1 male FPC<br>DV: T2 female IPAV vict |
| 10B High FPC in women at T1 would be associated with higher levels of IPAV perp in men at T2 | IV: T1 female FPC<br>DV: T2 male IPAV perp |

*Note.* FPC = Frequency of Pornography Consumption, IPAV = Intimate Partner Aggression/Violence, perp = perpetration, vict = victimization, T1 = Time 1, T2 = Time 2, IV = Independent Variable, DV = Dependent Variable.

# CHAPTER 3

## Method

### Participants

Heterosexual couples were recruited through the University of Windsor's Psychology Participant Pool, a pool of undergraduate students who choose to participate in research studies in order to receive bonus points in specified courses for their participation. Participants were either recruited directly from the Psychology Participant Pool or indirectly through their romantic partner who was a member of the Psychology Participant Pool. Participants were eligible to participate in this study if they were in a heterosexual romantic relationship of at least two months duration. Participants and their romantic partners each needed to be willing to participate in the study at both Time 1 and Time 2 (four months later). Types of intimate relationships that were excluded from the study included couples in a purely long distance or online relationship, partners in polyamorous relationships with three or more members, partners in a sexual relationship but who did not identify as being in a committed relationship, and participants with ex-partners from dissolved relationships (e.g., couples who were "on a break" but who planned to resume their relationship).

A total of 615 individuals signed up for Time 1 of the study through the Psychology Participant Pool, but 196 of these individuals cancelled their study participation without completing the Time 1 survey and 23 had not completed the Time 1 survey by the given deadline. Of those recruited directly through the Psychology Participant Pool, 396 participants completed the Time 1 survey and provided contact information for their romantic partners. Their partners were contacted and invited to

participate in the study (indirect recruitment), and 283 of those partners completed the Time 1 survey. Therefore, a total of 679 participants completed the Time 1 survey. Cases were removed if there did not have data from the corresponding partner ($n$ = 113), which left 283 couple dyads for whom both partners completed the Time 1 survey, and only participants in these 283 couples dyads ($N$ = 566) were invited to participate in Time 2 of the study 4 months later. Eleven of these dyads had broken off their romantic relationship, and thus were not eligible to participate in Time 2 of the study. A total of 342 participants also completed the Time 2 survey, but 46 cases had to be removed because there were no data from the corresponding partner, which left 148 couples dyads for whom both partners completed both the Time 1 and Time 2 surveys. The final sample consisted of 283 couples that completed Time 1 and 148 couples that completed both Time 1 and 2 of the study, with a 47.70% rate of attrition. Comparisons between participants who completed both Time 1 and 2 and those that dropped out after Time 1 did not reveal any significant differences between key variables at Time 1 ($p > 0.05$ for IPAV perpetration and victimization, coercive control perpetration and victimization, composite aggression, benevolent sexism, hostile sexism, FPC, proportion of violent pornography consumed, attitudes toward sexuality, and social desirability at Time 1).

There are not well-established models for evaluating statistical power of APIM to date. Therefore, I conducted an a priori power analysis using G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) with a multiple regression analysis (MRA) function to serve as a rough estimate of the required sample size for this study. This power analysis used six predictor variables (frequency of pornography consumption, coercive control perpetration, coercive control victimization, composite aggression, hostile sexism, and

benevolent sexism), a two-tailed test, a power level of .80, and an alpha level of .05. In my review of the research literature, I did not find any research studies that measured both pornography consumption and IPAV; therefore I was unable to find effect sizes from prior studies. I used a conservative effect size of .15 in the power analysis. The power analysis estimated that a sample size of 55 would be necessary to yield statistically significant results if they exist. However, given the lower proportion of Canadians with experiences of IPAV perpetration and victimization (Connolly et al., 2010; Romans et al., 2007), this study would likely require a larger sample size to adequately measure IPAV. Although Kenny, Kashy, and Cook (2006) indicate that at least 25 dyads are required in order to verify independence for dyadic analysis, most research studies using dyadic analyses have sample sizes ranging from 100-300 (e.g., Badr & Taylor, 2008; Cook & Kenny, 2005; Eaton, West, Kenny, & Kalichman, 2010; Sanchez-Ku & Arthur, 2000). Thus, the current sample size of 283 couple dyads in Time 1 of the study and 148 couples in Time 2 was deemed sufficient.

Participants ranged between the ages of 17 and 54 ($M$ = 21.71, $SD$ = 4.71) years old. On average, participants started dating at the age of 18.16 ($SD$ = 3.28, range = 10-40) years old with their average romantic relationship lasting 18.16 months ($SD$ = 19.51, range = 1-184). Twenty-two percent ($n$ = 144) of participants endorsed experiencing IPAV in the past. Participants' current romantic relationships varied in length from 2 months to 27 years ($M$ = 28.72 months, $SD$ = 36.60) and were most commonly described as a "committed relationship/exclusive dating" ($n$ = 457, 90.0%). The majority of participants were sexually active in their current romantic relationship ($n$ = 475, 93.5%). On average, 6.55% of couples indicated that they felt that their relationship was likely to

end within the next four months. See Table 2 for a detailed summary of demographic information.

## Measures

The online surveys for Time 1 and 2 of the study both included each of the measures described below.

**Demographics.** Participants completed a self-report demographics questionnaire at both Time 1 and 2 of the study (Appendix A), which asked participants about their age, sex, gender, sexual orientation, ethnicity, level of education, religious affiliation, living situation, and socioeconomic status. Questions about participants' intimate relationship history, current romantic relationship, and history of IPAV were also included as potential covariates. The demographic questionnaire for Time 2 of the study was slightly shorter than the one at Time 1 as it did not repeat questions asked at Time 1 pertaining to relatively stable demographic characteristics (i.e., ethnicity, religion, level of education).

**Pornography consumption.** The research literature on pornography consumption lacks well-validated and consistently used measures for pornography usage, and there are no known validated measures of pornography consumption frequency among both men and women to date. The current study included two different measures of pornography consumption: the Pornography Consumption Questionnaire (PCQ; Hald, 2006) and the Pornography Use Scale (PUS; Szymanski & Stewart-Richardson, 2014). The intension was to use the PCQ as the primary measure of pornography consumption frequency, as it provides detailed information about aspects of pornography consumption and originators developed a procedure to calculate a pornography consumption frequency composite (PCFreq), which has been studied in both men and women in several studies but has not

Table 2

*Demographic Information*

| Variable | *N* | *%* |
|---|---|---|
| Sex | | |
| Female | 254 | 50.0% |
| Male | 254 | 50.0% |
| Total | 508 | 100.0% |
| Gender | | |
| Female | 254 | 50.0% |
| Fluid | 1 | 0.2% |
| Male | 253 | 49.8% |
| Total | 508 | 100.0% |
| Sexual orientation | | |
| Bisexual | 9 | 1.8% |
| Demisexual | 2 | 0.4% |
| Heterosexual/Straight | 492 | 96.9% |
| Pansexual | 4 | 0.8% |
| Queer | 1 | 0.2% |
| Total | 508 | 100.0% |
| Religious affiliation | | |
| Agnostic | 35 | 6.9% |
| Atheist/None | 162 | 31.9% |
| Buddhist | 5 | 1.0% |
| Catholic | 171 | 33.7% |
| Christian/Lutheran/Anglican/Seventh Day Adventist | 97 | 19.1% |
| Hindu | 1 | 0.2% |
| Jewish | 2 | 0.4% |
| Muslim/Islam | 17 | 3.3% |
| Orthodox Christian | 10 | 2.0% |
| Other | 1 | 0.2% |
| Sikh | 1 | 0.2% |
| Spiritual | 2 | 0.4% |
| Wiccan | 1 | 0.2% |
| No comment | 3 | 0.6% |
| Total | 508 | 100.0% |

*Continued*

| Variable | *N* | *%* |
|---|---|---|
| Ethnicity | | |
| Arabic/Middle Eastern | 30 | 5.9% |
| Black/African Canadian | 19 | 3.7% |
| Caucasian/European Canadian/White | 412 | 81.1% |
| East Asian/Pacific Islander | 19 | 3.7% |
| Hispanic/Latino | 5 | 1.0% |
| Indigenous/First Nations/Inuit/Metis | 4 | 0.8% |
| Mixed/Biracial/Multiethnic | 12 | 2.4% |
| South Asian | 3 | 0.6% |
| No comment | 4 | 0.8% |
| Total | 508 | 100.0% |
| Highest level of education completed | | |
| Grade/Elementary School | 1 | 0.2% |
| High School | 90 | 17.7% |
| 1 year of college or university | 104 | 2.5% |
| 2 years of college or university | 111 | 21.9% |
| 3 years of college or university | 103 | 2.3% |
| 4 years of college or university | 58 | 11.4% |
| 5 or more years of college or university | 41 | 8.1% |
| Total | 508 | 100.0% |
| Estimated annual income | | |
| Under $20,000 | 143 | 28.1% |
| $20,000 to $39,999 | 50 | 9.8% |
| $40,000 to $59,999 | 17 | 3.3% |
| $60,00 to $79,999 | 6 | 1.2% |
| $80,000 to $99,999 | 5 | 1.0% |
| $100,000 or greater | 6 | 1.2% |
| Prefer not to answer | 281 | 55.3% |
| Total | 508 | 100.0% |
| Parents' combined income | | |
| Under $20,000 | 15 | 3.0% |
| $20,000 to $39,999 | 26 | 5.1% |
| $40,000 to $59,999 | 47 | 9.3% |
| $60,000 to $79,999 | 37 | 7.3% |
| $80,000 to $99,999 | 54 | 1.6% |
| $100,000 or greater | 188 | 37.0% |
| Do not know | 80 | 15.7% |
| Prefer not to answer | 61 | 12.0% |
| Total | 508 | 100.0% |

*Continued*

| Variable | *N* | *%* |
|---|---|---|
| Parents' marital status | | |
| Divorced | 98 | 19.3% |
| Married to each other | 304 | 59.8% |
| Never married to each other and living together | 12 | 2.4% |
| Never married to each other and not living together | 40 | 7.9% |
| One or both parents have died | 26 | 5.1% |
| Separated | 28 | 5.5% |
| Total | 508 | 100.0% |
| Participants' current living arrangements | | |
| Alone | 37 | 7.3% |
| Child/children | 1 | 0.2% |
| Homeless | 1 | 0.2% |
| Parent/guardian/extended family | 314 | 61.8% |
| Romantic partner | 94 | 18.5% |
| Roommate(s) | 61 | 12.0% |
| Total | 508 | 100.0% |
| History of intimate partner aggression/violence | | |
| Yes | 114 | 22.4% |
| No | 394 | 77.6% |
| Total | 508 | 100.0% |
| Relationship status | | |
| Casual dating | 8 | 1.6% |
| Common law | 2 | 0.4% |
| Engaged | 16 | 3.1% |
| Exclusive dating/Committed relationship | 457 | 90.0% |
| Married | 24 | 4.7% |
| Other | 1 | 0.2% |
| Total | 508 | 100.0% |
| Sexually active in current romantic relationship | | |
| Yes | 475 | 93.5% |
| No | 33 | 6.5% |
| Total | 508 | 100.0% |

yet been empirically validated. Given this, the PUS was also included for the purposes of testing the construct validity of the PCQ PCFreq and also as a potential back-up measure in case the PCQ PCFreq had poor psychometric properties. The PUS is a brief measure of pornography consumption, which has been studied and validated in men. The characteristics of both measures are described below.

The PCQ is an 86-item self-report questionnaire developed and primarily studied in Denmark that is designed to measure aspects of pornography consumption, including age of first exposure, frequency of pornography consumption, context of pornography consumption, pornography content preferences, pattern of pornography consumption, financial impact of pornography consumption, sexual behaviour, and realism of pornography (Hald, 2006; Hald & Halamuth, 2008). The PCQ defines pornography as "any kind of material with the intention of creating or increasing sexual emotions or sexual thoughts and at the same time containing exposure to or description of sexual organs and clear and obvious sexual acts" (Hald, 2006). Due to the complexity of analyses in the current study, I only examined the PCQ items included in the $PC_{Freq}$ composite. Although dimensions of the PCQ related to the positive and negative impacts of pornography consumption have been shown to have good internal reliability (Cronbach's alpha = .91 and .82 respectively), the PCQ $PC_{Freq}$ has not yet been formally psychometrically evaluated (Hald et al., 2013; Hald & Mulya, 2013). Instructions were modified to assess the frequency of pornography consumption within the preceding four months. Although several additional modifications were made to other sections the PCQ in order to be more representative of North American pornography consumption, I will

not describe those modifications here for brevity's sake as the current study only examined the $PC_{Freq}$ section of the PCQ.

The procedure for calculating $PC_{Freq}$ involved factoring four highly correlated items measuring pornography consumption frequency (i.e., average time of use per week, frequency of pornography consumption, pornography consumption during masturbation, and pornography exposure patterns in the preceding year), which have been found to load onto a single, continuous pornography consumption factor (Hald, 2006). When I calculated the PCQ $PC_{Freq}$ using this method in the current study, the composite had unacceptable reliability at both Time 1 (Cronbach's alpha = .02) and Time 2 (Cronbach's alpha = .03). An examination of the inter-item correlations and item-total statistics revealed a problematic item (i.e., "Please specify the percentage of times you have used pornography in connection with masturbation during the last 4 months") that substantially decreased the internal reliability of the scale at both Time 1 (Corrected Item-Total Correlation = .39, Cronbach's Alpha if Item Deleted =.79) and Time 2 (Corrected Item-Total Correlation = .40, Cronbach's Alpha if Item Deleted =.81). Though the PCQ $PC_{Freq}$'s internal consistency improved to acceptable levels when this item was removed, this required modifying the standard procedure of calculating the composite and still did not yield a robust measure of pornography consumption frequency with good reliability. Thus, I deviated from my plan of using the PCQ $PC_{Freq}$ as my primary measure of pornography consumption frequency, and explored the options of using the PUS instead or making a composite of the items measuring the frequency of pornography consumption from both the PUS and the PCQ.

The PUS is a 14-item self-report measure designed to assess frequency of pornography use and problematic pornography use (Szymanski & Stewart-Richardson, 2014). The current study only included the 7-item Frequency of Pornography Use (FPU) section, which is designed to assess the use of different sources of pornography consumption (e.g., internet, magazines, videos/DVDs) across various times frames (e.g., viewing time per month, per week, and per day) and has been found to have good internal reliability among men (Cronbach's alpha = .88). In the current study, the PUS FPU demonstrated good internal consistency at both Time 1 (Cronbach's alpha = .88) and Time 2 (Cronbach's alpha = .88). Given that the PUS has not been validated with women to date, men's and women's PUS scores at Time 1 of the study were analyzed separately, and were found to have good reliability for both men (Cronbach's alpha = .86) and women (Cronbach's alpha = .89). The PUS FPU demonstrated good stability over time as partial correlations between Time 1 and 2 values showed good test-retest reliability for both men (*partial r* = .71, $p < .001$) and women (*partial r* = .60, $p < .001$) when their partners' baseline frequency of pornography consumption were controlled. In line with previous research (Paul, 2009), the PUS FPU was positively correlated with dispositional sexual affect (measured on the Sexual Opinion Survey; White, Fisher, Byrne, & Kingma, 1977) for both men and women when controlling for their partners' frequency of pornography consumption (*partial r* = .47, $p < .001$ and *partial r* = .44, $p < .001$, respectively), providing evidence of convergent validity. Prior to going forward with using the PUS FPU as the measure of frequency of pornography consumption in the current study, I explored the option of making a composite of the PCQ and PUS items

measuring the frequency of pornography consumption and then evaluated the reliability of the resulting composite.

A composite of the PCQ and PUS items measuring the frequency of pornography consumption was created by summing the standardized scores of the PUS FPU items and the three items from the PCQ $PC_{Freq}$ that were found to have acceptable reliability. This composite had excellent internal consistency at both Time 1 (Cronbach's alpha = .92) and Time 2 (Cronbach's alpha = .93), which exceeded the reliabilities found for either the PCQ $PC_{Freq}$ or PUS FPU alone. When men and women were analyzed separately, their Time 1 data showed excellent internal reliability for men (Cronbach's alpha = .90) and excellent internal reliability for women (Cronbach's alpha = .91). Given these promising results, several other indicators of validity and reliability were examined. The composite demonstrated good stability over time as partial correlations between Time 1 and 2 values showed good test-retest reliability for both men (*partial r* = .74, $p < .001$) and women (*partial r* = .66, $p < .001$) when their partners' baseline frequency of pornography consumption were controlled. Evidence of convergent validity was also demonstrated given that, in line with previous research (Paul, 2009), the composite measure of frequency of pornography consumption was positively correlated with dispositional sexual affect (measured on the Sexual Opinion Survey; White et al., 1977) for both men and women when controlling for their partners' frequency of pornography consumption (*partial r*s = .50, $p < .001$, respectively). Given that this composite of the two pornography consumption questionnaires was a more reliable measure of frequency of pornography consumption than either of the pornography questionnaires on their own and assessed a wider range of behaviours as well as evidence of good stability over time and

convergent validity, I opted to use it as the primary measure of frequency of pornography consumption for the current study, which from this point onward is referred to as the Frequency of Pornography Consumption (FPC).

**IPAV perpetration and victimization.** The Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) is a 78-item self-report questionnaire measuring the degree of physical, psychological, sexual, and injurious aggression between partners in intimate (e.g., dating, cohabiting, or marital) relationships. Although the CTS2 typically measures IPAV within the last year, I modified the time interval so that participants reported on IPAV that occurred within the preceding four months in the current study. Although this measure has been criticized for not considering the context of violence (e.g., Langhinrichsen-Rohling, 2010), the CTS2 was selected given its efficiency in measuring IPAV, widespread use in the IPAV literature, and empirically supported reliability and validity (Straus et al., 1996; Vega & O'Leary, 2007). Cronbach's alpha values for CTS2 scales range from .79 to .95 (Straus et al., 1996). The CTS2 consists of paired questions for each behavioural act, one about the respondent's use of aggression (perpetration items) and the other asking about their partner's aggression in the relationship (victimization items). Participants rate each item on an 8-point scale to indicate the frequency with which they have committed or experienced particular types of aggression in the preceding four months. Response options include *once in the past four months* (score of 1), *twice in the past four months* (score of 2), *3-5 times in the past four months* (score of 4), *6-10 times in the past four months* (score of 8), *11-20 times in the past four months* (score of 15), and *more than 20 times in the past four months* (score of 25), *not in the past four months but it did happen*

*before* (score of 0), and *this never happened* (score of 0). Due to the complexity of analyses in the current study, I created two composite scores, one for IPAV perpetration (calculated by summing physical, psychological, and sexual IPAV perpetration items) and the other for IPAV victimization (calculated by summing physical, psychological, and sexual IPAV victimization items), rather than analyzing physical, sexual, and psychological forms of IPAV separately. In the current study, the internal reliability of the IPAV perpetration composite was acceptable at both Time 1 (Cronbach's alpha = .71) and Time 2 (Cronbach's alpha = .78). Although the internal reliability of the IPAV victimization composite was acceptable at Time 2 (Cronbach's alpha = .79), it was questionable at Time 1 (Cronbach's alpha = .63), and an examination of inter-item correlations and item-total statistics revealed the item "my partner made me have sex without a condom" decreased the internal reliability of the scale (Corrected Item-Total Correlation = .20, Cronbach's Alpha if Item Deleted = .66). Given that removal of this item would not improve the internal reliability of this measure by much and bump the internal consistency into the acceptable range, this item was left in the measure given that the CTS2 is a commonly used and validated measure. In addition, altering the measure would make it more difficult to compare results to previous research.

**Coercive control.** An adaptation of the Coercion in Intimate Partner Relationships (CIPR; Dutton et al., 2006) questionnaire was used to measure coercive control in intimate relationships. This is a 220-item self-report questionnaire that was developed from a theoretical model of coercive control and has been found to be a reliable and well-validated measure of coercive control for both men and women (Dutton et al., 2006). The CIPR has three interrelated scales — demands, surveillance, and threats

— for both coercive control victimization and perpetration. The internal consistency for each of these scales is high, with Cronbach's alpha values of .86 or higher for both coercive control perpetration and victimization for men and women. Across all scales, participants indicated if the behaviour had occurred within the preceding four months (1 = *yes*, 0 = *no*). Separate coercive control perpetration and victimization total scores were calculated by adding the item responses for the perpetration and victimization sections separately, with higher scores indicating a greater degree of coercive control. The internal consistencies in the current study were excellent for coercive control victimization at Time 1 and 2 (Cronbach's alphas = .95 and .93, respectively). For coercive control perpetration, internal consistencies were excellent at Time 1 (Cronbach's alpha = .93) and good at Time 2 (Cronbach's alpha = 0.88).

**Ambivalent sexism.** The Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) is a 22-item self-report questionnaire designed to measure two seemingly opposing types of prejudiced attitudes about gender based in the ambivalent sexism theoretical model. The first is benevolent sexism, which refers to subjectively positive views about men or women (e.g., "No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman"). The second, hostile sexism, is defined as subjectively negative views of men or women, such as "many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for 'equality.'" The hostile sexism and benevolent sexism subscales each consist of 11 statements rated on a Likert scale from 0 (*disagree strongly*) to 5 (*agree strongly*) with higher scores corresponding to higher levels of sexism. This inventory has been found to be a reliable and well-validated measure of ambivalent sexism in women

and men, with predictive, discriminant, and convergent validity (Glick & Fiske, 1996), and internal consistency is generally higher for hostile sexism (Cronbach's alphas = .80-.92) than for benevolent sexism (Cronbach's alphas > .75-.83). In the current study, the benevolent sexism scale had good internal reliability at Time 1 (Cronbach's alpha = .81) and acceptable internal reliability at Time 2 (Cronbach's alpha = .79). The hostile sexism scale had good internal reliability at both Time 1 and 2 (Cronbach's alphas = .88 and 0.89, respectively).

**Attitudes about sexuality**. The Sexual Opinion Survey (SOS; White et al., 1977) is a 21-item self-report questionnaire that measures the degree and positive/negative valence of participants' attitudes about sexual stimuli on a 7-point Likert scale (1 = *strongly agree*, 7 = *strongly disagree*). The total score was calculated by adding the items after reverse coding the negatively worded items (7 items), and higher scores reflected more positive views of sexuality. The SOS has been found to have good internal validity (Cronbach's alpha = .84). The SOS also showed good internal reliability in the current study at both Time 1 and 2 (Cronbach's alphas = .84 and 0.86, respectively).

**Violence in the family of origin.** The current study used a modified version (O'Leary, Smith Slep, & O'Leary, 2007) of the Family of Origin Aggression Scale (FOAS; Rosenbaum & O'Leary, 1981) to measure childhood exposure to violence in the family of origin. This 22-item version of the measure retrospectively assesses various types of violence on a 5-point Likert scale (1 = *never*, 5 = *very often*) with higher scores corresponding to higher levels of family of origin violence. Participants were asked five questions each about aggression directed toward them during their childhood by their fathers, mothers, and siblings (if applicable), respectively. This measure also includes

seven items inquiring about witnessing aggression that occurred between participants' parents. Composite scores were obtained by calculating the means of each of the four subscales (O'Leary et al., 2007). In another shortened version of the measure, which did not measure sibling aggression, Cronbach's alphas for physical aggression were .89 for father-to-child aggression, .88 for mother-to-child aggression, .89 for father-to–mother aggression, and .66 for mother–to-father aggression (Fritz, Smith Slep, & O'Leary, 2012). In the current study, excellent internal reliability was demonstrated for the overall rate of violence in the family of origin at both Time 1 and 2 (Cronbach's alphas = .91 and 0.90, respectively).

**Delinquency.** The Scale of Delinquency Behaviour (SDB; Weenink, 2011) is a 13-item questionnaire designed to measure self-reported history of delinquent behaviour and conduct problems (e.g., "Did you ever carry a weapon?"). Questions are answered with *yes* (score of 1) or *no* (score of 0). The SDB score is calculated by adding the number of positive answers (*yes*) with higher scores corresponding to higher levels of delinquency. Cronbach's alpha for this measure was .77 for a Dutch sample ranging from 12 to 30 years (Weenink, 2011). The SDB showed good internal consistency in the current study at both Time 1 and 2 (Cronbach's alphas = .81 and .84, respectively).

**History of aggression.** The Personal History Questionnaire (PHQ; Riggs, O'Leary, & Breslin, 1990) is a 24-item questionnaire that measures self-reported history of verbal and physical aggression during childhood and adolescence. It asks participants to rate how often they argued and physically fought with others during elementary, junior high, and high school on a 5-point Likert scale (0 = *never*, 4 = *often*). Scores for verbal and physical aggression are calculated by summing the responses in each scale with

higher scores corresponding to higher levels of past aggression. The PHQ has been shown to have acceptable reliability; Cronbach's alphas on the verbal aggression scale were .76 for women and .85 for men and on the physical aggression scale were .80 for women and .82 for men. In the current study, both the verbal and physical aggression scales showed good internal reliability at both Time 1 (Cronbach's alphas = .86 and .88, respectively) and Time 2 (Cronbach's alphas = .90 and .88, respectively).

**Violence of pornography.** Similar to Baer and colleagues (2015), the current study measured the violence of pornography consumed by asking participants to self-report the proportion of the pornography they consumed in the last four months that was violent on a 11-point Likert scale (1 = *0%*, 6 = *50%*, 11 = *100%*) with higher scores corresponding to exposure to higher levels of violence. To ensure consistent participant understanding, violent pornography content was defined for participants as "violent sexually explicit depictions including the use of physical force, nonconsensual actions, rape, weapons, hitting, kicking, biting, burning, threats of injury, bestiality, and inflicting injury." This definition of violent pornography is consistent with that from Baer et al. (2015), but was expanded to fit the current study's definition of pornography.

**Social desirability**. The Marlowe-Crowne Social Desirability Short-Form C (MCSDS Form C; Reynolds, 1982) is designed to measure the tendency to respond in a socially desirable manner. It consists of 13 *true* (scored as 1) and *false* (scored as 0) statements (e.g., "I am always courteous, even to people who are disagreeable"), with eight reverse-coded items. The total MCSDS Form C score is calculated by summing the item scores, with higher scores representing more socially desirable response styles. The MCSDS Form C has been found to have good internal reliability (Cronbach's alpha =

.89; Reynolds, 1982). However, it was found to have questionable internal reliability in the current study at both Time 1 and 2 (Cronbach's alphas = .67 and .66, respectively). An examination of inter-item correlations and item-total statistics did not reveal any problematic items that could be removed to improve the internal consistency of the scale. Therefore, the total social desirability score was calculated using all 13 items.

**Validity questions**. Eleven embedded validity check questions were included throughout the surveys for both Time 1 and 2 of the study, with one in each questionnaire, in order to determine if participants were adequately attending to the task (e.g., "By reading this question, you will know that the answer is response four"). Additional validity questions inquiring about participants' perspective on the validity of their data were included at the end of the Time 1 and Time 2 surveys. Questions were prefaced with a description of the importance of responses being honest and valid, and then participants were asked to identify if their responses may be invalid for some reason. They were given an assurance that their responses would be confidential and would not impact whether or not they or their partners received compensation (viz., participant pool credit or entry into the draw). The validity questions at the end of the surveys included: (a) "Did you answer all of the questions honestly?" (yes/no); (b) "Did you and your partner fill the surveys out separately?" (yes/no); (c) "Do you have reason to believe that your survey results should not be included in this study?" (yes/no).

## Procedure

Following clearance to conduct the current study from the Research Ethics Board (REB) and Psychology Participant Pool, an advertisement was posted on the University of Windsor Psychology Participant Pool website (Appendix B). This advertisement

provided potential participants with general information about the longitudinal study, criteria for study eligibility, and instructions for participation. It invited students in intimate relationships to sign up for the longitudinal online study if both they and their romantic partner agreed to complete an online survey on two occasions that were four months apart. Only participants who indicated in a prescreening questionnaire that they were currently in a heterosexual romantic relationship were able to sign up and participate in Time 1 of the study. Interested participants signed up for the study and provided the name and contact information of their romantic partner.

**Time 1.** Following this initial response to the study advertisement, both members of the couple were contacted by email and provided instructions, their Couple ID and Individual ID, and the study's website URL for Time 1 in the study (Appendix C). Those who did not complete the Time 1 survey within one week of receiving this email received a reminder email (Appendix D).

Upon accessing the study's Time 1 survey URL, participants were presented with a consent form (Appendix E) and provided informed consent before proceeding. Then they were prompted to enter their Couple ID and Individual ID and indicate if they were currently in a heterosexual romantic relationship and whether they were registered in the Participant Pool and enrolled in one or more eligible courses for bonus credit. Next, participants completed the Time 1 demographic questionnaire followed by each of the measures described above in randomized order to avoid order effects. After completing each of the questionnaires, participants were presented with the four end-of-survey validity check questions as described above. Upon completion, participants were directed to a page containing a thank you for their participation, a reminder of Time 2 of the study

in four months' time, a list of community resources for mental health support (Appendix F), and instructions for clearing their Internet browser history (Appendix G).

The Time 1 survey was estimated to take approximately 60 minutes to complete. Participants from the Psychology Participant Pool received one credit for participating in Time 1 of the study, regardless of their participation in the Time 2 of the study and their romantic partners' completion of Time 1. Participants who were not registered members of the Participant Pool and enrolled in courses eligible for bonus marks received a $15 Amazon gift card via email, which was also independent of their completion of Time 2 and their romantic partners' completion of Time 2 of the study.

**Time 2.** The second phase of the study took place four months (± one week) after participants completed Time 1 of the study. An email was sent to all participants in couple dyads for whom each partner completed Time 1, which contained a reminder about the second phase of the study, general instructions, their Couple ID, their Individual ID, and the Time 2 URL (Appendix H). This email was sent three months and three weeks from the time that participants completed Time 1. Eligible participants had two weeks to complete Time 2 from the time of this email, and they were sent a reminder email if they did not compete Time 2 within one week (Appendix I).

Upon accessing the study's Time 2 URL, the eligible participants were presented with the same consent form from Time 1 of the study (Appendix E). After providing informed consent, they entered their Couple ID and Individual ID, indicated whether or not they were still in a heterosexual romantic relationship with their partner from Time 1 of the study, and identified whether or not they were registered in the Participant Pool and enrolled in one or more eligible courses for bonus credit. Then participants were

directed to a shortened version of the demographic questionnaire from Time 1 (Appendix A) followed by the remaining measures in randomized order. Then, they were given four validity check questions about the accuracy of the responses they provided, and after submitting these, participants were directed to a page containing a thank you for their participation, a summary of the current study, a list of community resources for mental health support (Appendix J), and instructions for clearing their Internet browser history (Appendix G).

Time 2 was also estimated to take about 60 minutes to complete. For participating in Time 2 of the study, participants received a $15 Amazon gift card or one credit on the Psychology Participant Pool if they were enrolled in courses eligible for bonus marks.

# CHAPTER 4

## Results

### Time 1 Data Analyses

Statistical analyses testing hypotheses 1-8 (Objectives 1-3) that involved only data from Time 1 of the study were conducted separately from the longitudinal analysis testing hypotheses 9 and 10 (Objective 4) that included data from both Time 1 and 2 in order to maximize the sample size available for the Time 1 analyses. The Time 1 data analyses included couples for whom both partners completed Time 1 of the study, whereas the longitudinal analysis required that both partners in each couple complete Time 1 and 2 of the study. In addition, the longitudinal analyses had a limited capacity for exploring mediations and moderations, which were the primary focuses of Objectives 2 and 3. Thus, this section describes the data analyses for hypotheses 1-8 using only the data from Time 1 of the study.

**Data management and statistical assumptions.** The statistical analyses for Time 1 were conducted using SPSS (Version 22). Prior to data analyses, the Time 1 data were checked for accuracy, completeness, and unusual patterns of responses.

***Validity.*** Sixty-two percent ($n$ = 455) of participants answered each of the eleven embedded validity questions correctly, 23% ($n$ = 166) failed one embedded validity question, 6% ($n$ = 46) failed two embedded validity questions, 2% ($n$ = 12) failed three embedded validity questions, and 7% ($n$ = 53) failed four or more of the embedded validity questions. Regarding the standalone validity questions at the end of the Time 1 survey, 1% ($n$ = 5) indicated that they did not answered each of the questions honestly, 5% ($n$ = 32) indicated they and their partner did not fill out their surveys separately, and

1% ($n$ = 4) indicated they had reason to believe that their responses should not be included in the study. Participants who indicated on the standalone validity questions that their data might not be valid and/or who failed over 30% of the embedded validity questions were removed. Given that the APIM requires data from both partners in each couple dyad, couples were included in analysis if both partners completed the Time 1 survey and each partner passed 70% or more of the embedded validity questions and did not indicate that their responses should not be included via the standalone validity questions. Of the 681 participants who completed Time 1 of the study, 508 (74.60% or 254 couples) met these inclusion criteria and were included in the analyses. Comparisons were made between participants who were included and excluded in Time 1 of the study for key study variables, and those who were excluded from analyses were primarily women, $t(678) = 6.29$, $p < 0.001$; more likely to endorse a history of IPAV, $t(678) = 3.40$, $p = 0.001$; and reported higher rates of benevolent sexism, $t(678) = 2.37$, $p = 0.018$.

***Missing data.*** The missing value analyses module in SPSS was used to determine the amount and pattern of missing data for these 254 couples for whom both partners completed the Time 1 survey and were considered to have valid data. There is not consensus about what degree of missing data is considered excessive, and suggested cut-offs range from 5% (Schafer, 1999) up to 20% (Peng, Harwell, Liou, & Ehman, 2006). For the Time 1 data, the degree of missingness due to item nonresponses ranged from 0.00% to 0.90%, with no item exceeding a total of 1.00% missing data and none of the main measures containing any items with missing data. In terms of the pattern of missing data, data can be missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR), with MNAR being problematic as it could skew the

statistical analyses. Little's MCAR test was used to examine whether missingness was related to other Time 1 variables, with nonsignificant findings indicating that missing values are likely randomly dispersed and there is a low likelihood of biased findings. Little's MCAR test for the Time 1 data was not significant ($p > .99$); therefore, the Time 1 data were concluded to be missing completely at random and there were no problematic missing data patterns. Given this, missing data were not imputed, particularly given that no data were missing for any of the key measures.

***Outliers***. The presence of univariate and multivariable outliers was assessed for all key Time 1 variables. Standardized residuals (*z* scores) were examined and cases outside of the absolute value of 3.29 were considered univariate outliers (Tabachnick & Fidell, 2014). Univariate outliers were found for both IPAV perpetration ($n = 7$) and victimization scales ($n = 7$). There were five outliers on the predictor variables detected with Mahalanobis' distance. There were no influential outliers indicted by Cook's values exceeding one. Examination of the outliers revealed that outliers were more likely to be female, have a history of IPAV, and report that their romantic relationship may end in the next four months. Outliers reported higher levels of IPAV perpetration and victimization as well as coercive control perpetration and victimization. In total, there were 16 participants that were outliers, and when I removed couples for whom one or both partners were outliers, there were a total of 240 Time 1 couple dyads left with outliers removed. The main analyses were run with and without outliers, and results differed when outliers were removed. However, I present findings for analyses that included the outliers given that they include participants who reported higher levels of the main variables of interest (i.e., IPAV, coercive control). Given that the bulk of the variables of

interest in this study are inherently highly positively skewed and not normally distributed and some are even classified as count data, it would be quite counterproductive to remove participants found to be outliers simply because they have high scores on the variables of interest, especially given that the methods of statistical analysis employed in this study accommodate highly skewed, nonnormal data. As such, the results and discussion sections present the analyses that included the outliers. A summary of the results from the analyses that removed the outliers is available in Appendix K.

***Normality***. I examined the distribution of all key variables through histograms, probability plots, skewness and kurtosis values, and the Shapiro-Wilk test. The Shapiro-Wilk tests for the dependent variables, IPAV perpetration and victimization, were both significant and each histogram showed that both outcome variables were positively skewed. Although neither of the dependent variables exceeded the critical values for skewness (±2) and kurtosis (±3), both dependent variables exceeded the critical value of ±1.96 when the skewness values were divided by the standard errors. For the predictor variables, only the Sexual Opinion Survey and the benevolent sexism section of the ASI had nonsignificant Shapiro-Wilk Tests and appeared to be normally distributed on histograms. Positively skewed predictor variables included the MCSDS, FPC, coercive control perpetration, coercive control victimization, and composite aggression. Due to the non-normal distributions for the bulk of the predictor and dependent variables, nonparametric analyses were used in subsequent analyses.

***Multicollinearity***. To assess multicollinearity, the correlation matrix of predictor variables in each model was examined. None of the correlations between predictor variables exceeded ±.90, suggesting that were not problems with multicollinearity.

Assessment of the collinearity statistics for the dependent variables also did not indicate multicollinearity as tolerance values were greater than .10 and the variance inflation factor (VIF) values were less than 1. Each of the predictor variables and covariates were grand-mean centered prior to the main analyses to decrease the potential influence of multicollinearity when creating interaction terms (Kenny et al., 2006).

***Tests of nonindependence.*** The extent to which the dependent variables were independent between partners within each couple was examined to assess if the APIM was an appropriate statistical model. The Spearman's rank-order correlations between romantic partners' reports of IPAV perpetration ($\rho = .34$, $p < .001$) and IPAV victimization ($\rho = .44$, $p < .001$) were statistically significant. This suggested that the data were not independent, given that respondents' rates of IPAV perpetration and victimization were dependent on that of their partner, and indicated that it would be more appropriate to analyze the data at the level of the couple dyad rather than the individual.

***Distinguishability.*** The manner in which dyadic data are analyzed is informed by whether the dyads are distinguishable or indistinguishable from each other, which can be determined both theoretically and empirically. Empirically distinguishable dyads might have significant differences in means or variance, and theoretically distinguishable dyads are distinguishable due to differences in some theoretically relevant variable, such as age or sex. Theoretically, sex would be an appropriate factor for distinguishing partners in each couple in the current study. This was evaluated empirically following Gonzalez and Griffin's (1999) procedure for conducting an omnibus test of distinguishability with a saturated, or I-SAT, model using structural equation modeling in AMOS (Version 25). This test was applied to data from Time 1 of the study to determine whether sex should

be used as a distinguishing factor. Sex was a statistically significant distinguishing factor both in the model containing FPC and IPAV perpetration, $x^2(4) = 343.1$, $p < .001$, and in the model with FPC and IPAV victimization, $x^2(4) = 38.1$, $p < .001$. Therefore, it is statistically warranted to treat the dyads members as distinguishable by sex.

***Data structure.*** In order to structure the dataset appropriately for the dyadic statistical analyses, the Time 1 data were organized into a pairwise structure design, in which each row included the respondent's data and that of their partner as well. This means that each line included two scores for individual-level variables (e.g., IPAV perpetration), one score for each partner in the couple dyad, but only a single score for dyad-level variables (e.g., dyad ID). The pairwise data set structure was utilized because the main analyses used the generalized estimating equations (GEE) module in SPSS, which requires both a dyad number and participant number.

**Descriptive statistics.**

***Key predictor variables*.** Means, standard deviations, and ranges for independent variables at Time 1 of the study are presented in Table 3. In terms of pornography consumption, 94.1% of men and 79.1% of women reported being exposed to pornography at some point in their lives, and 85.8% of men and 68.5% of women had viewed pornography within the preceding year. Among men, 80.3% reported consuming pornography in the preceding four months and 60.2% used pornography in the preceding week; for women, 52.4% consumed pornography in the preceding four months and 15.4% consumed pornography within the preceding week. Of those who endorsed using pornography, most reported viewing pornography for less than 15 minutes in one sitting (49.5% of men, 61.3% of women).

Table 3

*Descriptive Statistics for Key Predictor Variables at Time 1*

| Variables | Men | | Women | | |
|---|---|---|---|---|---|
| | Mean *(SD)* | Range | Mean *(SD)* | Range | $t(df = 254)$ |
| Age | 22.37 (5.22) | 17-54 | 21.06 (4.04) | 17-49 | 3.38** |
| Positive attitude toward sex | 74.29 (16.48) | 16-109 | 68.08 (18.70) | 19-115 | 4.17*** |
| Benevolent sexism | 27.23 (8.84) | 2-51 | 21.22 (8.98) | 1-43 | 8.10*** |
| | | | | | $z(df = 254)$ |
| Hostile sexism | 25.77 (1.29) | 0-54 | 20.13 (10.24) | 0-51 | -6.99*** |
| Average minutes of PC/week | 88.15 (221.48) | 0-2433 | 28.48 (79.45) | 0-900 | -7.69*** |
| Percentage of violent PC | 4.53 (13.67) | 0-100 | 3.19 (12.43) | 0-100 | -2.28* |
| Frequency of PC composite | 3.54 (8.24) | -9.43-42.29 | -3.52 (6.23) | -9.43-24.27 | -10.43*** |
| Coercive control perp | 6.15 (7.44) | 0-42 | 3.26 (5.83) | 0-35 | -7.43 *** |
| Coercive control vict | 10.11 (10.70) | 0-54 | 7.15 (9.40) | 0-49 | -4.07*** |
| Social desirability | 6.20 (2.78) | 0-12 | 6.08 (2.82) | 0-13 | -0.19 |
| Violence in family of origin | 1.59 (0.46) | 1.0-4.0 | 1.61 (0.49) | 1.0-4.47 | -0.15 |
| Delinquency | 3.09 (2.77) | 0-11 | 1.30 (1.77) | 0-10 | -8.07*** |
| History of aggression | | | | | |
| Verbal | 18.66 (8.33) | 0-42 | 19.29 (8.52) | 0-47 | -1.09 |
| Physical | 5.32 (6.21) | 0-29 | 2.13 (4.02) | 0-24 | -6.94*** |
| Composite aggression | 10.48 (7.61) | 1-27 | 7.50 (6.87) | 1-27 | -5.35*** |

*Note.* Positive attitude toward sex = measured on the SOS; Benevolent sexism = benevolent sexism subscale of the ASI; Hostile sexism = hostile sexism subscale of the ASI; Average minutes of PC/week = average minutes of pornography consumption per week measured in the PCQ; Percentage of violent PC = proportion of pornography consumed that is violent; Frequency of PC composite = frequency of pornography consumption composite calculated from items from the PCQ and PUS; Coercive control perp = coercive control perpetration measured on the CIPR; Coercive control vict = coercive control victimization measured on the CIPR; Social desirability = measured on the MCSDS Form C; Violence in the family of origin = measured on the FOAS; Delinquency = measured on the SDB; History of aggression = measured on the PHQ; Composite aggression = composite risk of aggression was calculated from items from the FOAS, SDB, and PHQ.
*$p < .05$. **$p < .01$. ***$p < .001$.

***IPAV***. Descriptive statistics for the dependent variables at Time 1 of the study are presented in Table 4. More specifically, means, standard deviations, and range scores are provided for the total number of acts of IPAV perpetration and victimization as well as the total instances of particular types of IPAV (i.e., physical, sexual, psychological) in the preceding four month period, in addition to the percentage of participants who reported at least one act for each IPAV variable/subtype. The Injury subscale of the CTS2 was also examined, which showed that 2.8% of both men and women reported injuring their partners at least once in the preceding four months and 3.9% of men and 2.0% of women reported being injured by their partners at least once in the preceding four months.

***Comparisons between men and women***. Comparisons were made between men and women on independent and dependent variables at Time 1 of the study. Mean differences were tested with *t* tests for normally distributed variables (i.e., age, SOS, benevolent sexism) and with Wilcoxon signed rank sum tests for non-normally distributed data. For predictor variables (see Table 3), men were more likely to be older, report more positive attitudes toward sexual stimuli, and have higher levels of both hostile and benevolent sexism than their female romantic partners. Men also reported more minutes of pornography consumption per week, a higher proportion of violent pornography consumption, and higher overall frequency of pornography consumption (FPC) than women. In terms of coercive control, men endorsed higher levels of both perpetration and victimization compared to women. Men were more likely to have a history of delinquent behaviours and physical aggression and their overall composite risk of aggression was higher than their female partners. With respect to IPAV (see Table 4),

Table 4

*Descriptive Statistics for Dependent Variables at Time 1*

| | Men | | | Women | | | |
|---|---|---|---|---|---|---|---|
| Variables | Mean *(SD)* | Range | % | Mean *(SD)* | Range | % | $z(df = 254)$ |
| Total IPAV perp | 9.82 (18.10) | 0-129 | 63.4 | 11.00 (22.70) | 0-263 | 66.9 | -1.18 |
| Physical | 1.87 (8.16) | 0-91 | 17.7 | 1.46 (7.24) | 0-83 | 18.9 | -0.39 |
| Sexual | 3.44 (8.57) | 0-54 | 27.6 | 2.01 (6.84) | 0-65 | 21.3 | -2.66** |
| Psychological | 4.51 (8.98) | 0-66 | 54.3 | 7.54 (14.35) | 0-115 | 62.2 | -3.58*** |
| Total IPAV vict | 9.55 (16.05) | 0-112 | 65.0 | 10.64 (19.47) | 0-144 | 62.2 | -0.54 |
| Physical | 1.35 (5.87) | 0-68 | 20.1 | 1.13 (5.12) | 0-56 | 15.7 | -1.12 |
| Sexual | 2.76 (7.23) | 0-44 | 27.2 | 2.88 (7.94) | 0-50 | 27.2 | -0.23 |
| Psychological | 5.44 (9.93) | 0-77 | 57.5 | 6.63 (12.92) | 0-90 | 57.5 | -1.56 |

*Note.* Total IPAV perp = total reported acts of IPAV perpetration measured on the CTS2; Total IPAV vict = total reported instances of IPAV victimization measured on the CTS2. *$p < .05$. **$p < .01$. ***$p < .001$.

women had higher rates of psychological IPAV perpetration compared to men and men perpetrated more sexual IPAV than women.

**Bivariate correlations.** A series of bivariate correlations were conducted in order to examine whether there were significant relationships among key study variables (see Table 5). There were three types of correlations conducted: within-male (below diagonal), within-female (above diagonal), and interpartner (i.e., between dyad members; bolded along diagonal). The interpartner correlations indicate the degree of nonindependence of observations between dyads members. Spearman's rank correlations were used to examine the relationships among variables that were not normally distributed, and Pearson's correlations were conducted between normally distributed variables (i.e., SOS, benevolent sexism). Age, relationship length, percentage of violent pornography consumed, positive attitudes about sex, and social desirability were included in the correlational analyses to determine whether or not they were significantly related to FPC and IPAV and should be included as covariates in the main analyses.

***Within-male***. For men at Time 1, higher frequency of pornography use was significantly associated with a greater proportion of violent pornography consumed ($\rho$ = .22, $p < .001$), higher levels of coercive control perpetration ($\rho$ = .14, $p$ =.027) and victimization ($\rho$ = .19, $p$ = .002), greater composite risk of aggression ($\rho$ = .28, $p < .001$), and more positive attitudes about sexuality ($\rho$ = .58, $p < .001$). Consuming a greater proportion of violent pornography was significantly correlated with higher composite risk of aggression ($\rho$ = .13, $p$ = .039) and more positive views about sexuality ($\rho$ = .13, $p$ = .036). Among men, coercive control perpetration was associated with positive views about sexuality ($\rho$ = .13, $p$ = .046) and higher levels of coercive control victimization

Table 5

*Within-Male, Within-Female, and Interpartner Correlations among Key Variables at Time 1*

| Variable | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | **.84*** ** | .33*** | .06 | -.01 | .02 | .07 | .08 | .05 | -.04 | .15* | .00 | .03 | .03 |
| 2. Relationship length | .21** | **.99*** ** | -.06 | .01 | .03 | -.06 | -.13* | .07 | .06 | -.07 | .09 | .10 | .07 |
| 3. Frequency of PC | -.01 | -.01 | **.07** | .13* | .09 | .44*** | .28*** | -.25*** | -.18** | .61*** | -.21** | .13* | .10 |
| 4. Coercive control perp | .11 | .12 | .14* | **.33*** ** | .74*** | .03 | .19** | .01 | .08 | .03 | -.14* | .31*** | .30*** |
| 5. Coercive control vict | .10 | .08 | .19** | .71*** | **.29*** ** | .03 | .23*** | .09 | .16* | .01 | -.12 | .37*** | .38*** |
| 6. Percentage of violent PC | .03 | -.03 | .22*** | .10 | .08 | **.19*** ** | .11 | -.04 | .01 | .32*** | -.06 | .06 | .02 |
| 7. Composite aggression | .14* | .00 | .28*** | .20** | .22*** | .13* | **.16*** ** | -.04 | -.12 | .27*** | -.42*** | .38*** | .35*** |
| 8. Hostile sexism | .04 | .09 | .07 | .14* | .25*** | .09 | .16* | **.22*** ** | .43*** | -.30*** | .06 | .08 | .08 |
| 9. Benevolent sexism | -.02 | .00 | -.05 | .05 | .10 | .10 | .05 | .26*** | **.10* ** | -.23*** | .14* | .09 | .06 |
| 10. Positive attitude about sex | .14* | -.02 | .58*** | .13* | .08 | .13* | .17** | -.02 | -.22*** | **.44*** ** | -.25*** | .18** | .15* |
| 11. Social desirability | -.08 | -.05 | -.15* | -.25*** | -.30*** | -.23*** | -.26*** | -.17** | .06 | -.11 | **.21*** ** | -.30*** | -.27*** |
| 12. Total IPAV perp | .08 | .06 | .20** | .43*** | .34*** | .12 | .34*** | .26*** | .14* | .10 | -.36*** | **.34*** ** | .89*** |
| 13. Total IPAV vict | .09 | .04 | .17** | .42*** | .27*** | .12 | .27*** | .22*** | .13* | .09 | -.31*** | .89*** | **.44*** ** |

*Note.* In the correlation matrix, correlations for men appear below the diagonal, and correlations for women appear above the diagonal. Bolded values along the diagonal are correlations between dyad members. PC = pornography consumption; perp = perpetration; vict = victimization; IPAV = intimate partner aggression/violence.
*$p < .05$. **$p < .01$. ***$p < .001$.

($\rho$ = .71, $p$ < .001), composite risk of aggression ($\rho$ = .20, $p$ = .001), and hostile sexism ($\rho$ = .14, $p$ = .025). Greater coercive control victimization was also related to higher composite risk of aggression ($\rho$ = .22, $p$ < .001) and hostile sexism ($\rho$ = .25, $p$ < .001) in men. Higher composite risk of aggression was associated with higher hostile sexism ($\rho$ = .16, $p$ = .012) and more positive views about sexuality ($\rho$ = .17, $p$ = .006). Men with greater hostile sexism had higher levels of benevolent sexism ($\rho$ = .26, $p$ < .001). Greater benevolent sexism was related to negative views about sexuality ($r$ = -.22, $p$ < .001).

In terms of men's IPAV at Time 1 of the study, self-reported perpetration was associated with greater IPAV victimization ($\rho$ = .89, $p$ < .001), frequency of pornography use ($\rho$ = .20, $p$ = .001), coercive control perpetration ($\rho$ = .43, $p$ < .001) and victimization ($\rho$ = .41, $p$ < .001), composite risk of aggression ($\rho$ = .34, $p$ < .001), and hostile ($\rho$ = .27, $p$ < .001) and benevolent sexism ($\rho$ = .14, $p$ = .025). Higher rates of IPAV victimization were also associated with greater frequency of pornography use ($\rho$ = .17, $p$ = .008), coercive control perpetration ($\rho$ = .42, $p$ < .001) and victimization ($\rho$ = .45, $p$ < .001), composite risk of aggression ($\rho$ = .27, $p$ < .001), and hostile ($\rho$ = .22, $p$ < .001) and benevolent sexism ($\rho$ = .13, $p$ = .037).

Responding in a socially desirable manner was associated with significantly lower levels of IPAV perpetration ($\rho$ = -.36, $p$ < .001) and victimization ($\rho$ = -.31, $p$ < .001), FPC ($\rho$ = -.15, $p$ = .016), violence of pornography consumed ($\rho$ = -.23, $p$ < .001), coercive control perpetration ($\rho$ = -.25, $p$ < .001) and victimization ($\rho$ = -.30, $p$ < .001), risk of composite aggression ($\rho$ = -.26, $p$ < .001), and hostile sexism ($\rho$ = -.17, $p$ = .009). As such, social desirability was identified as a potential confound in predicting IPAV from FPC in men and was included as a covariate. However, the other variables

examined as potential covariates (i.e., age, relationship length, percentage of violent pornography consumed, and positive attitudes about sexuality) were not significantly associated with IPAV perpetration or victimization for men at Time 1.

***Within-female***. Among women at Time 1 of the study, higher frequency of pornography consumption (FPC) was significantly associated with viewing a greater proportion of violent pornography ($\rho$ = .44, $p$ < .001), higher levels of coercive control perpetration ($\rho$ = .13, $p$ =.042), greater composite risk of aggression ($\rho$ = .28, $p$ < .001), more positive attitudes about sexuality ($\rho$ = .61, $p$ < .001) and less hostile ($\rho$ = -.25, $p$ < .001) and benevolent sexism ($\rho$ = -.18, $p$ = .004). Consuming a greater proportion of violent pornography was correlated with positive views about sexuality ($\rho$ = .32, $p$ < .001). Women who perpetrated more coercive control tended to have a greater composite risk of aggression ($\rho$ = .19, $p$ = .003). Higher rates of coercive control victimization were also related to higher composite risk of aggression ($\rho$ = .23, $p$ < .001) and benevolent sexism ($\rho$ = .16, $p$ = .013). Higher composite risk of aggression was associated with more positive views about sexuality ($\rho$ = .27, $p$ < .001). Women with greater hostile sexism had higher levels of benevolent sexism ($\rho$ = .43, $p$ < .001) and more negative views about sexuality ($\rho$ = -.30, $p$ < .001). Higher levels of benevolent sexism were associated with negative views about sexuality ($r$ = -.23, $p$ < .001).

With respect to women's rates of IPAV, self-reported perpetration was associated with higher IPAV victimization ($\rho$ = .89, $p$ < .001), FPC ($\rho$ = .13, $p$ = .034), coercive control perpetration ($\rho$ = .31, $p$ < .001) and victimization ($\rho$ = .37, $p$ < .001), composite risk of aggression ($\rho$ = .38, $p$ < .001), and positive attitudes about sexuality ($\rho$ = .18, $p$ = .005). Women's IPAV victimization was not associated with FPC ($\rho$ = .10, $p$ = .124) but

was associated with greater coercive control perpetration ($\rho$ = .30, $p$ < .001) and victimization ($\rho$ = .38, $p$ < .001), composite risk of aggression ($\rho$ = .35, $p$ < .001), and positive views about sexuality ($\rho$ = .15, $p$ = .015).

Women who responded in a socially desirable manner tended to have lower levels of IPAV perpetration ($\rho$ = -.30, $p$ < .001) and victimization ($\rho$ = -.27, $p$ < .001), FPC ($\rho$ = -.21, $p$ = .001), coercive control perpetration ($\rho$ = -.14, $p$ = .025), and risk of composite aggression ($\rho$ = -.42, $p$ < .001) as well as more negative views about sexuality ($\rho$ = -.25, $p$ < .001) and higher levels of benevolent sexism ($\rho$ = .14, $p$ = .031). Given this, social desirability was also identified as a potential confound in predicting IPAV for women and was included as a covariate. As found in men, the other potentially confounding variables (i.e., age, relationship length, percentage of violent pornography consumed, and attitudes about sexuality) were not significantly related to independent and dependent variables for women, and were not thus were not included as covariates.

***Interpartner***. At the couple-level, there were significant, positive interpartner correlations between romantic partners' self-reports of IPAV perpetration ($\rho$ = .34, $p$ < .001) and victimization ($\rho$ = .44, $p$ < .001) at Time 1, which indicated that the Time 1 dependent variables were not independent and it was necessary to use a statistical model that accounts for statistical interdependence. Interpartner correlations were also positive and statistically significant for several other variables, demonstrating quite a bit of statistical interdependence between romantic partners' responses at Time 1.

**Interpartner agreement on IPAV**. As no single metric is likely to fully capture the degree of interpartner agreement on its own (Armstrong, Wernke, Medina, & Schafer, 2002), several indices were used to evaluate interpartner agreement, including the

percentage of occurrence agreement, kappa statistics examining agreement about the occurrence of male- and female-perpetrated IPAV, and correlations assessing agreement about the frequency of male- and female-perpetrated IPAV.

The percentage of occurrence agreement is the proportion of couples who agreed that IPAV did or did not occur in their relationships. At Time 1, 67.3% of women agreed with their male partner's self-report of whether or not he had perpetrated any degree of IPAV (at least one act of physical, sexual, or psychological IPAV in the preceding four months), and 68.1% of men agreed with their female partner's self-report of whether or not she had perpetrated at least one act of IPAV. However, IPAV is a relatively low base rate phenomenon in the general population as well as in the current study sample, which means that the rates of agreement between romantic partners are likely inflated by partners agreeing on the nonoccurrence of IPAV. Given this, I further examined percentage of occurrence agreement for couples who endorsed some degree of IPAV. Of the 254 couples for whom both partners completed Time 1 of the study and had valid data, there were 201 couples (79.1%) for whom at least one partner self-reported perpetrating at least one act of physical, sexual, or emotional IPAV, and 124 of these couples demonstrated interpartner agreement (61.7%). There were 161 men who endorsed perpetrating one or more acts of IPAV, and 118 of their female partners agreed with their endorsement (73.3% interpartner agreement). For the 170 women who self-reported perpetrating at least one act of IPAV, 127 of their male partners agreed, and interpartner agreement was 74.4%.

The kappa statistic (*k*) is a widely used metric of interpartner agreement as it adjusts for the degree of agreement expected by change, but in the case of low base rate

variables, such as IPAV, *k* tends to underestimate interpartner agreement (Thompson & Walter, 1988). Despite this limitation, kappa was calculated for agreement about the occurrence of male- and female-perpetrated IPAV at Time 1, and romantic partners had poor agreement about the occurrence of IPAV perpetrated by both men ($k = .30$) and women ($k = .29$) based on standard criteria (Landis & Koch, 1977).

Last, I assessed agreement about the frequency of male- and female-perpetrated IPAV at Time 1 using Spearman's rank correlations given the nonnormal distributions of IPAV. Romantic partners' reports were positively and significantly related for both male-perpetrated IPAV ($\rho = .40$, $p < .001$) and female-perpetrated IPAV ($\rho = .41$, $p < .001$), but the magnitude of these correlations suggested only moderate interparner agreement.

Altogether, multiple indices of interpartner agreement demonstrated relatively poor levels of interpartner agreement about the occurrence and frequency of IPAV at Time 1. Given this, self-reported rates of IPAV were modeled as two separate outcome variables for each partner using the APIM, rather than calculating a composite of IPAV for each couple that combined the two partners' responses.

**Planned analyses.**

***Actor-partner interdependence model (APIM).*** The APIM was deemed the most appropriate method of analyzing the dyadic data in the current study for a variety of reasons including the study design and hypotheses, the interdependence of partners' responses, and the low level of interpartner agreement. The APIM treats the dyad as the unit of analyses and controls for the interdependence of data between the two partners in each couple dyad. There are three different types of effects that the APIM measures, including actor effects, partner effects, and actor-partner effects. Actor effects measure

the degree that individuals' own predictor variables predict their own outcome variables, whereas, partner effects address the impact of individuals' own predictor variables on their partners' outcome variables. Lastly, actor-partner effects test whether an interaction between individuals' predictor variables and their partners' predictor variables predict individuals' outcome variables. See Figure 3 for a diagram of the basic APIM model tested in Objective 1 of the study. The APIM can also be extended to examine both mediation and moderation. Of the several statistical procedures that can be used for the APIM, multilevel modelling (MLM) was considered the most suitable means for estimating the APIM in the current study as there are modules available to accommodate non-normal distributions.

To test the APIM hypotheses at Time 1 of the study (Objectives 1-3), I conducted a series of multilevel modeling analyses for distinguishable data using the generalized estimating equations (GEE) module in SPSS (Version 22.0), as this procedure can allow for non-normal distributions and mixed effects (i.e., nested or multilevel) models. A negative binomial (NB) mixed-model regression was required as IPAV perpetration and victimization were positively skewed and overdispersed (i.e., variables' standard deviations were greater than variables' corresponding mean levels). I included social desirability as a covariate in each model as it was significantly correlated with predictor and outcome variables for both men and women (Table 5). All predictor variables were grand-mean centered prior to calculating the interaction terms to aid in interpreting the interactions (Kenny et al., 2006). I computed interaction terms by multiplying the two centered predictors (Hilbe, 2011) together. As estimating the APIM using MLM introduces a complexity into the data structure as the identity of the actor and the identity

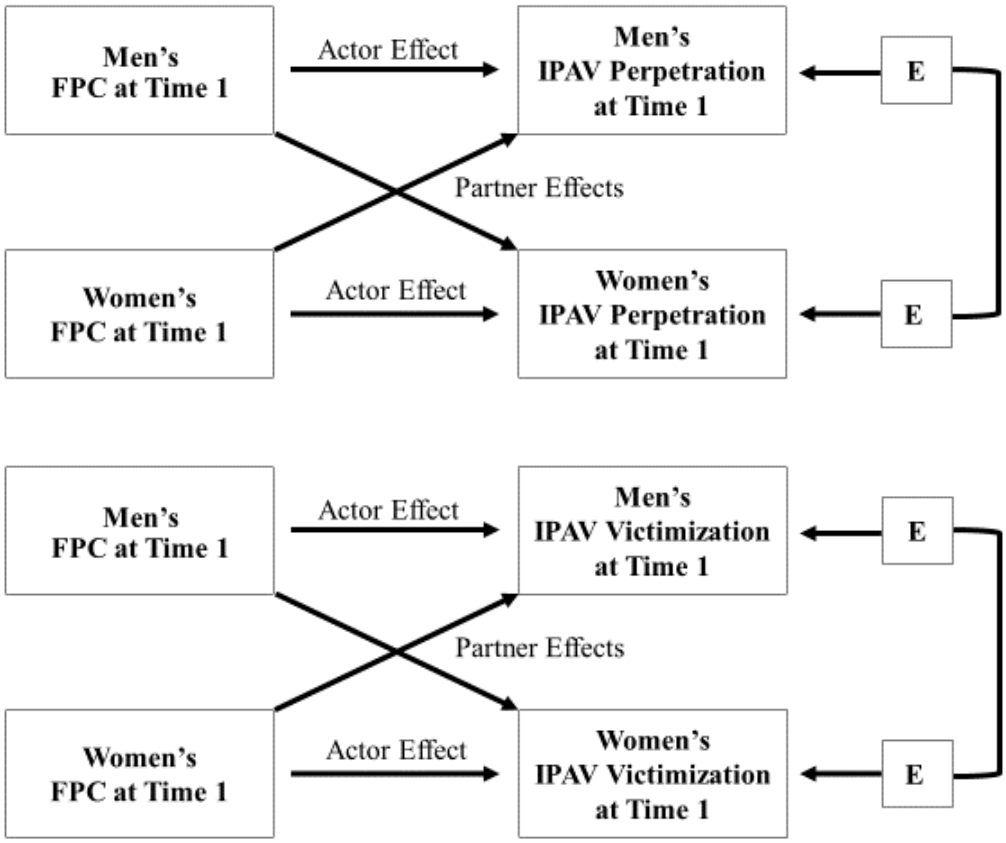


*Figure 3*. Measurement models for distinguishable dyad actor partner interdependence models predicting intimate partner aggression/violence (IPAV) perpetration and victimization at Time 1 from frequency of pornography (FPC) at Time 1.

of the partner (i.e., male or female) shift with each record, male and female dummy code variables were created and multiplied with each of the predictor variables as per the procedure recommended by Cook and Kenny (2005) in order to ensure that the appropriate actor or partner predictor is used for a particular outcome. This allowed the actor and partner predictor variables to be distinguishable as male actor effects, female actor effects, male partner effects, and female partner effects. Each model included the following predictor variables: men's and women's social desirability, men's and women's actor and partner effects (main effects), and men's and women's actor by partner (two-way) interactions. I used Hilbe's (2011) procedures to examine significant two-way interactions in the NB regressions by calculating incidence rate ratios (IRRs), standard errors, and 95% confidence intervals for a range of possible scores (e.g., - 1 *SD*, mean, + 1 *SD*) on continuous predictor variables (e.g., coercive control perpetration, FPC). I examined the statistically significant two-way interaction terms by calculating IRRs and 95% CIs for each significant interaction term (separately for analyses with and without variables). Graphs were also created to illustrate the breakdown of the interactions for ease of interpretation. Negative binomial three-way interactions terms were not included in any of the models because of a lack of research and consensus on how to calculate and interpret them.

I conducted a total of 14 multilevel models (MLMs) to examine the hypotheses for Time 1 (Objectives 1-3). First, I conducted two NB regression models to assess the relation between the FPC and IPAV perpetration and victimization at Time 1 of the study (Models 1A and 1B; Objective 1 hypotheses 1A, 1B, 2A, 2B, 3A, and 3B). Second, to test the moderations, I ran four NB regression models to examine whether or not coercive

control perpetration or victimization moderated the relation between FPC and IPAV perpetration and victimization at Time 1 (Model 2A, 2B, 2C, and 2D; Objective 2 hypotheses 4A, 4B, 5A, and 5B). Two NB regression models were conducted to assess if composite risk of aggression moderated the association between FPC and IPAV perpetration and victimization at Time 1 (Models 3A and 3B; Objective 2 hypotheses 6A-D). The last six MLMs involved testing the hypothesized mediations with hostile and benevolent sexism (Objective 3 hypotheses). I ran two NB regression models to assess the relation between FPC and the two potential mediators, benevolent and hostile sexism, at Time 1 in order to test if the independent variable was related to the mediator variables (Models 4A and 4B). Then, I conducted four NB regression models to assess the final mediation models for benevolent sexism (Models 5A and 5B) and hostile sexism (Models 6A and 6B) for both IPAV perpetration and victimization at Time 1. In order to assess the fit of each NB regression model, significance levels (*p* values) were adjusted using the sequential Bonferroni procedure available in SPSS to address the risk of elevated Type 1 error when testing several hypotheses, and each of the *p* values reported has been adjusted according.

***Frequency of pornography consumption and IPAV at Time 1 (Objective 1).*** As shown in Table 6, in the NB regressions the included the outliers, men's and women's frequency of pornography consumption at Time 1 did not significantly predict their level of IPAV perpetration or victimization at Time 1 as was expected (no significant actor effects). However, consistent with hypothesis 1A, frequent pornography consumption among men was significantly associated with men reporting more instances of IPAV

Table 6

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption at Time 1 (Outliers Included, N = 254)*

| Variables | IPAV perpetration (Model 1A) | | | IPAV victimization (Model 1B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.183 (0.111) | 387.10 | 8.88 [7.14-11.03] | 2.169 (0.099) | 479.12 | 8.75 [7.21-10.63] |
| | | | Men | | | |
| Social desirability | **-0.219 (0.037)** | **35.67*** ** | **0.80 [0.75-0.86]** | **-0.151 (0.031)** | **23.91*** ** | **0.86 [0.81-0.91]** |
| Actor FPC | 0.017 (0.014) | 1.54 | 1.02 [0.99-1.04] | 0.014 (0.014) | 1.25 | 1.01 [0.99-1.04] |
| Partner FPC | 0.001 (0.016) | 0.01 | 1.00 [0.97-1.03] | 0.006 (0.011) | 0.17 | 1.01 [.98-1.03] |
| Actor X Partner FPC | -0.001 (0.002) | 0.22 | 1.00 [1.00 -1.00] | 0.000 (0.002) | 0.05 | 1.00 [1.00-1.00] |
| | | | Women | | | |
| Social desirability | **-0.125 (0.045)** | **7.67**** | **0.88 [0.81-0.96]** | **-0.125 (0.045)** | **7.83**** | **0.88 [0.81-0.96]** |
| Actor FPC | -0.005 (0.023) | 0.05 | 1.00 [0.95-1.04] | -0.003 (0.018) | 0.02 | 1.00 [0.96-1.03] |
| Partner FPC | 0.012 (0.014) | 0.80 | 1.01 [0.99-1.04] | 0.014 (0.014) | 1.05 | 1.01 [0.99-1.04] |
| Actor X Partner FPC | -0.002 (0.002) | 0.47 | 1.00 [0.99-1.00] | -0.002 (0.002) | 1.39 | 1.00 [0.99-1.00] |

*Note.* Significant findings are bolded. FPC = frequency of pornography consumption; IPAV = intimate partner aggression/violence. *$p$ < .05, **$p$ < .01. ***$p$ < .001.

perpetration ($\rho$ = .20, $p$ = .001) and victimization ($\rho$ = .17, $p$ = .008) at the bivariate level (Table 5). Contrary to hypothesis 1B, women's FPC and IPAV victimization were not significantly correlated ($\rho$ = .10, $p$ = .124), but women with higher FPC did report perpetrating significantly more acts of IPAV ($\rho$ = .13, $p$ = .034). Inconsistent with hypotheses 2A and 2B, there were also no significant partner effects, as men's FPC was not significantly associated with women's level of IPAV victimization and women's FPC did not predict men's perpetration of IPAV at Time 1 of the study. Further, inconsistent with hypotheses 3A and 3B, men's and women's FPC did not significantly interact when predicting men's IPAV perpetration or women's IPAV victimization.

It is important to note that social desirability was controlled for in both models, and it emerged as a significant predictor of both IPAV perpetration (Model 1A) and victimization (Model 1B). Specifically, for men and women at Time 1, higher levels of social desirability were associated with lower levels of reported IPAV perpetration and victimization. Thus, social desirable responding was found to be an important covariate.

***Moderation models at Time 1 (Objective 2).*** Results from the six NB regressions (Models 2A, 2B, 2C, 2D, 3A, and 3B) testing the hypothesized moderations with coercive control perpetration and victimization and composite risk of aggression are presented in Tables 7-9.

Social desirability was controlled for in all six models, and was predictive of lower levels of IPAV perpetration or victimization for men and women at Time 1 of the study in the models that evaluated coercive control perpetration and victimization as moderators, but the relation between responding a in socially desirable manner and reporting lower levels of IPAV was stronger for men than women. For men, responding

Table 7

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Coercive Control Perpetration as a Potential Moderator at Time 1 (N = 254 couples)*

| Variables | IPAV perpetration (Model 2A) | | | IPAV victimization (Model 2B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.126 (0.107) | 394.56 | 8.38 [6.80-10.34] | 2.113 (0.099) | 454.09 | 8.27 [6.81-10.05] |
| | | | Men | | | |
| Social desirability | **-0.194 (0.034)** | **31.91*** ** | **0.82 [0.77-0.88]** | **-0.133 (0.031)** | **18.23*** ** | **0.88 [0.82-0.93]** |
| Actor FPC | 0.000 (0.011) | 0.00 | 1.00 [0.98-1.02] | 0.004 (0.012) | 0.14 | 1.00 [0.98-1.03] |
| Partner FPC | 0.006 (0.014) | 0.16 | 1.01 [0.98-1.03] | 0.004 (0.013) | 0.09 | 1.00 [0.98-1.03] |
| Actor CC perp | **0.115 (0.019)** | **35.14*** ** | **1.12 [1.08-1.17]** | **0.100 (0.020)** | **25.83*** ** | **1.11 [1.06-1.15]** |
| Partner CC perp | 0.037 (0.031) | 1.44 | 1.04 [0.98-1.10] | 0.058 (0.030) | 3.88 | 1.06 [1.00-1.12] |
| Actor X Partner FPC | -0.002 (0.002) | 2.25 | 1.00 [1.00-1.00] | -0.001 (0.001) | 0.29 | 1.00 [1.00 -1.00] |
| Actor X Partner CC perp | **-0.004 (0.002)** | **8.79**** | **1.00 [0.99-1.00]** | **-0.004 (0.002)** | **7.82**** | **1.00 [0.99-1.00]** |
| Actor CC perp X Actor FPC | -0.002 (0.001) | 3.88 | 1.00 [1.00-1.00] | -0.002 (0.001) | 2.93 | 1.00 [1.00-1.00] |
| Actor CC perp X Partner FPC | 0.003 (0.002) | 1.87 | 1.00 [1.00-1.01] | 0.004 (0.002) | 3.82 | 1.00 [1.00-1.01] |
| Partner CC perp X Actor FPC | -0.002 (0.002) | 1.75 | 1.00 [1.00-1.00] | -0.003 (0.002) | 2.85 | 1.00 [0.99-1.00] |
| Partner CC perp X Partner FPC | -0.003 (0.004) | 0.59 | 1.00 [0.99-1.00] | -0.003 (0.003) | 0.77 | 1.00 [0.99-1.00] |
| | | | Women | | | |
| Social desirability | **-0.104 (0.049)** | **4.46*** | **0.90 [0.82-0.99]** | **-0.109 (0.046)** | **5.60*** | **0.90 [0.82-0.98]** |
| Actor FPC | 0.002 (0.020) | 0.01 | 1.00 [0.96-1.04] | -0.001 (0.017) | 0.00 | 1.00 [0.97-1.03] |
| Partner FPC | -0.001 (0.016) | 0.01 | 1.00 [0.97-1.03] | 0.002 (0.014) | 0.02 | 1.00 [0.98-1.03] |
| Actor CC perp | **0.091 (0.026)** | **12.46*** ** | **1.10 [1.04-1.15]** | **0.106 (0.027)** | **16.04*** ** | **1.11 [1.06-1.17]** |
| Partner CC perp | 0.037 (0.030) | 1.60 | 1.04 [0.98-1.10] | 0.042 (0.027) | 2.31 | 1.04 [0.99-1.10] |
| Actor X Partner FPC | -0.001 (0.002) | 0.12 | 1.00 [0.99-1.00] | -0.002 (0.002) | 0.98 | 1.00 [0.99 -1.00] |
| Actor X Partner CC perp | **-0.005 (0.002)** | **8.30**** | **1.00 [0.99-1.00]** | **-0.006 (0.002)** | **13.19*** ** | **0.99 [0.99-1.00]** |
| Actor CC perp X Actor FPC | **-0.006 (0.003)** | **6.50*** | **0.99 [0.99-1.00]** | **-0.006 (0.003)** | **4.83*** | **0.99 [0.99-1.00]** |
| Actor CC perp X Partner FPC | 0.000 (0.002) | 0.03 | 1.00 [1.00-1.01] | 0.002 (0.002) | 1.34 | 1.00 [0.99-1.00] |
| Partner CC perp X Actor FPC | -0.001 (0.002) | 0.38 | 1.00 [1.00-1.00] | 0.000 (0.002) | 0.00 | 1.00 [1.00-1.00] |
| Partner CC perp X Partner FPC | 0.001 (0.002) | 0.29 | 1.00 [1.00-1.01] | 0.002 (0.002) | 0.53 | 1.00 [1.00-1.01] |

*Note.* Significant findings are bolded. FPC = frequency of pornography consumption; CC perp = coercive control perpetration; IPAV = intimate partner aggression/violence. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 8

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Coercive Control Victimization as a Potential Moderator at Time 1*

| Variables | IPAV perpetration (Model 2C) | | | IPAV victimization (Model 2D) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.149 (0.120) | 319.67 | 8.58 [6.78-10.85] | 2.075 (0.109) | 363.78 | 7.97 [6.44-9.86] |
| | | | Men | | | |
| Social desirability | **-0.218 (0.042)** | **27.18*** ** | **0.80 [0.74-0.87]** | **-0.135 (0.034)** | **16.02*** ** | **0.87 [0.82-0.93]** |
| Actor FPC | -0.009 (0.012) | 0.56 | 0.99 [0.97-1.01] | -0.005 (0.012) | 0.21 | 1.00 [0.97-1.02] |
| Partner FPC | 0.018 (0.014) | 1.56 | 1.02 [0.99-1.05] | 0.014 (0.013) | 1.18 | 1.01 [0.99-1.04] |
| Actor CC vict | **0.073 (0.012)** | **36.64*** ** | **1.08 [1.05-1.10]** | **0.080 (0.011)** | **54.65*** ** | **1.08 [1.06-1.11]** |
| Partner CC vict | 0.010 (0.015) | 0.40 | 1.01 [0.98-1.04] | 0.009 (0.014) | 0.37 | 1.01 [0.98-1.04] |
| Actor X Partner FPC | -0.002 (0.002) | 1.41 | 1.00 [1.00-1.00] | -0.001 (0.002) | 1.01 | 1.00 [1.00 -1.00] |
| Actor X Partner CC vict | -0.002 (0.001) | 4.68 | 1.00 [1.00-1.00] | **-0.002 (0.001)** | **4.77*** | **1.00 [1.00 -1.00]** |
| Actor CC vict X Actor FPC | **-0.002 (0.001)** | **5.59*** | **1.00 [1.00-1.00]** | **-0.002 (0.001)** | **9.55** ** | **1.00 [1.00-1.00]** |
| Actor CC vict X Partner FPC | 0.002 (0.001) | 1.56 | 1.00 [1.00-1.00] | 0.003 (0.001) | 4.60 | 1.00 [1.00-1.01] |
| Partner CC vict X Actor FPC | 0.001 (0.001) | 0.27 | 1.00 [1.00-1.00] | 0.001 (0.001) | 2.03 | 1.00 [1.00-1.00] |
| Partner CC vict X Partner FPC | -0.002 (0.002) | 1.10 | 1.00 [1.00-1.00] | -0.002 (0.002) | 2.23 | 1.00 [0.99-1.00] |
| | | | Women | | | |
| Social desirability | **-0.119 (0.051)** | **5.50*** | **0.89 [0.80-0.98]** | -0.109 (0.053) | 4.24 | 0.90 [0.81-1.00] |
| Actor FPC | 0.005 (0.025) | 0.04 | 1.01 [0.96-1.05] | 0.004 (0.021) | 0.04 | 1.00 [0.96-1.05] |
| Partner FPC | -0.001 (0.018) | 0.00 | 1.00 [0.97-1.04] | 0.005 (0.016) | 0.10 | 1.01 [0.97-1.04] |
| Actor CC vict | **0.049 (0.016)** | **9.93** ** | **1.05 [1.02-1.08]** | **0.057 (0.017)** | **11.33** ** | **1.06 [1.02-1.09]** |
| Partner CC vict | 0.016 (0.013) | 1.52 | 1.02 [0.99-1.04] | 0.016 (0.014) | 1.24 | 1.02 [0.99-1.05] |
| Actor X Partner FPC | -0.001 (0.003) | 0.04 | 1.00 [0.99-1.01] | -0.001 (0.002) | 0.18 | 1.00 [0.99 -1.00] |
| Actor X Partner CC vict | -0.001 (0.001) | 2.09 | 1.00 [1.00-1.00] | -0.001 (0.001) | 2.54 | 1.00 [1.00-1.00] |
| Actor CC vict X Actor FPC | -0.002 (0.002) | 0.94 | 1.00 [0.99-1.00] | -0.001 (0.002) | 0.53 | 1.00 [1.00-1.00] |
| Actor CC vict X Partner FPC | 0.002 (0.001) | 2.55 | 1.00 [1.00-1.01] | 0.001 (0.001) | 0.28 | 1.00 [1.00-1.00] |
| Partner CC vict X Actor FPC | -0.002 (0.001) | 3.12 | 1.00 [1.00-1.00] | -0.002 (0.001) | 2.36 | 1.00 [1.00-1.00] |
| Partner CC vict X Partner FPC | 0.000 (0.001) | 0.13 | 1.00 [1.00-1.00] | 0.001 (0.001) | 0.43 | 1.00 [1.00-1.00] |

*Note.* Significant findings are bolded. FPC = frequency of pornography consumption; CC vict = coercive control victimization; IPAV = intimate partner aggression/violence. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 9

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Composite Risk of Aggression as a Potential Moderator at Time 1 (N = 254 couples)*

| Variables | IPAV perpetration (Model 3A) | | | IPAV victimization (Model 3B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.136 (0.111) | 373.91 | 8.47 [6.82-10.52] | 2.102 (0.111) | 360.73 | 8.18 [6.59-10.16] |
| | | | Men | | | |
| Social desirability | **-0.212 (0.031)** | **46.12*** ** | **0.81 [0.76-0.86]** | **-0.149 (0.029)** | **25.94*** ** | **0.86 [0.81-0.91]** |
| Actor FPC | -0.004 (0.013) | 0.09 | 1.00 [0.97-1.02] | 0.001 (0.014) | 0.01 | 1.00 [0.98-1.03] |
| Partner FPC | -0.013 (0.019) | 0.49 | 0.99 [0.95-1.03] | -0.011 (0.017) | 0.42 | 0.99 [0.96-1.02] |
| Actor CA | **0.047 (0.015)** | **9.45**** | **1.05 [1.02-1.08]** | **0.038 (0.017)** | **5.10*** | **1.04 [1.01-1.07]** |
| Partner CA | **0.058 (0.018)** | **10.81**** | **1.06 [1.02-1.10]** | 0.034 (0.017) | 4.12 | 1.04 [1.00-1.07] |
| Actor X Partner FPC | -0.002 (0.002) | 1.88 | 1.00 [1.00-1.00] | -0.001 (0.001) | 0.45 | 1.00 [1.00 -1.00] |
| Actor X Partner CA | **-0.007 (0.001)** | **29.28*** ** | **0.99 [0.99-1.00]** | **-0.005 (0.001)** | **13.44*** ** | **1.00 [0.99-1.00]** |
| Actor CA X Actor FPC | 0.000 (0.001) | 0.03 | 1.00 [1.00-1.00] | 0.000 (0.000) | 0.00 | 1.00 [1.00-1.00] |
| Actor CA X Partner FPC | 0.001 (0.002) | 0.29 | 1.00 [1.00-1.01] | 0.001 (0.002) | 0.27 | 1.00 [1.00-1.01] |
| Partner CA X Actor FPC | 0.001 (0.002) | 0.22 | 1.00 [1.00-1.00] | **0.003 (0.001)** | **4.30*** | **1.00 [1.00-1.01]** |
| Partner CA X Partner FPC | 0.000 (0.002) | 0.00 | 1.00 [1.00-1.01] | -0.002 (0.002) | 1.30 | 1.00 [0.99-1.00] |
| | | | Women | | | |
| Social desirability | -0.074 (0.052) | 2.04 | 0.93 [0.84-1.03] | -0.075 (0.050) | 2.23 | 0.93 [0.84-1.02] |
| Actor FPC | -0.017 (0.019) | 0.82 | 0.99 [0.95-1.02] | -0.023 (0.017) | 1.99 | 0.98 [0.95-1.01] |
| Partner FPC | 0.013 (0.014) | 0.95 | 1.01 [0.99-1.04] | 0.016 (0.014) | 1.39 | 1.02 [0.99-1.04] |
| Actor CA | **0.060 (0.020)** | **8.94**** | **1.06 [1.02-1.11]** | **0.052 (0.019)** | **7.35**** | **1.05 [1.02-1.09]** |
| Partner CA | **0.056 (0.013)** | **20.48*** ** | **1.06 [1.03-1.08]** | **0.063 (0.013)** | **23.97*** ** | **1.07 [1.04-1.09]** |
| Actor X Partner FPC | -0.001 (0.002) | 0.10 | 1.00 [1.00-1.00] | -0.001 (0.002) | 0.50 | 1.00 [1.00-1.00] |
| Actor X Partner CA | **-0.005 (0.002)** | **10.88**** | **1.00 [0.99-1.00]** | **-0.004 (0.001)** | **8.94**** | **1.00 [0.99-1.00]** |
| Actor CA X Actor FPC | -0.004 (0.003) | 2.04 | 1.00 [0.99-1.00] | **-0.006 (0.002)** | **6.52*** | **0.99 [0.99-1.00]** |
| Actor CA X Partner FPC | 0.002 (0.002) | 1.32 | 1.00 [1.00-1.01] | 0.002 (0.002) | 1.01 | 1.00 [1.00-1.01] |
| Partner CA X Actor FPC | 0.003 (0.003) | 0.97 | 1.00 [1.00-1.01] | 0.004 (0.002) | 2.59 | 1.00 [1.00-1.01] |
| Partner CA X Partner FPC | -0.002 (0.002) | 2.46 | 1.00 [1.00-1.00] | -0.002 (0.001) | 2.24 | 1.00 [1.00-1.00] |

*Note.* Sex is coded men = -1 and women = 1. Significant findings are bolded. FPC = frequency of pornography consumption; CA = composite aggression; IPAV = intimate partner aggression/violence. *$p < .05$. **$p < .01$. ***$p < .001$.

in a socially desirable manner was also associated with fewer reported instances of IPAV perpetration and victimization in the models including composite aggression, but this relation was not statistically significant for women. Although men's and women's rates of social desirability and overall IPAV perpetration and victimization did not significantly differ (see Table 3 and 4), these findings suggest men likely underreported both IPAV perpetration and victimization, and analyses should be interpreted with this in mind.

*Coercive control perpetration.* Main effects for coercive control perpetration included an actor effect for coercive control perpetration, such that greater coercive control perpetration was associated with higher levels of IPAV perpetration and victimization for both men and women at Time 1 of the study. Thus, at the main effect level, women and men who used coercive control against their partners were generally more likely to report the presence of both IPAV perpetration and victimization in their romantic relationships; however, individuals' partners' use of coercive control was not predictive of IPAV (perpetration or victimization).

There were several statistically significant actor by partner interactions between men's and women's coercive control perpetration when predicting their risk of IPAV perpetration and victimization at Time 1 of the study. Results from Model 2A showed that when female partners' coercive control perpetration was held at constant low (i.e., discrepant) levels, men's risk of perpetrating IPAV increased by 16% for every one unit increase in men's coercive control perpetration (IRR = 1.16, 95% CI = [1.08-1.25]), whereas men's risk of IPAV perpetration increased by only 8% (IRR = 1.08, 95% CI = [1.02-1.15]) for every one unit increase in men's coercive control perpetration when their

female partners' coercive control perpetration was (similarly) high (Figure 4). In a similar vein, when considering women's perpetration, women's risk of IPAV perpetration increased by 15% for every one unit increase in women's coercive control perpetration (IRR = 1.15, 95% CI = [1.08-1.24]) when their male partners' coercive control perpetration was held at constant low (i.e., discrepant) levels, but women's coercive control perpetration and IPAV perpetration were not significantly related (IRR = 1.03, 95% CI = [0.97-1.11]) when men's coercive control perpetration was (similarly) high (Figure 5).

A similar pattern held for men and women when predicting IPAV victimization. That is, for Model 2B predicting IPAV victimization, there was a significant actor by partner interaction between men's and women's coercive control perpetration when predicting men's IPAV victimization (Figure 6), such that men's IPAV victimization increased by 14% for every one unit increase in men's coercive control perpetration (IRR = 1.14, 95% CI = [1.07-1.23]) when their female partners' coercive control perpetration was held at constant low (i.e., discrepant) levels, whereas, men's IPAV victimization increased by only 7% for every one unit increase in men's coercive control perpetration (IRR = 1.07, 95% CI = [1.01-1.13]) when their female partners' coercive control perpetration was (similarly) high. There was also a significant actor by partner interaction when predicting women's IPAV victimization (Figure 7). When male partners' coercive control victimization was held constant at low (i.e., discrepant) levels, women's IPAV victimization increased by 18% (IRR = 1.18, 95% CI = [1.10-1.27]) for every one unit increase in women's coercive control perpetration, but women's IPAV victimization and

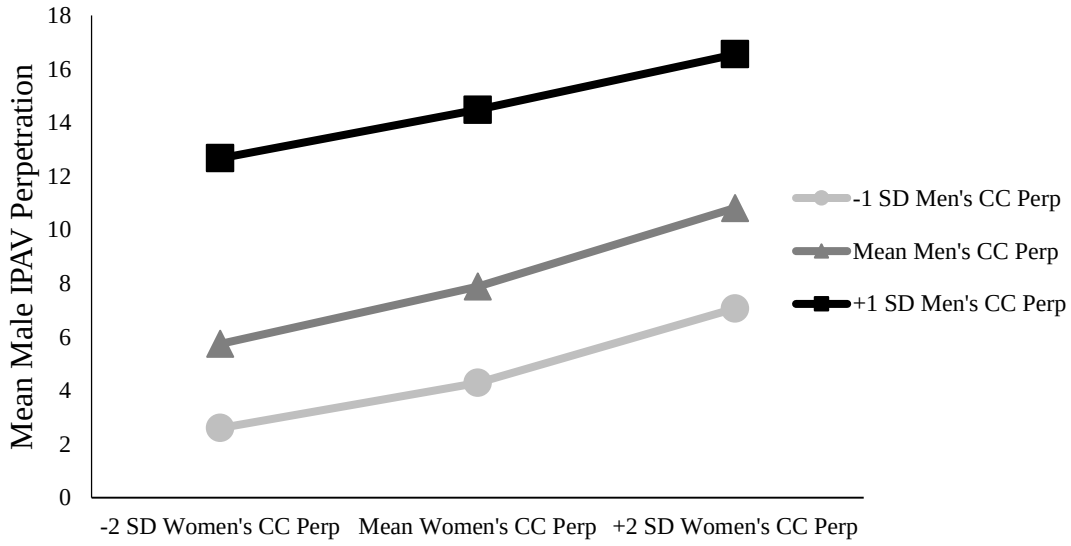


*Figure 4.* Examination of significant actor by partner interaction predicting men's intimate partner aggression/violence (IPAV) perpetration from men's and women's coercive control perpetration (CC Perp) for Time 1 data analyses including outliers.

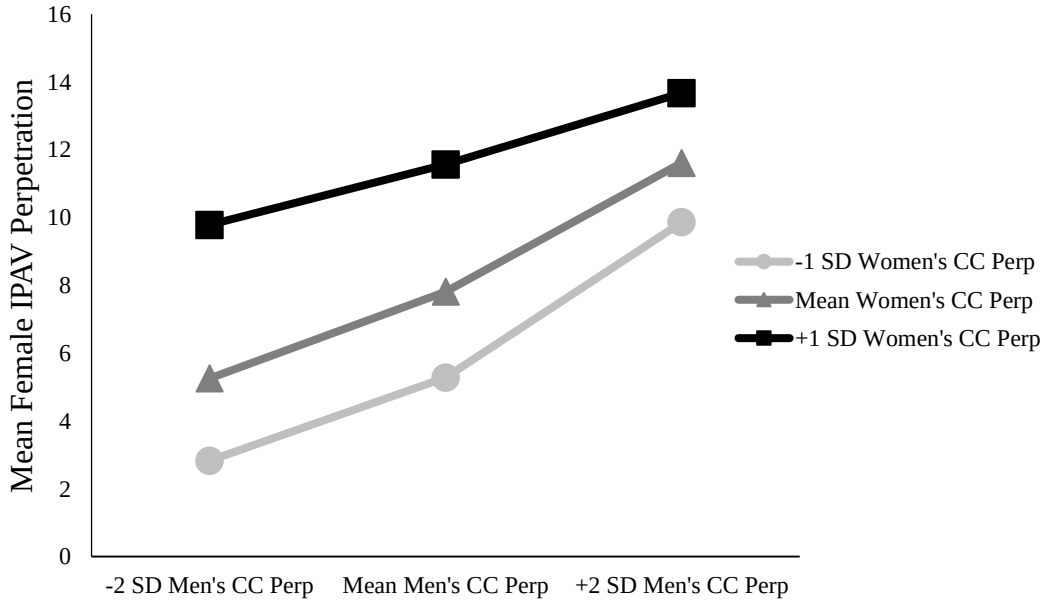


*Figure 5.* Examination of significant actor by partner interaction predicting women's intimate partner aggression/violence (IPAV) perpetration from men's and women's coercive control perpetration (CC Perp) for Time 1 data analyses including outliers.

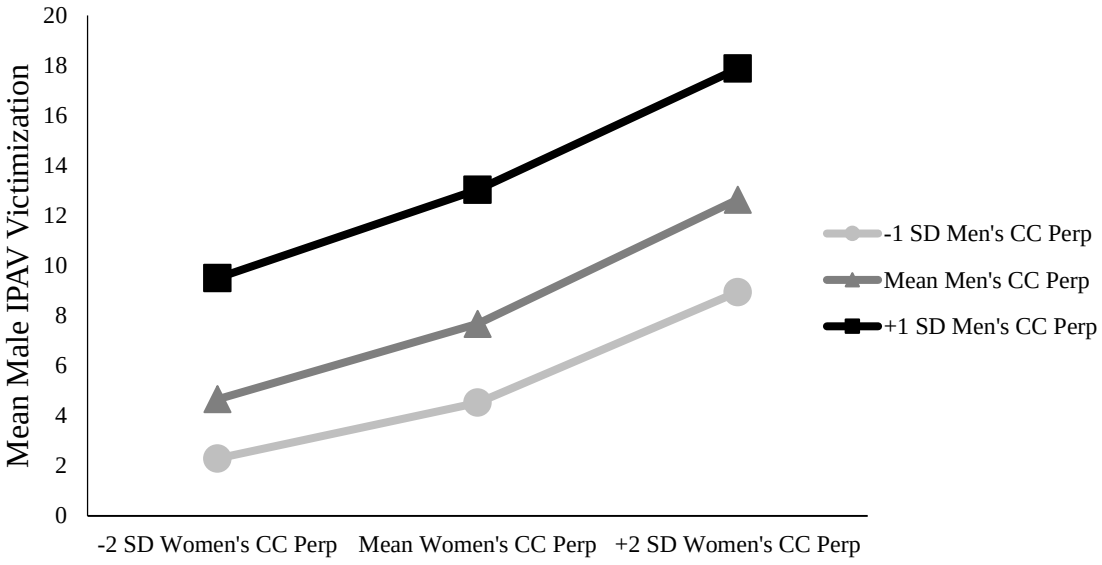


*Figure 6*. Examination of significant actor by partner interaction predicting men's intimate partner aggression/violence (IPAV) victimization from men's and women's coercive control perpetration (CC Perp) for Time 1 data analyses including outliers.

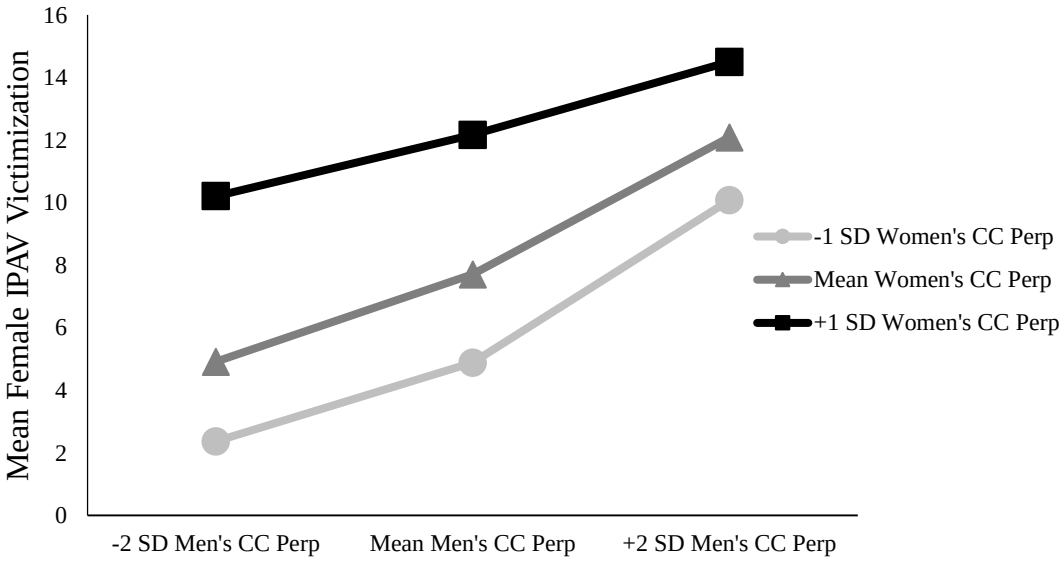


*Figure 7*. Examination of significant actor by partner interaction predicting women's intimate partner aggression/violence (IPAV) victimization from men's and women's coercive control perpetration (CC Perp) for Time 1 data analyses including outliers.

coercive control perpetration were not significantly associated when men's coercive control perpetration was held constant at (similarly) high levels (IRR = 1.04, 95% CI = [0.98-1.11]).

Regarding the hypothesized interactions between FPC and coercive control perpetration, contrary to hypotheses 4A and 4B, the interaction between men's FPC and coercive control perpetration did not significantly predict men's IPAV perpetration or women's IPAV victimization. However, significant actor by actor interactions between women's coercive control perpetration and FPC emerged in analyses predicting women's IPAV perpetration and victimization. As presented in Figure 8, when women's FPC was held at constant low levels, their risk of IPAV perpetration increased by 17% (IRR = 1.17, 95% CI = [1.14-1.21]) for every one unit increase in their coercive control perpetration, but when women's FPC was high, their risk of IPAV perpetration was not significantly predicted by their level of coercive control perpetration (IRR = 1.04, 95% CI = [0.97-1.13]). Similarly, women's level of IPAV victimization increased by 19% for every one unit increase in their coercive control perpetration (IRR = 1.19, 95% CI = [1.17-1.21]) when women's FPC was low, but women's IPAV victimization and coercive control perpetration were not significantly associated (IRR = 1.06, 95% CI = [0.98-1.14]) when their FPC was held at high levels (Figure 9). Thus, in contrast to hypotheses, less frequent rather than more frequent pornography consumption was associated with higher levels of IPAV perpetration and victimization among women who also were controlling of their romantic partners. Moreover, the interaction between pornography consumption frequency and coercive control perpetration was not predictive of IPAV among men as was expected.

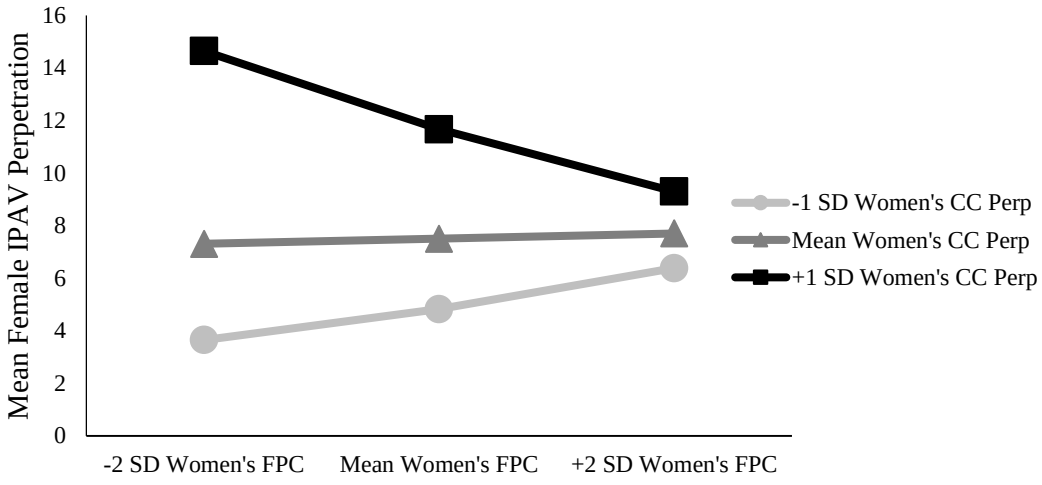


*Figure 8*. Examination of significant interaction between women's coercive control perpetration (CC Perp) and frequency of pornography consumption (FPC) when predicting their intimate partner aggression/violence (IPAV) perpetration for Time 1 data analyses including outliers.

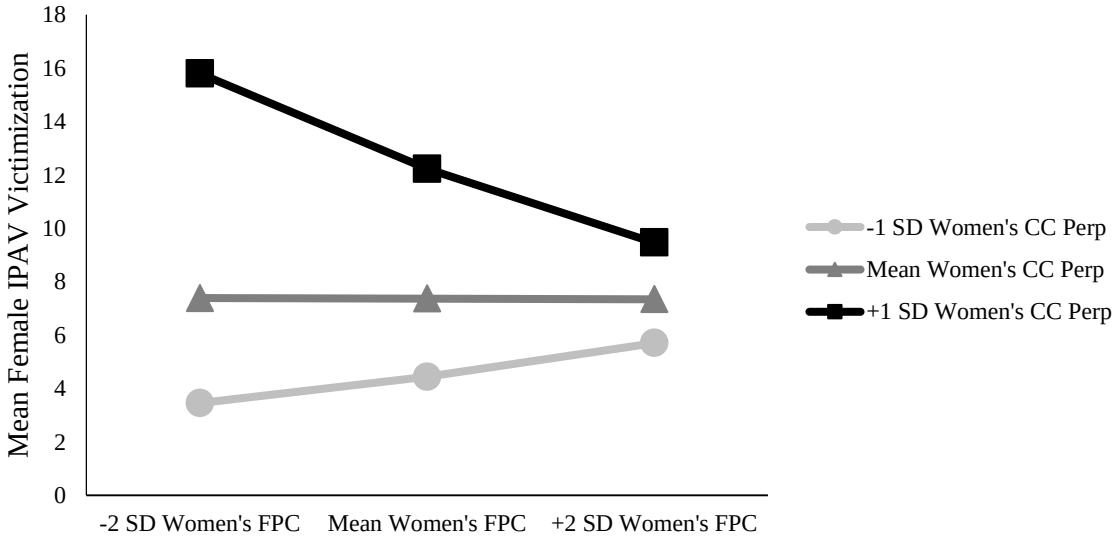


*Figure 9*. Examination of significant interaction between women's coercive control perpetration (CC Perp) and frequency of pornography consumption (FPC) when predicting their intimate partner aggression/violence (IPAV) victimization for Time 1 data analyses including outliers.

Taken together, results from coercive control perpetration moderation analyses indicated that women and men who used coercive control against their partners were more likely to report IPAV. In addition, men and women who reported discrepant amounts of coercive control perpetration from their partner appeared to be at greatest risk of IPAV perpetration and victimization. Contrary to hypotheses, men's coercive control perpetration did not moderate the relation between their FPC and IPAV. However, coercive control victimization moderated the relation between frequency of pornography use and IPAV among women, with less frequent rather than more frequent pornography consumption predicting higher levels of IPAV among women who were controlling of their romantic partners.

*Coercive control victimization.* Main effects for coercive control victimization included significant actor effects in Models 2C and 2D. Higher levels of coercive control victimization were associated with higher risk of IPAV perpetration and victimization for both men and women at Time 1 of the study. Thus, men and women who reported that their romantic partners frequently engaged in controlling behaviours also reported higher levels of both IPAV perpetration and victimization.

Only one statistically significant interaction was found between men's and women's coercive control victimization, which was found in Model 2D predicting men's IPAV victimization. As depicted in Figure 10, when female partners' coercive control victimization was held at a constant low (i.e., discrepant) level, men's risk of IPAV victimization increased by 11% for every one unit increase in men's coercive control victimization (*IRR* = 1.11, 95% CI = [1.06-1.16]), but men's risk of IPAV victimization only increased by 6% for every one unit increase in men's coercive control victimization

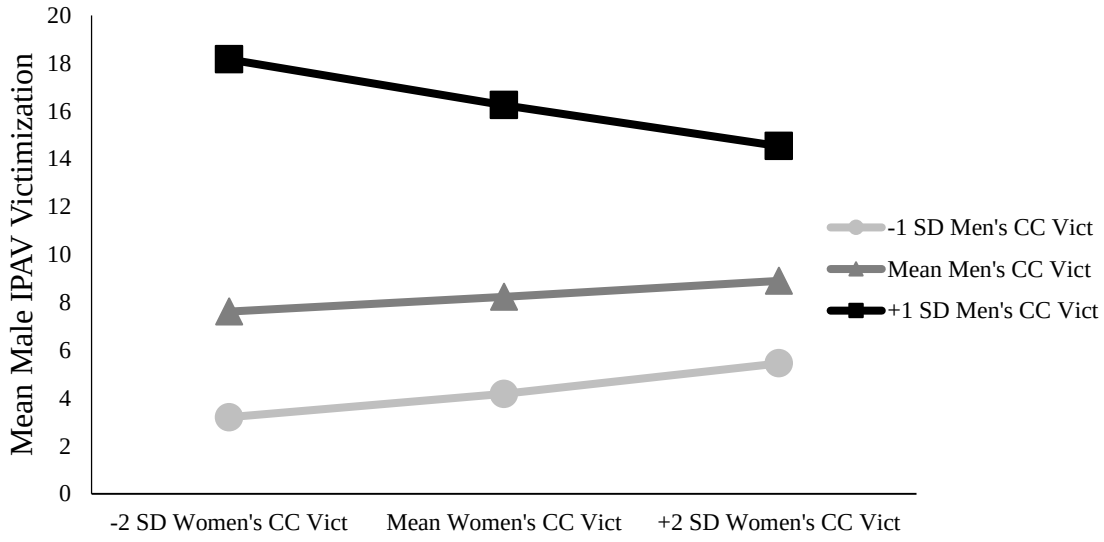


*Figure 10.* Examination of significant actor by partner interaction predicting men's intimate partner aggression/violence (IPAV) victimization from men's and women's coercive control victimization (CC Vict) for Time 1 data analyses including outliers.

when their female partners' coercive control victimization was (similarly) high (*IRR* = 1.06, 95% CI = [1.03-1.09]). Put another way, when both men and women rated their partners as high in coercive control, men's risk of IPAV victimization increased less steeply with each unit increase in men's coercive control victimization than when men rated their female partners as being high in coercive control but women did not rate their male partners as being controlling. Thus, couples who differed on the dimension of interest were at greater risk for partner aggression compared to couples who were both high on the dimension.

There were two statistically significant interactions between FPC and coercive control victimization when predicting men's IPAV, but they were not consistent with study predictions. The first of these significant interactions was an actor by actor interaction between men's FPC and coercive control victimization when predicting men's IPAV perpetration in the analyses that included outliers (Figure 11). Results indicated that men's IPAV perpetration decreased by 4% for every one unit increase in their FPC (IRR = 0.96, 95% CI = [0.92-0.99]) when men's coercive control victimization was high, but men's FPC did not predict men's risk of IPAV perpetration when men's coercive control victimization was held at constant low levels (IRR = 1.02, 95% CI = [0.98-1.06]). Second, a significant actor by actor interaction emerged between men's FPC and coercive control victimization when predicting men's IPAV victimization (Figure 12), such that when men's coercive control victimization was held constant at high levels, men's IPAV victimization decreased by 4% (IRR = 0.96, 95% CI = [0.93-0.99]) for every one unit increase in their FPC; however, men's FPC did not predict their IPAV victimization if their coercive control victimization was low (IRR = 1.03, 95% CI = [0.99-1.07]). Overall,

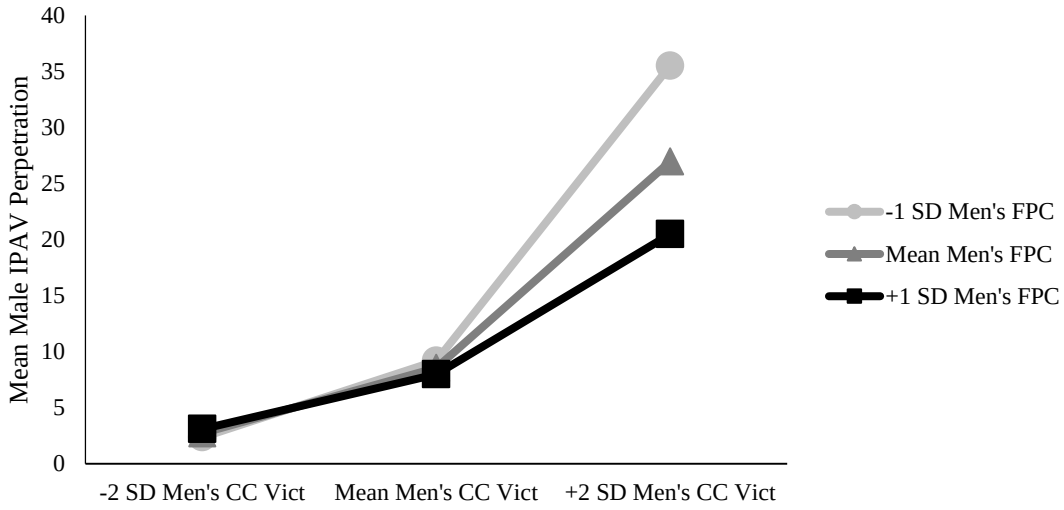


*Figure 11*. Examination of significant interaction between men's coercive control victimization (CC Vict) and frequency of pornography consumption (FPC) when predicting their intimate partner aggression/violence (IPAV) perpetration for Time 1 data analyses including outliers.

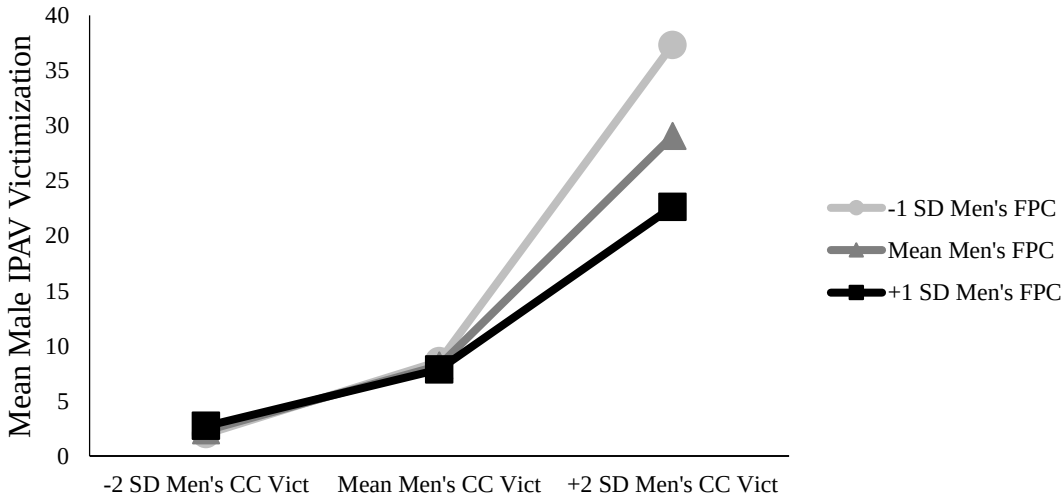


*Figure 12*. Examination of significant interaction between men's coercive control victimization (CC Vict) and frequency of pornography consumption (FPC) when predicting their intimate partner aggression/violence (IPAV) victimization for Time 1 data analyses including outliers.

both of these interactions demonstrated that that men's FPC did not predict their IPAV when men did not perceive their female partners to be controlling.

Regarding hypothesis 5A, which predicted that the positive association between women's FPC and women's IPAV victimization would be stronger in the context of high rates of female-reported coercive control victimization, the actor by actor interaction between women's FPC and coercive control victimization did not significantly predict women's IPAV victimization. There was also a nonsignificant interaction between women's FPC and coercive control victimization when predicting men's IPAV perpetration, which did not support hypothesis 5B predicting that the positive association between women's FPC and men's IPAV perpetration would be stronger in the context of high rates of female-reported coercive control victimization.

Overall, results from coercive control victimization moderation analyses demonstrated several important findings. First, women and men who reported that their romantic partners were controlling of them were at greater risk for IPAV perpetration and victimization. In addition, men had a higher risk of IPAV victimization if they reported discrepant amounts of coercive control victimization from their partners, specifically when men's coercive control victimization was low but women's coercive control victimization was high. Further, results indicated that coercive control victimization moderated the relation between frequency of pornography use and IPAV among men, but not in the hypothesized direction. In couples for whom the female partner was very controlling over the male partner, the male partner had a lower risk of IPAV perpetration and victimization if he frequently viewed pornography.

*Composite risk of aggression.* There were a number of significant main effects of composite risk of aggression in Models 3A and 3B, which examined the moderating effects of composite aggression on the relation between frequency of pornography consumption and IPAV perpetration and victimization. For women, both their own (actor effects) and their male partners' (partner effects) rates of composite aggression were associated with women's heightened risk of Time 1 IPAV perpetration and victimization. For men, although their own rates of composite aggression were associated with higher levels of IPAV perpetration and victimization (actor effects), the only model for which their female partners' composite aggression significantly predicted men's IPAV (partner effect) was when predicting male-perpetrated IPAV. Thus, there were significant actor effects for composite risk of aggression for both women and men, but partner effects were found primarily among women only.

Each of the actor by partner interactions between men's and women's composite aggression in Models 3A and 3B were statistically significant. The results from Model 3A showed that when women's composite aggression was held at constant low (i.e., discrepant) levels, men's risk of perpetrating IPAV increased by 13% (IRR = 1.13, 95% CI = [1.08-1.18]) for every one unit increase in men's composite aggression (Figure 13), but men's composite aggression did not predict men's IPAV perpetration when women's composite aggression was (similarly) high (IRR = 0.98, 95% CI = [0.95-1.02]). In a similar vein, for women's IPAV perpetration (Figure 14), women's risk of perpetrating IPAV increased by 12% (IRR = 1.12, 95% CI = [1.07 -1.16]) for every one unit increase in women's composite aggression when men's composite aggression was held at constant low levels (i.e., discrepant composite aggression between romantic partners), but

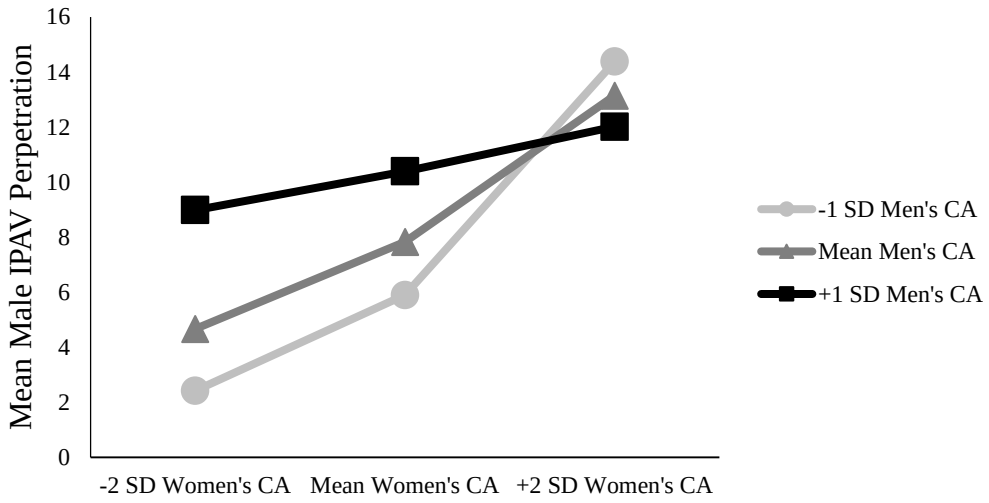


*Figure 13*. Examination of significant actor by partner interaction predicting men's intimate partner aggression/violence (IPAV) perpetration from men's and women's composite aggression (CA) for Time 1 data analyses including outliers.

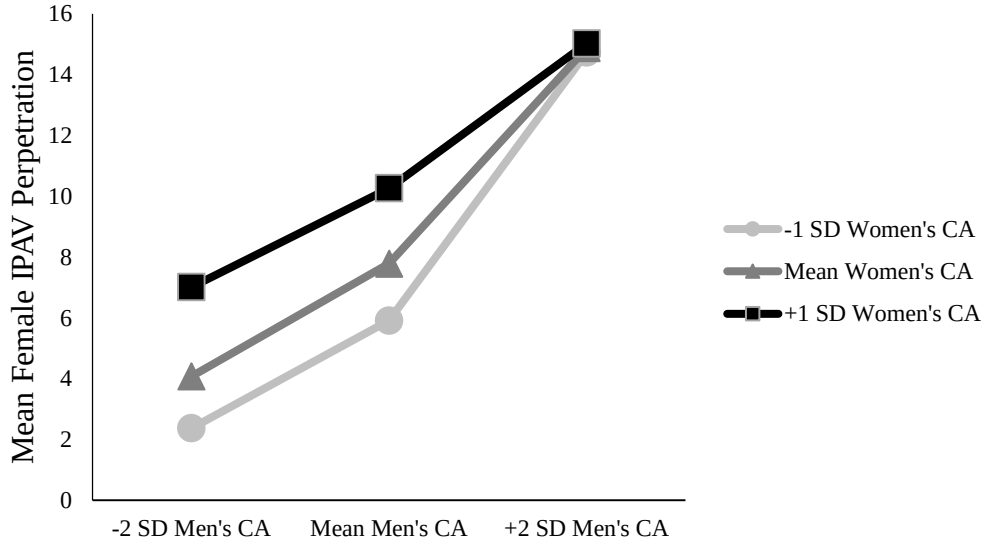


*Figure 14*. Examination of significant actor by partner interaction predicting women's intimate partner aggression/violence (IPAV) perpetration from men's and women's composite aggression (CA) for Time 1 data analyses including outliers.

women's composite aggression did not predict their IPAV perpetration when men's composite aggression was high (IRR = 1.00, 95% CI = [0.96-1.04]). For Model 3B predicting IPAV victimization, the results showed that when women's composite aggression was held at constant low (i.e., discrepant) levels, men's risk of IPAV victimization increased by 10% (IRR = 1.10, 95% CI = [1.04-1.15]) for every one unit increase in men's composite aggression (Figure 15), but men's composite aggression did not predict men's IPAV victimization when women's composite aggression was (similarly) high (IRR = 0.99, 95% CI = [0.96-1.02]). With respect to women's IPAV victimization (Figure 16), women's risk of IPAV victimization increased by 10% (IRR = 1.10, 95% CI = [1.04 -1.15]) for every one unit increase in women's composite aggression when men's composite aggression was held at constant low (i.e., discrepant) levels. However, women's composite aggression did not predict women's IPAV victimization when men's composite aggression was (similarly) high (IRR = 1.01, 95% CI = [0.99-1.02]). Thus, men and women had an increased risk of IPAV perpetration and victimization if they or their partner had a high composite risk of aggression.

There were no statistically significant interactions between FPC and composite aggression when predicting IPAV perpetration. Thus, contrary to hypotheses 6A and 6D, neither the actor by actor interaction between men's frequency of pornography consumption and composite aggression nor the partner by partner interaction between women's frequency of pornography use and composite aggression were predictive of men's IPAV perpetration.

When predicting IPAV victimization, two statistically significant interactions between FPC and composite aggression emerged, but they were not consistent with study

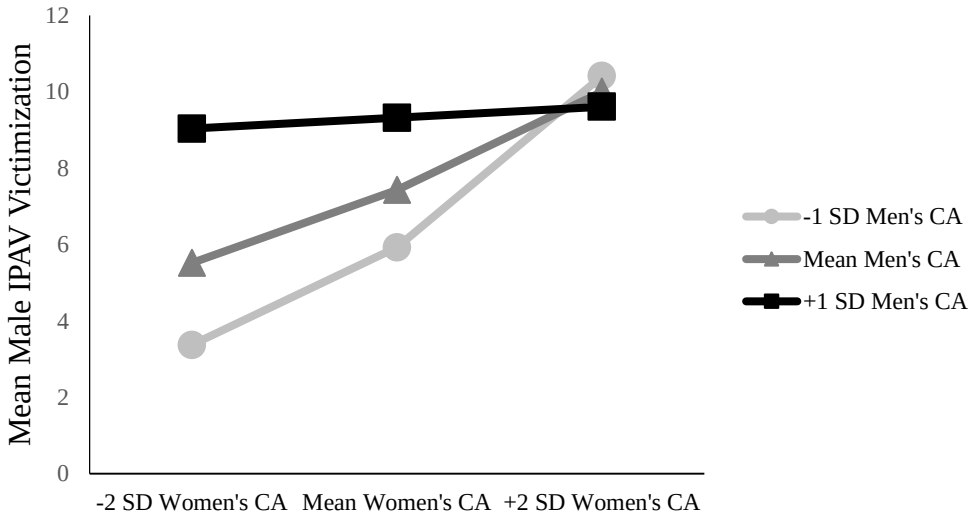


*Figure 15*. Examination of significant actor by partner interaction predicting men's intimate partner aggression/violence (IPAV) victimization from men's and women's composite aggression (CA) for Time 1 data analyses including outliers.

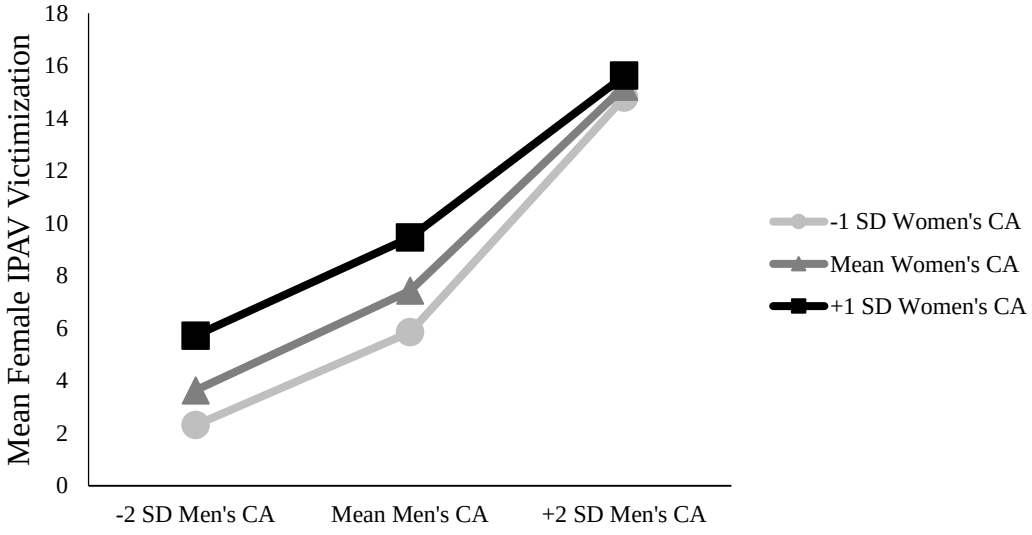


*Figure 16*. Examination of significant actor by partner interaction predicting women's intimate partner aggression/violence (IPAV) victimization from men's and women's composite aggression (CA) for Time 1 data analyses including outliers.

hypotheses. Contrary to hypothesis 6B, which predicted a stronger positive relation between men's FPC and women's IPAV victimization in the context of high male composite aggression, the partner by partner interaction between male partners' composite risk of aggression and FPC did not significantly predict women's IPAV victimization. Regarding hypothesis 6C, which predicted that the positive relation between women's FPC and women's IPAV victimization would be stronger among women high in composite aggression, there was a significant actor by actor interaction between women's composite aggression and FPC when predicting their risk of IPAV victimization (Figure 17). However, contrary to hypothesis 6C, results showed that when women's composite aggression was held at constant high levels, their risk of IPAV victimization decreased by 7% (IRR = 0.93, 95% CI = [0.88-0.98]) for every one unit increase in women's FPC, but women's IPAV victimization and FPC were not significantly related when women's composite aggression was held at constant low levels (IRR = 1.04, 95% CI = [0.98-1.10]).

Regarding men's IPAV victimization, there was a significant partner by actor interaction between women's composite aggression and men's FPC when predicting men's risk of IPAV victimization (Figure 18). When men's FPC was held at constant high levels, their risk of IPAV victimization increased by 8% (IRR = 1.08, 95% CI = [1.03-1.13]) for every one unit increase in women's composite aggression. However, women's composite aggression did not predict men's IPAV victimization when men's FPC was held at constant low levels (IRR = 1.00, 95% CI = [0.96-1.04]). Thus, in contrast to hypotheses, frequent pornography consumption was associated with lower not higher levels of IPAV victimization among women at high risk of aggression. In contrast,

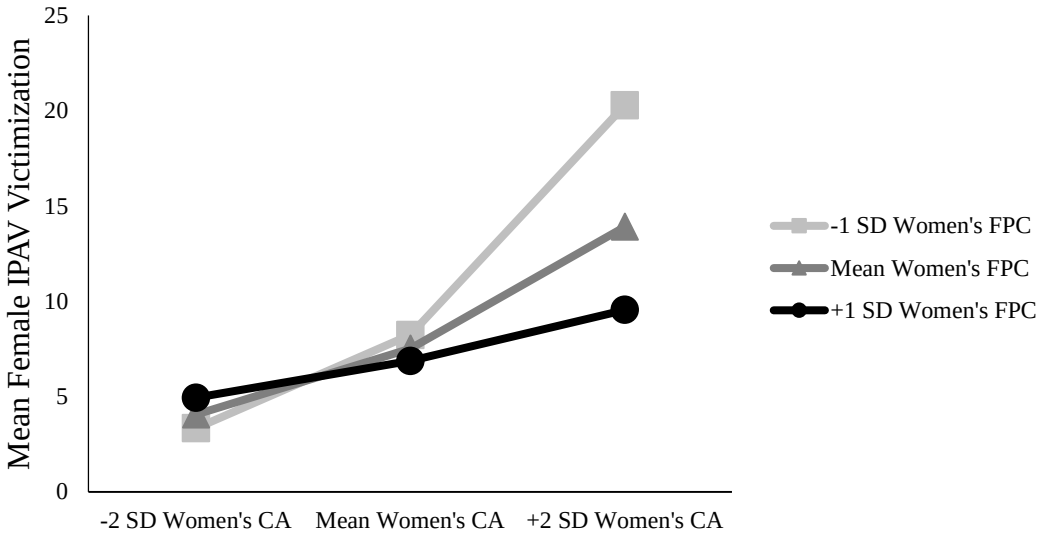


*Figure 17.* Examination of significant interaction between women's composite aggression (CA) and frequency of pornography consumption (FPC) when predicting women's intimate partner aggression/violence (IPAV) victimization for Time 1 data analyses including outliers.

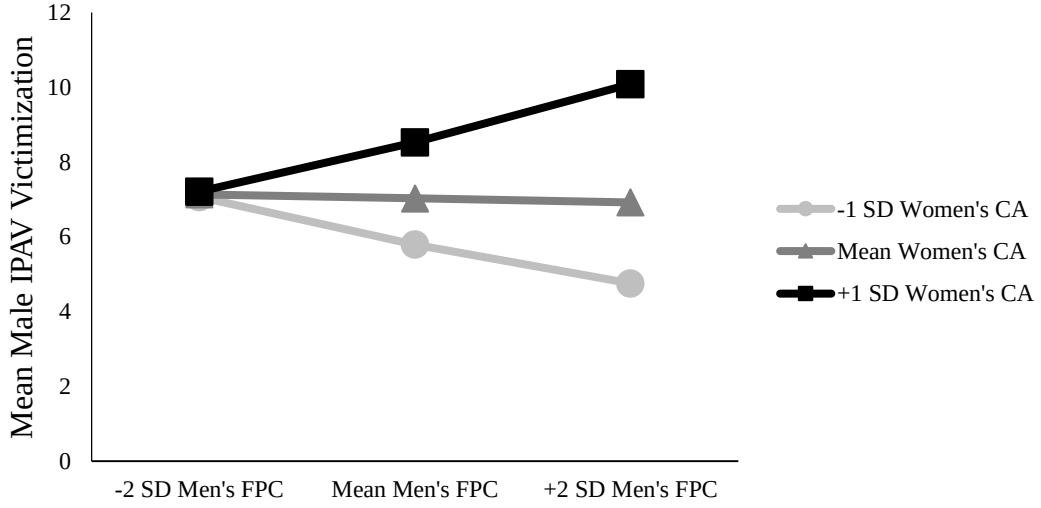


*Figure 18.* Examination of significant interaction between women's composite aggression (CA) and men's frequency of pornography consumption (FPC) when predicting men's intimate partner aggression/violence (IPAV) victimization for Time 1 data analyses including outliers.

frequent pornography consumption among men was associated with an increased risk of experiencing IPAV victimization if their female partners were high in composite aggression.

Overall, results provide evidence that composite risk of aggression does moderate aspects of the relation between frequency of pornography use and IPAV. Results indicate that when female partners have a high baseline risk of aggression, female partners have a lowered risk of IPAV victimization if they often view pornography but male partners have an increased risk of IPAV victimization if they often view pornography.

***Mediation models at Time 1 (Objective 3).*** I conducted a total of eight NB regressions (Models 1A, 1B, 4A, 4B, 5A, 5B, 6A, and 6B; see Tables 6, 10, 11, and 12) to test the predicted mediations with benevolent and hostile sexism in accordance with the procedures for assessing mediation in dyadic data using multilevel modeling (Kenny, Korchmaros, & Bolger, 2003). Social desirability was controlled for in all eight models, and was predictive of lower levels of IPAV perpetration or victimization for both men and women in Models 1A, 1B, 5A, 5B, 6A, and 6B. Social desirability was not significantly related to benevolent sexism for men or women in Model 4A. Men who responded in a more socially desirable manner tended to endorse lower levels of hostile sexism in Model 4B, but social desirability did not predict hostile sexism for women. Thus, analyses should be interpreted while keeping in mind that men likely underreported their true levels of hostile sexism.

The most commonly used method of assessing mediations in dyadic research continues to be Baron and Kenny's (1986) procedure (Figure 19). However, this approach has limitations and contemporary analysts often estimate the indirect effects

Table 10

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor Benevolent and Hostile Sexism by Frequency of Pornography Consumption at Time 1 (N = 254 couples)*

| Variables | Benevolent sexism (Model 4A) | | | Hostile sexism (Model 4B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 3.197 (0.024) | 17773.69 | 24.46 [23.33-25.64] | 3.119 (0.041) | 5938.60 | 22.63 [20.90-24.49] |
| | | | | Men | | |
| Social desirability | 0.005 (0.008) | 0.31 | 1.01 [0.99-1.02] | **-0.024 (0.010)** | **5.94*** | **0.98 [0.96-1.00]** |
| Actor FPC | 0.002 (0.003) | 0.26 | 1.00 [1.00-1.01] | 0.008 (0.005) | 2.35 | 1.01 [1.00-1.02] |
| Partner FPC | **-0.010 (0.004)** | **6.12*** | **0.99 [0.98-1.00]** | -0.011 (0.007) | 2.64 | 0.99 [0.98-1.00] |
| Actor X Partner FPC | 0.000 (0.001) | 0.07 | 1.00 [1.00-1.00] | 0.000 (0.001) | 0.25 | 1.00 [1.00-1.00] |
| | | | | Women | | |
| Social desirability | 0.020 (0.009) | 4.43* | 1.02 [1.00-1.04] | 0.001 (0.010) | 0.01 | 1.00 [0.99-1.02] |
| Actor FPC | 0.006 (0.003) | 0.01 | 1.01 [1.00-1.01] | 0.000 (0.005) | 0.00 | 1.00 [0.99-1.01] |
| Partner FPC | **-0.014 (0.004)** | **11.43**** | **0.99 [0.98-0.99]** | **-0.015 (0.005)** | **9.76**** | **0.99 [0.98-0.99]** |
| Actor X Partner FPC | **-0.001 (0.001)** | **4.48*** | **1.00 [1.00 -1.00]** | **-0.001 (0.001)** | **4.47*** | **1.00 [1.00-1.00]** |

*Note.* FPC = frequency of pornography consumption. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 11

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Benevolent Sexism as a Potential Mediator at Time 1 (N = 254 couples)*

| Variables | IPAV perpetration (Model 5A) | | | IPAV victimization (Model 5B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.047 (0.127) | 260.78 | 7.75 [6.04-9.93] | 2.054 (0.114) | 327.04 | 7.80 [6.24-9.74] |
| | | | Men | | | |
| Social desirability | **-0.208 (0.032)** | **42.82*** ** | **0.81 [0.76-0.87]** | **-0.145 (0.029)** | **24.58*** ** | **0.87 [0.82-0.92]** |
| Actor FPC | 0.024 (0.014) | 2.87 | 1.02 [1.00-1.05] | 0.020 (0.013) | 2.42 | 1.02 [1.00-1.05] |
| Partner FPC | 0.013 (0.015) | 0.74 | 1.01 [0.98-1.04] | 0.017 (0.013) | 1.74 | 1.02 [0.99-1.04] |
| Actor benevolent sexism | **0.043 (0.012)** | **13.84*** ** | **1.04 [1.02-1.07]** | **0.042 (0.010)** | **17.99*** ** | **1.04 [1.02-1.06]** |
| Partner benevolent sexism | 0.014 (0.012) | 1.29 | 1.01 [0.99-1.04] | 0.014 (0.010) | 1.89 | 1.01 [0.99-1.04] |
| Actor X Partner FPC | 0.001 (0.002) | 0.32 | 1.00 [1.00-1.00] | 0.002 (0.002) | 1.07 | 1.00 [1.00-1.01] |
| | | | Women | | | |
| Social desirability | **-0.124 (0.045)** | **7.69** ** | **0.88 [0.81-0.96]** | **-0.128 (0.047)** | **7.58** ** | **0.88 [0.80-0.96]** |
| Actor FPC | -0.003 (0.023) | 0.02 | 1.00 [0.95-1.04] | -0.005 (0.020) | 0.05 | 1.00 [0.96-1.04] |
| Partner FPC | 0.012 (0.017) | 0.50 | 1.01 [0.98-1.05] | 0.015 (0.015) | 1.00 | 1.02 [0.99-1.05] |
| Actor benevolent sexism | 0.014 (0.015) | 0.99 | 1.02 [0.99-1.04] | 0.011 (0.012) | 0.90 | 1.01 [0.99-1.04] |
| Partner benevolent sexism | **0.034 (0.012)** | **8.19** ** | **1.04 [1.01-1.06]** | **0.024 (0.011)** | **4.60*** | **1.02 [1.00-1.05]** |
| Actor X Partner FPC | 0.000 (0.003) | 0.01 | 1.00 [1.00-1.01] | -0.002 (0.002) | 0.44 | 1.00 [0.99-1.00] |

*Note.* FPC = frequency of pornography consumption. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 12

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Hostile Sexism as a Potential Mediator at Time 1 (N = 254 couples)*

| Variables | IPAV perpetration (Model 6A) | | | IPAV victimization (Model 6B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.122 (0.121) | 307.85 | 8.35 [6.59-10.58] | 2.069 (0.105) | 389.92 | 7.92 [6.45-9.73] |
| | | | Men | | | |
| Social desirability | **-0.221 (0.039)** | **30.00*** ** | **0.81 [0.75-0.87]** | **-0.138 (0.033)** | **17.44*** ** | **0.87 [0.82-0.93]** |
| Actor FPC | 0.007 (0.013) | 0.26 | 1.01 [0.98-1.03] | 0.005 (0.013) | 0.14 | 1.01 [0.98-1.03] |
| Partner FPC | 0.008 (0.015) | 0.27 | 1.01 [0.98-1.04] | 0.011 (0.014) | 0.63 | 1.01 [0.98-1.04] |
| Actor hostile Sexism | **0.025 (0.010)** | **5.71*** | **1.03 [1.00-1.05]** | **0.029 (0.009)** | **9.65** ** | **1.03 [1.01-1.05]** |
| Partner hostile sexism | -0.017 (0.015) | 1.37 | 0.98 [0.96-1.01] | -0.019 (0.013) | 2.21 | 0.98 [0.96-1.01] |
| Actor X Partner FPC | -0.002 (0.002) | 1.03 | 1.00 [1.00-1.00] | -0.001 (0.002) | 0.16 | 1.00 [1.00-1.00] |
| | | | Women | | | |
| Social desirability | **-0.143 (0.042)** | **11.82** ** | **0.87 [0.80-0.94]** | **-0.140 (0.040)** | **12.29*** ** | **0.87 [0.80-0.94]** |
| Actor FPC | -0.007 (0.024) | 0.07 | 0.99 [0.95-1.04] | -0.004 (0.019) | 0.05 | 1.00 [0.96-1.03] |
| Partner FPC | 0.017 (0.002) | 0.98 | 1.02 [0.98-1.05] | 0.020 (0.015) | 1.84 | 1.02 [0.99-1.05] |
| Actor hostile sexism | 0.016 (0.018) | 0.82 | 1.02 [0.98-1.05] | 0.017 (0.014) | 1.38 | 1.02 [0.99-1.05] |
| Partner hostile sexism | 0.009 (0.017) | 0.30 | 1.01 [0.98-1.04] | 0.018 (0.013) | 1.97 | 1.02 [0.99-1.04] |
| Actor X Partner FPC | -0.001 (0.003) | 0.13 | 1.00 [0.99-1.00] | -0.001 (0.002) | 0.50 | 1.00 [1.00-1.00] |

*Note.* FPC = frequency of pornography consumption. *$p < .05$. **$p < .01$. ***$p < .001$.

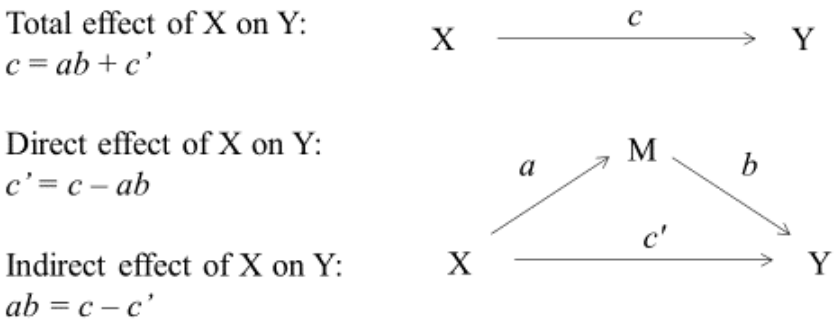


*Figure 19*. Baron and Kenny's (1986) mediation model.

and contend that a statistically significant relationship between the independent and dependent variable is not essential when testing mediations (i.e., the total effect, path *c* in Figure 19; Hayes, 2009). Given this, I used both approaches to evaluate the predicted mediations. Mediations with dyadic data can result in four different types of mediations: actor-actor, actor-partner, partner-actor, and partner-partner. Only actor-actor and partner-partner mediations were hypothesized in the current study (hypotheses 7A, 7B, 8A, and 8B), so only these effects were examined. An example of an actor-actor mediation would include men's hostile sexism mediating the relation between men's FPC and men's IPAV perpetration, whereas a partner-partner mediation would be if men's hostile sexism mediated the relation between men's FPC and women's IPAV victimization.

*Benevolent sexism.* There were several statistically significant effects that were found in the models involved in examining benevolent sexism as a potential mediator of the relation between FPC and IPAV at Time 1 of the study (Models 1A, 1B, 4A, 5A, and 5B), which I describe initially in the paragraphs below. Then, I discuss the evaluation of the hypothesized mediation pathways for benevolent sexism.

Regarding the ancillary effects of FPC found in the models involved in testing the mediation, in Model 4A predicting benevolent sexism (path *a*; Table 10), main effects were found for partner FPC, with men and women having lower ratings of benevolent sexism when their romantic partners frequently used pornography. There was also a statistically significant interaction between men's and women's FPC when predicting women's benevolent sexism (Figure 20). Specifically, when men's FPC was held at constant low levels, women's level of benevolent sexism increased by 2% (*IRR* = 1.02,

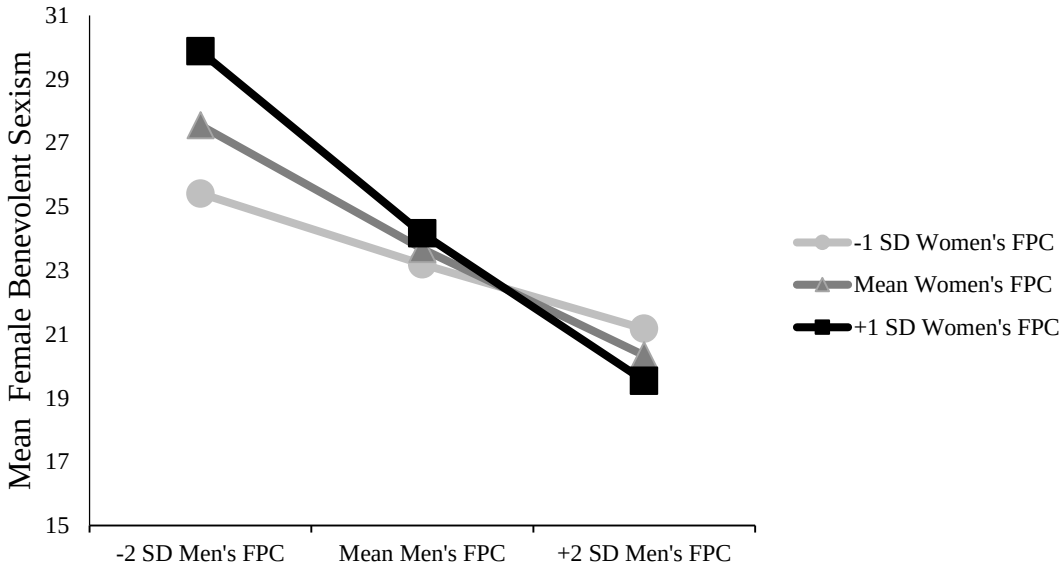


*Figure 20.* Examination of significant actor by partner interaction predicting women's benevolent sexism from men's and women's frequency of pornography consumption (FPC) for Time 1 data analyses including outliers.

95% CI = [1.00-1.03]) for every one unit increase in women's FPC (i.e., discrepant FPC between partners), but there was not a significant relation between women's FPC and benevolent sexism when men's FPC was held at constant high (i.e., similar) levels (*IRR* = 0.99, 95% CI = [0.97-1.01]). When predicting IPAV perpetration and victimization, several statistically significant actor and partner main effects for benevolent sexism emerged. For men, higher levels of benevolent sexism were associated with higher risk of IPAV perpetration and victimization (actor effects). High benevolent sexism among men was also related to higher risk of women reporting IPAV perpetration and victimization (partner effects). Thus, men's benevolent sexism ratings predicted their own (actor effects) reports of IPAV perpetration and victimization whereas women's benevolent sexism was only predictive of men's (and not their own) perpetration and victimization (partner effects).

In the mediation models testing benevolent sexism as a mediator of the relationship between FPC and IPAV perpetration and victimization at Time 1 of the study, there are four hypothesized mediation pathways including an actor-actor mediation among men, an actor-actor mediation among women, a partner-partner mediation among men, and a partner-partner mediation among women (Figure 1). For the first mediation pathway examined below, the step-by-step process of using Baron and Kenny's (1986) procedure to test the mediation and assessing the indirect effects is explained in detail for illustrative purposes, but the results are summarized for the remaining mediation pathways.

The first mediation pathway tested male actor benevolent sexism as a mediator in the relation between male actor FPC and male actor IPAV perpetration (actor-actor

mediation for men). Step 1 involved assessing the association between men's FPC and men's perpetration (path *c*). As previously shown in Table 6, men's FPC did not significantly predict men's reports of IPAV perpetration at Time 1 of the study. Therefore, the initial criteria for mediation in Baron and Kenny's (1986) model was not met. Despite this, I evaluated the remaining steps as contemporary analysts posit that this step is not necessary when testing mediation (e.g., Hayes, 2009). In Step 2, I examined the association between men's FPC and benevolent sexism (path *a*), but there was no significant relation between these variables (Table 9). As the requirement for Step 2 was not met, it was not necessary to analyse Steps 3 and 4 in this case as this particular mediation pathway already does not meet Baron and Kenny's (1986) criteria. However, in this section, I describe how Steps 3 and 4 would be examined for the purpose of illustrating the procedure, but in subsequent analyses, I discontinued testing Baron and Kenny's (1986) procedure if any criteria were not met aside from the rule that path *c* must be statistically significant as mentioned above. Steps 3 and 4 were examined in the same model (Table 11). In Step 3, I examined the relationship between men's benevolent sexism and IPAV perpetration (path *b*), and found support for path *b* as higher benevolent sexism predicted higher rates of IPAV perpetration among men. Lastly, Step 4 involved testing the direct effect (path *c'*) of men's FPC on their IPAV perpetration while controlling for their level of benevolent sexism. Men's FPC did not significantly predict their risk of IPAV perpetration while controlling for their level of benevolent sexism, and this nonsignificant result provided some preliminary support for path *c'*. As Baron and Kenny's (1986) model requires that path *c'* be nonsignificant and have a much smaller effect than path *c* in order to demonstrate full mediation, I further examined the

strength of the relationship between men's FPC and IPAV perpetration in paths *c* and *c'*. I found that the relationship between men's FPC and IPAV perpetration actually slightly increased when men's benevolent sexism was added to the model, which is contrary to Baron and Kenny's (1986) requirements for mediation. In order to estimate the indirect effect, I multiplied the parameter estimates of paths *a* and *b*, and calculated confidence intervals using the Monte Carlo method (Selig & Preachers, 2008). The indirect effect of men's FPC on their risk of IPAV perpetration through their benevolent sexism was not statistically significant ($b = 8.60\times10^{-5}$, 95% CI = $-2.03\times10^{-4} – 3.98\times10^{-4}$). Therefore, contrary to the first prediction in hypothesis 7A, men's benevolent sexism did not significantly mediate the relation between men's FPC and IPAV perpetration based on Baron and Kenny's (1986) criteria for mediation as well as analysis of the indirect effects.

I used the same steps described above to examine the remaining hypothesized mediation pathways for benevolent sexism, including the actor-actor and partner-partner mediations for women and the partner-partner mediation for men. Regarding Step 1 of the hypothesized partner-partner mediation pathway for men, as mentioned above, the total effect of men's FPC on their IPAV perpetration (path *c*) was not statistically significant (Table 6). With respect to the hypothesized mediation pathways for women, the total effect of women's FPC on their IPAV victimization (path *c'*) was also not statistically significant (Table 6). None of the three remaining mediation pathways met the criteria for Step 2 as men's and women's FPC did not significantly predict their rates of benevolent sexism (path *a*; see Table 10). Thus, Baron and Kenny's (1986) criteria for

mediation were not met for hypotheses 7A and 7B, and as a result, the remaining steps were not examined.

Examination of the indirect effects also did not support any of these remaining mediation models. Specifically, contrary to the second prediction of hypothesis 7A, the expectation that men's benevolent sexism would mediate the relation between men's FPC and women's IPAV victimization was not supported as the indirect effect of men's FPC on women's IPAV victimization through men's benevolent sexism was not statistically significant ($b = 1.20 \times 10^{-4}$, 95% CI = $-1.16 \times 10^{-4} – 2.54 \times 10^{-4}$). Regarding hypothesis 7B, the prediction that women's benevolent sexism would mediate the relation between their FPC and IPAV victimization was not supported, given that the indirect effect of women's FPC on their IPAV victimization through their benevolent sexism was not statistically significant ($b = 6.60 \times 10^{-5}$, 95% CI = $-8.12 \times 10^{-5} – 2.81 \times 10^{-4}$). For the second part of hypothesis 7B, the expectation that women's benevolent sexism would mediate the relation between women's FPC and men's IPAV perpetration was also not supported, as the indirect effect of women's FPC on men's IPAV perpetration through women's benevolent sexism was not statistically significant ($b = 8.40 \times 10^{-5}$, 95% CI = $-6.00 \times 10^{-5} – 3.11 \times 10^{-4}$). To summarize, none of the hypothesized mediations with benevolent sexism (hypotheses 7A and 7B) were significant based on Baron and Kenny's (1986) criteria for mediation as well as analysis of the indirect effects.

*Hostile sexism.* Several statistically significant effects emerged in the models involved in examining hostile sexism as a potential mediator of the relation between FPC and IPAV at Time 1 of the study (Models 1A, 1B, 4B, 6A, and 6B), which are outlined

initially in the paragraphs below. Subsequently, the evaluation of the hypothesized mediation pathways for hostile sexism is discussed.

With respect to the ancillary significant effects of FPC in the models involved in testing hostile sexism as a mediator, a partner effect for FPC emerged when predicting women's hostile sexism in Model 4B (Table 10), with lower FPC in men being associated with higher rates of hostile sexism in women (path *a*). There was also a statistically significant actor by partner interaction between men's and women's FPC when predicting women's hostile sexism in analyses that included the outliers. However, when this interaction was further explored using Hilbe's methodology (2011), there was not a significant association between women's FPC and hostile sexism when their male partners' FPC was held constant at low levels (*IRR* = 1.01, 95% CI = [0.99-1.03]) or high levels (*IRR* = 0.99, 95% CI = [0.97-1.00]). Thus, although initial results indicated a significant interaction between men's and women's FPC when predicting women's hostile sexism, further investigation revealed that the interaction was actually not statistically significant. Regarding the effect of hostile sexism, when hostile sexism was added to the models predicting IPAV perpetration and victimization (Models 6A and 6B; Table 12; path *c'*), a new partner effect for FPC emerged in the analyses with removed outliers, with frequent pornography use among women predicting higher levels of IPAV perpetration for men. In Models 6A and 6B, higher levels of hostile sexism among men were associated with higher risk of IPAV perpetration and victimization (actor effects).

With respect to the hypothesized mediation pathways for hostile sexism, the model testing hostile sexism as a mediator of the relation between FPC and IPAV

perpetration and victimization at Time 1 of the study also had two possible actor-actor mediations and two possible partner-partner mediations (Figure 2).

First, I evaluated whether the predicted mediation models met Baron and Kenny's (1986) mediation criteria. As previously mentioned, in Step 1, the total effect (path *c*) was not supported for any of the hypothesized mediation models as men's and women's FPC were not significantly associated with their level of IPAV perpetration or victimization. For Step 2, men's FPC was not related to their level of hostile sexism (path *a*), so Baron and Kenny's (1986) criteria for mediation were not met for hypothesis 8A, which predicted that men's hostile sexism would mediate the role of men's FPC in men's IPAV perpetration and women's IPAV victimization. Additionally, women's FPC was not significantly associated with women's level of hostile sexism (path *a*), and thus, Baron and Kenny's (1986) criteria for mediation were also not met for hypothesis 8B, which predicted that women's hostile sexism would mediate the relation between women's FPC and women's IPAV victimization and men's IPAV perpetration.

The indirect effects were also not significant for each of the hypothesized mediation models. For hypothesis 8A, the predictions that men's hostile sexism would mediate the relation between men's FPC and men's IPAV perpetration and women's IPAV victimization were not supported, given that the indirect effect of men's FPC on their IPAV perpetration through their hostile sexism was not statistically significant ($b = 2.00 \times 10^{-4}$, 95% CI = $-5.04 \times 10^{-5} - 5.67 \times 10^{-4}$) and the indirect effect of men's FPC on women's IPAV victimization through men's hostile sexism was not statistically significant ($b = 1.44 \times 10^{-4}$, 95% CI = $-7.80 \times 10^{-5} - 5.12 \times 10^{-4}$). Regarding hypothesis 8B, the prediction that women's hostile sexism would mediate the role of women's FPC

in women's IPAV victimization and men's IPAV perpetration was not supported as the indirect effect of women's FPC on their own IPAV victimization through their reports of hostile sexism was not statistically significant ($b$ = -3.25 $\times 10^{-5}$, 95% CI = -2.46 $\times 10^{-4}$ – 2.30 $\times 10^{-4}$) and the indirect effect of women's FPC on men's IPAV perpetration through women's hostile sexism was not statistically significant ($b$ = 3.25 $\times 10^{-6}$, 95% CI = -2.30 $\times 10^{-4}$ – 2.37 $\times 10^{-4}$). In summary, none of the hypothesized mediations with hostile sexism (hypotheses 8A and 8B) were statistically significant based on Baron and Kenny's (1986) criteria for mediation as well as analysis of the indirect effects.

**Longitudinal Data Analyses**

The longitudinal data analyses tested hypotheses 9 and 10 from Objective 4 and included couples for whom each partner completed both Time 1 and Time 2 of the study.

**Data management and statistical assumptions.** The longitudinal statistical analyses were conducted using Mplus (Version 8.0), which allowed for estimating the longitudinal APIM. The data were examined for accuracy, completeness, and unusual patterns of responses prior to analyses.

***Validity.*** For participants who went on to complete Time 2 of the study, 97% of participants answered over 30% of the embedded validity questions correctly and 99% indicated that they completed the questionnaires in a way that should produce valid data on the standalone validity questions administered at Time 2. Couples were included in the longitudinal analyses if both partners completed the Time 1 and Time 2 surveys and each partner passed 70% or more of the embedded validity questions and did not indicate that their responses were invalid via the standalone validity questions at both Time 1 and 2. Of the 345 participants who completed Time 2 of the study, 264 (or 132 couples) met this

inclusion criteria and were included in the longitudinal analyses. Comparisons were made between participants that were included and excluded in Time 2 of the study for key study variables, and the only difference that emerged is that those who were not included in analyses were more likely to be women, $t(350) = 2.80$, $p = 0.005$.

***Missing data.*** For the Time 1 data, the degree of missingness due to item nonresponses ranged from 0.00% to 0.90%, with no item exceeding a total of 1.00% missing data and the main measures did not contain any items with missing data. At Time 2, the degree of missingness due to item nonresponses ranged from 0.00% to 1.20%, and none of the main measures contained any items with missing data. Little's MCAR tests for the two waves of data were nonsignificant ($p > .99$), and thus the Time 1 and 2 data were concluded to be missing completely at random. Data were not imputed given that the small amount of missing data was MCAR and there were no data missing for any of the key measures.

***Outliers***. The presence of univariate and multivariate outliers was assessed for all key Time 1 and 2 variables. There were seven univariate outliers identified with studentized residuals. There were four outliers on the predictor variables detected with Mahalanobis' distance. There were two influential outliers indicted by Cook's values exceeding one. Examination of the outliers revealed that outliers were less likely to have a history of IPAV and parents that were married but more likely to be sexually active in the relationship. Individuals deemed to be outliers had been in a romantic relationship with their current partner longer than individuals who were not outliers. At Time 1, individuals who were found to be outliers reported higher frequency of pornography consumption and IPAV perpetration and victimization and consumed a greater proportion

of violent pornography. At Time 2, outlier participants reported higher levels of coercive control perpetration and IPAV perpetration and victimization, and they consumed a greater proportion of violent pornography than nonoutliers. In total, there were 11 participants who were outliers, and when I removed couples for whom one or both partners were outliers, there were a total of 125 couples. I ran the main analyses with and without outliers to examine how their removal would affect the significance of the results and no differences were found. Given this, the cases with univariate and/or multivariate outliers were retained in the longitudinal analyses to maximize the sample size and power.

***Normality***. I examined the distributions of the all key Time 1 and 2 variables in Objective 4 through histograms, probability plots, skewness and kurtosis values, and the Shapiro-Wilk test. For FPC and IPAV perpetration and victimization at both Time 1 and 2, the Shapiro-Wilk tests were significant, histograms showed that each variable was positively skewed, and each variable exceeded the critical values for skewness (±2) and kurtosis (±3). For the social desirability measure at Times 1 and 2, the Shapiro-Wilk tests were significant and were slightly negatively skewed on histograms. Neither variable exceeded the critical values for skewness and kurtosis, but social desirability at Time 2 exceeded the critical value of ±1.96 when the skewness value were divided by the standard error. Given the nonnormal distributions, nonparametric analyses were used in subsequent analyses.

***Multicollinearity***. To assess multicollinearity, I examined the correlation matrix of predictor variables in each model separately for Time 1 and 2 data. None of the correlations between predictor variables exceeded ±.90, suggesting that there were no

problems with multicollinearity. Assessment of the collinearity statistics for the dependent variables also did not indicate multicollinearity as tolerance values were not exceeded. The predictor variables and covariates were grand-mean centered prior to the main analyses to reduce the potential influence of multicollinearity when creating interaction terms (Kenny et al., 2006).

***Tests of nonindependence.*** The degree that the dependent variables were independent between partners within each couple was examined to assess if the APIM was an appropriate statistical model. For the Time 1 data, the Spearman's rank-order correlations between romantic partners' reports of IPAV perpetration ($\rho = .45$, $p < .001$) and IPAV victimization ($\rho = .59$, $p < .001$) were statistically significant. At Time 2, romantic partners' reports of IPAV perpetration ($\rho = .47$, $p < .001$) and IPAV victimization ($\rho = .57$, $p < .001$) were also statistically significant. This suggested that the data were not independent as respondents' rates of IPAV perpetration and victimization were related to those of their partner, and indicated that it would be ideal to analyze the data at the couple-level.

***Distinguishability.*** As in the data analyses of only the Time 1 data, the longitudinal data analyses conceptualized sex as the identifying factor distinguishing partners in each couple and used a distinguishable data design. As mentioned previously, the Time 1 data were empirically distinguishable by sex. This was also evaluated empirically for the Time 2 data following Gonzalez and Griffin's (1999) procedure for conducting an omnibus test of distinguishability with a saturated, or I-SAT, model using structural equation modeling in AMOS (Version 25). Both the models containing FPC and IPAV perpetration, $x^2(4) = 13.7$, $p = 0.008$, and including FPC and IPAV

victimization, $x^2(4) = 12.6$, $p = 0.013$, were distinguishable by sex. Therefore, it was statistically warranted to treat the Time 2 dyads members as distinguishable by sex as well.

***Data structure.*** In order to structure the dataset appropriately for the longitudinal dyadic statistical analyses, the Time 1 data were organized into a dyadic structure, in which each row consisted of one dyad and included the respondent's data and that of their partner as well. The dyadic data set structure was utilized because the statistical analyses used a structural equation modeling (SEM) framework using Mplus to estimate the longitudinal APIM, which requires a dyad number.

**Descriptive statistics.** Descriptive statistics for the key variables for the longitudinal analyses are presented in Table 13. More specifically, means, standard deviations, range, and frequency scores are provided for frequency of pornography consumption (FPC) and the total number of acts of IPAV perpetration and victimization as well as the total instances of particular types of IPAV (i.e., physical, sexual, psychological) in the preceding four months. Mean differences between Time 1 and 2 scores were tested with Wilcoxon signed rank sum tests for non-normally distributed data. In terms of pornography consumption, there was no difference in the proportion of men who reported consuming pornography within the prior four months at Time 1 and Time 2 (81.1% and 83.3% respectively), $z(132) = -0.78$, $p = 0.44$. The proportion of women that reported consuming pornography in the past four months also did not significantly differ from Time 1 to Time 2 (48.5% and 50.8% respectively), $z(132) = -0.60$, $p = 0.55$. Of those who consumed pornography in the preceding four months, men predominantly reported using pornography 1-2 times per week at both Time 1 and 2,

Table 13

*Descriptive Statistics for Key Variables at Time 1 and 2*

| Variable | Time 1 | | | Time 2 | | | |
|---|---|---|---|---|---|---|---|
| | Mean *(SD)* | Range | % | Mean *(SD)* | Range | % | *z*(*df* = 132) |
| | | | | Men | | | |
| Total IPAV perp | 9.58 (18.11) | 0-129 | 62.1 | 7.82 (21.68) | 0-178 | 54.5 | -2.12* |
| Physical | 1.92 (9.09) | 0-91 | 17.4 | 1.33 (11.68) | 0-133 | 10.6 | -1.47 |
| Sexual | 3.62 (9.32) | 0-54 | 28.8 | 2.52 (8.65) | 0-75 | 25.0 | -1.12 |
| Psychological | 4.04 (7.63) | 0-48 | 53.0 | 3.96 (9.21) | 0-73 | 45.5 | -0.57 |
| Total IPAV vict | 9.51 (16.38) | 0-112 | 62.9 | 8.70 (22.25) | 0-200 | 56.8 | -1.14 |
| Physical | 1.48 (6.99) | 0-68 | 19.7 | 2.18 (13.89) | 0-153 | 13.6 | -0.13 |
| Sexual | 2.92 (7.70) | 0-44 | 27.3 | 1.93 (5.94) | 0-30 | 22.0 | -1.29 |
| Psychological | 5.11 (8.79) | 0-44 | 56.8 | 4.58 (9.85) | 0-53 | 50.8 | -1.26 |
| FPC | 4.58 (8.84) | -8.89-44.54 | 81.1 | 4.03 (8.29) | -9.22-32.49 | 83.3 | -0.70 |
| | | | | Women | | | |
| Total IPAV perp | 9.41 (16.02) | 0-85 | 61.4 | 8.61 (20.31) | 0-170 | 54.5 | -1.31 |
| Physical | 0.86 (5.19) | 0-58 | 15.9 | 1.32 (10.13) | 0-115 | 11.4 | -0.20 |
| Sexual | 1.62 (5.19) | 0-27 | 18.2 | 1.34 (5.10) | 0-28 | 12.9 | -1.25 |
| Psychological | 6.92 (12.97) | 0-69 | 56.1 | 5.95 (13.17) | 0-69 | 50.0 | -1.13 |
| Total IPAV vict | 10.63 (19.20) | 0-100 | 53.0 | 9.45 (22.98) | 0-178 | 53.0 | -1.41 |
| Physical | 1.00 (5.73) | 0-56 | 12.9 | 1.19 (11.25) | 0-129 | 8.3 | -1.40 |
| Sexual | 3.04 (8.75) | 0-50 | 23.5 | 2.63 (7.13) | 0-40 | 26.5 | -0.82 |
| Psychological | 6.59 (12.72) | 0-67 | 50.0 | 5.63 (13.44) | 0-73 | 45.5 | -1.00 |
| FPC | -3.34 (6.05) | -8.89-15.15 | 48.5 | -3.87 (6.20) | -9.22-20.96 | 50.8 | -2.08* |

*Note.* Total IPAV perp = total reported acts of IPAV perpetration measured on the CTS2; total IPAV vict = total reported instances of IPAV victimization measured on the CTS2; FPC = frequency of pornography consumption composite calculated from items from the PCQ and PUS; % = percentage of participants who endorsed at least one item.
*$p < .05$. **$p < .01$. ***$p < .001$.

whereas women viewed pornography less than once a month at Time 1 and 2.

***Comparisons between men and women***. Comparisons were made between men and women using Wilcoxon signed rank sum tests. Men's frequency of pornography consumption was higher than that of women at both Time 1 and Time 2; Time 1: $z(132) = -7.95$, $p < 0.001$, Time 2: $z(132) = -8.15$, $p < 0.001$. Women perpetrated higher levels of psychological IPAV than men at both Time 1 and Time 2; Time 1: $z(132) = -2.86$, $p = 0.004$, Time 2: $z(132) = -2.11$, $p = 0.035$, whereas men perpetrated higher rates of sexual IPAV than women at both Time 1 and 2 of the study, Time 1: $z(132) = -2.39$, $p = 0.017$; Time 2: $z(132) = -2.15$, $p = 0.031$. Lastly, men had higher rates of physical IPAV victimization than women at Time 2, $z(132) = -2.37$, $p = 0.018$.

**Bivariate correlations**. A series of bivariate correlations were conducted in order to examine whether there were significant relationships among key variables included in the longitudinal data analyses (see Table 14). I conducted three types of correlations: within-male (below diagonal), within-female (above diagonal), and interpartner (i.e., between dyad members; bolded along diagonal). The interpartner correlations indicate the degree of nonindependence of observations between dyads members. Spearman's rank correlations were used to examine the relationships given that variables were not normally distributed. Social desirability was included to determine whether it should be included as a covariate in the main analyses, given that it predicted both the predictor and outcome variables at Time 1 of the study.

***Within-male***. Men who responded in a socially desirable manner at Time 1 also tended to do so at Time 2 ($\rho = .42$, $p < .001$). In addition, they reported consuming pornography less frequently at Time 1 ($\rho = -.22$, $p = .013$) and Time 2 ($\rho = -.21$, $p = .019$)

Table 14

*Within-Male, Within-Female, and Interpartner Correlations among Key Variables at Time 1 and 2*

| Variable | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. |
|---|---|---|---|---|---|---|---|---|
| 1. Time 1 social desirability | **.21**** | .51*** | -.22* | -.29** | -.32*** | -.29** | -.26** | -.19* |
| 2. Time 2 social desirability | .42*** | **.45***** | -.14 | -.23** | -.16 | -.22* | -.14 | -.17* |
| 3. Time 1 FPC | -.22* | -.11 | **.06** | .68*** | .12 | .11 | .08 | .07 |
| 4. Time 2 FPC | -.21* | -.18* | .77*** | **.13*** | .08 | .15 | .09 | .14 |
| 5. Time 1 total IPAV perp | -.35*** | -.15 | .31*** | .15 | **.45***** | .71*** | .87*** | .70*** |
| 6. Time 2 total IPAV perp | -.39*** | -.24** | .36*** | .28** | .62*** | **.47***** | .62*** | .91*** |
| 7. Time 1 total IPAV vict | -.30** | -.12 | .26** | .11 | .91*** | .60*** | **.59***** | .67*** |
| 8. Time 2 total IPAV vict | -.32*** | -.19* | .33*** | .25** | .55*** | .86*** | .60*** | **.57***** |

*Note.* In the matrix, correlation for men appear below the diagonal and correlations for women appear above the diagonal. Bolded values along the diagonal are correlations between dyad members. FPC = frequency of pornography consumption; perp = perpetration; vict = victimization; IPAV = intimate partner aggression/violence.
*$p < .05$. **$p < .01$. ***$p < .001$.

and endorsed lower rates of IPAV perpetration and victimization at Time 1 (perpetration: $\rho$ = -.35, $p$ < .001, victimization: $\rho$ = -.30, $p$ = .001) and Time 2 (perpetration: $\rho$ = -.39, $p$ < .001, victimization: $\rho$ = -.32, $p$ < .001). Men who responded in a socially desirable manner at Time 2 reported lower FPC at Time 2 ($\rho$ = -.18, $p$ = .041) and less IPAV perpetration ($\rho$ = -.24, $p$ = .005) and victimization ($\rho$ = -.19, $p$ = .033) at Time 2. Men who consumed pornography frequently at Time 1 also tended to do so at Time 2 ($\rho$ = .77, $p$ < .001) and they endorsed higher rates of IPAV perpetration and victimization at Time 1 (perpetration: $\rho$ = .31, $p$ < .001, victimization: $\rho$ = .26, $p$ = .003) and Time 2 (perpetration: $\rho$ = .36, $p$ < .001, victimization: $\rho$ = .33, $p$ < .001). Men with high FPC at Time 2 also reported higher levels of IPAV perpetration ($\rho$ = .28, $p$ = .001) and victimization ($\rho$ = .25, $p$ = .005) at Time 2. Men who perpetrated high levels of IPAV at Time 1 also had higher rates of IPAV victimization at Time 1 ($\rho$ = .91, $p$ < .001), and later at Time 2, these men reported higher rates of IPAV perpetration ($\rho$ = .62, $p$ < .001) and victimization ($\rho$ = .55, $p$ < .001). Men with high levels of IPAV victimization at Time 1 also had higher rates of IPAV perpetration ($\rho$ = .60, $p$ < .001) and victimization ($\rho$ = .86, $p$ < .001) at Time 2. Lastly, men who reported high levels of IPAV perpetration at Time 2 also had high levels of IPAV victimization at Time 2 ($\rho$ = .60, $p$ < .001).

***Within-female***. Women who responded in a socially desirable manner at Time 1 also had higher rates of socially desirable responding at Time 2 ($\rho$ = .51, $p$ < .001) and they reported consuming pornography less frequently at Time 1 ($\rho$ = -.22, $p$ = .010) and Time 2 ($\rho$ = -.29, $p$ = .001) and endorsed lower rates of IPAV perpetration and victimization at Time 1 (perpetration: $\rho$ = -.32, $p$ < .001, victimization: $\rho$ = -.26, $p$ = .002) and Time 2 (perpetration: $\rho$ = -.29, $p$ = .001, victimization: $\rho$ = -.19, $p$ = .027). Women

who responded in a socially desirable manner at Time 2 reported lower FPC at Time 2 ($\rho$ = -.23, $p$ = .003) and less IPAV perpetration ($\rho$ = -.22, $p$ = .013) and victimization ($\rho$ = -.197 $p$ = .047) at Time 2. Given this, social desirability was identified as a potential confound in predicting IPAV for both men and women and was included as a covariate in the longitudinal analyses.

Women who consumed pornography frequently at Time 1 also tended to do so at Time 2 ($\rho$ = .68, $p$ < .001). Among women, high levels of IPAV at Time 1 were associated with higher rates of IPAV victimization at Time 1 ($\rho$ = .87, $p$ < .001) and higher rates of IPAV perpetration ($\rho$ = .71, $p$ < .001) and victimization ($\rho$ = .70, $p$ < .001) at Time 2. Women with high levels of IPAV victimization at Time 1 also had higher rates of IPAV perpetration ($\rho$ = .62, $p$ < .001) and victimization ($\rho$ = .91, $p$ < .001) at Time 2. Women who reported high levels of IPAV perpetration at Time 2 also tended to endorse high levels of IPAV victimization at Time 2 ($\rho$ = .67, $p$ < .001).

***Interpartner***. There were significant, positive interpartner correlations between romantic partners' self-reports of IPAV perpetration ($\rho$ = .45, $p$ < .001) and victimization ($\rho$ = .59, $p$ < .001) at Time 1 and their IPAV perpetration ($\rho$ = .47, $p$ < .001) and victimization ($\rho$ = .57, $p$ < .001) at Time 2, indicating that the longitudinal outcome variables were not independent and it was necessary to account for statistical interdependence in the statistical analyses. Interpartner correlations were also positive and statistically significant for social desirable responding at Time 1 ($\rho$ = .21, $p$ = .001) and Time 2 ($\rho$ = .45, $p$ < .001) as well as for FPC at Time 2 ($\rho$ = .13, $p$ = .038).

**Interpartner agreement on IPAV**. Similar to analyses conducted at Time 1, three indices were used to evaluate interpartner agreement for couples that completed

Time 1 and 2 and had valid data (132 couples), including the percentage of occurrence agreement, kappa statistics examining agreement about the occurrence of male- and female-perpetrated IPAV, and correlations assessing agreement about the frequency of male- and female-perpetrated IPAV. The percentage of occurrence agreement is the proportion of couples who agreed that IPAV did or did not occur in their relationships. For the 132 couples for whom both partners completed Time 1 and 2 of the study and had valid data, 72.7% of women agreed with their male partner's self-report of whether or not he had perpetrated any degree of IPAV at Time 1 of the study, and 71.2% of men agreed with their female partner's self-report if she had perpetrated any IPAV at Time 1. Of these 132 couples, there were 101 couples (76.5%) for whom at least one partner self-reported perpetrating at least one act of physical, sexual, or emotional IPAV at Time 1, and 61 of these couples demonstrated interpartner agreement (60.4%). At Time 1, there were 82 men who endorsed perpetrating one or more acts of IPAV, and 58 of their female partners agreed with their endorsement (70.7% interpartner agreement). For the 81 women who self-reported perpetrating at least one act of IPAV at Time 1, 63 of their male partners agreed, and interpartner agreement was 77.8%.

At Time 2 of the study, 69.7% of women agreed with their male partner's self-report of whether or not he had perpetrated at least one act of IPAV, and 65.9% of men agreed with their female partner's self-report if she had perpetrated any IPAV. Of the 132 couples for whom both partners completed Time 1 and 2 of the study and had valid data, there were 95 couples (72.0%) for whom at least one partner self-reported perpetrating at least one act of physical, sexual, or emotional IPAV at Time 2, and 61 of these couples demonstrated interpartner agreement (55.8%). There were 72 men who endorsed

perpetrating one or more acts of IPAV at Time 2, and 51 of their female partners agreed with their endorsement (70.8% interpartner agreement). Similarly, for the 72 women who self-reported perpetrating at least one act of IPAV at Time 2, 51 of their male partners agreed, and interpartner agreement was 70.8%.

Kappa was calculated for agreement about the occurrence of male- and female-perpetrated IPAV at Time 1 and 2 for the 132 couples that completed both Time 1 and 2 and had valid data. Based on standard criteria (Landis & Koch, 1977), romantic partners had poor agreement about the occurrence of IPAV perpetrated by both men ($k$ = .13) and women ($k$ = .11) at Time 1, and there was also poor agreement for male- ($k$ = .17) and female-perpetrated IPAV ($k$ = .12) at Time 2.

I also assessed agreement about the frequency of male- and female-perpetrated IPAV at Time 1 and 2 using Spearman's rank correlations. At Time 1, romantic partners' reports were significantly positively related for both male-perpetrated IPAV ($\rho$ = .54, $p$ < .001) and female-perpetrated IPAV ($\rho$ = .51, $p$ < .001), and at Time 2, romantic partners' reports were positively, significantly related for both male-perpetrated IPAV ($\rho$ = .57, $p$ < .001) and female-perpetrated IPAV ($\rho$ = .49, $p$ < .001), but the magnitude of these correlations suggested only moderate interparner agreement.

In summary, multiple indices of interpartner agreement demonstrated relatively poor levels of interpartner agreement about the occurrence and frequency of IPAV at Time 1 and 2. Therefore, self-reported rates of IPAV were modeled as two separate outcome variables for each partner in the analyses using the longitudinal APIM, rather than using a composite of IPAV for each couple that combines the partners' responses.

**Planned analyses.**

***Longitudinal APIM.*** The only statistical method known to date that is appropriate for analyzing the longitudinal dyadic data in the current study is the actor-partner interdependence model (APIM) as it can be modified for use with longitudinal data in order to address influence of time between dyads. In a longitudinal APIM, autoregressive effects describe the stability of the variables and the residual change in scores can be predicted by controlling for variable stability (Hartl et al., 2015; Popp, Laursen, Kerr, Statin, & Burk, 2008). In this study, the longitudinal APIM provides a robust estimate of the influence of FPC on IPAV perpetration and victimization over the course of the four month period between Time 1 and Time 2. Participants' initial FPC at Time 1 was used to predict change in their own and their partners' IPAV perpetration and victimization from Time 1 to Time 2. To test the longitudinal APIM hypotheses (Objectives 4), two path analyses were conducted in a SEM framework in Mplus, and this software had the ability to extend the APIM to control for variable stability. Figures 21 and 22 illustrate the longitudinal APIM measurement models. Model 1 predicts Time 2 IPAV perpetration from Time 1 FPC while controlling for Time 1 IPAV perpetration and Time 2 social desirability. Model 2 predicts Time 2 IPAV victimization from Time 1 FPC while controlling for Time 1 IPAV victimization and Time 2 social desirability. This method of analysis benefited from entering the data in a dyadic format, such that each row contained one dyad with both the actor and partner data. As in the Time 1 data analyses, the dyads were distinguishable based on the sex of the partners in each couple. Given this along with the dyadic format of data entry, sex did not have to be entered as a separate variable. Social desirability was included as a covariate in each model as it was significantly

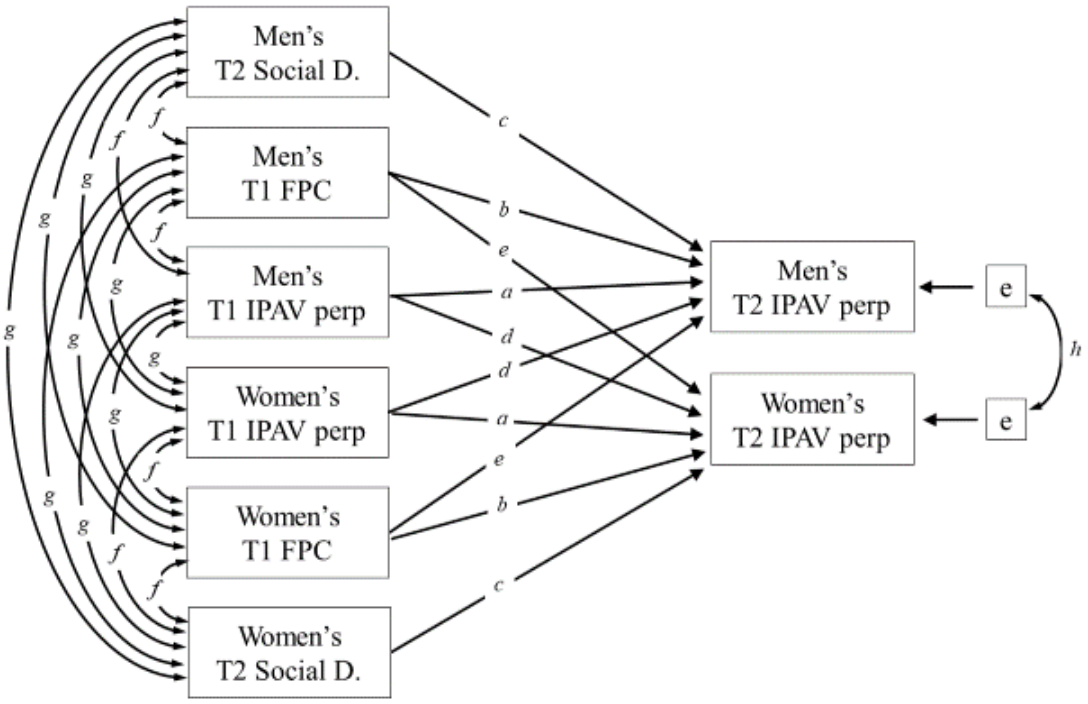


*Figure 21*. Measurement model for distinguishable dyad longitudinal actor-partner interdependence model (APIM) predicting intimate partner aggression/violence perpetration (IPAV perp) at Time 2 (T2) from frequency of pornography consumption (FPC) at Time 1 (T1) and social desirability (Social D.) at Time 2.

*Note*. Model 1 includes the stability path (*a*), within individual influence paths (*b* & *c*), between individual influence paths (*d* & *e*), within-individual correlations (*f*), and between-individual correlations (*g* and *h*).

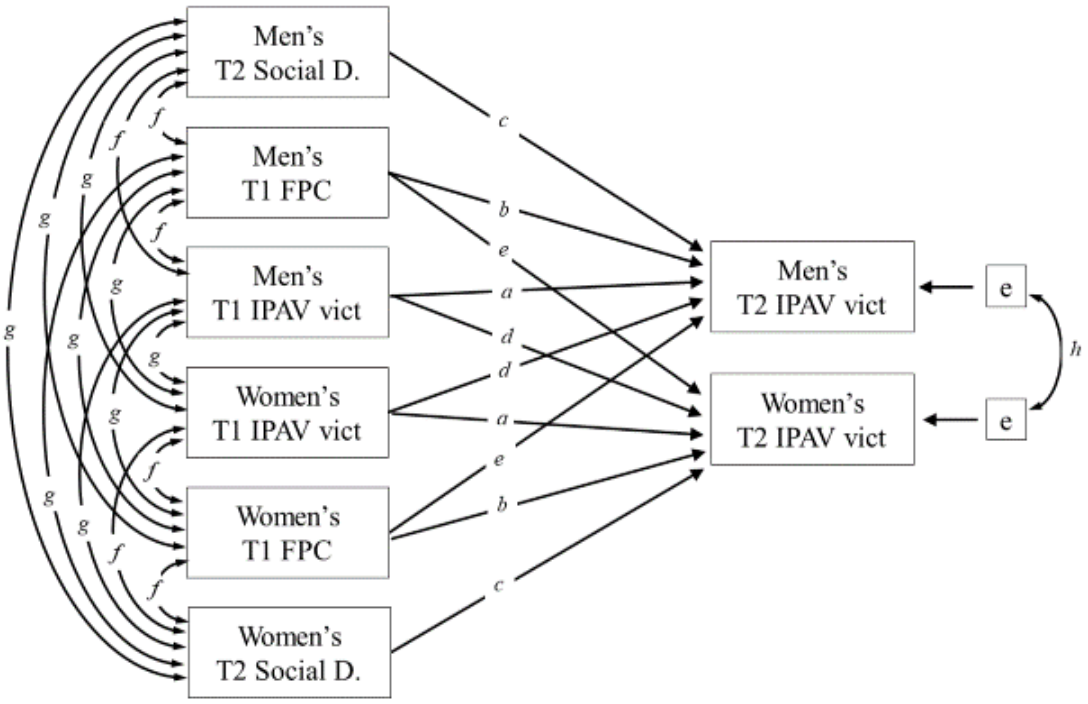


*Figure 22*. Measurement model for distinguishable dyad longitudinal actor-partner interdependence model (APIM) predicting intimate partner aggression/violence victimization (IPAV vict) at Time 2 (T2) from frequency of pornography consumption (FPC) at Time 1 and social desirability (Social D.) at Time 2.

*Note*. Model 2 includes the stability path (*a*), within individual influence paths (*b* & *c*), between individual influence paths (*d* & *e*), within-individual correlations (*f*), and between-individual correlations (*g* and *h*).

correlated with FPC and IPAV perpetration and victimization at Time 1 and 2 for both men and women. As outlined by Hartl and colleagues (2015), a key type of actor effect in the longitudinal APIM is the within-individual stability pathway (actor path *a*), which, in the case of the current study, was the effect that participants' level of IPAV at Time 1 had on their rate of IPAV at Time 2. There are also within-individual influence paths (actor paths *b* and *c*), which are the effect of an actor's predictor or covariate variables at Time 1 on their outcome variable at Time 2. Between-individual influence pathways (partner paths *d* and e) are the partner effects between one partner's variables at Time 1 on the other partner's variables at Time 2. In order to assess the fit of each model, significance levels (*p* values) were adjusted using the sequential Bonferroni procedure to address the risk of elevated Type 1 error when testing several hypotheses, and each of the *p* values reported has been adjusted accordingly.

***Predicting IPAV at Time 1 by FPC at Time 2 (Objective 4).*** Figure 23 depicts Model 1, which predicted IPAV perpetration over time from initial FPC levels while controlling for men's and women's Time 1 IPAV perpetration and socially desirable responding. Figure 24 presents Model 2, a parallel model which predicted IPAV victimization over time from FPC at Time 1 while controlling for men's and women's Time 1 IPAV victimization and Time 2 socially desirable responding.

In Model 1, consistent with hypothesis 9A, which predicted that, for men, more frequent consumption of pornography at Time 1 would be associated with higher levels of Time 2 IPAV perpetration, frequent pornography use among men at Time 1 was associated with more acts of male-perpetrated IPAV at Time 2 while controlling for men's level of IPAV perpetration at Time 1 and socially desirable responding at Time 2

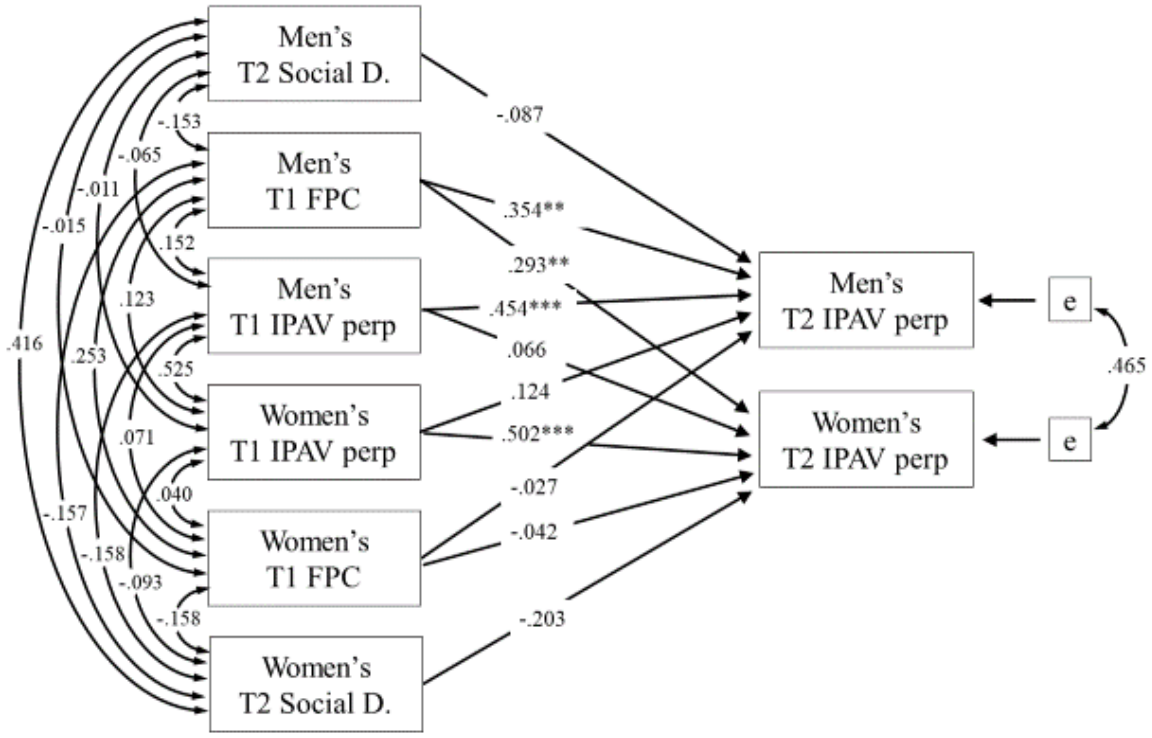


*Figure 23.* Longitudinal actor-partner interdependence model (APIM) predicting intimate partner aggression/violence perpetration (IPAV perp) at Time 2 (T2) from frequency of pornography consumption (FPC) at Time 1 (T1) while controlling for IPAV perpetration at Time 1 and socially desirable responding (Social D.) at Time 2.

*Note*. 132 couple dyads ($N$ = 264). *$p$ < .05. **$p$ < .01. ***$p$ < .001.

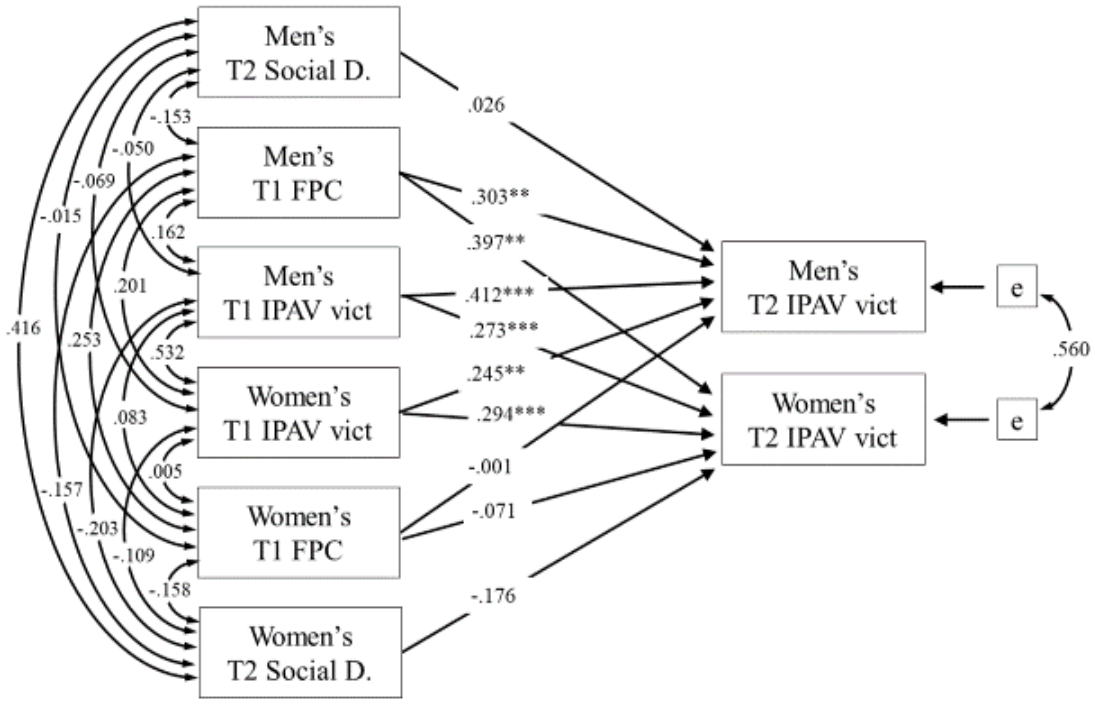


*Figure 24*. Longitudinal actor-partner interdependence model (APIM) predicting intimate partner aggression/violence victimization (IPAV vict) at Time 2 (T2) from frequency of pornography consumption (FPC) at Time 1 (T1) while controlling for IPAV victimization at Time 1 and socially desirable responding (Social D.) at Time 2.

*Note*. 132 couple dyads ($N$ = 264). *$p$ < .05. **$p$ < .01. ***$p$ < .001.

($\beta$ = 0.354, $p$ = 0.003, 95% CI = 0.02-0.09). Other significant actor effects in the model included stability effects for IPAV among both men and women. That is, as expected, men's and women's levels of IPAV perpetration at Time 1 predicted their rate of IPAV perpetration at Time 2 (men: $\beta$ = 0.454, $p$ < 0.001, 95% CI = 0.02-0.05; women: $\beta$ = 0.502, $p$ < 0.001, 95% CI = 0.03-0.07). When considering partner effects, contrary to hypothesis 10B, which predicted that more frequent pornography consumption among women at Time 1 would be associated with higher levels of Time 2 male-perpetrated IPAV perpetration, women's FPC at Time 1 was not significantly associated with men's IPAV perpetration at Time 2 ($\beta$ = -0.027, $p$ = 0.800, 95% CI = -0.05 – 0.04). However, if men frequently consumed pornography at Time 1, their female partners tended to perpetrate higher levels of IPAV at Time 2 ($\beta$ = 0.293, $p$ = 0.007, 95% CI = 0.02-0.08). Interestingly, men's and women's Time 1 IPAV perpetration did not significantly predict their partners' Time 2 IPAV perpetration, and despite significant correlations at the bivariate level, socially desirable responding at Time 2 was not related to men's or women's Time 2 IPAV perpetration in Model 1. In summary, when predicting Time 2 IPAV perpetration from Time 1 FPC, both men and women were at greater risk of perpetrating IPAV against their romantic partners at Time 2 if men had frequently viewed pornography four months earlier and stability was found in the frequency with which both men and women perpetrated IPAV against their romantic partners across the four-month interval.

In the model predicting Time 2 IPAV victimization from Time 1 FPC (Model 2), a slightly different pattern of results was found. Similar to the actor effects for IPAV perpetration, stability of IPAV victimization was found for both men ($\beta$ = 0.412, $p$ <

0.001, 95% CI = 0.03-0.05) and women ($\beta$ = 0.294, $p$ < 0.001, 95% CI = 0.01-0.05) across the four-month interval and frequent pornography consumption among men at Time 1 was associated with higher rates of IPAV victimization for men at Time 2 ($\beta$ = 0.303, $p$ = 0.008, 95% CI = 0.02-0.08) when controlling for Time 1 IPAV victimization and Time 2 social desirability ratings. However, contrary to hypothesis 9B, which predicted that, for women, more frequent pornography consumption at Time 1 would be related to higher reports of IPAV victimization at Time 2, women's FPC at Time 1 did not predict their risk of IPAV victimization at Time 2 ($\beta$ = -0.071, $p$ = 0.488, 95% CI = -0.07 – 0.03). In addition, Time 2 social desirability was not significantly related to Time 2 IPAV victimization for men or women. As for partner effects, hypothesis 10A was supported as women tended to experience higher levels of IPAV victimization at Time 2 if their male partners consumed pornography frequently at Time 1 ($\beta$ = 0.397, $p$ = 0.001, 95% CI = 0.05-0.11). In addition, although not found for IPAV perpetration, higher reports of men's ($\beta$ = 0.273, $p$ < 0.001, 95% CI = 0.02-0.04) and women's ($\beta$ = 0.245, $p$ = 0.006, 95% CI = 0.01-0.03) Time 1 IPAV victimization were associated with higher reports of their partners' Time 2 IPAV victimization, which suggests that each partner's victimization ratings at Time 1 were predictive of the other partner's victimization ratings four months later. Thus, based on Model 2, it appears that men's FPC at Time 1 predicted both men's own and their female partners' Time 2 IPAV victimization and that each partner's Time 1 IPAV victimization predicted their own and their partners' IPAV victimization four months later.

**Exploratory analysis.** Results from the planned longitudinal analysis discussed above found that men who consume pornography more frequently at baseline develop

higher rates of IPAV perpetration and victimization over time when their initial levels of IPAV are controlled. High FPC among men at Time 1 also predicted higher rates of Time 2 IPAV perpetration and victimization for their female partners when controlling for their female partners' initial IPAV scores. Essentially, this shows that men's FPC is not simply correlated with men's and women's IPAV, but that it predicts change in IPAV over time. Although this could suggest that men's pornography consumption is leading to increased rates of IPAV in their romantic relationships, it could simply be that FPC and IPAV mutually affect each other and that IPAV also predicts FPC over time. In order to further examine the direction of this relationship, I conducted a post-hoc, exploratory analysis assessing the role of baseline IPAV perpetration and victimization in the development of FPC over time. Using the procedure for estimating longitudinal APIMs described above, I conducted two path analyses in a structural equation modeling framework in Mplus (Version 8.0). As shown in Figure 25, Model 3 predicted FPC at Time 2 from IPAV perpetration at Time 1 while controlling for FPC at Time 1 and social desirability at Time 2. Model 4 predicted FPC at Time 2 from IPAV victimization at Time 1 while controlling for FPC at Time 1 and social desirability at Time 2 (Figure 26). The results did not suggest that baseline IPAV predicts change in FPC over time, as neither men's nor women's baseline levels of IPAV perpetration and victimization at Time 1 significantly predicted their own or their partner's rate of FPC at Time 2. In fact, the only statistically significant effects in Models 3 and 4 are the path *a* actor effects between FPC at Time 1 and 2 (within-individual stability paths). More specifically, men who consumed pornography frequently at Time 1 also tended to do so at Time 2 (Model 3: $\beta = 0.735$, $p < 0.001$, 95% CI = 0.56-0.82; Model 4; $\beta = 0.745$, $p < 0.001$, 95% CI = 0.56-0.83), and

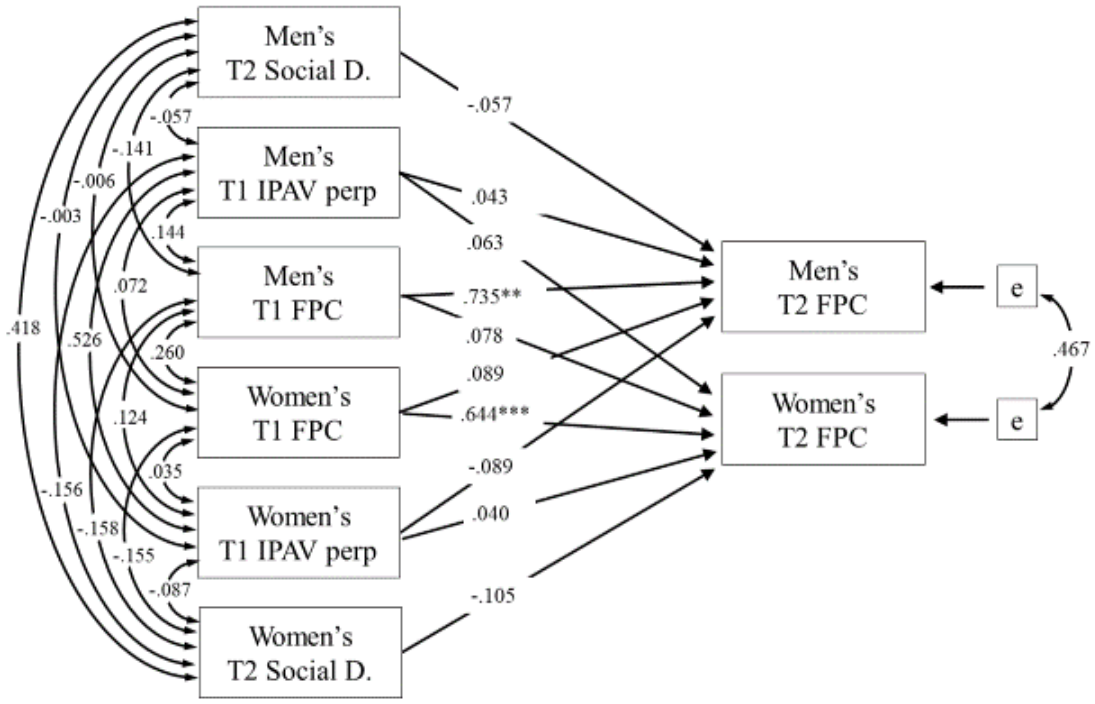


*Figure 25.* Longitudinal actor-partner interdependence model (APIM) predicting frequency of pornography consumption (FPC) at Time 2 (T2) from intimate partner aggression/violence perpetration (IPAV perp) at Time 1 (T1) while controlling for FPC at Time 1 and socially desirable responding (Social D.) at Time 2.

*Note*. 132 couple dyads ($N$ = 264). *$p$ < .05. **$p$ < .01. ***$p$ < .001.

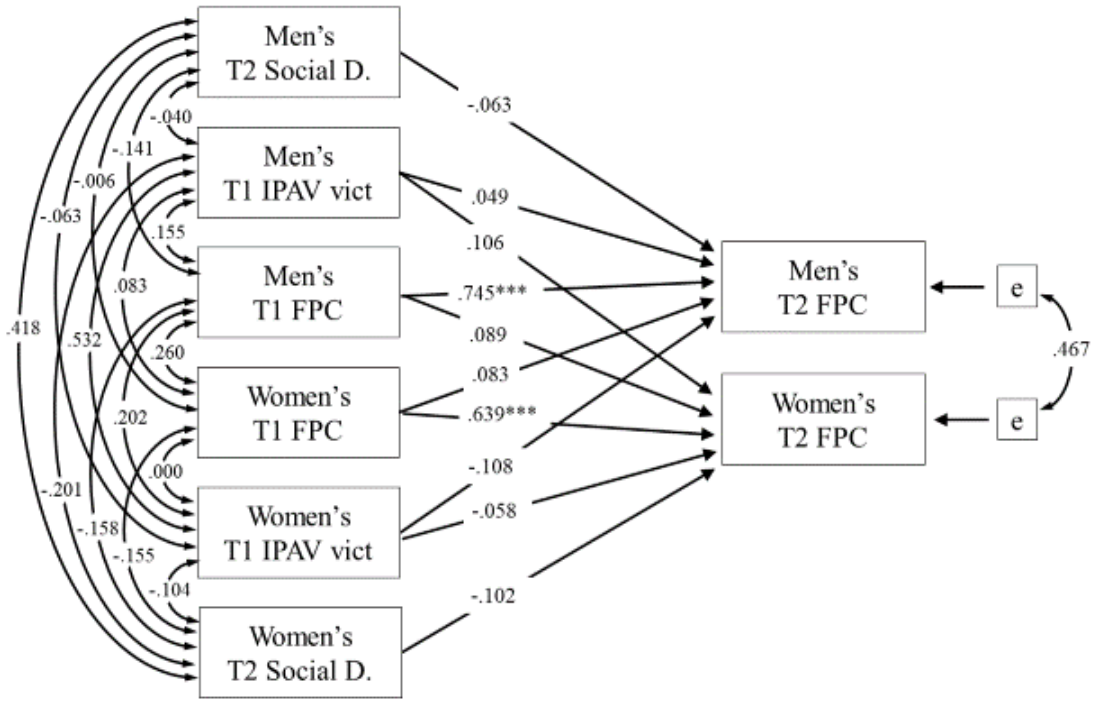


*Figure 26.* Longitudinal actor-partner interdependence model (APIM) predicting frequency of pornography consumption (FPC) at Time 2 (T2) from intimate partner aggression/violence victimization (IPAV vict) at Time 1 (T1) while controlling for FPC at Time 1 and socially desirable responding (Social D.) at Time 2.

*Note*. 132 couple dyads ($N$ = 264). *$p$ < .05, **$p$ < .01. ***$p$ < .001.

women who frequently viewed pornography at Time 1 also often consumed pornography at Time 2 (Model 3: $\beta = 0.644$, $p < 0.001$, 95% CI = 0.47-0.84; Model 4; $\beta = 0.639$, $p < 0.001$, 95% CI = 0.46-0.84).

**Summary of Main Analyses**

Across analyses, there was mixed support for the study hypotheses and several novel findings. Table 15 provides a summary of the main results germane to each of the hypotheses.

Table 15

*Summary of Results Pertinent to Study Hypotheses*

| | Objective 1 hypotheses | Results | Hypothesis supported? |
|---|---|---|---|
| 1A | Men with high levels of FPC at T1 would self-report higher levels of IPAV perp at T1. | At the bivariate level, high FPC at T1 was associated with higher IPAV perp at T1 among men, but this was not statistically significant in the APIM. | Partially |
| 1B | Women with high levels of FPC at T1 would self-report higher levels of IPAV vict at T1. | No significant relation between women's FPC at T1 and their IPAV vict at T1. | No |
| 2A | In couples with high levels of male FPC at T1, female partners would report greater rates of IPAV vict at T1. | No significant association between men's FPC at T1 and women's IPAV vict at T1. | No |
| 2B | In couples with high levels of female FPC at T1, male partners would report greater rates of IPAV perp at T1. | No significant association between women's FPC and men's IPAV perp at T1. | No |
| 3A | For couples with high male FPC and low female FPC at T1, male partners would report higher levels of IPAV perp at T1. | No significant actor by partner interaction between men's and women's levels of FPC at T1 when predicting men's IPAV perp at T1. | No |
| 3B | For couples with low female FPC and high male FPC at T1, female partners would report higher levels of IPAV vict at T1. | No significant actor by partner interaction between men's and women's levels of FPC at T1 when predicting women's IPAV vict at T1. | No |
| | Objective 2 hypotheses | Results | Hypothesis supported? |
| 4A | The positive association between male FPC at T1 and male IPAV perp at T1 would be stronger for men with higher rates of CC perp at T1. | No significant interaction between men's FPC and CC perp when predicting their IPAV perp at T1. | No |
| 4B | There would be a stronger positive relation between male FPC at T1 and female IPAV vict at T1 among men with higher rates of CC perp at T1. | No significant interaction between men's FPC and CC perp when predicting women's IPAV vict at T1. | No |

*Continued*

| | Objective 2 hypotheses continued | Results | Hypothesis supported? |
|---|---|---|---|
| 5A | The positive association between female FPC at T1 and female IPAV vict at T1 would be stronger among women with higher rates of CC vict at T1. | No significant interaction between women's FPC and CC perp when predicting women's IPAV vict at T1. | No |
| 5B | The positive association between female FPC at T1 and male IPAV perp at T1 would be stronger for women with higher rates of CC vict at T1. | No significant actor by partner interaction between women's FPC and CC vict at T1 when predicting men's IPAV perp at T1. | No |
| 6A | The positive relation between male FPC at T1 and male IPAV perp at T1 would be stronger for men with higher composite aggression scores at T1. | No significant interaction between men's FPC and composite aggression when predicting men's IPAV perp at T1. | No |
| 6B | There would be a stronger positive association between male FPC at T1 and female IPAV vict at T1 among men with higher composite aggression at T1. | No significant interaction between men's FPC and composite aggression when predicting women's IPAV vict at T1. | No |
| 6C | The positive association between female FPC at T1 and female IPAV vict at T1 would be stronger among women with higher composite aggression at T1. | A significant interaction was found between women's FPC and composite aggression at T1 when predicting women's IPAV vict at T1, such that women's FPC at T1 and composite aggression at T1 did not significantly predict their risk of IPAV vict at T1, but women with high composite aggression at T1 were at lower risk of IPAV perp at T1 if they frequently viewed pornography at T1. | No |
| 6D | The positive relation between female FPC at T1 and male IPAV perp at T1 would be stronger for women with higher composite aggression at T1. | No significant interaction between women's FPC and composite aggression when predicting men's IPAV perp at Time 1. | No |

*Continued*

| | Objective 3 hypotheses | Results | Hypothesis supported? |
|---|---|---|---|
| 7A | Men's FPC at T1 would predict more benevolent sexism at T1, which would in turn predict lower male IPAV perp at T1 and female IPAV vict at T1. | Baron and Kenny's (1986) criteria for mediation were not met. No significant indirect effect of men's FPC on their IPAV perp or women's IPAV vict through men's benevolent sexism at T1. | No |
| 7B | Women's FPC at T1 would predict more benevolent sexism at T1, which would in turn predict lower female IPAV vict at T1 and male IPAV perp at T1. | Baron and Kenny's (1986) criteria for mediation were not met. No significant indirect effect of women's FPC on their IPAV vict and men's IPAV perp through women's benevolent sexism at T1. | No |
| 8A | Men's FPC at T1 would predict more hostile sexism at T1, which would in turn predict higher male IPAV perp at T1 and female IPAV vict at T1. | Baron and Kenny's (1986) criteria for mediation were not met. No significant indirect effect of men's FPC on their IPAV perp and women's IPAV vict through men's hostile sexism at T1. | No |
| 8B | Women's FPC at T1 would predict more hostile sexism at T1, in turn predicting higher female IPAV vict at T1 and male IPAV perp at T1. | Baron and Kenny's (1986) criteria for mediation were not met. No significant indirect effect of women's FPC on their IPAV vict and men's IPAV perp through women's hostile sexism at T1. | No |
| | Objective 4 hypotheses | Results | Hypothesis supported? |
| 9A | Men with high levels of FPC at T1 would self-report higher levels of IPAV perp at T2. | Men who consumed pornography more frequently at T1 reported higher levels of IPAV perp at T2 while controlling for their level of IPAV perp at T1. | Yes |
| 9B | Women with high levels of FPC at T1 would self-report higher levels of IPAV vict at T2. | No significant association between women's FPC at T1 and their level of IPAV vict at T2. | No |
| 10A | In couples with high levels of male FPC at T1, female partners would report greater rates of IPAV vict at T2. | Men who frequently consumed pornography at T1 had female partners who experienced higher levels of IPAV vict at T2. | Yes |
| 10B | In couples with high levels of female FPC at T1, male partners would report greater rates of IPAV perp at T2. | No significant association between women's FPC at T1 and men's IPAV perp at T2. | No |

*Note*. FPC = Frequency of Pornography Consumption, IPAV = Intimate Partner Aggression/Violence, CC = Coercive Control, perp = perpetration, vict = victimization, T1 = Time 1, T2 = Time 2.

# CHAPTER 5

# Discussion

## Objectives

The current study examined pornography consumption, IPAV, and other relevant variables in emerging adult heterosexual couple dyads across a four-month span. The main objectives were to (a) examine the association between frequency of pornography consumption and IPAV at the couple-level, (b) test the moderating effects of coercive control and composite risk of aggression on this relation, (c) assess the mediating effects of benevolent and hostile sexism on the association between frequency of pornography consumption and IPAV, and (d) evaluate if frequency of pornography consumption predicts change in IPAV over time.

## Review of Main Results

The current study yielded a myriad of interesting findings, which are discussed below in order of the major study objectives. To briefly highlight the key findings, more frequent pornography consumption was generally predictive of developing higher rates of IPAV — with men's frequency of pornography consumption being more influential in predicting the risk of IPAV in the relationship than women's rate of pornography consumption — and this relation was often influenced by other factors (e.g., coercive control, composite risk of aggression), but did not appear to be mediated by ambivalent sexism. Not surprisingly in light of the host of factors known to affect rates of IPAV, the effect sizes for the significant relations that emerged between IPAV and other variables at baseline were quite small (mostly $b \geq 0.10$); however, the longitudinal analyses indicated

there were small but robust effects of men's frequency of pornography at baseline on the rate of IPAV four months later ($b$ = 0.293-0.397).

**Pornography consumption and IPAV at Time 1 (Objective 1).** The current study investigated the role of frequency of pornography consumption (FPC) in predicting IPAV perpetration and victimization at the couple-level at Time 1 of the study. Results indicated that men consumed over three times the amount of pornography consumed by women (average of 88.15 vs. 28.48 minutes per week respectively) at Time 1, which is consistent with previous research findings that men are more likely to view pornography than women (Carroll et al., 2008). Regarding rates of IPAV at Time 1, men ($M$ = 3.44) reported perpetrating more acts of sexual IPAV then women ($M$ = 2.01), which is also consistent with previous research (e.g., Breiding et al., 2008; Coker et al., 2002; Fass et al., 2008). Although some researchers have found no gender differences for psychological IPAV perpetration (e.g., Fass et al., 2008; Romans et al., 2007), results from Time 1 of the current study showed that women ($M$ = 7.54) endorsed more acts of psychological IPAV than men ($M$ = 4.51). There were no significant differences between men's and women's overall rate of IPAV perpetration or victimization, which is consistent with previous research findings that women report perpetrating IPAV at the same rate as men (Archer, 2000).

However, these IPAV prevalence rates should be taken with caution given significant main effects that emerged between social desirability and IPAV perpetration and victimization for both men and women at Time 1 of the study (Table 6). Respondents who reported fewer acts of IPAV on the CTS2 tended to present themselves in a more socially desirable manner. Further, the relation between responding in a socially desirable

manner and reporting lower levels of IPAV was stronger for men than women, which indicated that men likely underreported IPAV perpetration and victimization, and analyses should be interpreted with this in mind. Men who responded in a socially desirable manner also underreported hostile sexism. The positive association between social desirability and IPAV was quite robust and remained statistically significant in almost all subsequent analyses predicting IPAV even when numerous other variables and interactions were added as predictors (Tables 6, 7, 8, 10, and 11). This is consistent with previous findings that have shown that research participants who underreport their aggressive behaviours tend to have higher scores on social desirability response measures (Dutton & Hemphill, 1992; Saunders, 1991). These findings highlight the importance of violence researchers including measures of social desirability in their studies and controlling for social desirability in statistical analyses. They also have important implications for clinical and legal settings, suggesting that the reports provided by individuals in aggressive relationships (and/or individuals who are reporting on sensitive matters in general, including pornography consumption) may not be providing accurate estimates.

Based on previous research (e.g., Malamuth et al., 2000) and relevant theoretical models (e.g., cognitive neoassociationistic model, HMC model), I expected that Allen and colleagues' (1995) findings — that higher levels of pornography consumption were associated with more aggressive behaviour for both men and women in nonforsensic settings — would generalize to violence and aggression occurring within intimate relationships of emerging adult couples. As such, I expected that men's and women's FPC would predict IPAV perpetration and victimization in their romantic relationship at

Time 1 of the study. At the bivariate level, support for this prediction was found for men and partial support was found for women, as higher levels of FPC were significantly related to higher rates of both IPAV perpetration and victimization among men, and higher FPC was associated with a significantly higher risk of IPAV perpetration, but not victimization, among women. However, multivariate results indicated that each of the main effects (i.e., actor and partner effects) between FPC and IPAV at Time 1 were nonsignificant when controlling for social desirability and the actor by partner interactive effects of FPC, as men's and women's FPC were not significantly predictive of their own or their partners' level of IPAV perpetration or victimization at Time 1 of the study. It appears that the relations between FPC and IPAV perpetration and victimization were better accounted for by various interactions included in the multivariate models. Given previous research findings that discrepancy in partners' consumption of pornography was associated with poor outcomes (Maddox et al., 2011; Yucel & Gassanov, 2010) and that interactive relationship dynamics within couples accounted for IPAV (Capaldi, Shortt, & Crosby, 2003; Stark, 2007; Stark & Flitcraft, 1988), I expected that discrepancy between partners' frequency of pornography consumption would be associated with higher rates of IPAV. However, the interactions between men's and women's FPC when predicting men's and women's IPAV perpetration and victimization at Time 1 were nonsignificant. This indicates that the degree of discrepancy between male and female partners' frequency of pornography use was not predictive of their degree of IPAV as was expected. Taken together, Objective 1 analyses indicate that more frequent pornography consumption only predicts increased risk for perpetrating IPAV among men and at the bivariate level.

**Moderation models at Time 1 (Objective 2).** The second objective examined the moderating role of coercive control and composite aggression on the relation between FPC and IPAV at Time 1. Results are discussed by each of the potential moderators.

***Coercive control perpetration.*** There were two major findings that emerged from the coercive control perpetration moderation analyses. First, results indicated that coercive control perpetration increased men's and women's risk of IPAV and that couples were at greatest risk of IPAV when both partners had high levels of coercive control perpetration, which served to extend the understanding of how coercive control perpetration contributes to IPAV. Second, the current study demonstrated that coercive control perpetration moderated the relation between FPC and IPAV among women but not men. Unexpectedly, more frequent pornography consumption was found to decrease women's risk of IPAV if they reported being quite controlling of their male partners.

Regarding the first set of findings concerning the role of coercive control perpetration in IPAV, consistent with what I expected based on my integrated theoretical model and previous research (O'Leary et al., 2007), results demonstrated that higher levels of coercive control perpetration were predictive of higher rates IPAV perpetration and victimization for both men and women at Time 1 (Table 7). In addition, men ($M$ = 6.15) reported being more controlling of their romantic partners than women ($M$ = 3.26) at Time 1.

Consistent with the main effects that showed that higher levels of coercive control perpetration are predictive of elevated risk of IPAV, significant interactions between men's and women's coercive control perpetration indicated that couples for whom both partners reported low levels of coercive control perpetration were also among those at the

lowest risk of IPAV perpetration and victimization (Figures 4, 5, 6, and 7). This would be expected given that coercive control is a key contributor to IPAV (Dutton & Goodman, 2005; Próspero, 2008; Tanha et al., 2010). Results also indicated that men's and women's risk of IPAV perpetration and victimization increased if they or their partners reported perpetrating coercive control, suggesting that more controlling individuals tend to perpetrate more acts of IPAV toward their partners. This is consistent with previous research findings (e.g., O'Leary et al., 2007; Tanha et al., 2010), the reasoning I provided for my integrated theoretical model, and Dutton and Goodman's (2005) theory of coercive control, which states that controlling individuals often use violence if their partners do not comply with their demands or as a way to (re)gain control in the relationship. Whereas previous research has primarily focused on the relation between coercive control perpetration and IPAV perpetration, results from the current research also indicated that individuals who have a very controlling romantic partner (i.e., are experiencing coercive control victimization) may be more inclined to perpetrate IPAV toward their partner, perhaps to protest against being restricted and controlled or in response to experiencing heightened co-occurring IPAV victimization (e.g., retaliation). Furthermore, the results also revealed that in the context of a very controlling partner, men's risk of IPAV perpetration and victimization slightly increased if they were also quite controlling of their female partners, but women's perpetration of coercive control did not significantly change women's risk of IPAV perpetration and victimization over and above the impact of their male partners being highly controlling. Men's coercive control perpetration was more strongly associated with their IPAV perpetration and victimization than was the case for women (Table 5), and it seems that men's IPAV may

be heavily influenced by men's coercive control perpetration, somewhat affected by their female partners' coercive control perpetration, and only slightly affected by the interaction between men's and women's coercive control perpetration. In contrast, the effect of women's coercive control on women's IPAV seems to be quite contingent on their male partners' level of coercive control perpetration. Results suggest that the dynamic interplay between men's and women's coercive control perpetration may account for more of women's IPAV than men's IPAV.

With respect to the second major finding regarding the moderating role of coercive control on the relation between FPC and IPAV, significant interactions between women's coercive control perpetration and FPC were found in analyses predicting women's IPAV perpetration and victimization, indicating that women's coercive control perpetration moderated the relation between their FPC and IPAV. Women who reported low levels of FPC and coercive control perpetration had the lowest risk of IPAV perpetration and victimization, whereas women with low FPC but high levels of coercive control perpetration were at the highest risk of IPAV perpetration and victimization (Figures 8 and 9). Women who rarely viewed pornography had an increased risk of IPAV perpetration and victimization if they were quite controlling of their male partners, but women's coercive control perpetration did not predict their risk of IPAV when they frequently viewed pornography. It seems that women who are controlling of their male partners are at increased risk of IPAV but somehow frequently consuming pornography can mitigate this elevated risk. Given that women generally consume less pornography than men, perhaps women who consume "higher" levels of pornography might actually be consuming levels closer to that of their male partners. Perhaps reducing the

discrepancy between the FPC by men versus women decreases the risk of women perpetrating IPAV particularly if they are already quite controlling. It is possible that women who are quite controlling of their partners but consume infrequent pornography might view their partners' pornography consumption as cheating and be likely to aggress toward them. However, these controlling women may be less likely to perpetrate IPAV if they also regularly consume pornography at a rate similar to that of their partner. Alternatively, women who frequently view pornography may simply spend less time together with their partners, and as a result, there is less opportunity for her to exert control over her male partner and for violence to ensue.

Contrary to hypotheses, men's coercive control perpetration did not significantly moderate the association between men's FPC and IPAV perpetration or the relation between men's FPC and women's risk of IPAV victimization. Though results indicate that frequent pornography consumption was associated with reduced risk of IPAV among controlling women, this was not the case for men. Given that women tend to initiate heated discussions more than men (Bookwala, Sobin, & Zdaniuk, 2005) and verbal arguments can lead to IPAV (Greenfield et al., 1998), perhaps frequent pornography consumption reduces the amount of time the controlling woman spends with her partner, and in turn, the likelihood of initiating heated discussions which may lead to IPAV. In contrast, controlling men's pornography consumption may not impact the frequency of verbal fights and thus does change their risk of IPAV. An alternative explanation for these findings is that IPAV may serve as a means of experiential avoidance for those who are emotionally dysregulated. There is some preliminary evidence that problematic pornography use is associated with experiential avoidance in men (Wetterneck et al.,

2012). No research to date has explored the relationship between experiential avoidance, FPC, and IPAV in women. Future research may delineate the potential mediating effects of experiential avoidance on the effects of FPC on IPAV across genders.

Taken together, results suggest that coercive control perpetration increases the risk of IPAV for both men and women, but frequent pornography use among women (but not men) moderates this effect, with frequent pornography consumption among controlling women reducing women's risk of IPAV. These findings can also be understood in the broader context of sex differences in how coercive control perpetration seems to relate to IPAV. Specifically, men's coercive control perpetration seems to have a robust direct relationship on men's IPAV, rather than interact with other variables, whereas women's coercive control perpetration seems to influence women's IPAV more through interactions with other variables (e.g., men's coercive control perpetration, women's FPC). This may account for why the predicted moderation of men's coercive control perpetration was nonsignificant, but women's coercive control perpetration was found to be a significant moderator in the relation between women's FPC and IPAV. This is consistent with sex role theory, which conceptualizes gender differences in violence as resulting from differences in the ways men and women are socialized. Women are socialized to attend to others' emotional needs, whereas men are taught to be self-reliant and independent (Eckes & Trautner, 2012). These socialization differences could account for why more interactive effects were found for women than men, given that women may be modifying their behaviour based on contextual factors and responses from others more so than men.

***Coercive control victimization.*** Similar findings emerged in the moderation analyses with coercive control victimization. First, further information was gleaned about the nature of the relation between coercive control and IPAV. In particular, two sets of findings regarding the main effects and actor by partner interactions of coercive control victimization are discussed. Second, coercive control victimization was found to moderate the association between FPC and IPAV among men but not women.

With regards to the findings concerning the role of coercive control victimization in IPAV, several main effects emerged when coercive control victimization was assessed as a moderator. Higher levels of coercive control victimization were predictive of higher rates of IPAV perpetration and victimization for men and women at Time 1 of the study (Table 8), which is consistent with my integrated theoretical model, coercive control theory, and previous research (e.g., Dutton & Goodman, 2005; Johnson, 2005; O'Leary et al., 2007; Tanha et al., 2010). In addition, at Time 1 of the study, men ($M$ = 6.15) endorsed experiencing higher levels of coercive control victimization than women ($M$ = 3.26); however, men ($M$ = 10.11) also reported being more controlling of their romantic partners than women did ($M$ = 7.15). This could potentially reflect a tendency of women to underreport coercive control perpetration and victimization and view it as normative (e.g., holding the perspective that it is acceptable for men to control what their female partner is permitted to wear outside the home). This could be attributable to sexist attitudes in society and conceptualized as a societal level factor predicting IPAV within the integrated theoretical model.

Further, although there were a number of significant actor-partner interactions for coercive control perpetration, only one significant actor-partner interaction emerged for

coercive control victimization. It seems that respondents' risk of IPAV was more strongly affected by their partners' reports of coercive control perpetration than victimization, which may be due in part to low interpartner agreement for coercive control. With respect to the significant actor-partner interaction for coercive control victimization, there was a significant interactive effect between men's and women's coercive control victimization when predicting men's IPAV victimization. Men were at the lowest risk of experiencing IPAV victimization if both they and their partners reported low levels of coercive control victimization, but men were at a much higher risk of IPAV victimization if men reported their partners were quite controlling of them (Figure 10). Results also indicated that men who reported low levels of coercive control victimization had a slightly higher risk of IPAV victimization if their female partners reported high levels of coercive control victimization, but female partners' coercive control victimization did not predict men's IPAV victimization when men reported high levels of coercive control victimization. Taken together, results demonstrated that men's risk of IPAV victimization increased when one or both partners were being controlled, which is consistent with the findings from the interactions with coercive control perpetration. That is, men's and women's risk of IPAV perpetration and victimization is increased when one or both partners are controlling.

Second, regarding the effect of coercive control victimization on the relation between FPC and IPAV, two significant interactions between FPC and coercive control victimization were found among men when coercive control victimization was tested as a moderator, but they were not consistent with study predictions. Results showed that men who reported that their female partners engaged in frequent controlling behaviours

against them had an increased risk of IPAV perpetration and victimization, which was mitigated by their frequent use of pornography; however, men's FPC was not found to be associated with IPAV perpetration and victimization for men who reported that their female partners engaged in few controlling behaviours (Figures 11 and 12). Perhaps frequent pornography use among men whose partners are quite controlling over them decreases the amount of time they spend with their controlling partners, which in turn reduces men's risk of IPAV perpetration and victimization. Alternatively, given that pornography consumption is often done in private, maybe for men who have controlling partners, pornography consumption is one of the few behaviours that they can engage is that is relatively outside of their partners' control. Thus, consuming pornography may reduce the extent of control that their female partners' exert on their lives, which in turn could reduce these men's risk of aggressing toward their controlling partner. Further, pornography consumption may be serving as a means of experiential avoidance for these men, which reduces the likelihood of them being emotionally dysregulated and their risk of IPAV.

Contrary to expectations, the interaction between women's FPC and coercive control victimization did not significantly predict men's IPAV perpetration or women's IPAV victimization at Time 1. The nonsignificant effects may be due, at least in part, to the relatively weak relation that was found between FPC and both coercive control victimization among women in the current study. Unlike men, women's FPC was not significantly correlated with coercive control victimization in bivariate analyses at Time 1. This may account for why significant interactions between FPC and coercive control victimization were only seen among men.

Overall, results suggest that coercive control victimization moderates the relation between frequency of pornography use and IPAV among men by decreasing and reversing the positive relation between FPC and IPAV. Results suggest that in couples for whom the male partner reports their female partners to be highly controlling, the male partner has a lower risk of IPAV perpetration and victimization if he frequently views pornography. It seems that heavy pornography consumption acts as a wedge between couples with otherwise healthy relationships leading to more conflict and IPAV, but pornography consumption might serve as an outlet that decreases tension for couples in controlling relationships, which could lead to lower levels of IPAV.

***Composite risk of aggression.*** As outlined above, composite risk of aggression consisted of a combination of several risk factors for IPAV, including violence in the family of origin, history of aggressive behaviours, and delinquency. It was examined in the third and final moderation analysis, given that research from the sexual aggression literature has shown that men with high risk of aggression not only go on to perpetrate more sexual violence but also have a stronger positive relation between pornography use and sexual aggression (e.g., Malamuth, 2000; Malamuth et al., 1995).

Regarding the nature of the relation between composite aggression and IPAV, several statistically significant actor and partner main effects were found, and as expected from Malamuth's HMC model (2000) and previous research (e.g., Capaldi, Knoble, Shortt, & Kim, 2012; Riggs & O'Leary, 1996), higher levels of composite risk of aggression predicted higher rates of IPAV perpetration and victimization for both men and women at Time 1 (Table 9). Further, women had a higher risk of IPAV perpetration and victimization if their male partners had higher rates of composite aggression. At

Time 1 of the study, men ($M$ = 10.48) had slightly higher rates of composite risk of aggression than women ($M$ = 7.50). This is consistent with research showing that men tend to have a higher risk of externalizing behaviours than women (e.g., Moylan et al., 2011; many of the variables included in the composite aggression variable would fall into the category of externalizing behaviours, including delinquency and physical fighting).

Further, each of the interactions between men's and women's composite risk of aggression were statistically significant (Figures 13, 14, 15, and 16), and results indicated that couples for whom both partners reported low levels of composite risk of aggression were among those at the lowest risk of IPAV perpetration and victimization. In addition, men's and women's risk of IPAV perpetration and victimization increased as their composite aggression increased when their partners had a low (i.e., discrepant) composite risk of aggression. Respondents' risk of IPAV perpetration and victimization was higher when their partners had a high composite risk of aggression, and respondents' composite aggression did not predict change in their risk of IPAV over and above their partner's high composite aggression. This suggests that the risk of IPAV perpetration and victimization increases when one or both partners in the relationship are at high risk of aggression as would be expected from previous research (e.g., Capaldi et al., 2012). If both partners have a low composite risk of aggression, they may be likely to solve problems using nonviolent means and have less of a predisposition to turn to violence during interpersonal conflict.

When composite aggression was tested as a moderator, there were two significant interactions between FPC and composite aggression that were found, but they were not consistent with study hypotheses. First, there was a significant interaction when

predicting women's IPAV victimization (Figure 17). Results indicated that women with a low composite risk of aggression had a higher rate of IPAV victimization if they frequently viewed pornography, whereas women with a high composite risk of aggression had a lower rate of IPAV victimization if they frequently used pornography. Women who had a high composite risk of aggression and did not view pornography were at the highest risk of IPAV victimization. For women with a high composite risk of aggression, frequent pornography consumption seemed to decrease their risk of IPAV victimization, which was similar to findings with coercive control. It appears that frequent pornography consumption can act as a buffer that reduces IPAV among women who are at a high risk of aggression or who are quite controlling of their partners. As mentioned above, viewing pornography may serve as a means of experiential avoidance that reduces emotional dysregulation and makes these women less likely to aggress toward their male partners, who in turn, are less likely to perpetrate IPAV toward the women.

Second, when predicting men's IPAV victimization, a statistically significant interaction was found between women's composite aggression and men's FPC. Results indicated that men were at an increased risk of experiencing IPAV victimization from female partners at a high risk of aggression if men frequently viewed pornography compared to if men viewed pornography less often (Figure 18). This suggests that women who are at a high risk of aggression tend to perpetrate higher rates of IPAV if their partners frequently view pornography. Thus, pornography consumption may be interpreted as a betrayal by female partners who are predisposed to aggression, leading to higher rates of IPAV perpetration. This finding of an interaction between women's

composite aggression and men's FPC is consistent with my multivariate integrated theoretical model which suggests that IPAV is determined by a number of interrelated factors which can interactively affect IPAV. When comparing the composite aggression interaction results with results from coercive control moderator analyses, it is interesting that more frequent pornography consumption among men reduced their risk of IPAV perpetration and victimization if their female partners were highly controlling, but frequent pornography use among male partners was associated with an increased rate of IPAV victimization for men with female partners who had a high risk of aggression. Perhaps pornography consumption serves as a nonviolent way to avoid a controlling female partner leading to reduced rates of violence in the relationship, but pornography consumption may be more likely to be interpreted as a betrayal by a female partner predisposed to aggression, leading to higher rates of IPAV.

Although it was predicted that frequent pornography use in men would predict higher levels of male IPAV perpetration and female IPAV victimization for men with a high composite risk of aggression compared to men with a low risk of aggression at Time 1 of the study, the interaction between men's FPC and composite risk of aggression did not significantly predict men's IPAV perpetration or women's IPAV victimization at Time 1. Thus, it seems that among men at a high risk of aggression, their FPC does not appear to affect their likelihood of perpetrating IPAV. This suggests that Malamuth's HMC model of sexual aggression in men may not directly map onto what is seen in men's IPAV perpetration and women's IPAV victimization. Specifically, previous studies in the sexual aggression literature (Malamuth, 2000; Vega & Malamuth, 2007) have found that men with a higher overall risk of aggression had a stronger positive

relation between pornography consumption and sexual aggression, but the current study did not find the same pattern for IPAV as men's composite risk of aggression did not moderate the role of their FPC in men's IPAV perpetration and women's IPAV victimization. This is likely due, at least in part, to the fact that although men's sexual aggression and IPAV may overlap (i.e., if men are sexually aggressive to their intimate partners), the two forms of aggression are not necessarily equivalent. Sexual aggression can be perpetrated toward anyone, not only one's intimate partner. Thus, the sexual aggression referenced in the key HMC studies to date is not necessarily the same as sexual IPAV, especially given that many of the men included in Malamuth's research were single (Malamuth, 2000; Vega & Malamuth, 2007). Further, IPAV in the current study also included physical and psychological abuse, which have not been examined in the HMC model. Another factor to consider is that Malamuth's research was not based on couple-level data. Thus, their data were not able to assess which partners' FPC was most influential in predicting men's sexual aggression (while controlling for the other partners' FPC). Bivariate correlations in the current study show that men's FPC was statistically significantly correlated with their IPAV perpetration and victimization. Thus, the nondyadic data from the current study provide support for Malamuth's HMC model. However, given that Malamuth and colleagues have not tested their model with couples, it is not necessarily surprising that the dyadic analyses in the current study did not find full support for their model.

Overall, results provide evidence that composite risk of aggression does moderate aspects of the relation between frequency of pornography use and IPAV. Specifically, there is evidence that women at high baseline risk of aggression are at increased risk of

perpetrating IPAV particularly when their partner frequently views pornography. Further, women at a high risk of aggression have a lower risk of IPAV victimization if they frequently view pornography. These findings were not consistent with previous studies in the sexual aggression literature (Malamuth, 2000; Vega & Malamuth, 2007), which have found that men with a higher overall risk of aggression had a stronger positive relation between pornography consumption and sexual aggression, suggesting important differences in the manner in which men's pornography consumption and composite aggression impact their sexual aggression (within or outside of romantic relationships) versus physical, psychological, and sexual aggression occurring within the context of intimate relationships. The discrepancy between the dyadic analyses from the current study and Malamuth's research is likely due in a large part to the fact that Malamuth's HMC model was not based on or tested with couple-level data. Thus, Malamuth was unable to account for the role of partners' FPC and composite aggression when predicting men's sexual aggression. As such, it is understandable that results from the current study's dyadic analyses may not directly map onto what was found in the HMC model.

**Mediation models at Time 1 (Objective 3).** The third objective examined the mediating role of benevolent and hostile sexism on the relation between FPC and IPAV perpetration and victimization at Time 1, given previous studies that found that hostile and benevolent sexism are related to pornography consumption and aggression (e.g., Allen et al., 2008; Hald et al., 2013; Harris et al., 2005) and relevant theoretical models (e.g., Berkowitz, 1993; Glick & Fiske, 1996; Malamuth, 2003; O'Leary at al., 2007).

***Benevolent sexism.*** Benevolent sexism was not found to mediate the relation between FPC and IPAV at Time 1 as each of the hypothesized mediations with

benevolent sexism was not significant and most of the steps required for the mediations were not met. Further, benevolent sexism seemed to strengthen the relationship between FPC and IPAV when it was added to the model, but it would be expected to weaken that relationship if it was in fact a mediator. In addition, there were several unexpected findings that emerged that were inconsistent with the hypothesized mediations, including the positive relation between men's benevolent sexism and IPAV and the findings that benevolent sexism was negatively correlated with women's FPC but unrelated to men's FPC. Thus, results clearly do not support the prediction that benevolent sexism mediates the relation between FPC and IPAV despite predictions from my integrated theoretical approach which drew upon ambivalent sexism theory (Glick & Fiske, 1996), multivariate models of IPAV (O'Leary at al., 2007; Riggs & O'Leary, 1996), the HMC model of sexual aggression (Malamuth, 2003), and the cognitive neoassociationistic model (Berkowitz, 1993).

In terms of the unexpected results outlined above, there were three main sets of findings on the relations among benevolent sexism, FPC, and IPAV that are discussed below. First, the current study found that both men and women had an elevated risk of IPAV perpetration and victimization if men had high rates of benevolent sexism. In contrast to this, the research literature on the relation between benevolent sexism and IPAV is mixed, with some studies in Latino communities finding that benevolent sexism reduced the risk of men's IPAV perpetration and women's IPAV victimization (Allen et al., 2008; Harris et al., 2005) whereas other studies did not find a significant association between benevolent sexism and aggression (Forbes et al., 2004; Forbes & Adams-Curtis, 2001). The results from the current study are not consistent with the concept that

benevolent sexism is a mitigating factor against IPAV. A possible reason for this discrepant finding could be cultural differences between traditional familism that may have been present in the two studies that were based on Latino samples and the influence of gender role orientations in the current primarily Euro-Canadian sample. In addition, benevolent and hostile sexist beliefs are often held in tandem (Glick & Fiske, 1996), and this may be why results from the current study showed that benevolent sexism was associated with higher rates of IPAV perpetration.

Second, another unexpected finding was that women who frequently consumed pornography tended to have lower levels of benevolent sexism, whereas previous studies have not found a significant relation between these variables (Garos et al., 2008; Hald et al., 2013). The current study had a larger sample size than the previous two studies on this topic; thus, it is possible that a greater degree of statistical power accounted for the significant relation between women's benevolent sexism and FPC in the current study. Women who consume pornography tend to hold more liberal sexual attitudes (Lam & Chan, 2007) and have weaker ties to religion (Stack et al., 2004), so perhaps having more liberal and accepting views of pornography is related to having more egalitarian beliefs, thus resulting in the lower rates of benevolent sexism in women who frequently view pornography. Nonetheless, this finding is not consistent with previous research that found pornography consumption to be associated with endorsing more traditional gender roles (Brown & L'Engle, 2009; Burns, 2001) and my expectations that pornography consumption would reinforce sexist beliefs based on my integrated theoretical model.

Third, consistent with results from a study by Hald, Malamuth, and Lange (2013), results from the current study revealed a nonsignificant relation between men's

benevolent sexism and FPC. However, these findings are discordant with Garos and colleagues' (2008) findings which showed that higher scores on benevolent sexism were related to greater pornography consumption in men. Results from the current study suggest that even though men's FPC and benevolent sexism both seem to contribute to their IPAV, men's FPC and benevolent sexism do not appear to have an interactive relationship and instead likely affect IPAV through different mechanisms.

However, consistent with previous research showing that, in most countries, men have higher rates of benevolent sexism than women (Glick et al., 2000), men ($M$ = 27.23) in the current study did endorse higher levels of benevolent sexism than women ($M$ = 21.22). In addition, results demonstrated that men and women tended to have lower rates of benevolent sexism if their partners frequently consumed pornography, which provides evidence for a couple-level partner effect between one partner's pornography consumption and the other partner's rate of benevolent sexism. Yet again, this seems to be inconsistent with previous research that found that pornography consumption is associated with holding more traditional gender roles (Brown & L'Engle, 2009; Burns, 2001), and suggests that men and women with more egalitarian, liberal beliefs may be more permissive of their romantic partners consuming pornography. However, this could be explained by the additional findings that higher rates of benevolent sexism among men and women are associated with more negative attitudes about sex. That is, perhaps those with high levels of benevolent sexism are more likely to actively discourage their partners from viewing pornography or to have partners who are also high in benevolent sexism with similar beliefs about pornography that cause them to view pornography less often.

Furthermore, men's and women's FPC were found to significantly interact when predicting women's benevolent sexism (Figure 20). Women tended to have higher rates of benevolent sexism if their male partners' FPC was low, and women who frequently consumed pornography but whose partners rarely consumed pornography were among those with the highest levels of benevolent sexism. It is not clear why this is the case, especially given that results also showed that women who frequently consumed pornography tended to have lower levels of benevolent sexism. Perhaps in couples for whom the male partner rarely consumes pornography but the female partner frequently views pornography, both partners tend to be more accepting of traditional gender roles and the female partner's pornography consumption is driven by having a high sex drive (Poulsen et al., 2013) rather than holding more liberal, accepting views of pornography. It could be that for these women, pornography consumption reinforces their premorbid sexist beliefs, hence explaining why they tend to have higher rates of benevolent sexism than women who rarely view pornography and who have male partners who rarely view pornography.

In summary, results demonstrated that benevolent sexism does not mediate the relationship between FPC and IPAV. Thus, based on these results benevolent sexism does not seem to be an important contributor to the relation between FPC and IPAV. However, investigating benevolent sexism at the couple-level did yield some intriguing findings contrary to research to date which may warrant further study.

***Hostile sexism.*** Similar to findings for benevolent sexism, the hypothesized mediations for hostile sexism at Time 1 of the study also were not significant. Further, most of the steps required for the mediations were similarly not met. Altogether, the

results do not support the prediction that hostile sexism mediates the relation between FPC and IPAV.

Despite hostile sexism not being a significant mediator, results yielded some interesting findings on the association between hostile sexism, FPC, and IPAV, which are discussed below in two main sections. First, consistent with previous research (e.g., Forbes et al., 2004), results indicated that men's hostile sexism was associated with higher rates of IPAV perpetration and victimization among men and women at Time 1 of the study. As seen in previous studies (e.g., Glick et al., 2000), men ($M$ = 25.77) had higher levels of hostile sexism than women did ($M$ = 20.13). In addition, the current study found that men's FPC was not significantly related to men's scores on hostile sexism, which was also found in Garos et al.'s (2008) study in the United States. Although previous research studies did not find a significant relationship between women's hostile sexism and pornography consumption (e.g., Hald et al., 2013), results from the current study showed that women with high levels of hostile sexism tended to consume pornography less often. As mentioned above, it is possible that women with more liberal and accepting views of pornography also tend to have more egalitarian beliefs and have lower levels of hostile sexism.

Second, results also indicated that women tended to have higher rates of hostile sexism if their male partners rarely consumed pornography, which was also found with benevolent sexism; however, men's level of hostile sexism was not significantly related to their female partners' FPC. These different findings for men and women may be because men's hostile sexism did not significantly relate to men's attitudes about sex but women's hostile sexism predicted more negative attitudes about sex. In light of this, it is

possible that women with more negatively-valenced sexist beliefs have negative views about sex, and as a result, are less likely to consume pornography themselves and are more likely to actively discourage their partners from viewing pornography. This is not the case for men because men's hostile sexism does not seem to impact their attitudes about sex, and as a result, may not affect the likelihood of their partner consuming pornography.

In summary, as was found with benevolent sexism, hostile sexism did not mediate the relationship between FPC and IPAV, despite my predictions based on previous research (e.g., Allen et al., 2008; Hald et al., 2013; Harris et al., 2005) and relevant theoretical models (e.g., Berkowitz, 1993; Glick & Fiske, 1996; Malamuth, 2003; O'Leary at al., 2007). Nonetheless, several interesting and unexpected findings were found in the analyses with both hostile and benevolent sexism that may give grounds for further study and require replication.

**Longitudinal analyses (Objective 4).** The fourth objective of the study examined how the baseline frequency of pornography consumption impacted the development of IPAV perpetration and victimization over time. This utilized longitudinal APIM models to predict the rate of IPAV at Time 2 from the frequency of pornography consumption at Time 1 while controlling for the baseline level of IPAV at Time 1.

In the model that predicted IPAV perpetration (Figure 21), as was hypothesized, results showed that men who frequently consumed pornography at Time 1 reported perpetrating higher levels of IPAV at Time 2 while controlling for their level of IPAV perpetration at Time 1 (effect size: $b = 0.354$). Further, if men frequently consumed pornography at Time 1, their female partners tended to perpetrate higher levels of IPAV

at Time 2 (effect size: $b = 0.293$). This provides novel evidence that men in heterosexual romantic relationships who view pornography more frequently at baseline develop higher rates of IPAV perpetration over time as do their female partners, and based on the effect sizes, this relation is small but robust. However, women's baseline frequency of pornography consumption did not significantly predict women's or men's IPAV perpetration at Time 2 of the study. This suggests women's frequency of pornography consumption does not play a central role in how IPAV perpetration develops over time, and provides additional evidence that men and women do not have the same risk factors for IPAV, which is consistent with my expectation that the effects of consuming pornography may differ between men and women.

Results from the model predicting IPAV victimization (Figure 22) showed that contrary to hypotheses, women's frequency of pornography consumption at Time 1 did not predict their risk of IPAV victimization at Time 2 nor that of their male partner. Altogether, the longitudinal analysis predicting IPAV perpetration and victimization provides evidence that women's baseline frequency of pornography consumption does not affect how men's or women's IPAV perpetration and victimization develop over time when initial levels of IPAV are controlled for. As hypothesized, men ($b = 0.303$) and women ($b = 0.397$) both reported higher rates of IPAV victimization at Time 2 if men reported frequently consuming pornography at Time 1 (small to moderate effect size). Thus, unlike with women, men's baseline frequency of pornography consumption does affect how men's and women's IPAV perpetration and victimization develop over time (when initial levels of IPAV are controlled for). Specifically, results indicated that men who consume pornography more frequently at baseline develop higher rates of IPAV

perpetration and victimization over time when initial levels of IPAV are controlled as do their female partners. Essentially, men's frequency of pornography consumption predicts change in IPAV for the couple over time, whereas women's frequency of pornography consumption does not.

In order to better understand whether men's frequency of pornography consumption might be leading to increases in IPAV or if FPC and IPAV simply mutually affect each other, post-hoc analyses examined the role of baseline IPAV perpetration and victimization in the development FPC over time. The results did not suggest that baseline IPAV predicts change in FPC over time, as neither men's nor women's baseline levels of IPAV perpetration and victimization at Time 1 significantly predicted their own or their partners' rates of FPC at Time 2 (Figures 23 and 24). This suggests that pornography consumption has an effect on how IPAV develops over time — with frequent pornography consumption in men at baseline predicting subsequent increases in men's and women's IPAV perpetration and victimization — but IPAV does not, in turn, have an effect on how people's frequency of pornography consumption evolves over time. This research is one of the first to demonstrate the direction of effect.

Determining causality requires demonstrating (a) covariation between the causal and dependent variable, (b) that changes in the causal variable temporally precede changes in the dependent variable, and (c) that the effect of extraneous variables have been eliminated. The longitudinal findings in the current study meet the first two requirements of covariation and temporal precedence, but do not effectively demonstrate that this relation is not due to other extraneous variables. Although social desirability was controlled, there are likely a host of other important latent variables that are contributing

to frequent pornography consumption among men predicting increases in IPAV over time. Thus, I was not able to fully establish that frequent pornography use in men causes increases in IPAV, but results do indicate that two out of the three requirements for determining causality have been met.

**Strengths of the Current Study**

The current study provides novel insights into the role of pornography consumption as a risk factor for IPAV perpetration and victimization among emerging adult couples in heterosexual intimate relationships. Strengths of the current study include its novel investigation of the relation between pornography consumption and IPAV, use of a longitudinal design, focus on individual- and couple-level risk factors for IPAV perpetration and victimization in both men and women, and examination of other factors that may play a role in the relationship between pornography consumption and IPAV. These strengths are discussed in more detail below.

First, the current study was the first known study to date to examine the role of frequency of pornography consumption and IPAV in a nonforensic sample. The bulk of the research on pornography consumption to date has investigated the effects of pornography use for individuals, with no reference to their intimate relationships (e.g., Vega & Malamuth, 2007). The studies that have investigated the impact of pornography on intimate relationships have mainly focused on factors such as sexual satisfaction, attachment between partners, and fidelity (e.g., Brown, 2014b; Lambert et al., 2012). However, there is one known study to date that examined both pornography consumption and IPAV. It included female IPAV victims in a women's shelter (Simmons et al., 2008), which has limited generalizability to the general population. Because pornography

consumption is common in the general population, it is important to understand how pornography use impacts intimate relationships outside of forensic and clinical samples. The current study addressed this limitation by studying the relation between pornography consumption and IPAV in a university sample of emerging adult couples. In addition to being a novel topic of research, this issue is particularly important to public health given the widespread consumption of pornography (e.g., Thornburg & Lin, 2002) and research evidence showing that pornography consumption increases the risk of aggression (Hald et al., 2009) and that IPAV is associated with a host of negative health outcomes (e.g., Lawrence et al., 2012). The current study found that frequent pornography consumption in men predicts subsequent increases in IPAV perpetration and victimization for both partners in the relationship, which has important implications for the health and well-being of emerging adult couples in heterosexual relationships, given that the majority of young men view pornography (Carroll et al., 2008).

The second key strength of the current study is its use of a longitudinal approach to prospectively evaluate the role of frequency of pornography consumption in how IPAV develops and changes over time. Through the use of a longitudinal dyadic design, it was possible to examine frequency of pornography consumption as an antecedent that predicted the outcome of IPAV at the couple-level. Results showed that men who consumed pornography more frequently at baseline developed higher rates of IPAV perpetration and victimization over time when initial levels of IPAV were controlled, as did their female partners. However, women's frequency of pornography consumption did not predict changes in couples' IPAV. This provides strong evidence that men's

frequency of pornography consumption is a risk factor for IPAV, which is consistent with what I expected in light of the HMC model of sexual aggression.

Third, the current study had a dyadic focus. For the few published studies that have examined pornography consumption in couples, the majority have examined the pornography consumption of only one partner in the relationship and focused mainly on male pornography consumers (e.g., Lambert et al., 2012; Wright et al., 2015). Given that the behaviours and characteristics of both partners contribute to their relationship dynamics, valuable information is missed by studying only one partner in the dyad. Thus, the current study makes a meaningful contribution to the research literature by being the first to investigate the role of pornography consumption in predicting IPAV perpetration and victimization at a couple-level of analysis.

The fourth strength of this study is the examination of pornography use and IPAV perpetration and victimization in both men and women. Another limitation of the existing research is that past studies have predominantly focused on men's pornography use and IPAV perpetration (e.g., Simmons et al., 2008; Vega & Malamuth, 2007), despite research evidence that both men and women experience and perpetrate IPAV (Archer, 2000) and are also known to consume pornography (Hald, Kuyper, Adam, & Wit, 2013). Of the 254 couples who completed Time 1 of the study and had valid data, 63.4% of men and 66.9% of women reported perpetration, whereas 65.0% of men and 62.2% of women reported victimization. These findings allow for a richer understanding of factors associated with IPAV victimization and differences in men's and women's IPAV perpetration.

Fifth, most studies in the IPAV research literature solely investigate IPAV from an act-based perspective (e.g., physical acts of violence, verbal insults), which does not speak to the broader context of the violence such as the consequences of (e.g., social shaming) and motivations for (e.g., self-defense) the IPAV. To address this limitation, the current study examined coercive control in addition to IPAV, testing the moderating effect of coercive control on the relationship between pornography consumption and IPAV in order to advance IPAV theory by developing a deeper understanding of the processes and factors underlying IPAV, rather than solely looking at IPAV from an act-based perspective. Results from the current study found that coercive control perpetration moderated the relation between women's FPC and IPAV, and coercive control victimization moderated the association between men's FPC and IPAV. More specifically, the current study provided novel evidence that frequent pornography consumption among women predicted higher risk of IPAV when their coercive control was low but frequent pornography use among women predicted lower rates of IPAV when they were quite controlling, but frequent pornography consumption predicted lower risk of IPAV for men with controlling female partners. It seems that the baseline risk of pornography consumption increasing the risk of IPAV was overshadowed by pornography use serving as an outlet or means of avoidance that reduced the risk of violence in controlling relationships. Thus, pornography consumption and coercive control are both risk factors for IPAV, but frequent pornography use decreases the risk of IPAV if one or both partners is quite controlling. These findings provide valuable insights into how pornography use and coercive control relate to IPAV.

The sixth contribution of the current study is that it examined the moderating effect of a composite of aggression-based experiential/behavioural risk factors for IPAV on the relation between frequency of pornography consumption and IPAV. Results showed that frequent pornography use among men increased their risk of IPAV victimization if their female partners had a high baseline risk of aggression.In addition, similar to the moderation with coercive control, women at a high risk of aggression were found to experience less IPAV victimization when they frequently consumed pornography, which suggests that heavy pornography consumption may act as an outlet for women at risk of aggression and decreases their risk of experiencing IPAV. By evaluating the moderation with composite risk of aggression and frequency of pornography consumption, it became apparent that these two factors both independently increase the risk of IPAV but in different ways. In addition, these findings suggest that forming a composite risk of aggression in a similar manner to that done in the HMC model of sexual aggression (Malamuth et al., 2000) could be useful within the IPAV research literature. However, the manner in which pornography use and risk of aggression related to sexual aggression in the HMC model was not supported in the current study, suggesting that the way the HMC model conceptualizes pornography consumption may not be generalized to violence occurring in the context of intimate relationships.

Seventh, this was the first known study to examine ambivalent sexism as an explanatory mechanism through which frequency of pornography consumption and IPAV relate. Results did not support either of the proposed mediations with benevolent or hostile sexism. Rather, findings indicated that frequency of pornography consumption

and ambivalent sexism relate differently to IPAV, and are both independent risk factors for IPAV. Despite the lack of support for the proposed mediation models, the current study contributes to a more refined understanding of the mechanism.

Finally, a key strength of the current study was the evaluation of the reliability and validity of two measures of frequency of pornography consumption, the Frequency of Pornography Use Scale of the PUS (Szymanski & Stewart-Richardson, 2014) and the Frequency of Pornography Consumption Composite from the PCQ (Hald, 2006; Hald & Halamuth, 2008). In the current study, the Frequency of Pornography Consumption Composite from the PCQ demonstrated poor reliability (Cronbach's alpha = .023). However, the Frequency of Pornography Use (FPU) Scale of the PUS had good internal consistency in both men and women (Cronbach's alphas = .86 and 89, respectively). The PUS FPU also demonstrated good stability over time as partial correlations between Time 1 and 2 values showed good test-retest reliability for both men (*partial r* = .71, $p < .001$) and women (*partial r* = .60, $p < .001$) when their partners' baseline frequency of pornography consumption were controlled. Providing evidence of convergent validity, in line with previous research (Paul, 2009), the PUS FPU was positively correlated with dispositional sexual affect (measured on the Sexual Opinion Survey; White, Fisher, Byrne, & Kingma, 1977) for both men and women when controlling for their partners' frequency of pornography consumption (*partial r* = .47, $p < .001$ and *partial r* = .44, $p < .001$, respectively). This provides a valuable contribution to research and clinical practice given that, previously, the PUS had only been validated in men.

**Research Implications**

Findings from the current study make significant contributions to our understanding of pornography consumption and IPAV. This study bridged the gap between the research literature on IPAV and pornography consumption. Results demonstrated that frequent pornography consumption may be harmful for the average young man in a heterosexual romantic relationship as it increases the risk of IPAV in his relationship, but this was not the case for women who frequently viewed pornography. Results also indicated that the relation between pornography consumption and IPAV is complex, and that heavy pornography consumption could serve as a buffer that reduces the likelihood of IPAV in the context of other risk factors for IPAV, such as coercive control and composite risk of aggression. It seems that for the majority of men who have relatively few other risk factors for IPAV, heavy pornography consumption appears to be harmful and increases their risk of IPAV. However, men who have controlling partners have a lower risk of IPAV if they frequently use pornography. Women's frequency of pornography consumption seems to be less related to their risk of IPAV than is the case for men, but moderation analyses showed that for women who were quite controlling or predisposed to aggression, frequent pornography consumption reduced their risk of IPAV. These findings reveal a nuanced mechanism in which pornography consumption relates to IPAV, which has implication for informing the debate around whether pornography consumption is helpful or harmful.

In addition, the current study explored ambivalent sexism as a salient cognitive factor that might mediate the association between frequency of pornography consumption and IPAV based on the cognitive neoassociationistic model (Berkowitz, 1993), feminist

theories of IPAV (Connell, 1987), and the HMC model of sexual aggression (Malamuth et al., 2000), but results indicated that neither benevolent nor hostile sexism – the two elements of ambivalent sexism – significantly mediated this relation. Despite this, there remains a strong theoretical rationale for how consuming pornography could lead to increased aggression by way of the exposure to pornography priming salient cognitive constructs that subsequently become more accessible when responding to environmental stimuli (Berkowitz, 1993; Kingston et al., 2009). Results from the current study provide important information that ambivalent sexism is likely not a salient cognitive construct in this relation. Future studies could examine other relevant cognitive factors, and one such promising option that could be explored is hostile masculinity (e.g.,Malamuth, 2003; Zurbriggen, 2000).

As previous mentioned, another key research implication is evaluating and reporting the psychometric properties of a measure of pornography consumption among both men and women. Given that the PUS is only validated for use among men, the findings that the Frequency of Pornography Use Scale of the PUS also has good internal reliability and test-retest reliability in a sample of women is a valuable contribution to the pornography consumption research literature. It appears that there are no validated measures of frequency of pornography consumption in both men and women to date, which demonstrates the need for development of additional psychometrically sound measures of pornography use.

This study also had broader research implications regarding whether male and female IPAV share similar risk factors. Although men and women in the current study had similar rates of IPAV perpetration and victimization, there seemed to be sex-specific

pathways related to increased risk of perpetration and victimization. For example, frequent pornography consumption was associated with developing higher rates of IPAV over time for men but not women. In addition, men tended to be more controlling than women, and men were more likely to perpetrate IPAV than women if they or their partner were highly controlling. Women were also at higher risk of IPAV victimization than men if their partner had high composite risk of aggression. In addition, men's benevolent and hostile sexism predicted higher risk of IPAV perpetration and victimization for both partners, but this was not the case for women's benevolent and hostile sexism. Men also had higher rates of benevolent and hostile sexism than women. Interestingly, frequent pornography consumption reduced the risk of IPAV among women who were quite controlling or at a high risk of aggression, but this was not the case for men. Altogether, these findings highlight that frequency of pornography consumption, coercive control, composite risk of aggression, and ambivalent sexism are each more individually salient risk factors of IPAV for men than for women. However, results indicate that women's levels of coercive control perpetration and composite aggression may have more interactive effects with both men's and women's frequency of pornography use, suggesting that these factors have more of an interactive effect on risk of IPAV for women, whereas they more strongly and directly predict men's risk of IPAV. These findings challenge the notion that men and women share similar risk factors for IPAV and provide evidence of several risk factors that affect men and women differently.

**Clinical Implications**

These findings have important implications for clinical practice, public health, and the development of prevention efforts and interventions for both IPAV and

problematic pornography consumption. The current study demonstrated that the PUS is a reliable measure of pornography consumption in both men and women, whereas previously, it was only studied and validated among men, which has important implications for clinical practice as there is now a reliable questionnaire available for measuring pornography consumption in both men and women. Regarding implications for public health, the novel finding that couples developed higher rates of IPAV over time if male partners frequently consumed pornography at Time 1 has meaningful implications for the population at large given the small but robust effect size of this relation ($b$ = 0.293-0.397), the widespread consumption of pornography particularly among men, as well as the well-documented detrimental effects of IPAV. The public could be informed that frequent pornography use among men increases the rate of IPAV in the relationship over time by incorporating this information into existing health promotion campaigns. Although, more targeted approaches to dissemination may be more cost effective and feasible, including through knowledge translation to relevant stakeholders, such as physicians and teachers. The evidence that frequent pornography consumption by men is a risk factor for IPAV could bolster support for existing interventions that treat problematic pornography consumption, and this information could be included in the psychoeducational components of these interventions (Wéry & Billieux, 2017). Interventions for problematic pornography use could also evaluate the effect of their program on IPAV, as declines in pornography consumption may also reduce rates of IPAV. That being said, it is important to effectively communicate that the relationship between frequency of pornography consumption and IPAV is complex, and results in the current study demonstrated that other risk factors for IPAV, such as

coercive control and composite risk of aggression, can also contribute to this relation, particularly for women.

In addition to the findings related to pornography consumption, the current study identified several other individual- and couple-level risk factors for IPAV perpetration and victimization among emerging adults in heterosexual romantic relationships with relevant clinical implications. Coercive control increases the risk of IPAV, and men had a higher risk of IPAV perpetration than women if they or their partner were quite controlling. These findings demonstrate that it is important to educate young people about coercive control in an effort to reduce the degree of coercive control in their romantic relationships and the likelihood of being in a relationship characterized by coercive control. Efforts to prevent the development of coercive control would also be helpful, particularly in young men. This might involve teaching emotional regulation skills and conflict resolution. Addressing coercive control in IPAV interventions may also be beneficial. Currently, there is limited efficacy for existing treatment models designed to reduce IPAV perpetration (Feder & Wilson, 2005), but coercive control could be explored as a proximal risk factor for IPAV that is amenable to change through treatment. Interventions for victims of IPAV may benefit from adaptations to include experiences of coercive control. In regards to composite risk of aggression, the current study found that men and women with a history of violence in their family of origin and aggressive and delinquent behaviours had a higher risk of perpetrating and experiencing IPAV, which emphasizes the important of both assessing for prior exposure to aggression and violence and early-intervention for at-risk families and youth.

**Limitations and Future Directions**

Despite the aforementioned contributions to our understanding of the role of pornography consumption in IPAV, the current study has notable limitations that affect the interpretation of the results. A discussion of the key limitations and suggestions for future research is provided below.

A major limitation of the current study as its sole reliance on self-report measures. Not only does using only self-report measures increase the chances of overestimating associations due to shared method variance, but the study examines a number of sensitive issues that people may feel hesitant to endorse, which increases the likelihood of underreporting. Consistent with previous research (e.g., Dutton & Hemphill, 1992), the current study found that participants who reported fewer acts of IPAV on the CTS2 tended to present themselves in a more socially desirable manner. This study included a measure of social desirability as a covariate in analyses in order to address this issue. Another limitation with most of the self-report measures in this study is their focus on retrospective reporting, which could reduce the accuracy responses. Further, there is often a lack of agreement in reports of couple violence (Armstrong et al., 2002), and couples in the current study had low levels of interpartner agreement about the occurrence and frequency of IPAV. In light of this, data analyses included separate self- and partner-reports from both partners in each couple. This issue highlights the importance of collecting data from both partners. To address these limitations, researchers are recommended to develop multimodal methods of assessment. In addition to questionnaires, researchers could employ behavioural observations, interview, and other experimental assessment methods done in the laboratory. Although it would not be

ethical to observe or illicit episodes of IPAV, it is possible to directly expose participants to pornography in the laboratory, and indeed previous studies have done this and found exposure to pornography in the laboratory is associated with elevated aggression (Allen et al., 1995). However, we would not necessarily expect exposure to pornography in the laboratory to affect rates of IPAV, and it is unrealistic to have participants only consume pornography in the laboratory over a period of time in order to measure its effect on IPAV over time. Rather, future studies could draw on advances in technology to prospectively track participants' pornography consumption with the use of a mobile application software or computer program, which would likely drastically improve the accuracy of measuring frequency of pornography consumption compared to self-report methods. In summary, the current findings are limited by the study's dependence on self-report measures, which is a significant limitation across the bulk of the research studies on IPAV and pornography consumption. The fields would greatly benefit from the development of new assessment methods that more accurately and reliably measure the constructs of interest.

Furthermore, the current study is limited by its reliance on the CTS2 as the measure of IPAV as it is an entirely act-based measure. As a result, the CTS2 lacks information on the context of the aggressive behaviours, including the motivation for violence and the lasting impacts on physical and psychological health. Although including a measure of coercive control can serve to mitigate some of the limitations inherent in the CTS2, the current study used the CTS2 as the sole measure of IPAV and included numerous analyses in which CC was not considered.

Third, another potential limitation was that the study was conducted online. It is possible that the lack of the physical presence of the researcher could increase the chances of participants not being forthcoming. However, there is research evidence that participants are more forthcoming when disclosing sensitive information online compared to in-person (Parks, Pardo, & Bradizza, 2006). The current study included a number of validation and validity questions and steps were taken to assess the accuracy of participants' responses.

A fourth limitation was the influence of drop-out. There was a 47.7% drop-out rate, due, in part, to eleven couples breaking up and thus no longer being eligible for the study as well as attrition for other unknown reasons. It is possible that there are differences between those who dropped out and those who completed both Time 1 and 2 of the study resulting in a self-selection bias that may affect the findings of the study. However, those who dropped out and those who completed both Time 1 and 2 did not differ on any key variables at Time 1. Future researchers should strive to develop and implement methods of follow-up to reduce the rate of dropout to avoid attrition potentially biasing their results.

Fifth, although the current study included several potential covariates, it probably did not include all the relevant variables that contribute to the relation between frequency of pornography consumption and IPAV. Thus, I am unable to definitely explain how pornography consumption influences IPAV as there are likely important latent factors (e.g., emotional regulation, experiential avoidance, coping strategies, interpersonal skills) and interactive variables (e.g., sex drive, viewing pornography alone or with one's partner) that were not accounted for in this study.

Sixth, this study conducted a large number of statistical analyses to address the study hypotheses. A number of different methods were employed to preserve statistical power including collecting as large a sample size as was feasible, using the sequential Bonferroni correction to adjust the alpha values for multiple comparisons, including social desirability as a covariate, and limiting the number of dependent variables to reduce the number of statistical models. However, it is still possible that some of the findings in the current study were spurious or due to Type 1 error. It is important to note that this study did query multiple forms of violence, but due to the scope of this study, analyses were conducted using a composite of physical, sexual, and psychological IPAV. However, in doing this, the study did not analyze the ways in which the different types of IPAV related to frequency of pornography consumption, which may have yielded more fine-tuned results and shown meaningful sex-differences. To reduce the risk of Type 1 error, analyses were also limited to examining the frequency of pornography consumption in IPAV, although several other pornography-related variables were available, such as the type of pornography viewed, proportion of pornography viewed together with one's romantic partner, and degree of violence of pornography. Future research may wish to use a larger sample size and narrow the scope of their investigation in order to be able to examine some of these aspects of IPAV and pornography consumption in more detail without unduly inflating the risk of Type 1 error.

Finally, the generalizability of this study was limited given its use of a convenience sample. This study collected data from university students and their partners. The majority of participants were Caucasian young adults from middle- to upper-class backgrounds. Most participants had a minimum of high school education. All

of the participants were in heterosexual romantic relationships. Most participants still lived with parents or family members and only about 19% lived with their intimate partner. Therefore, it is unclear whether findings from this study can be generalized to same-sex couples or to heterosexual couples from more varied cultural, socioeconomic, or educational backgrounds.

**Conclusion**

In conclusion, the current study prospectively examined the role of frequency of pornography consumption in IPAV in emerging adult couples. There were several aspects of the study that made novel contributions to the research literature, including evaluating pornography consumption and IPAV in a nonforsensic sample, at the couple-level, and with a longitudinal design. This study illustrates the value of allowing societal issues to inform research questions, given that the public debate about whether the burgeoning consumption of pornography in the internet age is positive or harmful was the impetus for the current study. It also demonstrated the importance of taking a couple-level approach to better understand risk and protective factors for IPAV as interactions that take place between partners are key in understanding why some couples resort to violence. Researchers in the field of pornography consumption and IPAV have a relatively good understanding of individual-levels risk factors particularly for men, but knowledge of how these risk factors operate at a couple-level is lacking. By using a couple-level approach that evaluates factors that are interpersonal in nature, this study may identify interpersonal factors that may be responsive to intervention, which could illuminate new avenues that researchers and clinicians might incorporate into intervention. The current study shed light on the complex relation between frequency of pornography consumption

and IPAV perpetration and victimization, but there is still much about this association that is not well understood. Future research can build upon these findings to develop a more thorough understanding of the impact of pornography use on IPAV.

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# APPENDICES

## Appendix A

Time 1 Survey Demographics Questionnaire

1. What is your age? ___ years old
2. What is your sex? _____
3. What is your gender? _____
4. What is your ethnicity? _____
5. What religion do you identify with? _____
6. What is the highest level of education you have completed?
    a. Grade/Elementary school
    b. High school
    c. 1 year of college or university
    d. 2 years of college or university
    e. 3 years of college or university
    f. 4 years of college or university
    g. 5 or more years of college or university
7. What is your current major? _____
8. What is YOUR annual income? _____
    a. Please type here: _____
    b. Prefer not to answer
9. What is your parents' marital status?
    a. Married to each other
    b. Separated
    c. Divorced
    d. Never married to each other and not living together
    e. Never married to each other and living together
    f. One or both parents have died
10. What is your parents' combined income (make your best estimate)?
    a. Under $20,000
    b. $20,000 to $39,999
    c. $40,000 to $59,999
    d. $60,000 to $79,999
    e. $80,000 to $99,999
    f. $100,000 or Greater
    g. Don't know
    h. Prefer not to answer
11. What is your sexual orientation? (e.g., heterosexual, gay, lesbian, bisexual, etc.) _____
12. Are you currently in a romantic relationship? ___ Yes ___ No
13. What is the biological sex of your romantic partner? _____
14. How old were you when you first started dating? _____
15. How many people have you dated? _____
16. What is the average length of your past romantic relationships? ___ year(s) ____

month(s)

17. How many people have you been sexually involved with? _____
18. In your past romantic relationships, have you ever experienced emotion, physical, or sexual abuse? ___ Yes ___ No
19. How long have you been in your current romantic relationship? ___ year(s) ____ month(s)
20. In your current romantic relationship, are you sexually active? ___ Yes ___ No
21. What is your relationship status?
    a. Causal dating
    b. Exclusive dating
    c. Engaged
    d. Married
    e. Other: _____
22. What is your living situation?
    a. I live by myself
    b. I live with roommates
    c. I live with my romantic partner
    d. I live with my parent(s)/guardian(s)
    e. Other: _____
23. In your opinion what is the likelihood that your current romantic relationship will end within four months?
    a. 0%
    b. 25%
    c. 50%
    d. 75%
    e. 100%

Time 2 Survey Demographics Questionnaire

1. Are you currently in a romantic relationship? ___ Yes ___ No
2. What is the biological sex of your romantic partner? _____
3. How old were you when you first started dating? _____
4. How many people have you dated? _____
5. What is the average length of your past romantic relationships? ___ year(s) ____ month(s)
6. How many people have you been sexually involved with? _____
7. In your past romantic relationships, have you ever experienced emotion, physical, or sexual abuse? ___ Yes ___ No
8. How long have you been in your current romantic relationship? ___ year(s) ____ month(s)
9. In your current romantic relationship, are you sexually active? ___ Yes ___ No
10. What is your relationship status?
    a. Causal dating
    b. Exclusive dating
    c. Engaged
    d. Married
    e. Other: _____
11. What is your living situation?
    a. I live by myself
    b. I live with roommates
    c. I live with my romantic partner
    d. I live with my parent(s)/guardian(s)
    e. Other: _____
12. In your opinion what is the likelihood that your current romantic relationship will end within four months?
    a. 0%
    b. 25%
    c. 50%
    d. 75%
    e. 100%

**Appendix B**

Psychology Participant Pool Description

**Study name:** Longitudinal Study of Heterosexual Romantic Relationships

**Brief abstract:** Individuals in heterosexual romantic relationships and their partners are being recruited for a longitudinal study about sexually explicit materials, conflict, and romantic relationships, which will involve completing two online surveys over a span of four months.

**Detailed description:** For this study, we are looking for individuals who are currently in a heterosexual romantic relationship. Study participants will not view any sexually explicit media as part of the study. To be in this study, you and your romantic partner **must** separately and independently complete a series of questionnaires at two intervals which are four months apart. The questionnaires will be accessible online and you can complete them from a location of your choosing. For participating in this study (Waves 1 and 2), participants will receive a total 2 bonus points for up to 120 minutes of participation towards the psychology participant pool if registered in the pool and enrolled in one or more eligible courses, with 1 bonus point credited following participation in each Wave of the study. If your romantic partner is not eligible for participant pool points, he or she will receive a $30 Amazon gift card for participation in Waves 1 and 2 of the study, with a $15 Amazon gift card credited following participation in each Wave of the study. 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:** At the time of Wave 1, you must be in a committed heterosexual romantic relationship…

a) with one other person…
b) for a minimum of two months…
c) with an other-sex (i.e., NOT a same-sex) partner AND
d) NOT exclusively a long distance or an online relationship AND
e) NOT have broken up, NOT be casual sexual partners, and NOT be in a polyamorous relationship (have more than one committed romantic partner).

**Duration (minutes):** 120
(The online Sona form only allows for numerical responses in this field.)

**Points:** 2.0
(The online Sona form only allows for numerical responses in this field.)

**Disqualifiers:** Other studies being conducted in the Healthy Relationships Research Group (Longitudinal Dating Couples Pilot Study).

**Appendix C**

Wave 1 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 a longitudinal online couples study 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 Katherine Jongsma and I am currently conducting a research study entitled, "Longitudinal Study of Heterosexual Romantic Relationships." This study has been cleared by the Research Ethics Board (REB) at the University of Windsor. To qualify for this study,

- At the time of Wave 1, you and your partner need to have been in a heterosexual romantic relationship for at least two months.
- You must **NOT** be:
    - casual sexual partners,
    - same-sex partners,
    - broken up,
    - "on a break",
    - in a polyamorous relationship,
    - in a purely long distance relationship, or
    - in a solely online relationship.

If you are eligible to participate, you and your partner will independently complete two series of online questionnaires (completed four months apart) that inquire about sexually explicit material and your thoughts, feelings, and behaviours related to yourself and your current romantic relationship. Upon completing Wave 1 of the study, I will email you and your partner in about four months reminding you to complete Wave 2 of the study.

For you to participate in this study, please visit the study website at [LINK].

You will be asked to input your research identification number and individual identification number, which are listed below.

RESEARCH IDENTIFICATION NUMBER: *inserted*

INDIVIDUAL IDENTIFICATION NUMBER: *inserted*

- We ask that BOTH partners in the romantic relationship complete both **Wave 1** and **Wave 2** of the study (4 months later).
- Please complete Wave 1 of the online study within the next 7 days.
- Please complete the questionnaires separately from your partner and please do not

discuss your responses with your partner.

- Wave 1 will take you approximately 60 minutes per partner to complete the online survey.
- 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 a total of 2 bonus points for completion of both Waves 1 and 2 of the study, with 1 bonus point credited following participation in each Wave of the study. If you are not registered in the psychology participant pool and enrolled in one or more eligible courses, you will receive a $30 Amazon gift card for completion of Waves 1 and 2 of the study, with a $15 Amazon gift card credited following participation in each Wave of the study. Amazon gift cards will be sent via email.
- 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!

Katherine Jongsma

**Appendix D**

Wave 1 Reminder Email

Hello *inserted First Name,*

You are receiving this email because you have not yet completed Wave 1 of the online study entitled "Longitudinal Study of Heterosexual Romantic Relationships."

This is just a reminder email should you and your partner still be interested in participating in this two-part research project. Waves 1 and 2 of the study are to be completed four months apart. 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.

Katherine Jongsma

Note. Original email with study website and research identification number was forwarded.

**Appendix E**

Consent Form

**CONSENT TO PARTICIPATE IN RESEARCH**

Title of Study: **Longitudinal Study of Heterosexual Romantic Relationships**

You are asked to participate in a research study conducted by Katherine Jongsma, 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, an Associate 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:

Katherine Jongsma
E-mail: jongsma@uwindsor.ca

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' romantic relationships across time. More specifically, this study will explore conflict, romantic relationships, and sexually explicit materials among young adult heterosexual couples.

**PROCEDURES**

If you volunteer to participate in this two-part study, we would ask that you and your dating partner separately complete an online survey in Wave 1 of the study, and then complete another online survey four months later in Wave 2. You both will be provided with unique research and individual identification numbers and may access the study's website from a location of your choosing. For Waves 1 and 2 of the study combined, the study procedures should take up to 120 minutes to complete. Once you have completed the survey or exited the survey for Wave 1 of the study, you will be provided with a reminder about Wave 2 of the study and a list of local resources. Upon completing Wave 1 of the study, you and your partner will both be emailed in about four months' time reminding you to complete Wave 2 of the study. Once you have completed Wave 2 or

exited the survey for Wave 2, you will be provided with a summary of the research study 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 or questions that you will be asked in the surveys. 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 contact someone from the community resource list at the end of the survey.

**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 young adults' experiences with and perspectives on romantic relationships, conflict, and sexually explicit media.

**PAYMENT FOR PARTICIPATION**

If you are registered in the psychology participant pool and enrolled in one or more eligible courses, you will receive a total of 2 bonus points for completion of both Waves 1 and 2 of the study, with 1 bonus point credited following participation in each Wave of the study. If you are not registered in the psychology participant pool and enrolled in one or more eligible courses, you will receive a $30 Amazon gift card for completion of Waves 1 and 2 of the study, with a $15 Amazon gift card credited following participation in each Wave of the study. Amazon gift cards will be sent via email.You must complete at least 90% of questions asked in each survey 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 from Waves 1 and 2 of the study 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. You must complete at least 90% of questions asked in Wave 1 of the study in order to be permitted to participate in Wave 2 of 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 2018.

**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 "Longitudinal Study of Heterosexual Romantic Relationships" study 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.

**SIGNATURE OF INVESTIGATOR**

These are the terms under which I will conduct research.

| | |
|---|---|
| _____ | _____ |
| Electronic Signature of Investigator | Date |
| ["I Agree" Button] | ["I do not wish to participate" button] |

**Appendix F**

Letter of Information: Wave 1

Thank you for participating in the initial phase of this study. Given that all couples experience difficulties in their relationships, we are interested in studying factors that are related to these types of experiences.

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 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 Centre. All services are confidential and offered free to students. The SCC is open 8:30 am – 4:30 pm, Monday – Friday. The SCC is located in Room 293, CAW Centre.
519-253-3000, ext. 4616.
scc@uwindsor.ca

**Psychological Services Centre, University of Windsor**
The Psychological Services 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

**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 8 am to 4 pm, Monday – Friday or 24 hours, 7 days a week through the hospital emergency services.
519-255-2234

**Hiatus House**
Hiatus House is a social service agency offering confidential intervention for families experiencing domestic violence.
519-252-7781 or 1-800-265-5142

**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. Available 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 from 9 am to 5 pm, Monday – Friday, at Hotel-Dieu Grace Hospital in Windsor, ON.
519-973-4411 ext. 3277

**24 Hour Crisis Line**
24 Hour crisis telephone line provides an anonymous, confidential service from 12 pm to 12 am seven days a week. The 24 Hour Crisis Line serves Windsor and Leamington areas.
519-973-4435

**Assaulted Women's Helpline**
The Assaulted Women's Helpline offers 24-hour telephone and TTY crisis line for abused women in Ontario. This service is anonymous and confidential and is provided in up to 154 languages.
1-866-863-0511 or 1-866-863-7868 (TTY)

**Neighbours, Friends, & Family**
Neighbours, Friends, and Families is a public education campaign to raise awareness of the signs of woman abuse so that those close to an at-risk woman or an abusive man can help.
http://www.neighboursfriendsandfamilies.ca/index.php

Thank you for your participation!

## Appendix G

Instructions for Clearing Internet Browsing History
(Retrieved from http://www.computerhope.com/issues/ch00051.htm)

### Google Chrome

1. Press *Ctrl + Shift + Del* to open the *clear browsing data* window.
2. Click the *clear browsing data* button.

### Microsoft Edge

1. Press *Ctrl + H* to open the history menu.
2. Select *clear all history*.
3. Choose the appropriate boxes for types of data you want to clear.
4. Select *clear*.

### Microsoft Internet Explorer

Internet Explorer 7 and above:

1. Click *Tools* in the upper right-hand corner.
2. Select *Internet Options* from the dropdown menu.
3. On the *General* tab, in the *browsing history* section, click the *delete* button.
4. Check the boxes of the data you want to clear.
5. Click *delete*.

Internet Explorer 6 and above:

1. In the toolbar at the top of the screen, click the *tools* menu.
2. In the dropdown menu, select *internet options*.
3. Click the *clear browser history* button.
4. Click the *delete files* button.
5. Click *OK*.

Internet Explorer 4.X:

1. Click the *history* icon.
2. Click *clear internet history.*
3. Click *OK*.

Internet Explorer 3.02 and lower:

1. In the toolbar, click the *view* menu.
2. Click *options*.
3. Open the *advanced* tab.
4. Click the *settings* tab.
5. Click the *empty folder* button.

### Mozilla Firefox

1. Press *Ctrl + Shift + Del* keys to open the *clear recent history* window.
2. Select an option for *time range to clear.*
3. Click the arrow for *details* and select the options to have cleared.
4. Click the *clear now* button.

**Opera**

1. Click the *menu* icon in the upper left-hand corner of the window.
2. From the dropdown menu, select *history*.
3. Click *clear browsing data.*
4. Next to *obliterate the following items from:* click the down arrow and select *the beginning of time*.
5. Check the appropriate boxes then click *clear browsing data*.

**Safari**

Version 1:

1. In the menu bar at the top of the browser window, open the *Safari* menu.
2. Select *clear history and website data* in the Safari menu.
3. In the *clear* drop-down list, select an option for how far back you want to delete your history.
4. Click the *clear history* button to clear browser history, as well as browser cookies and data.

Version 2:

1. Click on the *gear* icon, which is located near the top-right side of the browser window.
2. Click the *reset Safari* link, which opens the window shown below. Uncheck any boxes whose content you do not want to delete and click the *reset* button.

**Appendix H**

Wave 2 Email Response to Participants from Wave 1

Hello *inserted First Name,*

You are receiving this email because about four months ago you and/or your partner participated in Wave 1 of my longitudinal online study entitled, "Longitudinal Study of Heterosexual Romantic Relationships." It is time for Wave 2 of the study! Wave 2 is the final portion of this study, and involves completing a series of online questionnaires.

Please complete **Wave 2** of the study **within the next two weeks**.

For you to participate in this study, please visit the study website at [LINK].

You will be asked to input your research identification number and individual identification number, which are listed below.

RESEARCH IDENTIFICATION NUMBER: *inserted*

INDIVIDUAL IDENTIFICATION NUMBER: *inserted*

- We ask that BOTH partners in the romantic relationship complete **Wave 2**.
- Please complete Wave 2 of the online study within the next 14 days.
- Please complete the questionnaires separately from your partner and please do not discuss your responses with your partner.
- Wave 2 will take you approximately 60 minutes per partner to complete the online survey.
- 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 a total of 2 bonus points for completion of both Waves 1 and 2 of the study, with 1 bonus point credited following participation in each Wave of the study. If you are not registered in the psychology participant pool and enrolled in one or more eligible courses, you will receive a $30 Amazon gift card for completion of Waves 1 and 2 of the study, with a $15 Amazon gift card credited following participation in each Wave of the study. Amazon gift cards will be sent via email.
- 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!

Katherine Jongsma

**Appendix I**

Wave 2 Reminder Email

Hello *inserted First Name,*

You are receiving this email because you have not yet completed Wave 2 of the online study entitled "Longitudinal Study of Heterosexual Romantic Relationships."

This is just a reminder email should you and your partner still be interested in participating in this two-part 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.

Katherine Jongsma

Note. Original email with study website and research identification number was forwarded.

**Appendix J**

Letter of Information: Wave 2

Thank you for participating in this study. We are interested in studying the effect of viewing sexually explicit materials on experiences with aggression and controlling behaviours in romantic relationships among emerging adult couples.

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 Centre. All services are confidential and offered free to students. The SCC is open 8:30 am – 4:30 pm, Monday – Friday. The SCC is located in Room 293, CAW Centre.
*519-253-3000, ext. 4616.*
*scc@uwindsor.ca*

**Psychological Services Centre, University of Windsor**
The Psychological Services 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*

**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 8 am to 4 pm, Monday – Friday or 24 hours, 7 days a week through the hospital emergency services.
*519-255-2234*

**Hiatus House**
Hiatus House is a social service agency offering confidential intervention for families experiencing domestic violence.
*519-252-7781* or *1-800-265-5142*

**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. Available 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 from 9 am to 5 pm, Monday – Friday, at Hotel-Dieu Grace Hospital in Windsor, ON.
*519-973-4411 ext. 3277*

**24 Hour Crisis Line**
24 Hour crisis telephone line provides an anonymous, confidential service from 12 pm to 12 am seven days a week. The 24 Hour Crisis Line serves Windsor and Leamington areas.
*519-973-4435*

**Assaulted Women's Helpline**
The Assaulted Women's Helpline offers 24-hour telephone and TTY crisis line for abused women in Ontario. This service is anonymous and confidential and is provided in up to 154 languages.
1-866-863-0511 or 1-866-863-7868 (TTY)

**Neighbours, Friends, & Family**
Neighbours, Friends, and Families is a public education campaign to raise awareness of the signs of woman abuse so that those close to an at-risk woman or an abusive man can help.
*http://www.neighboursfriendsandfamilies.ca/index.php*

Thank you for your participation!

**Appendix K**

Time 1 Analyses with Outliers Removed

Table K1

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption at Time 1 (N = 240 couples)*

| Variables | IPAV perpetration (Model 1A) | | | IPAV victimization (Model 1B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 1.995 (0.103) | 373.20 | 7.36 [6.01-9.01] | 2.012 (0.100) | 411.27 | 7.48 [6.16-9.08] |
| | | | Men | | | |
| Social desirability | **-0.216 (0.026)** | **69.94*** ** | **0.81 [0.77-0.85]** | **-0.151 (0.029)** | **27.79*** ** | **0.86 [0.81-0.91]** |
| Actor FPC | 0.002 (0.011) | 0.05 | 1.00 [0.98-1.02] | 0.000 (0.012) | 0.00 | 1.00 [0.98-1.03] |
| Partner FPC | 0.019 (0.012) | 2.50 | 1.02 [1.00-1.04] | 0.015 (0.012) | 1.49 | 1.02 [0.99-1.04] |
| Actor X Partner FPC | **-0.005 (0.001)** | **14.14*** ** | **1.00 [0.99 -1.00]** | **-0.003 (0.001)** | **4.97*** | **1.00 [0.99-1.00]** |
| | | | Women | | | |
| Social desirability | **-0.147 (0.045)** | **10.50** ** | **0.86 [0.79-0.94]** | **-0.162 (0.048)** | **11.50*** ** | **0.85 [0.78-0.93]** |
| Actor FPC | 0.014 (0.020) | 0.49 | 1.01 [0.98-1.06] | 0.007 (0.017) | 0.16 | 1.01 [0.98-1.04] |
| Partner FPC | 0.001 (0.014) | 0.01 | 1.00 [0.98-1.03] | -0.002 (0.012) | 0.02 | 1.00 [0.98-1.02] |
| Actor X Partner FPC | 0.000 (0.003) | 0.01 | 1.00 [1.00-1.01] | -0.002 (0.002) | 1.30 | 1.00 [0.99-1.00] |

*Note.* Significant findings are bolded. FPC = frequency of pornography consumption; IPAV = intimate partner aggression/violence. *$p$ < .05, **$p$ < .01. ***$p$ < .001.

Table K2

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Coercive Control Perpetration as a Potential Moderator at Time 1 (N = 240 couples)*

| Variables | IPAV perpetration (Model 2A) | | | IPAV victimization (Model 2B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.037 (0.111) | 336.78 | 7.67 [6.17-9.53] | 2.053 (0.106) | 378.76 | 7.79 [6.33-9.58] |
| | | | Men | | | |
| Social desirability | **-0.193 (0.030)** | **41.47*** ** | **0.83 [0.78-0.88]** | **-0.135 (0.031)** | **19.67*** ** | **0.87 [0.82-0.93]** |
| Actor FPC | -0.003 (0.011) | 0.05 | 1.00 [0.98-1.02] | 0.000 (0.013) | 0.00 | 1.00 [0.98-1.03] |
| Partner FPC | 0.013 (0.014) | 0.93 | 1.01 [0.99-1.04] | 0.007 (0.013) | 0.30 | 1.01 [0.98-1.03] |
| Actor CC perp | **0.079 (0.018)** | **18.59*** ** | **1.08 [1.04-1.12]** | **0.078 (0.021)** | **14.03*** ** | **1.08 [1.04-1.13]** |
| Partner CC perp | 0.041 (0.033) | 1.59 | 1.04 [0.98-1.11] | **0.065 (0.032)** | **4.09*** | **1.07 [1.00-1.14]** |
| Actor X Partner FPC | **-0.004 (0.001)** | **8.99**** | **1.00 [0.99-1.00]** | -0.002 (0.001) | 1.75 | 1.00 [1.00 -1.00] |
| Actor X Partner CC perp | -0.004 (0.002) | 3.13 | 1.00 [0.99-1.00] | -0.003 (0.002) | 2.81 | 1.00 [0.99-1.00] |
| Actor CC perp X Actor FPC | -0.002 (0.001) | 1.38 | 1.00 [1.00-1.00] | -0.002 (0.002) | 1.97 | 1.00 [0.99-1.00] |
| Actor CC perp X Partner FPC | 0.002 (0.002) | 1.34 | 1.00 [1.00-1.01] | 0.003 (0.002) | 1.94 | 1.00 [1.00-1.01] |
| Partner CC perp X Actor FPC | -0.002 (0.002) | 1.03 | 1.00 [1.00-1.00] | -0.004 (0.002) | 3.37 | 1.00 [0.99-1.00] |
| Partner CC perp X Partner FPC | -0.002 (0.004) | 0.20 | 1.00 [0.99-1.01] | -0.001 (0.004) | 0.11 | 1.00 [0.99-1.01] |
| | | | Women | | | |
| Social desirability | **-0.119 (0.050)** | **5.72*** | **0.89 [0.81-0.98]** | **-0.133 (0.051)** | **6.81**** | **0.88 [0.79-0.97]** |
| Actor FPC | 0.013 (0.020) | 0.46 | 1.01 [0.98-1.05] | 0.006 (0.017) | 0.13 | 1.01 [0.97-1.04] |
| Partner FPC | -0.011 (0.017) | 0.44 | 0.99 [0.96-1.02] | -0.011 (0.015) | 0.51 | 0.99 [0.96-1.02] |
| Actor CC perp | **0.104 (0.030)** | **12.24*** ** | **1.11 [1.05-1.18]** | **0.122 (0.029)** | **17.39*** ** | **1.13 [1.07-1.20]** |
| Partner CC perp | 0.019 (0.035) | 0.29 | 1.02 [0.95-1.09] | 0.020 (0.029) | 0.47 | 1.02 [0.96-1.08] |
| Actor X Partner FPC | 0.000 (0.003) | 0.01 | 1.00 [1.00-1.01] | -0.002 (0.002) | 1.08 | 1.00 [0.99 -1.00] |
| Actor X Partner CC perp | -0.003 (0.002) | 3.63 | 1.00 [0.99-1.00] | **-0.005 (0.002)** | **10.08**** | **1.00 [0.99-1.00]** |
| Actor CC perp X Actor FPC | -0.004 (0.003) | 2.72 | 1.00 [0.99-1.00] | -0.002 (0.002) | 1.03 | 1.00 [0.99-1.00] |
| Actor CC perp X Partner FPC | -0.001 (0.002) | 0.16 | 1.00 [0.99-1.00] | -0.003 (0.002) | 2.25 | 1.00 [0.99-1.00] |
| Partner CC perp X Actor FPC | -0.001 (0.002) | 0.19 | 1.00 [1.00-1.00] | -0.001 (0.002) | 0.17 | 1.00 [1.00-1.00] |
| Partner CC perp X Partner FPC | 0.000 (0.004) | 0.00 | 1.00 [0.99-1.01] | 0.001 (0.003) | 0.05 | 1.00 [1.00-1.01] |

*Note.* Significant findings are bolded. FPC = frequency of pornography consumption; CC perp = coercive control perpetration; IPAV = intimate partner aggression/violence. *$p$ < .05. **$p$ < .01. ***$p$ < .001.

Table K3

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Coercive Control Victimization as a Potential Moderator at Time 1 (N = 240)*

| Variables | IPAV perpetration (Model 2C) | | | IPAV victimization (Model 2D) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 2.019 (0.108) | 352.68 | 7.53 [6.10-9.30] | 1.980 (0.113) | 307.81 | 7.24 [5.81-9.03] |
| | | | Men | | | |
| Social desirability | **-0.191 (0.029)** | **43.88*** ** | **0.83 [0.78-0.87]** | **-0.129 (0.031)** | **16.75*** ** | **0.88 [0.83-0.94]** |
| Actor FPC | -0.017 (0.011) | 2.13 | 0.98 [0.96-1.01] | -0.010 (0.013) | 0.64 | 0.99 [0.97-1.02] |
| Partner FPC | 0.021 (0.012) | 3.13 | 1.02 [1.00-1.05] | 0.011 (0.013) | 0.66 | 1.01 [0.99-1.04] |
| Actor CC vict | **0.046 (0.010)** | **21.50*** ** | **1.05 [1.03-1.07]** | **0.069 (0.010)** | **53.12*** ** | **1.07 [1.05-1.09]** |
| Partner CC vict | 0.000 (0.015) | 0.00 | 1.00 [0.97-1.03] | 0.007 (0.015) | 0.23 | 1.01 [0.98-1.04] |
| Actor X Partner FPC | **-0.004 (0.001)** | **9.24**** | **1.00 [0.99-1.00]** | -0.003 (0.001) | 3.73 | 1.00 [0.99 -1.00] |
| Actor X Partner CC vict | -0.001 (0.001) | 1.32 | 1.00 [1.00-1.00] | -0.001 (0.001) | 1.47 | 1.00 [1.00-1.00] |
| Actor CC vict X Actor FPC | -0.001 (0.001) | 0.50 | 1.00 [1.00-1.00] | **-0.002 (0.001)** | **8.17**** | **1.00 [1.00-1.00]** |
| Actor CC vict X Partner FPC | 0.000 (0.001) | 0.01 | 1.00 [1.00-1.01] | 0.002 (0.001) | 2.60 | 1.00 [1.00-1.01] |
| Partner CC vict X Actor FPC | 0.000 (0.001) | 0.00 | 1.00 [1.00-1.00] | 0.000 (0.001) | 0.16 | 1.00 [1.00-1.00] |
| Partner CC vict X Partner FPC | **-0.004 (0.002)** | **5.14*** | **1.00 [0.99-1.00]** | -0.003 (0.002) | 3.16 | 1.00 [0.99-1.00] |
| | | | Women | | | |
| Social desirability | **-0.140 (0.055)** | **6.57*** | **0.87 [0.78-0.97]** | **-0.151 (0.056)** | **7.25**** | **0.86 [0.77-0.96]** |
| Actor FPC | 0.019 (0.021) | 0.81 | 1.02 [0.98-1.06] | 0.008 (0.021) | 0.13 | 1.01 [0.97-1.05] |
| Partner FPC | -0.010 (0.017) | 0.31 | 0.99 [0.96-1.03] | -0.006 (0.017) | 0.15 | 0.99 [0.96-1.03] |
| Actor CC vict | **0.057 (0.017)** | **11.67**** | **1.06 [1.03-1.10]** | **0.063 (0.018)** | **11.72**** | **1.07 [1.03-1.10]** |
| Partner CC vict | 0.006 (0.015) | 0.15 | 1.01 [0.98-1.04] | 0.003 (0.015) | 0.04 | 1.00 [0.98-1.03] |
| Actor X Partner FPC | 0.000 (0.003) | 0.01 | 1.00 [1.00-1.01] | -0.001 (0.002) | 0.11 | 1.00 [0.99 -1.00] |
| Actor X Partner CC vict | 0.000 (0.001) | 0.14 | 1.00 [1.00-1.00] | -0.001 (0.001) | 0.45 | 1.00 [1.00-1.00] |
| Actor CC vict X Actor FPC | -0.001 (0.002) | 0.30 | 1.00 [1.00-1.00] | -0.001 (0.002) | 0.25 | 1.00 [1.00-1.00] |
| Actor CC vict X Partner FPC | 0.000 (0.001) | 0.04 | 1.00 [1.00-1.00] | -0.001 (0.001) | 0.29 | 1.00 [1.00-1.00] |
| Partner CC vict X Actor FPC | -0.002 (0.002) | 1.37 | 1.00 [1.00-1.00] | **-0.003 (0.001)** | **4.18*** | **1.00 [1.00-1.00]** |
| Partner CC vict X Partner FPC | 0.001 (0.002) | 0.22 | 1.00 [1.00-1.00] | 0.001 (0.002) | 0.23 | 1.00 [1.00-1.00] |

*Note.* Significant findings are bolded. FPC = frequency of pornography consumption; CC vict = coercive control victimization; IPAV = intimate partner aggression/violence. *$p < .05$. **$p < .01$. ***$p < .001$.

Table K4

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Composite Risk of Aggression as a Potential Moderator at Time 1 (N = 240 couples)*

| Variables | IPAV perpetration (Model 3A) | | | IPAV victimization (Model 3B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 1.908 (0.102) | 349.57 | 6.74 [5.52-8.24] | 1.925 (0.111) | 298.75 | 6.86 [5.51-8.53] |
| | | | Men | | | |
| Social desirability | **-0.212 (0.029)** | **52.81*** ** | **0.81 [0.76-0.86]** | **-0.144 (0.029)** | **25.01*** ** | **0.87 [0.82-0.92]** |
| Actor FPC | -0.006 (0.014) | 0.20 | 0.99 [0.97-1.02] | -0.010 (0.014) | 0.47 | 0.99 [0.96-1.02] |
| Partner FPC | -0.006 (0.015) | 0.15 | 0.99 [0.97-1.02] | -0.008 (0.016) | 0.22 | 0.99 [0.96-1.02] |
| Actor CA | **0.049 (0.014)** | **12.74*** ** | **1.05 [1.02-1.08]** | **0.045 (0.017)** | **7.29** ** | **1.05 [1.01-1.08]** |
| Partner CA | 0.018 (0.014) | 1.76 | 1.02 [0.99-1.05] | 0.016 (0.015) | 1.19 | 1.02 [0.99-1.05] |
| Actor X Partner FPC | **-0.005 (0.002)** | **12.92*** ** | **1.00 [0.99-1.00]** | **-0.004 (0.001)** | **7.43** ** | **1.00 [0.99-1.00]** |
| Actor X Partner CA | **-0.004 (0.001)** | **16.09*** ** | **1.00 [0.99-1.00]** | **-0.004 (0.001)** | **9.56** ** | **1.00 [0.99-1.00]** |
| Actor CA X Actor FPC | 0.000 (0.001) | 0.06 | 1.00 [1.00-1.00] | 0.000 (0.002) | 0.04 | 1.00 [1.00-1.00] |
| Actor CA X Partner FPC | **0.004 (0.002)** | **4.57*** | **1.00 [1.00-1.01]** | 0.003 (0.002) | 2.31 | 1.00 [1.00-1.01] |
| Partner CA X Actor FPC | 0.002 (0.002) | 1.15 | 1.00 [1.00-1.01] | **0.004 (0.002)** | **5.81*** | **1.00 [1.00-1.01]** |
| Partner CA X Partner FPC | -0.003 (0.002) | 2.51 | 1.00 [0.99-1.00] | **-0.004 (0.002)** | **4.71*** | **1.00 [0.99-1.00]** |
| | | | Women | | | |
| Social desirability | -0.074 (0.048) | 2.38 | 0.93 [0.85-1.02] | -0.069 (0.049) | 1.99 | 0.93 [0.85-1.03] |
| Actor FPC | -0.005 (0.019) | 0.06 | 1.00 [0.96-1.03] | -0.015 (0.018) | 0.69 | 0.99 [0.95-1.02] |
| Partner FPC | 0.010 (0.013) | 0.61 | 1.01 [0.99-1.04] | 0.008 (0.013) | 0.41 | 1.01 [0.98-1.03] |
| Actor CA | **0.053 (0.016)** | **11.10** ** | **1.06 [1.02-1.09]** | **0.061 (0.015)** | **16.58*** ** | **1.06 [1.03-1.10]** |
| Partner CA | **0.054 (0.015)** | **13.69*** ** | **1.06 [1.03-1.09]** | **0.057 (0.014)** | **17.72*** ** | **1.06 [1.03-1.09]** |
| Actor X Partner FPC | 0.000 (0.002) | 0.01 | 1.00 [1.00-1.01] | -0.002 (0.002) | 0.72 | 1.00 [0.99-1.00] |
| Actor X Partner CA | **-0.003 (0.001)** | **5.75*** | **1.00 [1.00-1.00]** | **-0.003 (0.001)** | **7.03** ** | **1.00 [1.00-1.00]** |
| Actor CA X Actor FPC | **-0.005 (0.002)** | **5.99*** | **1.00 [0.99-1.00]** | **-0.006 (0.002)** | **11.42** ** | **0.99 [0.99-1.00]** |
| Actor CA X Partner FPC | -0.001 (0.002) | 0.36 | 1.00 [1.00-1.01] | 0.001 (0.002) | 0.27 | 1.00 [1.00-1.00] |
| Partner CA X Actor FPC | 0.004 (0.002) | 3.04 | 1.00 [1.00-1.01] | 0.003 (0.002) | 2.82 | 1.00 [1.00-1.01] |
| Partner CA X Partner FPC | -0.002 (0.002) | 1.82 | 1.00 [1.00-1.00] | -0.002 (0.001) | 2.43 | 1.00 [1.00-1.00] |

*Note.* Sex is coded men = -1 and women = 1. Significant findings are bolded. FPC = frequency of pornography consumption; CA = composite aggression; IPAV = intimate partner aggression/violence. *$p < .05$. **$p < .01$. ***$p < .001$.

Table K5

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor Benevolent and Hostile Sexism by Frequency of Pornography Consumption at Time 1 (N = 240 couples)*

| Variables | Benevolent sexism (Model 4A) | | | Hostile sexism (Model 4B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 3.191 (0.024) | 17046.84 | 24.31 [23.17-25.50] | 3.117 (0.041) | 5876.46 | 22.57 [20.84-24.44] |
| | | | | Men | | |
| Social desirability | 0.004 (0.008) | 0.19 | 1.00 [0.99-1.02] | **-0.024 (0.010)** | **5.51*** | **0.98 [0.96-1.00]** |
| Actor FPC | 0.003 (0.003) | 0.60 | 1.00 [1.00-1.01] | 0.008 (0.005) | 2.57 | 1.01 [1.00-1.02] |
| Partner FPC | **-0.010 (0.004)** | **6.20*** | **0.99 [0.98-1.00]** | -0.011 (0.007) | 2.55 | 0.99 [0.98-1.00] |
| Actor X Partner FPC | 0.000 (0.001) | 0.67 | 1.00 [1.00-1.01] | 0.000 (0.001) | 0.16 | 1.00 [1.00-1.00] |
| | | | | Women | | |
| Social desirability | 0.018 (0.010) | 3.43 | 1.02 [1.00-1.04] | -0.003 (0.011) | 0.06 | 1.00 [0.98-1.02] |
| Actor FPC | 0.005 (0.004) | 2.17 | 1.01 [1.00-1.01] | 0.001 (0.005) | 0.01 | 1.00 [0.99-1.01] |
| Partner FPC | **-0.014 (0.004)** | **10.22**** | **0.99 [0.98-1.00]** | **-0.015 (0.005)** | **8.84**** | **0.99 [0.98-1.00]** |
| Actor X Partner FPC | -0.001 (0.001) | 2.89 | 1.00 [1.00-1.00] | -0.001 (0.001) | 3.53 | 1.00 [1.00-1.00] |

*Note.* FPC = frequency of pornography consumption. *$p < .05$. **$p < .01$. ***$p < .001$.

Table K6

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Benevolent Sexism as a Potential Mediator at Time 1 (N = 240 couples)*

| Variables | IPAV perpetration (Model 5A) | | | IPAV victimization (Model 5B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 1.90 (0.114) | 279.04 | 6.68 [5.34-8.34] | 1.9229 (0.109) | 312.99 | 6.84 [5.52-8.46] |
| | | | Men | | | |
| Social desirability | **-0.230 (0.024)** | **90.90*** ** | **0.79 [0.76-0.83]** | **-0.167 (0.028)** | **36.30*** ** | **0.85 [0.80-0.89]** |
| Actor FPC | 0.008 (0.011) | 0.54 | 1.01 [0.99-1.03] | 0.004 (0.011) | 0.13 | 1.00 [0.98-1.03] |
| Partner FPC | **0.030 (0.011)** | **7.63** ** | **1.03 [1.01-1.05]** | **0.028 (0.012)** | **6.10*** | **1.03 [1.01-1.05]** |
| Actor benevolent sexism | **0.036 (0.009)** | **16.60*** ** | **1.04 [1.02-1.06]** | **0.039 (0.009)** | **18.04*** ** | **1.04 [1.02-1.06]** |
| Partner benevolent sexism | **0.022 (0.010)** | **4.97*** | **1.02 [1.00-1.04]** | **0.021 (0.010)** | **5.09*** | **1.02 [1.00-1.04]** |
| Actor X Partner FPC | **-0.004 (0.001)** | **8.32** ** | **1.00 [0.99-1.00]** | -0.002 (0.001) | 2.49 | 1.00 [1.00-1.00] |
| | | | Women | | | |
| Social desirability | **-0.144 (0.048)** | **9.05** ** | **0.87 [0.79-0.95]** | **-0.161 (0.052)** | **9.69** ** | **0.85 [0.77-0.94]** |
| Actor FPC | 0.014 (0.021) | 0.41 | 1.01 [0.97-1.06] | 0.004 (0.018) | 0.05 | 1.00 [0.97-1.04] |
| Partner FPC | 0.000 (0.016) | 0.00 | 1.00 [0.97-1.03] | -0.001 (0.014) | 0.00 | 1.00 [0.97-1.03] |
| Actor benevolent sexism | 0.005 (0.012) | 0.19 | 1.01 [0.98-1.03] | 0.008 (0.012) | 0.38 | 1.01 [0.98-1.03] |
| Partner benevolent sexism | **0.027 (0.011)** | **5.96*** | **1.03 [1.01-1.05]** | 0.019 (0.011) | 3.00 | 1.02 [1.00-1.04] |
| Actor X Partner FPC | 0.000 (0.003) | 0.03 | 1.00 [1.00-1.01] | -0.002 (0.002) | 0.69 | 1.00 [0.99-1.00] |

*Note.* FPC = frequency of pornography consumption. *$p < .05$. **$p < .01$. ***$p < .001$.

Table K7

*Summary of Negative Binomial Mixed-Model Regressions Predicting Actor IPAV Perpetration and Victimization by Frequency of Pornography Consumption with Hostile Sexism as a Potential Mediator at Time 1 (N = 240 couples)*

| Variables | IPAV perpetration (Model 6A) | | | IPAV victimization (Model 6B) | | |
|---|---|---|---|---|---|---|
| | *b (SE)* | Wald | Exp (*B*) [95% CI] | *b (SE)* | Wald | Exp (*B*) [95% CI] |
| Intercept | 1.859 (0.103) | 327.76 | 6.41 [5.25-7.84] | 1.871 (0.107) | 306.81 | 6.50 [5.27-8.01] |
| | | | Men | | | |
| Social desirability | **-0.201 (0.026)** | **61.26*** ** | **0.82 [0.78-0.86]** | **-0.137 (0.029)** | **22.50*** ** | **0.87 [0.82-0.92]** |
| Actor FPC | -0.008 (0.011) | 0.55 | 0.99 [0.97-1.01] | -0.010 (0.012) | 0.68 | 0.99 [0.97-1.01] |
| Partner FPC | **0.025 (0.011)** | **4.94*** | **1.03 [1.00-1.05]** | 0.022 (0.012) | 3.18 | 1.02 [1.00-1.05] |
| Actor hostile sexism | **0.037 (0.008)** | **20.90*** ** | **1.04 [1.02-1.05]** | **0.039 (0.009)** | **20.75*** ** | **1.04 [1.02-1.06]** |
| Partner hostile sexism | -0.011 (0.008) | 1.76 | 0.99 [0.97-1.01] | -0.010 (0.008) | 1.42 | 0.99 [0.97-1.01] |
| Actor X Partner FPC | -0.005 (0.001) | 16.68 | 1.00 [0.99-1.00] | **-0.004 (0.001)** | **7.00** ** | **1.00 [0.99-1.00]** |
| | | | Women | | | |
| Social desirability | **-0.156 (0.043)** | **13.26*** ** | **0.86 [0.79-0.93]** | **-0.165 (0.044)** | **14.17*** ** | **0.85 [0.78-0.92]** |
| Actor FPC | 0.015 (0.017) | 0.80 | 1.02 [0.98-1.05] | 0.009 (0.015) | 0.36 | 1.01 [0.98-1.04] |
| Partner FPC | 0.002 (0.014) | 0.02 | 1.00 [0.98-1.03] | 0.001 (0.012) | 0.00 | 1.00 [0.98-1.03] |
| Actor hostile sexism | 0.008 (0.012) | 0.41 | 1.01 [0.98-1.03] | 0.013 (0.011) | 1.33 | 1.01 [0.99-1.04] |
| Partner hostile sexism | **0.032 (0.013)** | **6.57*** | **1.03 [1.01-1.06]** | **0.033 (0.011)** | **8.36** ** | **1.03 [1.01-1.06]** |
| Actor X Partner FPC | 0.001 (0.002) | 0.14 | 1.00 [1.00-1.01] | -0.001 (0.002) | 0.37 | 1.00 [1.00-1.00] |

*Note.* FPC = frequency of pornography consumption. *$p < .05$. **$p < .01$. ***$p < .001$.

Table K8

*Breakdown of Moderation Interactive Effects at Time 1 (N = 240 couples)*

| Model | Outcome variable | Interactive variables | Variable held constant | IRR | [95% CI] |
|---|---|---|---|---|---|
| 1A | Male IPAV perp | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.06 | [1.03-1.09] |
| | | | High Female FPC (+2 *SD*) | 0.96 | [0.92-0.99] |
| 1B | Male IPAV vict | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.03 | [1.00-1.06] |
| | | | High Female FPC (+2 *SD*) | 0.98 | [0.94-1.01] |
| 2A | Male IPAV perp | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.04 | [1.01-1.08] |
| | | | High Female FPC (+2 *SD*) | 0.97 | [0.93-1.00] |
| 2B | Female IPAV vict | Male CC Perp * Female CC Perp | Low Male CC Perp (-2 *SD*) | 1.19 | [1.10-1.28] |
| | | | High Male CC Perp (+2 *SD*) | 1.07 | [1.02-1.14] |
| 2C | Male IPAV perp | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.03 | [0.99-1.06] |
| | | | High Female FPC (+2 *SD*) | 0.95 | [0.92-0.99] |
| | | Female FPC * Female CC Vict | Low Female CC Vict (-2 *SD*) | 1.07 | [1.01-1.13] |
| | | | High Female CC Vict (+2 *SD*) | 0.98 | [0.95-1.02] |
| 2D | Male IPAV vict | Male FPC * Male CC Vict | Low Male CC Vict (-2 *SD*) | 1.02 | [0.98-1.06] |
| | | | High Male CC Vict (+2 *SD*) | 0.96 | [0.94-0.98] |
| | Female IPAV vict | Female FPC * Male CC Vict | Low Male CC Vict (-2 *SD*) | 1.04 | [0.99-1.09] |
| | | | High Male CC Vict (+2 *SD*) | 0.95 | [0.90-0.99] |
| 3A | Male IPAV perp | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.05 | [1.02-1.09] |
| | | | High Female FPC (+2 *SD*) | 0.96 | [0.92-0.99] |
| | | Male CA * Female CA | Low Female CA (-2 *SD*) | 1.10 | [1.05-1.14] |
| | | | High Female CA (+2 *SD*) | 1.01 | [0.99-1.04] |
| | | Female FPC * Male CA | Low Male CA (-2 *SD*) | 1.04 | [1.01-1.09] |
| | | | High Male CA (+2 *SD*) | 0.95 | [0.90-1.02] |
| | Female IPAV perp | Female CA * Male CA | Low Male CA (-2 *SD*) | 1.09 | [1.04-1.13] |
| | | | High Male CA (+2 *SD*) | 1.02 | [0.99-1.05] |
| | | Female FPC * Female CA | Low Female CA (-2 *SD*) | 1.04 | [1.01-1.08] |
| | | | High Female CA (+2 *SD*) | 0.95 | [0.93-0.98] |

*Note*. FPC = Frequency of Pornography Consumption, IPAV = Intimate Partner Aggression/Violence, CC = Coercive Control, CA = Composite Aggression, Perp = perpetration, Vict = victimization.

Table K8 Continued

*Breakdown of Moderation Interactive Effects at Time 1 (N = 240 couples)*

| Model | Outcome variable | Interactive variables | Variable held constant | IRR | [95% CI] |
|---|---|---|---|---|---|
| 3B | Male IPAV vict | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.04 | [0.99-1.08] |
| | | | High Female FPC (+2 *SD*) | 0.96 | [0.91-1.00] |
| | | Male CA * Female CA | Low Female CA (-2 *SD*) | 1.09 | [1.04-1.14] |
| | | | High Female CA (+2 *SD*) | 1.01 | [0.98-1.04] |
| | | Male FPC * Female CA | Low Male FPC (-2 *SD*) | 0.98 | [0.93-1.02] |
| | | | High Male FPC (+2 *SD*) | 1.07 | [1.03-1.11] |
| | | Female FPC * Female CA | Low Female CA (-2 *SD*) | 1.03 | [0.99-1.08] |
| | | | High Female CA (+2 *SD*) | 0.96 | [0.91-1.01] |
| | Female IPAV vict | Female CA * Male CA | Low Male CA (-2 *SD*) | 1.10 | [1.05-1.14] |
| | | | High Male CA (+2 *SD*) | 1.03 | [0.99-1.06] |
| | | Female FPC * Female CA | Low Female CA (-2 *SD*) | 1.05 | [1.00-1.10] |
| | | | High Female CA (+2 *SD*) | 0.93 | [0.89-0.98] |
| 5A | Male IPAV perp | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.05 | [1.02-1.08] |
| | | | High Female FPC (+2 *SD*) | 0.98 | [0.94-1.01] |
| 6B | Male IPAV vict | Male FPC * Female FPC | Low Female FPC (-2 *SD*) | 1.03 | [1.01-1.06] |
| | | | High Female FPC (+2 *SD*) | 1.07 | [1.01-1.13] |

*Note*. FPC = Frequency of Pornography Consumption, IPAV = Intimate Partner Aggression/Violence, CC = Coercive Control, CA = Composite Aggression, Perp = perpetration, Vict = victimization.

Table K9

*Indirect Effects for Hypothesized Mediation Pathways at Time 1 (N = 240 couples)*

| Variables | *b* | [95% CI] |
|---|---|---|
| Indirect effect of men's FPC on men's IPAV perpetration through men's benevolent sexism | $1.08\times10^{-4}$ | [$-1.26\times10^{-4}$ – $3.73\times10^{-4}$] |
| Indirect effect of men's FPC on women's IPAV victimization through men's benevolent sexism | $5.70\times10^{-5}$ | [$-7.18\times10^{-5}$ – $2.50\times10^{-4}$] |
| Indirect effect of women's FPC on women's IPAV victimization through women's benevolent sexism | $-4.00\times10^{-5}$ | [$-1.00\times10^{-4}$ – $2.36\times10^{-4}$] |
| Indirect effect of women's FPC on men's IPAV perpetration through women's benevolent sexism | $1.10\times10-4$ | [$-3.97\times10-5$ – $3.42\times10-4$] |
| Indirect effect of men's FPC on men's IPAV perpetration through men's hostile sexism | $2.96\times10^{-4}$ | [$-7.44\times10-5$ – $7.25\times10-4$] |
| Indirect effect of women's FPC on their own IPAV victimization through their reports of hostile sexism | $1.30\times10^{-5}$ | [$-1.64\times10-4$ – $2.09\times10-4$] |
| Indirect effect of women's FPC on men's IPAV perpetration through women's hostile sexism | $-1.10\times10^{-5}$ | [$-1.65\times10^{-4}$ – $1.25\times10^{-4}$] |

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