Control Issues: Examining the Relationship between Low Self-Control and Intimate Partner Violence for both Perpetrators and Victims

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Abstract: Gottfredson and Hirschi's (1990) low self-control theory is linked to individual-level non-violent and violent criminal offending. In this study, we examine secondary-data collected from a transnational sample of survey respondents (n = 17404) to test a predictive model of low self-control on outcomes related to intimate partner violence for both perpetrators and victims. We control for several variables related to socio-demographic characteristics, substance use history, and deviance history when we test our model using logistic regression analysis. The results from our analysis indicates that a unidimensional measure of low self-control is a consistent and statistically significant predictor of outcomes related to intimate partner violence, even when control variables are entered into the model. These findings have strong policy implications for identifying risk-factors and interventions associated with intimate partner violence.

Keywords: Intimate partner violence, low self-control, social learning, risk-factors, theory testing.

Low self-control theory continues to remain a foundational theory in criminology and is referred to as the general theory of crime because of the parsimonious assumptions underlying the theories core propositions. Substantial research has been repeatedly conducted to empirically demonstrate how the attitudinal and behavioral traits of individuals with low self-control affect their propensity for engaging in criminal, deviant, and analogous activities (Sellers, 1999; Pratt & Cullen, 2000; Chapple & Hope). Gottfredson & Hirschi's (1990) conceptualization of low self-control theory as a general theory of crime and deviance has culminated in a collective body of empirical research that has been replicated to support their core propositions of the theory. More specifically, research has repeatedly demonstrated the significance that low self-control traits have on non-violent crime, violent crime, and substance use (Pratt & Cullen, 2000).

Additionally, previous research on low self-control has demonstrated that there is a significant relationship with offender recidivism (Langton, 2006). Chintakrindi, Porter, Mellow, & Sung (2015) examined a sample of parolees and demonstrated that low self-control is a statistically significant predictor of threatening or violent behavior and is a considerable risk-factor for predicting recidivism. Although a considerable amount of criticism and theoretical competition has been placed against low self-control, the theory continues to remain robust and relevant in research and policy discussions for identifying static risk-factors of criminal activity and deviance (Akers, 1991; Geis, 2000; Gottfredson & Hirschi, 2016).

Most tests of low self-control empirically demonstrate the propensity of offenders to engage in criminal behaviors or deviant activities. However, given the large body of literature connecting low self-control theory to crime and deviance, there continues to be minimal research on the relationship between low self-control traits and intimate partner violence. A meta-analysis research study on low self-control and victimization demonstrates that low self-control is a weak predictor of victimization experiences (Pratt, Turanovic, Fox, & Wright, 2014).

In this study, we seek to understand the relationship between low self-control theory and intimate partner violence by conducting a secondary-data analysis of survey data (N = 17404) collected from the International Dating Violence Study (IDVS), 2001-2006 (Straus, 2011). In this study, we use low self-control to predict both perpetrating behaviors of intimate partner violence and to predict victimization from partners. Our study aims to understand whether individuals with low self-control traits are at-risk for entering into intimate partner relationships that lead to violent outcomes.

LITERATURE REVIEW

Gottfredson & Hirschi (1990) state that low self-control theory's core proposition is that deviant behavior, aggression, and violence are a fundamental part of deviant behavior and criminal offending. The theory states that through parental socialization practices, young children learn to control their decisions and aggressive impulses which will

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significantly reduce their probability of demonstrating fraudulent or violent behavior in social settings. Self-control is trait stabilized in early development and levels of self-control remain stable across the development of the individual into adulthood. After a critical period in childhood development has passed, self-control is a much more difficult process to teach and model to adolescents and adults. Therefore, based on the assumptions of low self-control theory, if you want to reduce offending and deviant behavior in society, then considerable efforts should be made to focus on developing self-control practices in young children rather than adults.

The primary trait indicators of low self-control are a preference for risk-seeking, avoidance of complex tasks, inability to delay gratification, self-centeredness, and indifferent to the suffering of others (Gottfredson & Hirschi, 1990). The theory assumes deviant and criminal behavior as stemming from irrational thought processes. Furthermore the theory claims that individuals with low self-control do not contemplate the long-term consequences of their actions. Low self-control can lead to deviant or analogous behaviors, such as, illicit sex, drinking, smoking, drugs, gambling, divorce, education failure, job loss, and accidents due to the inability to control impulses and the propensity for pleasure and immediate gratification. Low self-control theory explains offending as being the product of opportunity and low self-control leading to crime by either fraud or force. Therefore, when individuals with low self-control are placed in environments with little supervision and criminal opportunities, they will act on their impulses and engage in deviant, fraudulent, or violent behavior without consideration for the long-term implications of their actions.

DeWall, Baumeister, Stillman, & Gailliot (2007) study the causes of aggression and found that self-control is linked to memories of previous provocations and that limited self-regulation resources are depleted when aggression is stimulated by external factors. Aggression is more likely to become a response in situations where external factors are depleting valuable but limited self-regulatory resources that are necessary for behavioral and emotional control, which conceptualized as “inner restraints”. Once an aggression threshold is reached due to external circumstances, the individual may no longer be able to control or regulate their “inner restraints” or behavioral responses to the situation. The individual may no longer be able to maintain restraint over aggressive impulses and will react unpredictably.

DeWall, Baumeister, Stillman, & Gailliot (2007) find that the use of aggressive responses to external circumstances is not formed through rational choice and calculated decisions (e.g. weighting costs and benefits, considering short- versus long-term gains associated with responding aggressively), but aggression is rather a failure of self-restraint due to external provocation. Individuals who consistently demonstrate low self-control in other aspects of their lives (e.g. addiction, gambling, risk-taking) have an increased likelihood of responding aggressively due to self-regulatory depletion of inner-restraints when compared to people with high levels of self-control who appear to possess more emotional and behavioral self-regulatory resources.

In a series of studies, Finkel, Slotter, DeWall, Slotter & Oaten (2009) investigated self-regulatory processes and four aspects of self-regulation that may suggest how impulse control and associated behaviors are manifested. Their first study explored basic self-regulatory processes by assessing how individuals may feel and react about a prior fight they had with their significant other and the frequency of using physical force by assessing 16 behaviors using the 16-item Safe Dates Physical Violence Scale (e.g. slapped him/her; kicked him/her, etc…). There was overwhelming support to show that individuals were more likely to deliberate on one or more acts rather than carry out the given behavior(s). Not only are these individuals non-violent, they clearly demonstrated self-control in their ability to overcome intense urges and impulses that may otherwise result in violent acts.

Self-regulatory processes were further investigated by using varied impulsivity measures (Finkel *et al*., 2009). It was found that those who were measured as being “higher” in dispositional self-control were more likely to inhibit violent impulses and less likely to commit violent acts, emphasizing again that levels of self-control and impulse control are significantly related and need further exploration.

Cognitive aspects of self-regulation were manipulated in more studies to simulate real-life situations and assess how unpleasant remarks are processed. Individuals were either assigned to “immediate” or “time delayed” conditions and had to exert their self-control in these scenarios where they were hypothetically “provoked” by their partner (Finkel *et al*., 2009). It was found that those in the time-delayed condition showed restraint as opposed to those in the immediate condition who reacted instantly

to partner provocation, revealing that processing time has a significant impact on self-regulatory processes. In addition to time, self-regulatory strength was also found to impact self-control and the tendency to think and act on violent behaviors when provoked. Taken together, these findings indicate that a lack of behavioral restraint, or low self-control is essentially a "self-regulatory failure" in intimate partner violence perpetration (Finkel *et al*., 2009), which also signifies that those who exhibit high self-control are better equipped with self-regulatory resources (Dewall *et al*., 2007).

Examining early trends in dating violence can offer critical insight about one's perceptions and behavioral tendencies such that we can understand what leads to marital discord and intimate partner violence. Follingstand, Wright, Lloyd & Sebastian (1991) used a variety of research scales to assess anger and conflict by questioning specifically whether hostility levels (e.g. "state anger, trait anger and anger expression") are inherently linked to sex differences found between men and women. In addition to external factors which can trigger hostility, the researchers discuss how personality traits related to violent behaviors may also impact aggression levels in relationships. Some trends for participants in the study who identified as "victims" and "perpetrators" were also asked to report on several measures assessing "motives", their own "motivations", and "perceptions of the effects of dating violence". It was found that female victims were more likely than male victims to believe that their "assaulters" used force as a desire for control or to "get their own way". Male and female perpetrators both reported that they used physical force to retaliate against their partner, though males reported increased feelings of jealousy, whereas females stated they were "emotionally hurt" prior to using force (Follingtand *et al*., 1991). Perpetrators were also asked to speculate on how their violent actions potentially impacted their dating partners. It was found that males believed their female partners were inclined to feel fear, anxiety, and depression. Whereas female perpetrators interestingly reported that their male victims would believe that their respective dating partner had a right to engage in the aggressive act(s). Anger and emotional pain were generally associated with how both men and women felt as victims of physical assault.

Findings on attitudinal measures revealed that both male and female perpetrators reported being "angrier people" in general, and sex differences on these measures showed that females "strongly disagreed" that using physical force "could be justified under certain circumstances" compared to male perpetrators, indicating that there are some intrinsic differences in how men and women perceive acts of violence (Follingstand *et al*., 1991). Importantly, sex differences were evident on several measures as well, indicating that perceptions and motivations related to dating violence fundamentally differ, especially between male and female perpetrators. The authors provide suggestions for interventions where it would be useful to implement different treatment strategies to address irrational thought patterns and behavioral tendencies, in an effort to effectively curb violent tendencies in couples.

Jennings, Park, Tomsich, Gover, & Akers (2011) examined the overlapping relationship between dating violence perpetration and victimization among South Korean College Students and found that their exists common risk-factors for both offenders and victims of violence in dating relationships. In this study, Jennings *et al*. (2011) conducted a theoretical test between low self-control and Aker's (1991) social learning theory and found five of variables were significantly predictive of physical dating violence offending and victimization in their sample. They found that being (1) males, (2) those dating exclusively, (3) those who experienced childhood physical abuse, (4) sexual risk takers, and (5) those having low self- control had an increased probability of being involved in physical dating violence offending and victimization. The findings from this study support the assumptions of Gottfredson & Hirschi (1990) that low self-control is universal across cultural contexts and will remain a strong predictor of aggressive behavior. This study demonstrates that both perpetrators and victims of intimate partner violence share overlapping traits for low self-control even when including social learning factors into the model, such as, family history of domestic violence and childhood physical abuse.

Flexon, Meldrum, & Piquero (2016) conducted a gendered analysis of the overlapping traits between victims and offenders using low self-control theory. Flexon *et al*. (2016) hypothesize that low self-control traits are found in both males and females who have been either perpetrator or victims. They reflect on Gottfredson & Hirschi's (1990) observations that "victims and offenders tend to share all or nearly all social and personal characteristics" and discuss how offenders and victims share a symmetry in behavioral and attitudinal characteristics consistent with low self-control theory.

They assume that the low self-control profile of victims is primarily related to a lack of consideration for long-term consequences of their decisions and behaviors, which increases their probability of being placed in a vulnerable position to be exploited, physically violated, or mentally abused by a perpetrator (e.g. hitch-hiking, prostitution, illegal drug buying, and dealing). Flexon *et al*. (2016) discuss the concept of victim precipitation by stating that victims are likely to have had a history of perpetrating crimes and engaging in deviant behaviors, such as, "assault, larceny, robbery, vandalism, violence, theft, and drug use."

Research conducted by Flexon *et al*. (2016) found that there is a statistically significant association between offending and victimization across genders. Also, their results strongly indicate that low self-control was positively and significantly related to both offending and victimization even when controlling for age, sex, ethnicity, and school attachment. Their findings support core theoretical propositions that were identified by Gottfredson & Hirschi (1990) that victims and offenders share symmetrical low self-control profiles that transcend typical socio-demographics factors that are observed in research findings in criminology.

Flexon *et al*. (2016) disaggregated the analysis by gender and found that male victims and perpetrators had significant overlap in low self-control traits, which is consistent with the assumptions proposed by Gottfredson & Hirschi (1990). However, among females, they did not observe an overlapping statistical significance in low self-control between victims and perpetrators. The lack of evidence to support overlapping levels of low self-control between female victims and perpetrators is inconsistent with the assumptions outlined by the general theory of crime (Gottfredson & Hirschi, 1990).

Pratt, Turanovic, Fox, & Wright (2014) conducted a meta-analysis of low self-control and its relationship to victimization. After meticulously reviewing data from 66 studies, they found that low self-control is a moderate predictor of victimization. Their results demonstrate that low self-control is a stronger predictor of noncontact forms of victimization (e.g. online victimization and fraud) compared to direct-contact victimization (e.g. property crimes, stalking, sexual, and violence). Also, they examine the effect sizes of intervening factors that bind low self-control to victimization and found that substance-use, deviant peers, social bonds, and gang membership were not consistently strong predictors of victimization in studies that measured these intervening mechanisms.

Additionally, they try to understand whether self-control and behavioral routines are linked, which is associated with the theoretical propositions found in Routine Activities Theory, that individuals with low self-control may make themselves vulnerable to victimization without requesting a capable guardian to be present and making themselves available to a motivated offenders as a suitable target for exploitation, fraud, or aggression (Holtfreter, Kristy & Reisig, Michael & Pratt, 2008; Pratt, Turanovic, Fox, & Wright, 2014). In the discussion section, Pratt, Turanovic, Fox, & Wright (2014) state that victimization is about exposure to "high risk times, places, and people."

They emphasize that it is not enough to examine a prospective victim leaving their house as a variable of interest, but that researchers need to be able to disaggregate the differential risks associated with the decision to engage in certain activities outside that may increase the potential for becoming victimized, such as, "planting flowers in a garden versus selling drugs on a street corner (Pratt, Turanovic, Fox, & Wright, 2014)." Therefore, research on low self-control and victimization needs to account for situational and routine activities of perpetrators and victims to understand how victimization opportunities are shaped.

Research Question

Gottfredson and Hirschi's (1990) low self-control theory has been consistently linked with deviant and criminal behavior. More specifically, previous research has shown that low self-control increases an individual's risk for aggressiveness and violent behavior (Sellers, 1999; DeWall *et al*., 2007; Rebellon *et al*., 2008; Chintakrindi *et al*., 2015). However, there are considerable gaps in the literature regarding the relationship between low self-control and intimate partner violence. Similarly, there are also gaps in the research literature regarding the relationship between low self-control and risk for victimization in intimate partner relationships. In this study, we are interested in examining whether low self-control theory is both a predictor of perpetrating intimate partner violence and experiencing victimization in relationships. More specifically, we ask if low self-control theory can be used to measure both perpetration and victimization in intimate partner relationships?

Hypothesis

We hypothesize that a unidimensional measure of low self-control statistically significantly predicts risk for perpetrating threatening and violent behavior towards significant others in intimate partner relationships. Also, we predict that respondents with low self-control are at risk for victimization from intimate partner violence by their significant others. Finally, we predict using low self-control theory that an individual can be both a perpetrator and victim of intimate partner violence when in relationships.

METHOD

Design

In this study, we conducted a secondary-data analysis of the International Dating Violence Study (IDVS), 2001-2006 (Straus, 2011). We are interested in understanding the relationship between respondents' levels of low self-control and their propensity to engage in violence against their significant others and will also be a victim of violence by their significant others. The secondary-data used in this study was collected by Straus (2011) and a consortium of researchers from 32 nations. Rebellon, Straus, & Medeiros (2008) report that the mean response rate across sites was 81.8 percent. The secondary-data used in this study is available and unrestricted for general scholarly research through the Inter-university Consortium for Political and Social Research.

In this study, we use a retrospective case–control design, to compare our outcomes of interest among survey respondents (cases) who have (1) perpetrated intimate partner violence and (2) been victims of intimate partner violence, with those respondents who do not present these outcomes (controls). The retrospective case-control study design will allow us to compare how frequently the respondents in this study have been exposed to specific risk-factors of interest (i.e. low self-control characteristics) in each group in order to analyze the relationship between the specified risk-factors and outcomes of interest (i.e. perpetration or victimization of intimate partner violence). Case control-control studies are observational and designed to estimate the odds of an outcome occurring by comparing risk-factors between cases and controls. For this study, no experimental intervention was attempted on respondents. Additionally, in our multivariate model analyses we will introduce control variables (e.g. demographic characteristics, sexual abuse history, alcohol and drug use history, and criminal associations) to understand the statistical significance, magnitude of effect, and directionality that the expression of control variables have in association with our outcomes of interest.

Participants/Sample

The researchers used a convenience sample (N = 17404) where survey data was collected from university age students (18 years of age or older) who were primarily studying criminology, psychology, and sociology (Rebellon, Straus, & Medeiros, 2008). The consortium of researchers gathered their data from students enrolled in their courses (Rebellon, Straus, & Medeiros, 2008).

Measures

Predictor Variables

The *Self-Control Factor Score* and its items are listed in Table **1**. These items were selected for exploratory factor analysis of low self-control based on their similarity to scales found in previous tests of low self-control theory summarized in the empirical literature (Arneklev *et al*., 1993; Arneklev *et al*., 1998; Grasmick *et al*., 1993; Langton, 2006; Longshore *et al*., 1996; Tittle *et al*., 2003; Crettaci, 2008; Rebellon *et al*., 2008; Chintakrindi *et al*., 2015). Each of the 11 items in the low self-control scale were coded in the direction of low self-control using a 1 point Likert response scale (e.g. 1 = Disagree Strongly to 4 = Agree Strongly)

For this study, we will be using a single construct of low self-control because we are aiming for a parsimonious model that best reflects our interpretation of Gottfredson and Hirschi's (1990) theoretical conceptualization of low self-control and its corresponding uni-dimensionality. An exploratory factor analysis was conducted which indicated that the 11-items load on to a one factor solution with an alpha reliability of 0.74.4 and that this one factor explains 29.1% of the total variation in those items as a linear combination.

Control Variables

Male is a dichotomous variable to indicate the gender of the survey respondent (0 = female and 1 = male). *Age* is a continuously scaled variable, which indicates the respondents' age at the time of participation in the study. *Income* is a continuously scaled variable, which indicates the respondents' family income at the time of participation in the study.

Table 1: Descriptive Statistics and Factor Loadings for Low Self-Control Items

Variable (Groupings)	Strongly disagree (%)	Disagree (%)	Agree (%)	Strongly agree (%)	Missing (%)	Factor loading
There is nothing I can do to control my feelings when my partner hassles me	4328 (24.9)	7553 (43.4)	2071 (11.9)	300 (1.7)	3152 (18.1)	0.4
I don't think about how what I do will affect other people	7358 (42.3)	7711 (44.3)	1919 (11.0)	416 (2.4)	-	0.4
I often do things that other people think are dangerous	5233 (30.1)	8056 (46.3)	3494 (20.1)	621 (3.6)	-	0.5
I have trouble following the rules at work or in school	8808 (50.6)	7053 (40.5)	1327 (7.6)	216 (1.2)	-	0.6
I often get hurt by things that I do	(37.1)	7361 (42.3)	(17.9)	459 (2.6)	-	0.6
I give up easily on difficult projects	5164 (29.7)	8717 (50.1)	3091 (17.8)	432 (2.5)	-	0.5
I am constantly looking for sign of danger	3682 (21.2)	7235 (41.6)	5398 (31.0)	1089 (6.3)	-	<0.30
It is sometimes hard for me to go on with my work if I am not encouraged	2294 (13.2)	6424 (36.9)	7530 (43.3)	1156 (6.6)	-	0.4
I often lie to get what I want	7472 (42.9)	7932 (45.6)	1770 (10.2)	230 (1.3)	-	0.6
There have been times when I have felt like rebelling against people in authority even though I knew	4020 (23.1)	6700 (38.5)	5722 (32.9)	962 (5.5)	-	0.4
On a few occasions, I have given up doing something because I have thought too little of my ability	3076 (17.7)	5013 (28.8)	7961 (45.7)	1354 (7.8)	-	0.5

Relationship living status is a dichotomous variable to indicate the living status that the respondent has with their partner (0 = Not living with partner and 1 = Living with partner). *Satisfaction with housing conditions*, is a dichotomous variable that measures the respondents' self-reported evaluation of their living conditions (0 = No and 1 = Yes). *Years in school*, is a continuously scaled variable, which indicates the respondents' number of years of education. *Sexually abused before 18*, is a dichotomously coded variable that indicates the survey respondents' self-reported history of sexual abuse prior to age 18 (0 = No and 1 = Yes). *Drinking until intoxicated*, is a dichotomous variable that measures the respondents' self-reported history of drinking alcohol and becoming intoxicated by its effects (0 = No and 1 = Yes). *Believes they have a drug problem*, is a dichotomous variable that measures the respondents' self-reported evaluation of their drug usage causing self-harm (0 = No and 1 = Yes). *Has friends who commit crime*, is a dichotomous variable that measures the respondents' self-reported friendship with individuals who have criminal histories (0 = No and 1 = Yes).

Outcome Variables

In this study, we examine outcome variables that both measure the survey respondents' (1) perpetration of violence against their partners and (2) their experiences of being victims of violence by their partners. We have five items that measure perpetration of violence against partners and five items that measure being a victim of violence in relationships.

For measuring the perpetration of violence by the survey respondent against their partner we examined the following variables: (1) Threaten to hit or throw something at my partner; (2) Threw something at partner that could hurt; (3) Punched partner or hit partner with something that could hurt; (4) Used force to make partner have sex; (5) Used a knife or gun on my partner. The outcomes measures for examining the survey respondents' perpetration of violence against their partner were dichotomously coded variables (0 = Never and 1 = At least one time). Additionally, we created an aggregate outcome variable that measures whether respondents had responded *At least one time* to any of the five outcomes for measuring perpetration of violence.

For measuring the rates of victimization through intimate partner violence experienced by the survey respondent we examined the following variables: (1) Partner threatened to hit or throw something at me; (2) Partner threw something at me that could hurt; (3)

Partner punched me or hit me with something that could hurt; (4) Partner used force to make me have sex; (5) Partner used a knife or gun on me. The outcome measures were dichotomously coded for examining the survey respondents' experiences of victimization through violence by their partner (0 = Never and 1 = At least one time). Additionally, we created an aggregate outcome variable that measures whether respondents had responded *At least one time* to any of the five victimization outcomes. Finally, we created a aggregate outcome variable that examines whether the respondent has been both a perpetrator and victim of violence.

Plan of Analysis

For this study, we will begin by providing descriptive statistics using frequency and percentages for the predictor, outcome, and control variables. Next, we will be conducting bivariate statistical analysis using Independent sample *t*-tests of intimate partner violence outcomes with our predictor variables for low self-control for the purpose of identifying marginally or statistically significant relationships with an alpha value of less than 0.05. Finally, using the predictor variables and control variables that we found to be theoretically relevant in the extant literature, we will then develop multivariate models to specify our logistic regression for predicting low self-control on intimate partner violence outcomes while controlling for demographic and criminological characteristics.

The output that will be reported and interpreted for the logistic regression analysis includes the -2 log likelihood for the fully reduced model and the related χ^2 for the full model and related significance levels to determine if inputting independent variables improves the model fitness. The results that are reported and interpreted include the odds-ratios and significance levels for each predictor variable with an alpha value of less than 0.05.

RESULTS

Descriptive Statistics of Predictor and Control Variables

In Table **2**, we present descriptive statistics for our theoretical predictor variable for our low self-control factor score, which has a mean of zero and a standard deviation of one with 18 percent of the data missing. In Table **2**, we present out descriptive statistics for our control variables demographic characteristics. For our gender variable, 70.1 percent of respondents are female and 29.9 percent of respondents are male. The mean age of the respondents is 22.9, with a standard deviation of 6. The living status of the respondents is that 84.4 percent live alone and 15.6 percent live with a partner. When examining satisfaction with housing conditions, we found that 21.1 percent of the respondents were not satisfied and 78.9 percent were satisfied with their housing conditions. The mean number of years of education among the respondents is 14.4 with a standard deviation of 1.2.

In Table **2**, we present out descriptive statistics for our control variables for criminological characteristics. We find that 85.7 percent of the respondents were not sexually abused before the age of 18 and 14.3 percent of the respondents reported being sexually abused before the age of 18. We find that 59.5 percent of the respondents do not get intoxicated from alcohol and 40.5 percent of the respondents reported drinking until intoxication from alcohol. We find that 93.4 percent of the respondents do not report having a drug problem and 6.6 percent of respondents reported having a drug problem. We find that 62.8 percent of the respondents do not have friends who commit crime and 37.2 percent of respondents reported having friends who commit crime.

5.2. Descriptive Statistics of Outcome Variables for Perpetrator and Victim Experiences with Measures of Intimate Partner Violence

In Table **3**, we examine the percentage of respondents self-reporting being perpetrators of intimate partner violence. When examining whether a respondent self-reports "threaten to hit or throw something at my partner" we find that 75.1 percent indicated *never* and 6.8 percent indicated *at least one time*. When examining whether a respondent self-reports "Threw something at partner that could hurt" we find that 72.8 percent indicated *never* and 9.1 percent indicated *at least one time*. When examining whether a respondent self-reports "Punched partner or hit partner with something that could hurt" we find that 78.1 percent indicated *never* and 3.8 percent indicated *at least one time*. When examining whether a respondent self-reports "Used force to make partner have sex" we find that 80.8 percent indicated *never* and 1.1 percent indicated *at least one time*. When examining whether a respondent self-reports "Used a knife or gun on my partner" we find that 81.1 percent indicated *never* and 0.8 percent indicated *at least one time*.

Table 2: Descriptive Statistics of Predictor and Control Variables

Variable (Groupings)	n (%)	M (SD)	Missing n (%)
N	17404	-	-
Predictor variable			
Low Self-control factor score	-	0 (1)	3152 (18)
Control variables			
Gender			
Male	5207 (29.9)	-	-
Female	12197 (70.1)		
Age	-	22.9 (6.0)	-
Income (z-score)	-	0.0 (1.0)	-
Relationship living status			
Not living with partner	14684 (84.4)	-	-
Living with partner	2720 (15.6)		
Satistfaction with housing conditions			
No	3679 (21.1	-	-
Yea	13725 (78.9)	-	-
Year in school	-	14.4 (1.2)	-
Sexually abuse before age 18			
No	14918 (85.7)	-	-
Yes	2486 (14.3)		
Drinking until intoxicated			
No	10363 (59.5)	-	-
Yea	7041 (40.5		
Believes they have a drug problem			
No	16261 (93.4)	-	-
Yea	1143 (6.6)		
Has friend who commit crime			
No	10925 (62.8)	-	-
Yea	6479 (37.2)		

In Table **3**, we examine the percentage of respondents self-reporting being victims of intimate partner violence. When examining whether a respondent self-reports “Partner threatened to hit or throw something at me” we find that 76.4 percent indicated *never* and 5.5 percent indicated *at least one time*. When examining whether a respondent self-reports “Partner threw something at me that could hurt” we find that 74.1 percent indicated *never* and 7.8 percent indicated *at least one time*. When examining whether a respondent self-reports “Partner punched me or hit me with something that could hurt” we find that 78.7 percent indicated *never* and 3.1 percent indicated *at least one time*. When examining whether a respondent self-reports “Partner used force to make me have sex” we find that 80.3 percent indicated *never* and 1.6 percent indicated *at least one time*. When examining whether a respondent self-reports “Partner used a knife or gun on me” we find that 81.1 percent indicated *never* and 0.8 percent indicated *at least one time*. We found that 18.1 percent of the data is missing from our outcome variables of interest.

Bivariate Analysis Results Examining the Self-Control Factor Score and the Outcome Variables Measuring Intimate Partner Violence by both Perpetrators and Victims

A series of Independent Samples *t*-tests were conducted to compare the mean differences for the self-control factor score between the number of times respondents self-reported perpetrating intimate partner

Table 3: Descriptive Statistics of Outcome Variables for Self-Reported Perpetrator and Victim Experiences with Intimate Partner Violence

Variable (Grouping)		At least one time		
		Never (%)	(%)	Missing (%)
Perpetrator variable	Threaten hit or throw something at my partner	13068 (75.1)	1184 (6.8)	3152 (18.1)
	Threw something at partner that could hurt	12672 (72.8)	1580 (9.1)	3152 (18.1)
	Punched partner or hit partner with something that could hurt	13591 (78.1)	661 (3.8)	3152 (18.1)
	Used force to make partner have sex	14060 (80.8)	192 (1.1)	3152 (18.1)
	Used a knife or gun on my partner	14120 (81.1)	132 (0.8)	3152 (18.1)
Victim variables	Partner threatened to hit or throw something at my	13297 (76.4)	955 (5.5)	3152 (18.1)
	Partner threw something at me that could hurt	12902 (74.1)	1350 (7.8)	3152 (18.1)
	Partner punched me or hit me with something that could hurt	13705 (78.7)	547 (3.1)	3152 (18.1)
	Partner used force to make me have sex	13975 (80.3)	277 (1.6)	3152 (18.1)
	Partner used a knife or gun on me	14119 (81.1)	133 (0.8)	3152 (18.1)

violence against their significant other; with responses coded either as "*never*" or "*at least one time*." We found that there was a consistent statistically significant mean difference in the self-control factor scores for all five of the outcome variables measuring self-reported perpetrator violence ($p < .001$). The results, in Table **4**, suggest that respondents who reported perpetrating intimate partner violence *at least one time* against their significant other have a statistically significantly higher self-control factor score compared to the scores of individuals who responded *never*. Additionally, our aggregate variable for measuring perpetration of intimate partner violence indicates that respondents who self-reported *at least one time* had statistically significant higher self-control factors scores compared to respondents who responded *never* ($p < .001$). A higher self-control factor score corresponds to lower levels of self-control.

A series of Independent Samples *t*-tests were conducted to compare the mean differences for the self-control factor score between the number of times respondents self-reported being a victim of intimate partner violence by their significant other; with responses coded either as "*never*" or "*at least one time*." We found that there was a consistent statistically

Table 4: Independent Sample *t*-test of Mean Differences for Self-Control Factor Scores for Self-Reported Perpetration of Intimate Partner Violence

	n	M (SD)	n	M (SD)	p
	Never		At least one time		
1. Threaten to hit throw something at my partner	13068	-0.03 (1.00)	1184	0.35 (1.02)	<0.001***
2. Threw something at partner that could hurt	12672	-0.05 (0.98)	1580	0.37 (1.04)	<0.001***
3. Used a knife or gun on my partner	14120	-0.01 (1.00)	132	0.84 (1.19)	<0.001***
4. Punched partner or hit partner with something that could hurt	13591	-0.28 (0.09)	661	0.56 (1.06)	<0.001***
5. Used force to make partner have sex	14.060	-0.01 (1.00)	192	0.64 (1.07)	<0.001***
Have you ever threatened or perpetrated intimate partner violence? (aggregate variable: 1-5)	11855	-0.07 (0.98)	2397	0.36 (1.02)	<0.001***

†p<0.10; *p<0.05; **p<0.01; p<0.001.

Table 5: Independent Sample *t*-test of Mean Differences for Self-Control Factor Scores of Victimization Experiences in Intimate Partner Violence

	n	M (SD)	n	M (SD)	p
	Never		At least one time		
1. Partner threatened to hit throw something at me	13297	-0.03 (1.00)	955	0.36 (1.04)	<0.001***
2. Partner threw something at me that could hurt	12902	-0.43 (0.99)	1350	0.41 (1.06)	<0.001***
3. Partner used a knife or gun on me	14119	-0.01 (1.00)	133	069 (1.17)	<0.001***
4. Partner punched me or hit me with something that could hurt	13705	-0.02 (1.00)	547	0.61 (1.04)	<0.001***
5. Partner used force to make me have sex	13975	-0.12 (0.99)	277	0.60 (1.09)	<0.001***
Have you ever been threatened or been a victim of intimate partner violence? (aggregate variable: 1-5)	12167	-0.07 (0.98)	2085	0.39 (1.03)	<0.001***

†p<0.10; *p<0.05; **p<0.01; p<0.001.

significant mean difference in the self-control factor scores for all five of the outcome variables measuring self-reported victimization ($p < .001$). The results, in Table **5**, indicate that respondents who reported being a victim of intimate partner violence *at least one time* by their significant other have a statistically significantly higher self-control factor score compared to the scores of individuals who responded *never*. Additionally, our aggregate variable for measuring victimization from intimate partner violence indicates that respondents who self-reported *at least one time* had statistically significant higher self-control factors scores compared to respondents who responded *never* ($p < .001$). A higher self-control factor score corresponds to lower levels of self-control.

In Table **6**, we conducted an Independent Samples *t*-tests to compare the mean differences for the self-control factor score between the number of times respondents self-reported being both a perpetrator and victim of intimate partner violence using aggregate data from both our perpetrator and victim outcome variables in Tables **4** and **5**; with responses coded either as "*never*" or "*at least one time*." We found that there was a statistically significant mean difference in the self-control factor scores for the outcome variable measuring self-reports of being both a perpetrator and victim of intimate partner violence ($p < .001$). The results, in Table **6**, indicate that respondents who reported being both a perpetrator and victim of intimate partner violence *at least one time* have a statistically significantly higher self-control factor score compared to the scores of individuals who responded *never*. A higher self-control factor score corresponds to lower levels of self-control.

Given our consistent and statistically significant findings regarding the mean differences in the relationship between the self-control factor score and our outcome variables, measuring experiences of perpetrating or being a victim of violence while being involved in an intimate partner relationship, we will enter the predictor and outcome variables into a multivariate analysis, using logistic regression, which will include control variables related to socio-demographic characteristics, substance use, and criminological characteristics into our multivariate models.

Table 6: Independent Sample *t*-test of Mean Differences for Self-Control Factor Scores of Individuals who Self-Report being both a Perpetrator and Victim of Intimate Partner Violence

	n	M (SD)	n	M (SD)	p
	Never		At least one time		
Have you ever been both a perpetrator and victim of intimate partner violence?	12640	-0.056 (0.98)	1612	0.44 (1.02)	<0.001***

†p<0.10; *p<0.05; **p<0.01; p<0.001.

Exploratory Multivariate Analysis of the Self-Control Factor Score, Control Variables, and Outcome Variables Related to Intimate Partner Violence by Perpetrators and Victims

In this section, we will proceed to examine the relationship between the self-control factor score and the outcome variables by comparing the statistical significance of our predictor variable against our control variables in our exploratory multivariate models using the logistic regression analysis. We will be examining the odds-ratio (Exp (B)) and statistical significance for our predictor variable, the self-control factor score, and comparing our results to the control variables in each model.

In Table **7**, we conducted a series of logistic regression analyses on five models and one aggregate model to examine the odds-ratio of predictor and control variables on perpetration of intimate partner violence. We are interested in examining the magnitude and direction of the relationship of the self-control factor score and control variables to the outcomes measuring perpetration of intimate partner violence. In models one through five, we found that all of our logistic regression models are statistically significant for predicting perpetration of intimate partner violence ($p < 0.001$). Additionally, we found that the aggregate model is statistically significant for predicting perpetration of intimate partner violence ($p < 0.001$).

Table 7: Logistic Regression Test of Predictor and Control Variables on Self-Reported Perpetration of Intimate Partner Violence Outcome Variables

	Model 1: Threatened to hit or throw something (At least one time = 1)	Model 2: Threw something at partner that could hurt (At least one time = 1)	Model 3: Punched partner or hit partner with something that could hurt (At least one time = 1)	Model 4: Used force to make partner have sex (At least one time = 1)	Model 5: Used a knife or gun on my partner (At least one time = 1)	Aggregate Model 1-5: Have you ever threatened or perpetrated intimate partner violence? At least one time = 1)
Variable (Groupings)	**Exp (B)**	**Exp (B)**	**Exp (B)**	**Exp (B)**	**Exp (B)**	**Exp (B)**
Male	0.391***	0.553***	0.419***	1.03	0.981	0.516***
Age	1.013***	1.007	1.007	1.026*	1.016	1.007†
Income	0.951	0.954†	0.948	1.1	0.857†	0.977†
Living with partner (yes = 1)	1.268***	1.215**	1.261*	1.066	1.278	1.161*
Satisfied with housing situation (yes = 1)	0.822**	0.863*	0.864	0.813	0.689†	0.845**
Years in School	1.018	0.995	0.983	0.905†	0.963	0.995
Victim of sexual abuse before age 18 (yes = 1)	1.382***	1.571***	1.638***	1.519*	1.636*	1.476***
Drinks until intoxicated (yes = 1)	1.197**	1.047	1.24*	0.788	0.829	1.051
Believes they have a drug problem (yes = 1)	0.930	1.273*	1.134	1.059	0.934	1.080
Has friend who commit crime (yes = 1)	1.581***	1.300***	1.418***	1.631**	1.011	1.358***
Low self-control factor score	1.477***	1.494***	1.745***	1.741***	2.127***	1.542***
-2 Log likelihood ratio	7741.352	9498.074	4988.149	1932.344	1391.994	12285.626
Chi-square	417.024***	430.24***	362.437***	103.006***	106.789***	626.676***

†p<0.10; *p<0.05; ** p<0.01; *** p<0.001.

We are interested in comparing the strength of our control variables when entering them into models. In models one through five and the aggregate model, we consistently found that respondents who indicated that they were sexually abused before the age of 18 have an increased odds of 1.3 to 1.6 times of reporting that they perpetrated or threatened to engage in intimate partner violence against their significant other (p < 0.05). Additionally, in models one through four and the aggregate model, we consistently found that respondents who have indicated that they have friends that commit crimes have an increased odds of 1.3 to 1.6 times of reporting that they perpetrated or threatened to engage in intimate partner violence against their significant other (p < 0.05).

Finally, in models one through five and the aggregate model, we found statistical significance for our theoretical self-control factor score for predicting respondent perpetration or threatening to engage in intimate partner violence (p < 0.001). More specifically, we found that respondents with higher self-control factor scores have a increased likelihood of reporting, by 1.5 to 2.1 times odds, that they had at least one time perpetrated or threatened to engage in intimate partner violence (p < 0.01).

In Table **8**, we conducted a series of logistic regression analyses on five models and one aggregate model in order to examine the odds-ratio of predictor and control variables on respondents becoming a victim of intimate partner violence. In particular, we are

Table 8: Logistic Regression Test of Predictor and Control Variables on Self-Reported Victimization of Intimate Partner Violence Outcome Variables

	Model 1: Partner threatened to hit me or throw something (At least one time = 1)	Model 2: Partner threw something at me that could hurt (At least one time = 1)	Model 3: Partner punched me or hit me with something that could hurt (At least one time = 1)	Model 4: Partner used force to make me have sex (At least one time = 1)	Model 5: Partner used a knife or gun on me (At least one time = 1)	Aggregate Model 1-5: Have you ever been threatened or been a victim intimate partner violence? At least one time = 1)
Variable (Groupings)	**Exp (B)**	**Exp (B)**	**Exp (B)**	**Exp (B)**	**Exp (B)**	**Exp (B)**
Male	0.720***	1.103	0.979	0.574***	1.382†	0.954
Age	1.029**	1.011*	1.021**	1.022*	1.029*	1.016***
Income	0.893**	0.981	0.902*	0.963	0.815*	0.965
Living with partner	1.350***	1.345***	1.297*	1.133	1.834**	1.260***
Satisfied with housing situation	0.894	0.866	0.724**	0.837	0.838	0.830
Years in School	0.991	0.998	0.969	0.932	0.892	0.993
Victim of sexual abuse before age 18 (yes = 1)	1.594***	1.542***	1.66***	1.629**	1.527*	1.567***
Drinks until intoxicated (yes = 1)	1.053	0.972	1.212*	0.762*	0.761	0.942
Believes they have a drug problem (yes = 1)	0.932	1.252*	1.056	0.979	1.206	1.091
Has friend who commit crime (yes = 1)	1.821***	1.361***	1.546***	1596**	1.616*	1.521***
Low self-control factor score	1.432***	1.476***	1.692***	1.780**	1.794***	1.504***
-2 Log likelihood ratio	6684.023	8573.993	4343.610	2580.721	1406.827	11322.289
Chi-square	323.122***	357.23***	295.784***	150.972***	101.292***	541.892***

†p<0.10; *p<0.05; ** p<0.01; *** p<0.001.

interested in examining the magnitude and direction of the relationship of the self-control factor score and control variables to the outcomes measuring experiences of victimization in intimate partner violence. In models one through five, we found that all of the logistic regression models are statistically significant for predicting perpetration of intimate partner violence ($p < 0.001$). Additionally, we found that the aggregate model is statistically significant for predicting experiences of victimization in intimate partner violence ($p < 0.001$).

We are interested in comparing the strength of our control variables when entering them into models. In models one through five and the aggregate model, we consistently found that respondents who indicated that they were sexually abused before the age of 18 have an increased odds of 1.5 to 1.7 times of reporting they had *at least one time* been a victim of intimate partner violence by their significant other ($p < 0.05$). Additionally, in models one through five and the aggregate model, we consistently found that respondents who have indicated that they have friends that commit crimes have an increased odds of 1.4 to 1.8 times of reporting that they had *at least one time* been a victim of intimate partner violence by their significant other ($p < 0.05$). In models one, two, three, five, and the aggregate model, we consistently found that those respondents who have indicated that they were living with a partner have an increased odds of 1.3 to 1.8 times of reporting that they had *at least one time* been a victim of intimate partner violence by their significant other ($p < 0.05$).

Finally, in models one through five and the aggregate model, we found statistical significance for our theoretical self-control factor score for predicting respondent experiences of being victim to intimate partner violence ($p < 0.001$). More specifically, we found that respondents with higher self-control factor scores have an increased likelihood of reporting, 1.4 to 1.8 times odds, that they had *at least one time* been a victim of intimate partner violence by their significant other ($p < 0.001$).

In Table **9**, we conducted a series of logistic regression analyses on an aggregate outcome to examine the odds-ratio of predictor and control variables on respondents reporting being both a perpetrator and victim of intimate partner violence. We are interested in examining the magnitude and direction of the relationship of the self-control factor score and control variables to the outcome measuring respondents self-reporting being both a perpetrator and victim of intimate partner violence. We found that the logistic regression model is statistically significant for predicting both perpetration of violence and experiences of victimization in relationships ($p < 0.001$).

Table 9: Logistic Regression Test of Predictor and Control Variables on Individuals who Self-Reported being both a Perpetrator and Victim of Intimate Partner Violence

	Model 1: Have you ever been both a perpetrator and victim of intimate partner violence? At least one time = 1)
Variable (Groupings)	**Exp (B)**
Male	0.754***
Age	1.008†
Income	0.987
Living with partner	1.212**
Satisfied with housing situation	0.838**
Years in School	0.984
Victim of sexual abuse before age 18 (yes = 1)	1.641***
Drinks until intoxicated (yes = 1)	0.911†
Believes they have a drug problem (yes = 1)	1.096
Has friend who commit crime (yes = 1)	1.486***
Low self-control factor score	1.577***
-2 Log likelihood ratio	9568.04
Chi-square	492.795***

†p<0.10; *p<0.05; ** p<0.01; *** p<0.001.

We are interested in comparing the strength of our control variables when entering them into models. We found that respondents who indicated that they were male have a decreased odds of 0.8 times of reporting they had *at least one time* been both perpetrator and a victim of intimate partner violence ($p < 0.05$). We found that those respondents who have indicated that they were living with a partner have an increased odds of 1.2 times of reporting that they had *at least one time* been both perpetrator and a victim of intimate partner violence ($p < 0.05$). We found that those respondents who have indicated that they were satisfied with their living conditions have a decreased odds of 0.8 times of reporting that they had *at least one time* been both perpetrator and a victim of intimate partner violence ($p < 0.05$). We found that those respondents who have indicated that they were sexually abused before the

age of 18 have a increased odds of 1.6 times of reporting that they had *at least one time* been both perpetrator and a victim of intimate partner violence ($p < 0.05$). We found that those respondents who have indicated that they have friends who commit crimes have a increased odds of 1.5 times of reporting that they had *at least one time* been both perpetrator and a victim of intimate partner violence ($p < 0.05$).

Finally, we found statistical significance for our theoretical self-control factor score for predicting respondent experiences of being both a perpetrator and victim of intimate partner violence ($p < 0.001$). More specifically, we found that respondents with higher self-control factor scores have an increased likelihood of reporting, 1.6 times odds, that they had *at least one time* been both a perpetrator and victim of intimate partner violence ($p < 0.001$).

CONCLUSION

Discussion

Based on the results from this study, we found that there is a robust and persistent relationship between our measure of self-control and predicting self-reported perpetration of intimate partner violence. More specifically, we found that respondents with lower levels of self-control have statistically significant higher odds of perpetrating intimate partner violence. Also, the results from our study demonstrate that self-control levels are associated with victimization experiences in intimate partner relationships.

We found that respondents with lower levels of self-control have statistically significant higher odds of reporting experiences of victimization while in an intimate partner relationship. Furthermore, upon detailed analysis, we find that our measure of self-control is associated with the aggregate outcome variable that measures respondents' self-reported experiences of both perpetrating and being a victim of intimate partner violence. We found that respondents with lower levels of self-control have statistically significant higher odds of reporting both perpetrating and experiencing victimization in intimate partner relationships. These findings provide empirical evidence to support our hypotheses that low self-control predicts: (1) respondents' perpetration of intimate partner violence, (2) respondents' experiences of victimization in intimate partner relationships, and (3) respondents' being both perpetrators and victims in intimate partner relationships.

The findings from this study provide strong evidence in support of the propositions and assumptions outlined in Gottfredson and Hirschi's (1990) theory of low self-control. Gottfredson and Hirschi (1990) explained that low self-control can be used to both predict criminality and deviant behaviors. The theory of low self-control allows researchers to examine the behavioral and personality traits exhibited by the individual and how those traits consequently impact socialization and relationship dynamics in intimate partner relationships.

Although, we found strong evidence to support our hypotheses by examining the relationship between low self-control, perpetration of intimate partner violence, and experiences of victimization. Additionally, we found equally supportive evidence that several of the control variables inputted into our multivariate models were equally predictive of perpetration and victimization in intimate partner relationships. More specifically, we found that having a history of sexual abuse and having friends who engage in crime are similarly strong predictors as our low self-control measure. Widom and Wilson (2015) discuss how the theoretical perspective of intergenerational transmission of the cycle of violence should utilize a multi-disciplinary and integrated paradigmatic approach to understanding and conceptualizing violence and developing interventions for preventing and responding to violent behaviors. Widom and Wilson (2015) describe how frequently cited and tested theories of violence include: "social learning, attachment, social information processing, neurophysiological, and behavioral genetics."

Furthermore, Akers (1991) describes how an individual's peer-associations are a reflection of the characteristics and behavioral profiles of the individual. Therefore, we speculate that the control variables in our models that are associated with measuring history of sexual abuse and criminal friendships can be theoretically linked to Widom and Wilson's (1989) findings that an individual's exposure to violence early in life increases their probability of engaging in violence throughout the life course. The social learning component is further pronounced and evidenced by the fact that our models demonstrate that respondents who indicate having criminal friendships are statistically significantly more likely to indicate both being perpetrator and victim in intimate partner violence. Akers (1991) theory of social learning would allow us to speculate that individuals who are perpetrating or experiencing victimization in intimate partner violence have observed their friends, family, or close associates engage in identical threatening, aggressive, or violent

behaviors. Based on the process of social learning, we found evidence to support the arguments that the social environment and the psychosocial history of respondents who self-reported perpetration or victimization contributes largely to their behaviors and actions in intimate partner relationships.

Future Research

Based on our findings, we believe that future research on this topic should continue to focus on identifying latent constructs that are driving both perpetration of violence and victimization in intimate partner relationships. We believe that given the examination of our results regarding the predictability of both our theoretical constructs and our control variables on our predictor variables, that considerable theoretical and conceptual refinement of our models are needed to more effectively identify latent constructs driving both perpetration and victimization related to intimate partner violence.

We believe that understanding the conceptual and theoretical factors that are associated with violence and victimization in relationships is linked to identifiable and measurable biopsychosocial indicators. Appropriate interventions possibly could be developed or refined, if researchers can find a unidimensional latent construct for predicting intimate partner violence. Based on the results from our theoretical and control variables, we recommend that future researchers examine how aggressive personality characteristics and sexual history are linked to propensity for engaging in intimate partner relationship violence.

Furthermore, we believe that low self-control theory provides a criminological framework for understanding causal factors associated with domestic violence and experiences of victimization but may be limited in its explanatory power if examined in isolation. Additionally, the results from our study lead us to believe that criminal friendships impact both perpetration of violence and experiences of victimization in intimate partner relationships. Based on the results from this study, we believe that future research on intimate partner violence should examine whether there is an interaction effect between constructs of low self-control theory and social learning theory. Furthermore, future research may want to analyze whether social learning constructs have a moderating influence on the relationship between low self-control and perpetration of violence in intimate partner relationships. We speculate that the social learning construct has a direct or indirect effect on the relationship between low self-control and perpetration of violence in intimate partner relationships.

Limitations

The following control variables were not included in our multivariate models but remain important criminological and public health measures for studying respondent outcomes related to intimate partner violence: gang activity, family history of abuse, mental health history, psychiatric hospitalization history, juvenile and adult criminal history, sentence length, total arrest and convictions, and total number of incarcerations. Therefore, we believe that had these control variables been included in our analysis, they would be important characteristics for understanding the life history of respondents and that they may impact the magnitude and direction of our results regarding the effects of self-control on perpetration and victimization in intimate partner relationships. However, we decided to maintain a multivariate model structure that is based off of a single theoretical construct of low self-control and using control variables that are conceptually linked to the extant research literature.

Additionally, we did not impute missing data that was missing among our specified predictor, outcome, and control variables. We used step-wise deletion to remove cases, with missing data, from our analysis for our univariate, bivariate, and multivariate analyses. Although we observe limitations associated with having missing data, we remain confident that our case-control design method will allow us to generate valid, reliable, and interpretable results for measuring the direction and magnitude of the effect that the relationship between our low self-control construct and the perpetration of violence and experiences of victimization in our examination of intimate partner relationships using available data.

Finally, we observed a significant gender imbalance with males being 29.9 percent of the sample and females being 70.1 percent of the sample. We believe that the gender imbalance in our sample group may impact the directionality and magnitude of the effect between low self-control and predicting perpetration and victimization of low self-control. However, we attempt to limit the effects of the gender imbalance in the interpretation of our results by including gender as a control variable in our multivariate models. By including gender in our multivariate models, we are able to compare its effects to low self-control, which

allows us to adjust our theoretical interpretation of the results. We find that being male is a moderate predictor of perpetration and victimization, but not nearly as consistently robust as our low self-control construct.

Ethical Considerations

The Institutional Review Board at California State University, Stanislaus designates this study as exempt from review because this study uses secondary data that is publicly available from the Inter-university Consortium for Political and Social Research. All identifying information of research participants in this study is unavailable or deidentified in the publicly available datasets (Straus, 2011).

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