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THE INFLUENCE OF NEIGHBORHOOD CHARACTERISTICS, PEER

DELINQUENCY, AND ATTITUDES APPROVING OF VIOLENCE

DURING ADOLESCENCE ON MALE-TO-FEMALE INTIMATE

PARTNER VIOLENCE PERPETRATION IN YOUNG ADULTHOOD

By

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And approved by

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ABSTRACT OF THE DISSERTATION

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Dissertation Director:
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Intimate partner violence (IPV) is a serious crime and public health problem in the United States. Past research on neighborhood-, peer-, and individual-level predictors of IPV have been cross-sectional, and few studies have investigated all three predictors in one mediation model. Even fewer studies have been longitudinal or have examined associations separately by race. Using data from the Pittsburgh Youth Study, the purpose of this dissertation was to address these gaps in the literature. This dissertation examined the indirect effects of neighborhood disorder and the intervening mechanisms of attitudes approving of violence and peer delinquency on male-to-female physical IPV perpetration from adolescence into young adulthood. The analyses were run separately for Blacks and Whites.

The findings showed that neighborhood disorder was not associated with any variables of interest for either Black or White respondents. Among perpetrators of physical IPV, greater neighborhood disorder was associated with more approving attitudes of violence for the White sample only. Due to the lack of statistically significant correlations among the variables included in the model, the hypothesized model was not tested. Two exploratory models examined whether peer delinquency mediated the

relationship between attitudes approving of violence and IPV perpetration for the White sample. The exploratory models were not tested for the Black sample because no statistically significant relationships had been found. The results of both exploratory analyses indicated that for White adolescents, attitudes that were more accepting of violence were associated with having more delinquent peers, and in turn, the association with delinquent peers was related to higher levels of IPV perpetration in young adulthood. The strength of the indirect effect of attitudes on IPV perpetration was stronger in the model that examined attitudes approving of violence and peer delinquency at the same point in time (mean of ages 16 and 17) than in the model that examined attitudes approving of violence at mean age 16 and peer delinquency at mean age 17. These results highlight a need to provide IPV-prevention strategies that target attitudes toward violence and associations with delinquent peers during adolescence.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

Male-to-female intimate partner violence (IPV) affects many women nationwide. According to the Centers for Disease Control (CDC; Black et al., 2011), more than 1 in 3 women (35.6%) in the United States have experienced IPV in their lifetime. About 1 in 4 women (24.3%) have experienced physical violence (e.g., hit with a fist or something hard, beaten, slammed against something) by an intimate partner in their lifetime. The CDC (2009) broadly defines *IPV* as abuse that occurs along a continuum, ranging from a single episode of violence to frequent, ongoing violence. Arias and Corso (2005) focused on the types of actions associated with IPV. For example, they defined IPV as the use of actual or threatened physical, sexual, or psychological violence by a current or former intimate partner (e.g., spouse, boyfriend, or girlfriend). Director and Linden (2004) highlighted the motivation behind the perpetration of IPV. According to them, IPV is part of a pattern of coercive behavior that an individual uses to establish and maintain power and control over their intimate partner. Although these three definitions varied in their focus and description of IPV, together they give a comprehensive view of the phenomenon.

Arias and Corso's (2005) definition of IPV includes three types of IPV abuse: physical, sexual, and psychological. *Physical abuse* refers to hurting or attempting to hurt a partner by hitting, kicking, burning, or using another type of physical force. *Sexual abuse* refers to a sexual act that is perpetrated against someone's will and can include unwanted sexual contact, rape, or the threat of sexual violence. *Psychological abuse* can

include isolating a victim, humiliating her, or threatening her physical or psychological health (Black et al., 2011). All of these actions can now be perpetrated through new technologies such as text messaging, emails, and monitoring devices. Furthermore, Black et al.'s (2011) definition included stalking; name-calling; intimidation; attacks on possessions, loved ones, or self-esteem; and isolation of the partner from family or friends.

Research has found that men who perpetrate IPV are likely to commit multiple types of IPV perpetration. For example, Basile and Hall (2010) conducted a cross-sectional study of 340 adult men from an urban Texas corrections department who had been arrested for physical assault of a female intimate partner. The researchers investigated the co-occurrence of male physical violence, sexual violence, psychological abuse, and stalking toward their female partners. Approximately 97% of the sample reported that they had perpetrated all four types of violence.

The research above shows that IPV is a complex, multidimensional issue. There are different types of abuse, potential perpetrators, time frames, and outcomes. It is known that IPV is perpetuated against many women. Therefore, more research is warranted on male-to-female IPV to determine predictors that can inform evidence-based prevention programs.

The Purpose of This Study

In this dissertation, male-to-female physical IPV was prospectively predicted with variables that occurred during the respondents' adolescence. These variables included neighborhood disorder, attitudes approving of violence, and peer delinquency. Akers's social learning theory was used to guide the investigation. This study extended previous

research on predictors of IPV perpetration by examining adolescent predictors in a high-risk sample of young men who were prospectively followed from childhood to young adulthood. In addition, by using a longitudinal design, this study examined the temporal order between the identified risk factors and male-to-female physical IPV perpetration. Moreover, Blacks and Whites were examined separately to determine if neighborhood-, peer-, and individual-level factors affected the two groups differently. This information is important because it can inform culturally sensitive prevention programs.

Overview of Research Area

Both men and women can be perpetrators and victims of IPV. However, women are more likely to be injured by male partners than men are to be injured by female partners (Catalano, Smith, Snyder, & Rand, 2009). Women are more likely than men to seek out emergency care due to injuries from opposite-sex partners (Biroscak, 2006; Schafer, Drach, Hedberg, & Kohn, 2008). Furthermore, women are more likely than men to be killed by their partners. In 2007, the Bureau of Justice Statistics reported that 36% of female homicides were committed by an intimate partner, compared to 2% of male homicides. For all of these reasons, the individual and societal consequences and costs seem to be greater for male-perpetrated IPV (Arias & Corso, 2005).

The experience of IPV can result in negative physical and psychological consequences for victims. Many victims suffer physical injuries, including cuts, scratches, and bruises. Other injuries are more serious and can lead to lasting disabilities such as broken bones, internal bleeding, and head trauma (CDC, 2009). In addition, negative health outcomes such as chronic pain, gastrointestinal difficulties, and gynecological problems can result from IPV (Campbell, 2002). Although physical issues

tend to be more apparent, one cannot ignore the psychological impact. Research has found that women who are survivors of IPV are more likely than women with no history of IPV victimization to have higher rates of depression, substance abuse, mental illness (Coker et al., 2002; Vostanis, Tischler, Cumella, & Bellerby, 2001), and poorer social functioning (Bonomi et al., 2006).

The financial costs of IPV are also high. Survivors often need medical, spiritual, legal, financial, and psychological assistance (Olsen, Parra, & Bennett, 2010). According to Gerberding, Binder, Hammond, and Arias (2003), federal and state governments spend 5.8 billion dollars each year to provide medical treatment for rape, physical assault, stalking, an homicide committed by the intimate partners. Using data from the 1995 National Violence against Women Survey and the 1995 Medical Expenditure Panel Survey, Max, Rice, Finkelstein, Bardwell, and Leadbetter (2004) estimated that male-to-female IPV costs society 8.3 billion dollars each year in medical services, mental health treatment, and loss of productivity from injuries.

Despite the large financial costs, these numbers do not fully account for the indirect effects on those who witness IPV in their homes. Research has established that youth exposed to IPV in childhood, such as interparental violence, are at higher risk for being involved in dating violence (Lichter & McCloskey, 2004) as well as violent intimate relationships in adulthood (Gover, Kaukinen, & Fox, 2008; Kennedy, 2008; Murrell, Christoff, & Henning, 2007; Whitfield, Anda, Dube, & Felitti, 2003). In addition, adolescents exposed to interparental IPV are at an increased risk for developing emotional and behavioral problems that affect them throughout their lives (Holt, Buckley, & Whelan, 2008). These findings show that IPV has a significant impact on those

beyond the couple where IPV is occurring. These far-reaching impacts of IPV justify further investigation of male-to-female IPV perpetration to inform evidenced-based prevention programs.

This dissertation focused on male-to-female physical IPV perpetration in young adulthood. Research has found higher rates of IPV during young adulthood than other periods in the life course. For example, using data from the 2000 National Household Survey on Drug Abuse (NHSDA; $n = 8,590$), Cunradi (2007) found that 1.3% of men ages 35 years and older reported mutual IPV, that is, IPV perpetrated by both partners, whereas 6.7% of men ages 18–25 reported mutual IPV.

Although IPV perpetration seems to occur at higher rates during young adulthood than later in the life course, rates of young-adult IPV perpetration have varied across studies. For example, Whitaker, Le, and Niolon (2010) used data from Wave 3 (collected in 2001) of the National Longitudinal Study on Adolescent Health (Add Health) to study IPV perpetration in young adulthood among 6,446 young adults (mean age = 21.8). They found, for men and women, that 18.1% perpetrated IPV in their first intimate relationship in young adulthood. Jain, Buka, Subramanian, and Molnar (2010) used data from Wave 3 (collected in 2002) of the Project on Human Development in Chicago Neighborhoods (PHDCN; $n = 633$). They found that 19% of males reported perpetrating IPV in young adulthood (mean age = 21). Using the Oregon Youth Study, Capaldi, Dishion, and Stoolmiller (2001) found that 45% of male respondents (mean age = 21.3) who completed the couples' assessment reported physical aggression toward their partner.

The prevalence of IPV ranged from 18.1% to 45% in the aforementioned studies (Capaldi et al., 2001; Jain et al., 2010; Whitaker et al., 2010). The differences in

prevalence rates across these three studies may be attributed to how IPV was measured. Whitaker et al. (2010) asked respondents two questions about physical aggression in the preceding year. The questions addressed whether respondents had (a) threatened, pushed, shoved, or thrown something at their partner and (b) slapped, hit, or kicked their partner. Jain et al. (2010) measured physical dating violence using seven items from the Revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996), which included whether the respondent had (a) shoved or pushed, (b) thrown something at, (c) slapped, (d) kicked, (e) slammed against a wall, (f) punched or hit with something hard that could hurt, or (g) used a knife or gun against his significant other. Capaldi et al. (2001) measured physical IPV perpetration by asking respondents four questions:

1. "When you have a disagreement, how often did you push, grab, shove, slap, or hit your partner?"

2. "Do you sometimes hurt your partner (hit her or twist her arm)?"

3. "In the past year, how often did you throw something at your partner?"

4. "How many times have you physically hurt your partner?"

Another difference that may have caused variation in prevalence rates is that Whitaker et al.'s (2010) study was nationally representative, whereas Jain et al.'s (2010) and Capaldi et al.'s (2001) studies were not. Furthermore, Capaldi et al. (2001) recruited their sample from schools with high incidences of delinquency, which could account for the higher IPV rate compared to other studies. Finally, the aforementioned studies also examined different age groups, which are described below.

Research that has focused on IPV perpetration and victimization in young adulthood has used a variety of age ranges for this time period, including 18–25 (Cunradi,

2007; Jain et al., 2010), 18–26 (Whitaker et al., 2010), and 19–23 (Capaldi et al., 2001). For the present study, young adulthood was defined as the time period from 18 to 25 years old. This age range was logical because it was the time period at which male-to-female physical IPV perpetration was measured in the Pittsburgh Youth Study (PYS), the data set used for this study. Additionally, this same age range was used to define young adulthood in previous investigations of young-adult IPV perpetration (Cunradi, 2007; Jain et al., 2010).

Study Focus

This study used Akers's (1973) social learning theory as a framework for examining adolescent predictors of young-adult, male-to-female physical IPV perpetration. In his theory, Akers described how adolescent predictors, such as neighborhood disorder, peer delinquency, and attitudes toward deviant behavior impact deviant outcomes. This study examined these concepts to understand their impact on young-adult, male-to-female physical IPV perpetration.

Over the last decade, researchers have given increased attention to neighborhood effects on IPV perpetration (Cunradi, 2007; Koenig, Stephenson, Ahmed, Jejeebhoy, & Campbell, 2006; Miles-Doan, 1998; Raghavan, Mennerich, Sexton, & James, 2006; Van Wyk, Benson, Fox, & DeMaris, 2003; Wright, 2008). Using data from Wave 2 (collected in 1994) of the National Survey of Families and Households and from the 1990 U.S. Census, Van Wyk et al. (2003) found that rates of male-to-female IPV perpetration were twice as high in highly disadvantaged neighborhoods than in neighborhoods with less disadvantage. Furthermore, researchers have increasingly recognized that disadvantaged neighborhoods characterized by vacant housing units, presence of community violence,

and social disorder increase the likelihood of male-to-female IPV perpetration (Benson, Wooldredge, Thistlethwaite, & Fox, 2004; Boyle & Hassett-Walker, 2008; Browning, 2008; Caetano, Cunradi, Schafer, & Clark, 2000).

In the last 10 years, emerging research has shown that having delinquent peers in adolescence impacts the likelihood of IPV perpetration in young adulthood (Casey & Beadnell, 2010; Linder & Collines, 2005). For example, Casey and Beadnell (2010) found that, compared to adolescent males with fewer delinquent peers, adolescent males (mean age = 16) with more delinquent peers reported higher rates of IPV in young adulthood (mean age = 21.9). Similarly, Linder and Collines (2005) found that adolescents (mean age = 16) with high-quality relationships and prosocial peers reported lower levels of IPV perpetration in young adulthood (mean age = 23) than did their peers without high-quality relationships and prosocial peers.

There is also empirical research to support an association between attitudes approving of violence and IPV perpetration. Among samples comprising male and female high school students, a number of studies have found that attitudes justifying aggression toward the opposite sex (O'Keefe, 1997), acceptance of dating violence (Williams, Connolly, Pepler, Craig, & Laporte, 2008), and approval of violence (Malik, Sorenson, & Aneshensel, 1997) were associated with dating-violence perpetration in high school. Among a sample of male college students, negative attitudes toward women and attitudes justifying IPV were found to have a direct effect on men's use of violence in intimate relationships (Reitzel-Jaffe & Wolfe, 2001). Although the aforementioned studies varied in the type of attitudes toward violence they measured, all found a significant positive association between attitudes favoring violence and IPV perpetration.

In sum, the literature suggests that neighborhood characteristics, peer delinquency, and attitudes approving of violence are associated with IPV perpetration. However, to date, the studies on links between IPV and these factors have been cross-sectional analyses. It is still uncertain how neighborhood disorder during adolescence affects IPV perpetration in young adulthood. Similarly, it is not clear whether adolescent attitudes approving of violence affect IPV perpetration among young adults. Moreover, it is important to examine what factors may increase the likelihood of male-to-female IPV perpetration among young adults (Gupta et al., 2008). It is important to follow individuals from adolescence to adulthood to delineate the pathways through which adolescent community contexts, early socialization, and attitudes exert long-term effects on adult outcomes (Wickrama & Noh, 2010). By understanding these pathways, steps can be taken to develop effective prevention efforts that target adolescents at risk for young adult IPV perpetration (Olsen et al., 2010).

This dissertation was the first empirical investigation, to my knowledge, in which impressions of neighborhood disorder, attitudes approving of violence, peer delinquency, and male-to-female physical IPV perpetration were studied in one theoretically driven model. In addition, the study was longitudinal, which allowed for an examination of the long-term effects of the identified adolescent predictors of IPV perpetration in young adulthood, an area with limited empirical research. Furthermore, this study examined Blacks and Whites separately, which allowed the analysis to identify culturally sensitive implications for social work practice, policy, and research.

Overview of the Chapters

Chapter 2 discusses the theoretical rationale for the problem and theorized mechanisms by which components of Akers's (1973) social learning theory (i.e., neighborhood characteristics, attitudes approving of violence, and peer delinquency) affect male-to-female physical IPV perpetration. Chapter 3 provides a detailed review of the literature. Chapter 4 details the methodological procedures that were used in this study. Specifically, a description of the data set, design, and procedures are given. All independent and dependent variables and their measures are also described, as are descriptions of item responses for all variables of interest. Chapter 5 provides the results of path analyses of the effects of the variables of interest on male-to-female physical IPV perpetration. Chapter 6 discusses the findings of the study, the limitations of the study, suggestions for future research on IPV perpetration, and implications for social work practice and policy.

CHAPTER 2

THEORETICAL RATIONALE

Introduction to Social Learning Theory

Social learning theory has been used to refer to a number of social science approaches that focus on social influences on behavior. Social learning theory is based primarily on the work of Bandura (1973, 1977). As a general perspective, social learning theory emphasizes the reciprocal interaction between environmental factors, behavior, and cognition. In the field of criminology, social learning theory primarily refers to the work of Akers (Sellers, Cochran, & Winfree, 2007). Akers's social learning theory was used to guide this dissertation.

Assumption of Akers's Social Learning Theory

Akers's (1973) social learning theory offers an explanation of deviance that includes predictors that motivate deviant behavior. The theory incorporates sociological and psychological processes into an explanation of crime. The basic assumption of the theory is that the learning process, which takes place in a context of social structure and interaction, can result in deviant behavior. For example, according to Akers (1998), the likelihood of deviant behavior increases when individuals associate with others who commit deviant behavior. In the context of deviant peer groups, group members find justification and desirability associated with deviant behaviors. In such groups, people perceive that there is a greater reward than punishment for deviant behavior, and therefore they are more likely to commit deviant acts.

Key Concepts

Akers's social learning theory has five elements: differential association, definitions, differential reinforcement, imitation, and sociostructural factors. *Differential association* refers to the attitudes and patterns of behavior that people are exposed to through their interactions with others. The impact of this exposure may vary according to the frequency, duration, and intensity of one's affiliation with others. In terms of IPV perpetration, social learning theory predicts higher IPV perpetration among those who have close peer associations with people who engage in deviant behaviors. In this dissertation, differential association was conceptualized as an affiliation with individuals who engage in delinquent behaviors, referred to as peer delinquency. *Definitions* refer to the attitudes or level of approval that individuals have regarding general morals and laws and specific delinquent behavior. In terms of IPV perpetration, the theory predicts that the more individuals endorse and internalize attitudes approving of violence, the more likely they are to perpetrate violence against an intimate partner. In this dissertation, the term *definitions* was conceptualized as attitudes approving of violence.

Differential reinforcement refers to the balance of anticipated or actual rewards and punishments that are a consequence of the behavior commonly provided by peer groups or differential association. The probability that individuals will engage in deviant behaviors depends on the past, present, and anticipated future rewards and punishments for their actions. The probability that an act will be committed or repeated is increased by rewarding outcomes or reactions, also known as positive reinforcement. Differential reinforcement was not able to be tested in this study because the data set did not include a measure for the concept.

Imitation, which has also been referred to as modeling and observational learning (White, Bates, & Johnson, 1990, 1991), is the acting out of behavior observed in others. Bandura (1977) differentiated between short-term copying of a significant other's or model's behavior (i.e., imitation) and long-term acquirement of behaviors (i.e., observational learning). Whether a modeled behavior will be imitated is based on the consequences seen from the act (differential reinforcement) as well as the significance or strength of the relationship between the observer and modeler. For example, if a peer-group member commits a deviant act but suffers no negative consequences, it is more likely that observers of the deviant behavior will act similarly or will have positive definitions of the behavior. In this study, imitation of IPV was not tested in the model because no measure of respondents' exposure to male-to-female physical IPV perpetration was available in the data at hand.

The final element of social learning theory is *sociostructural factors*. Akers (1998) argued that criminogenic conditions of environments provide contexts for individuals that increase or decrease their likelihood of committing crime. Examples of sociostructural factors are neighborhood characteristics such as poverty and disorder. Neighborhoods with more poverty and disorder provide socialization and learning environments conducive to deviance. Such neighborhoods can heighten exposure to criminal associations, models, definitions, and reinforcement, all of which increase an individual's likelihood of committing a criminal or deviant act. Therefore, sociostructural factors have an indirect effect on individuals' behaviors in that they affect differential association, differential reinforcement, definitions, and imitation. Sociostructural factors are indicators of primary, distal, macrolevel causes of crime,

whereas differential association, differential reinforcement, definitions, and imitation reflect primary proximal causes of criminal behavior that mediate the relationship between neighborhood characteristics and deviant outcomes (Akers, 2009). In this dissertation, a sociostructural factor was conceptualized as neighborhood disorder.

In sum, social learning theory proposes that IPV perpetration is more likely among people who hold definitions approving of violence, associate with others who engage in delinquent behavior, and live in neighborhoods with a high level of neighborhood disorder. According to Akers (1998), a sociostructural factor is predicted to indirectly affect male-to-female IPV perpetration through differential association and definitions. In other words, neighborhoods with high levels of disorder provide more exposure to delinquent behavior and encourage approving attitudes toward violence, both of which could increase the likelihood of young-adult IPV perpetration.

In this dissertation, these concepts from Akers's social learning theory were used to determine the variables in the hypothesized model of male-to-female physical IPV perpetration. Specifically, Akers's operationalized the concept of *differential association* as peer delinquency, the concept of *definitions* as attitudes approving of violence, and the concept of *sociostructural factors* as neighborhood disorder.

Based on Akers's theory, neighborhood disorder was predicted to indirectly affect male-to-female physical IPV perpetration through peer delinquency and attitudes approving of violence. Therefore, this dissertation tested if peer delinquency and attitudes approving of violence mediated the relationship between neighborhood disorder and male-to-female physical IPV perpetration. The hypothesized conceptual model is presented in Figure 2.1.
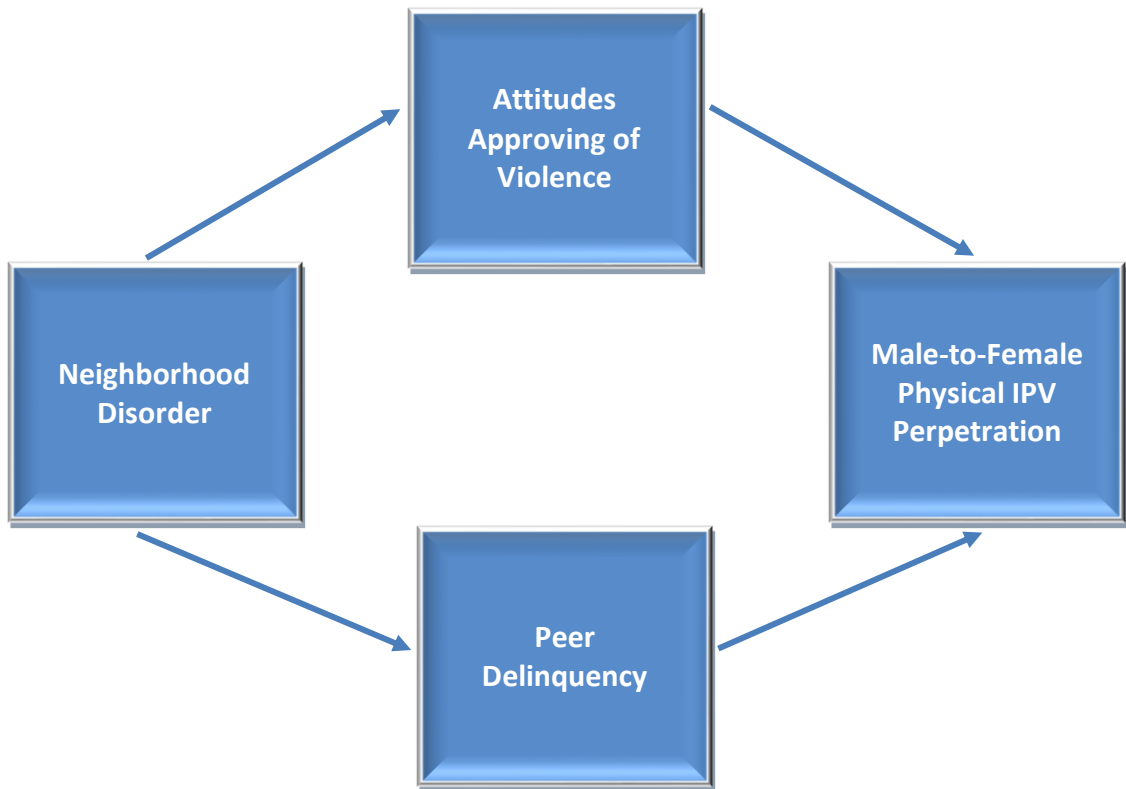
Figure 2.1. Conceptual model. Both peer delinquency and attitudes approving of violence were expected to mediate the relationship between neighborhood disorder and male-to-female physical IPV perpetration. Although control variables were included in the analysis, for simplicity they were not included in the delineation of this model.

Research Questions

Eight research questions and corresponding hypotheses were developed based on Akers's social learning theory.

1. What is the relationship between neighborhood disorder and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual socioeconomic status (SES)?

2. What is the relationship between neighborhood disorder and attitudes approving of violence?

3. What is the relationship between neighborhood disorder and peer delinquency?

4. What is the relationship between attitudes approving of violence and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES?

5. What is the relationship between peer delinquency and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES?

6. Do attitudes approving of violence mediate the relationship between neighborhood disorder and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES?

7. Does peer delinquency mediate the relationship between neighborhood disorder and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES?

8. Will the hypothesized model vary by racial group?

Hypotheses

1. There will be an association between neighborhood disorder and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES.

2. There will be an association between neighborhood disorder and attitudes approving of violence.

3. There will be an association between neighborhood disorder and peer delinquency.

4. There will be an association between attitudes approving of violence and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES.

5. There will be an association between peer delinquency and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES.

6. Attitudes approving of violence will mediate the relationship between neighborhood disorder and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES.

7. Peer delinquency will mediate the relationship between neighborhood disorder and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES.

8. The hypothesized model will not vary by racial group.

In his social learning theory, Akers did not address whether the concepts (e.g., sociostructural factors, definitions, and differential association) affected racial or ethnic groups differently. Therefore, it is hypothesized that the social learning process and the hypothesized model would fit equally well for Whites and Blacks.

Application of Akers's Social Learning Theory to IPV Perpetration

Most studies based on Akers's social learning theory have been in the areas of criminology and drug use (Sellers et al., 2007; White et al., 1990). However, some studies have used social learning theory to guide their research on IPV perpetration and victimization. For example, several scholars have used the theory to investigate the

effects of experiencing or witnessing violence at home as a child on IPV perpetration and victimization in adulthood (Chen & White, 2004; Kerley, Xu, Sirisunyaluck, & Alley, 2010; Wareham, Boots, & Chavez, 2009; White & Chen, 2002). In addition, Sellers et al. (2007) investigated the effects of differential association, differential reinforcement, definitions, and imitation on IPV perpetration and victimization. These studies are reviewed below.

Kerley et al. (2010) studied the intergenerational transmission of IPV victimization in a sample of 816 married women in Bangkok, Thailand. They tested whether childhood exposure to violence in the family of origin was related to IPV victimization during adulthood. The sample was randomly selected by a multistage probability cluster sampling method. Face-to-face interviews were conducted by 10 trained interviewers. IPV victimization was measured using items from the Conflict Tactics Scale (CTS; Straus, 1979). The items measured the frequency of psychological and physical abuse and included (a) my partner called me fat or ugly, (b) my partner destroyed something of mine, (c) my partner swore at me, (d) my partner shouted at me, (e) my partner stomped out of the room during a disagreement, (f) my partner accused me of being a lousy lover, and (g) my partner threatened to hit me or throw something at me. The IPV-victimization measure was dichotomized into any abuse versus no abuse committed by husbands against their wives (as reported by wives).

Kerley et al. (2010) found that the respondents who had experienced violence as a child were more likely to be a victim of IPV in adulthood. The researchers suggested that their findings supported a social-learning explanation of IPV in that children who are exposed to family violence learn attitudes and behaviors that are repeated in their familial

relationships as adults. Their study was cross-sectional, and data on childhood exposure to family violence were collected retrospectively. Furthermore, data were collected from female partners about the IPV behavior of their male partners. For these reasons, the accuracy of the information is unknown. Also, data were collected in face-to-face interviews, and it is unclear to what extent social desirability affected respondents' answers. Finally, this information was based on a Thai sample of women, so the results cannot be generalized to non-Thai individuals.

Wareham et al. (2009) also used social learning theory to guide their work on intergenerational transmission of family violence. Their sample consisted of 204 male domestic violence offenders in a court-ordered domestic violence program in Florida. They investigated corporal punishment in childhood and male-to-female physical IPV perpetration in adulthood. Their study was cross-sectional, and data on childhood abuse were collected retrospectively. IPV-perpetration data were based on self-reports. Respondents were asked to indicate how often they had ever done seven different actions to an intimate partner: (a) shook them; (b) threatened to hit or throw something at them; (c) slapped them; (d) beat them up; (e) hit or tried to hit them with something; (f) kicked, bit, or hit them with a fist; or (g) choked them. IPV was dichotomized into any abuse versus no abuse. The researchers found that experiencing frequent corporal punishment during childhood was associated with reports of physical IPV perpetration in adulthood, and they suggested that social learning theory offered an explanation for these findings. Specifically, Wareham et al. argued that the respondents who had been exposed to violent, abusive situations within the home as children were more likely to perpetrate IPV

because they had observed violent behaviors, internalized attitudes toward violence, and imitated the behaviors of role models.

White and Chen (2002) and Chen and White (2004) studied the effects of exposure to childhood family violence on later IPV perpetration and victimization. First, White and Chen (2002) studied the effects of witnessing parental violence on IPV perpetration. They used five waves of data (spanning 1979–1981 to 1999–2000) from the Rutgers Health and Human Development Project, a prospective and longitudinal data set. The sample consisted of 325 men and 400 women. Data on witnessing parental violence were collected between ages 12 and 18. The study measured IPV from age 28 to 31 using a 3-item subscale from the CTS (Straus,1979) that asked about the frequencies of (a) hitting, shoving, or throwing objects at a partner; (b) threatening a partner with a weapon; and (c) cutting, bruising, or seriously injuring a partner over the previous 12 months. White and Chen found that witnessing parental IPV predicted subsequent adult IPV perpetration among men but not among women.

Using the same data set, sample, and measure of IPV, Chen and White (2004) investigated the effects of childhood physical abuse on subsequent adult IPV perpetration and victimization. Childhood physical abuse was measured by the respondents' reports of being beaten by their parents. The variable was dichotomized (any abuse vs. no abuse). They found that childhood physical abuse predicted IPV victimization for women but not for men.

Overall, White and Chen's (2002) and Chen and White's (2004) studies showed support for social learning theory. However, the findings differed for men and women. For instance, childhood physical abuse was a predictor for adult IPV female

victimization, and witnessing parental IPV was a predictor for adult male IPV perpetration. One limitation of social learning theory is that it does not address gender differences. Furthermore, the studies had strengths in that data on childhood family violence were collected prospectively, which limited recollection bias. One major limitation of the White and Chen (2002) and Chen and White (2004) studies was that the samples were mostly White, which limited the generalizability of the findings to other racial or ethnic groups. Furthermore, only three items were used to measure IPV perpetration. The authors noted that it is unlikely that these three items captured the diversity of respondents' physical IPV behaviors.

None of the studies above tested the concepts of differential association, definitions, or sociostructural factors. Instead, they focused on experiencing violence in the home, either through a history of childhood abuse or witnessing parental IPV. Nevertheless, it is evident that social learning theory has been used to guide other work on childhood and adolescent predictors of later IPV perpetration. Below, I review a study by Sellers et al. (2007), which tested the theoretical concepts used in the present study.

Sellers et al.'s (2007) study provided empirical support for Akers's social learning theory as an explanation for IPV victimization and perpetration in dating relationships among university students. The researchers collected cross-sectional data from 1,228 male and female undergraduate and graduate students attending a large urban university. Respondents were either currently or recently in a relationship. The CTS (Straus, 1979) was used to measure IPV perpetration and victimization. Respondents were asked to indicate how many times during a current or recent committed dating relationship they had (a) thrown something at their partner; (b) pushed, grabbed, or shoved their partner;

(c) slapped their partner; (d) kicked, bit, or hit their partner; (e) hit their partner with something; (f) beat up their partner; (g) threatened their partner with a knife or gun; or (h) used a knife or gun against their partner. This measure was dichotomized (any vs. no physical IPV abuse). Sellers et al. measured four components of social learning theory: imitation, definitions, differential reinforcement, and differential association. Imitation was measured by the number of admired models that the respondents observed perpetrating IPV. Definitions were measured by attitudes toward IPV. Differential reinforcement was measured by anticipated costs and benefits of IPV. Differential association was measured by how many of their friends had ever used physical violence. Sellers et al. found that imitation, differential reinforcement, and differential association were significant predictors of IPV. They also found that delinquent peer association was the strongest predictor of IPV. The researchers noted that this was a significant finding because, unlike other deviant behaviors (e.g., smoking and alcohol use), which tend to occur with peers present, IPV usually occurs in private settings. Nevertheless, peers were still found to play an important role in IPV perpetration. Attitudes toward IPV did not influence IPV victimization or perpetration. The authors reported that these findings contradicted the previous literature, perhaps due to a social-desirability phenomenon on the college campus.

The study by Sellers et al. (2007) consisted of mostly White university students; therefore, their findings are not generalizable to other groups of people. Furthermore, their study did not examine the indirect effects of a sociostructural factor (i.e., neighborhood disorder) on IPV perpetration. Similar to Sellers et al.'s (2007) study, this dissertation was guided by Akers's social learning theory, and the concepts of differential

association and definitions were included in the model. This dissertation extended the research in this area by including a sociostructural factor in its model.

Major Criticism of Akers's Social Learning Theory

One of the major criticisms of social learning theory has to do with the temporal sequence of delinquent peer associations and delinquent behavior. It is difficult to determine if individuals with delinquent behavior choose delinquent peers (i.e., selection; Gordon et al., 2004; Haynie & Osgood, 2005), if affiliation with delinquent peers encourages adolescents to engage in delinquent behaviors (i.e., socialization; Heinze, Toro, & Urberg, 2004; Monahan et al., 2009), or both (Bauman & Ennett, 1994). Research has found that engaging in delinquent behavior and having delinquent peers go hand in hand (Monahan et al., 2009).

According to Akers and Sellers (2009), it would not contradict social learning theory if research demonstrated that the onset of delinquency or attitudes approving of delinquency predated interaction with peers who engaged in delinquent acts. For Akers and Sellers, a contradictory finding would be if empirical evidence showed that once associating with delinquent peers, a previously delinquent individual stopped or decreased delinquent behavior. However, up to this point, studies have not provided empirical evidence for this. Other criticisms include that the theory ignores biological influences and does not factor free will into its model (Sutherland, 1974). Furthermore, social learning theory does not consider how gender, ethnic, or cultural differences might affect behavior outcomes.

Scholars have also criticized how social learning theory has been applied to IPV perpetration. One major criticism is that although elements of social learning theory may

have an effect on IPV perpetration, the theory is not sufficient to explain this behavior. Social learning theory is valuable because it provides one explanation for how violence is learned, but it fails to consider other factors, such as the situation or context in which the abuse occurs and personality traits that may contribute to an individual's propensity to use physical aggression toward an intimate partner (Poullard, 2009).

In sum, Akers's social learning theory has been used in the past to guide research on IPV perpetration. Multiple studies have shown that elements of social learning theory affect IPV perpetration. However, to my knowledge, no study has investigated the indirect influences of sociostructural factors on IPV through differential association or definitions using social learning theory, despite the theory's claims in this regard. Therefore, this study extended the existing research by examining the indirect effects of one sociostructural factor—neighborhood disorder—on young-adult, male-to-female physical IPV perpetration through peer delinquency and attitudes approving of violence.

CHAPTER 3

REVIEW OF THE LITERATURE

Predictors of Male-to-Female Physical IPV Perpetration

This chapter reviews the literature on male-to-female IPV. Specifically, neighborhood-, peer-, and individual-level predictors (i.e., neighborhood disorder, peer delinquency, and attitudes approving of violence, respectively) are discussed. Correlates of male-to-female physical IPV perpetration, including history of physical or sexual abuse, alcohol use, and SES, are also discussed. In addition, racial differences and peer selection and socialization are discussed. Finally, studies that used the PYS (the data set employed in this study) to investigate male-to-female physical IPV perpetration, neighborhood disorder, attitudes approving of violence, and peer delinquency are reviewed.

Neighborhood Predictors of Male-to-Female Physical IPV Perpetration

Scholars have often used Census data to measure neighborhood SES. Some common SES indicators are the percentages of residents in the neighborhood who are unemployed, Black, under age 18, receiving public assistance, living below the poverty line, and living in female-headed households (Sampson & Raudenbush, 1999; Wright, 2008). Investigations of neighborhood economic disadvantage using Census data have consistently found higher rates of male perpetration of IPV in neighborhoods with lower SES (Benson, Fox, DeMaris, & Van Wyk, 2003; Browning, 2002; Lauritsen, 2001; Lauritsen & White, 2001; Wright, 2008). Respondents' and researchers' impressions of neighborhood disorder have been used to measure neighborhood effects on deviant behavior such as crime and IPV (Benson et al., 2003; Browning, 2002; Haynie, Silver, &

Teasdale, 2006). Although Census data are useful, impressions of neighborhood

disorder, particularly physical and social disorder, allow for a measure of individuals'

personal experiences with their neighborhoods, which may give a richer understanding of

the environment and the influence it has on IPV perpetration. Therefore, respondents'

impressions of neighborhood conditions offer a viable alternative to Census data in

measuring neighborhood-level characteristics (Elo, Mykyta, Margolis, & Culhane, 2009).

Impressions of neighborhood disorder are the variable of interest in the present study.

Sampson and Raudenbush (1999) conducted one of the first studies to investigate

impressions of neighborhood disorder and crime. They defined *physical disorder* as the

deterioration of urban landscapes, such as graffiti on buildings and abandoned cars. They

defined *social disorder* as behavior involving strangers and considered threatening, such

as verbal harassment on the street or open solicitation of prostitution. Sampson and

Raudenbush found that neighborhood disorder was significantly associated with robbery.

Sampson and Raudenbush's study did not investigate IPV, but their study is pertinent

because, like robbery, IPV is a violent crime. Moreover, researchers who have examined

the effects of neighborhood disorder on IPV perpetration and victimization (e.g., Cunradi,

2007, 2009; Wright, 2008) have based their measure of neighborhood disorder on the

work of Sampson and Raudenbush. Therefore, Sampson and Raudenbush's study has

had a significant influence on the measurement of neighborhood disorder in studies on

IPV perpetration and victimization.

Sampson and Raudenbush (1999) used data from the first Wave of the PHDCN to

examine neighborhood disorder and neighborhood crime. In 1995, researchers from the

PHDCN conducted the Systematic Social Observation of neighborhoods in Chicago and

collected data from each block of 80 neighborhoods. Data were recorded using videotapes and observer logs. The data included physical and social characteristics of the neighborhoods. Information from these observations were coded and analyzed by researchers. Neighborhood physical disorder and social disorder were measured by items intended to capture the presence or absence of disorder. Physical disorder was measured by 10 items, which included the presence or absence of cigarettes or cigars in the street or gutter; garbage or litter on street or sidewalk; empty beer bottles visible in the street; tagging graffiti; graffiti painted over; gang graffiti; abandoned cars; condoms on the sidewalk; needles/syringes on the sidewalk; and graffiti with political messages (α = 0.98). Social disorder was measured by seven items, which included loitering or congregating; public drinking; public intoxication; fighting or arguing in a hostile manner; selling drugs; prostitution; and peer groups with gang indicators present (α = 0.83). Sampson and Raudenbush found a significant direct effect of physical and social disorder on robbery. They also found neighborhood SES, which comprised data from the 1990 Census, to be strongly associated with neighborhood disorder.

Cunradi (2007) investigated whether impressions of neighborhood disorder moderated the association between drinking level and mutual IPV (i.e., both partners perpetrating IPV on each other). The sample consisted of 19,035 married or cohabiting Black (n = 1,501), Hispanic (n = 2.418), and White (n = 15,116) adults from the 2000 NHSDA. Data collection included voluntary and confidential interviews conducted by NHSDA field interviewers in private areas of the respondents' homes. Neighborhood disorder was measured as respondents' perceptions about crime, the sale of drugs, street fights, abandoned buildings, and graffiti in their neighborhoods (α = 0.80). One item was

used to measure IPV victimization: "How many times during the past 12 months did your spouse or partner hit or threaten to hit you?" One item was used to measure IPV perpetration: "How many times during the past 12 months did you hit or threaten to hit your spouse or partner?" If a respondent had answered yes to both victimization and perpetration, then that couple was identified as having positive mutual IPV. Data were collected from one partner per couple, which may have biased the prevalence estimates. Moreover, the single-item measurement of victimization and perpetration likely underestimated prevalence rates because it excluded acts other than hitting.

For women, Cunradi (2007) found that the risk for mutual IPV significantly increased under conditions of high neighborhood disorder and decreased to insignificant risk under conditions of low neighborhood disorder. Women who had reported heavy drinking in the past 30 days were approximately 6 times more likely to experience mutual IPV. For men, neighborhood disorder was associated with increased risk of mutual IPV (OR = 1.61). Men who had engaged in heavy drinking in the preceding 30 days had the highest odds of mutual IPV (OR = 6.55). This study did not conduct analyses separately by racial group. This study used a cross-sectional design; therefore, it was not possible to infer causal or temporal sequence of the effects.

In a later study, Cunradi (2009) studied impressions of neighborhood disorder, alcohol use, and IPV perpetration in a sample of Hispanic men ($n = 1,399$) using data from the 2000 NHSDA. Neighborhood disorder was measured by respondents' perceptions about crime, the sale of drugs, street fights, abandoned buildings, and graffiti in their neighborhoods ($\alpha = 0.80$). The 2009 study used the same single-item measure of IPV perpetration that was used in the 2007 study (IPV victimization was not measured).

Additionally, as with the 2007 study, the 2009 study used a cross-sectional design.

Neighborhood disorder was found to be significantly positively associated with increased

IPV perpetration. Because the sample was limited to Hispanics, the findings may not be

generalizable to other ethnic or racial groups. Cunradi (2009) suggested that future

research should investigate the social mechanisms that underlie the associations between

neighborhood disorder and IPV perpetration because there may be a mediating

relationship.

Wright (2008) investigated impressions of neighborhood disorder and female IPV

victimization using Wave 1 data of the PHDCN ($n = 3,235$). Measures of physical and

social disorder were taken from the Systematic Social Observation component of the

PHDCN and were measured as in the Sampson and Raudenbush (1999) study reviewed

above. Data on female IPV victimization were collected during the first Wave of the

PHDCN from female respondents. Respondents were interviewed privately when asked

about IPV perpetration of their male partners. The sample consisted of 53% Hispanic,

21% Black, and 26% White respondents; however, analyses were not conducted

separately for each racial group. The IPV victimization measure was derived from the

CTS (Straus, 1979), where respondents were asked how many times during an argument

with their partner, in the preceding year, their partner had (a) kicked, bit, or hit them with

their fist; (b) hit or tried to hit them with something; (c) beat them up; (d) choked them;

(e) threatened them with knife or a gun; and (f) used a knife or a gun. Wright

dichotomized the IPV measure (any abuse, no abuse) and used hierarchical linear

modeling, which took into consideration that the data were nested within neighborhoods.

Also, she investigated physical and social disorder separately, which other studies on

impressions of neighborhood disorder and IPV perpetration or victimization have not done (Cunradi, 2007, 2009). Physical and social disorder had Cronbach's alphas of 0.98 and 0.83, respectively, and were examined in relation to female IPV victimization with measures modeled after the Sampson and Raudenbush (1999) study.

In Wright's (2008) study, physical disorder was a significant predictor of female physical IPV victimization, whereas social disorder was not. Wright speculated that the nonfinding for social disorder was due to the 7-item social-disorder scale being less robust than the 10-item physical disorder scale. In addition, fewer neighborhood clusters (77 vs. 80) were analyzed for social disorder than for physical disorder due to insufficient data. Therefore, social disorder may be a weaker measure, or it could be that social disorder does not impact violence as much as physical disorder does.

Overall, the three studies reviewed above (Cunradi, 2007; Cunradi, 2009; Wright, 2008) suggest associations between neighborhood disorder and IPV perpetration and victimization among adult samples. However, two of the studies used a rather limited single-item measure of IPV, all three studies were cross-sectional, and the two studies with diverse samples did not run analyses by racial group. These limitations make it difficult to generalize the findings to larger groups, to understand the long-term relationships between disorder and IPV, and to inform culturally relevant programs and policies.

Peer-Level Predictors of Male-to-Female Physical IPV Perpetration

Two longitudinal studies have investigated the effects of having delinquent peers in adolescence on IPV perpetration in young adulthood (Capaldi et al., 2001; Casey & Beadnell, 2010). With data from the Oregon Youth Study, which followed 206 males

from the ages of 9 to 23, Capaldi et al. (2001) used path analyses to test the relationships among respondents' antisocial behavior, peer delinquency, hostile talk about women, and male-to-female physical IPV perpetration in young adulthood. The IPV measure was adapted from the CTS (Straus, 1979) and the Dyadic Social Skills Questionnaire (Capaldi, 1994). The Dyadic Social Skills Questionnaire is not a widely used questionnaire, and no information was provided about the survey's past use, reliability, or validity. Respondents were asked four questions about physical aggression toward their female partners:

1. "When you have a disagreement, how often do you push, grab, shove throw something, slap, or hit your partner?"

2. "Do you sometimes hurt your partner (hit her or twist her arm)?"

3. "In the past year, how often did you throw something at your partner?"

4. "How many times has your partner physically hurt you?"

In that study, Capaldi et al. (2001) found that men who were aggressive toward their partners in young adulthood had associated with male friends who engaged in delinquent behaviors (e.g., illegal activities) in midadolescence. In addition, they found that respondents who had observed hostile talk about women with male friends in adolescence were at an increased risk of becoming perpetrators of IPV in young adulthood. The researchers attributed these findings to learning a deviant behavior (i.e., aggression toward women) through a socialization process (i.e., peer modeling of hostility toward women), which is consistent with Akers's social learning theory. However, this study did not investigate the influence of neighborhoods or sociostructural factors (such as neighborhood disorder), important components of Akers's theory.

Moreover, approximately 90% of the sample was White; therefore, the findings are not generalizable to other racial or ethnic groups.

Casey and Beadnell (2010) also examined the effects of adolescent peer networks on physical IPV perpetration in young adulthood. They conducted a longitudinal analysis using Wave 1 (collected in 1995) of Add Health (n = 3,030 males) to predict IPV perpetration in Wave 3 (collected in 2001). Peer networks were measured by network size, network density, gender ratio, and peer delinquency. To assess IPV perpetration, respondents were asked to report how often in the preceding year they had (a) slapped, hit, or kicked their partner; (b) threatened partner with violence, pushed or shoved their partner, or threw something at their partner that could hurt; or (c) caused an injury such as a sprain, bruise, or cut to their partner. The IPV perpetration measure was dichotomized because the variable was highly skewed (any abuse, no abuse). The researchers found that male adolescents with a greater number of delinquent peers (e.g., those who reported doing something dangerous as a dare, using alcohol, skipping school, lying to parents, or fighting) reported increased rates of physical IPV perpetration in young adulthood. The researchers suggested that future research should focus on delinquent peer groups, utilize predictive models, and delineate mediating relationships. The majority of the sample was White (approximately 70%), and 14% of the sample was Black. Analyses were not conducted separately by race or ethnicity. Similar to Capaldi et al.'s (2001) study, White respondents made up such a large percentage of the sample that the findings are not generalizable to other racial or ethnic groups.

The findings of these two studies provided preliminary evidence that adolescent peer delinquency predicted IPV perpetration in young adulthood. However, the studies

only used a few items to measure IPV, which may have led to underestimations of IPV

perpetration reports. Furthermore, in both studies the majority of the respondents were

White; therefore, the results are not generalizable to other racial or ethnic groups.

Individual-Level Predictors of Male-to-Female Physical IPV Perpetration

Research has shown that attitudes approving of violence have an impact on IPV

perpetration among samples of adolescents and adults (Malik et al., 1997; O'Keefe, 1997;

Reitzel-Jaffe & Wolfe, 2001; Riggs & O'Leary, 1996; Williams et al., 2008). As Akers

(1973) described in his social learning theory, attitudes orient individuals to particular

acts. Whether adolescents define violence as acceptable behavior affects whether they

will engage in such behavior. The research on attitudes approving of violence and IPV

perpetration are described below. During adolescence, IPV is commonly referred to as

dating violence. Furthermore, studies that have investigated the links between attitudes

and IPV have generally focused on attitudes toward just one type of violence (e.g., sexual

violence or physical violence).

Past research has provided evidence to support the link between attitudes toward

dating violence and dating-violence perpetration among middle and high school samples

(Malik et al., 1997; O'Keefe, 1997; Reitzel-Jaffe & Wolfe, 2001; Riggs & O'Leary,

1996; Williams et al., 2008). Josephson and Proulx (2008) examined attitudes toward

dating violence and actual dating-violence behavior in a cross-sectional study of

Canadian middle school students ($n = 290$). The researchers reported that the

respondents were culturally and socioeconomically diverse, but they did not specify the

composition of their sample. Attitudes toward dating violence were measured using 18

items that addressed attitudes about psychological, physical, and sexual aggression

toward an intimate partner. Reliability information was not given for this measure.

Physical dating violence perpetration was measured using nine items from the Revised

Conflict Tactics Scale (Straus et al., 1996). On a 6-point Likert scale, respondents rated

how frequently they engaged in physical violence toward a current, past, or casual

partner. Researchers found that those who had attitudes that approved of dating violence

(psychological, physical, and sexual violence) also reported committing physical violence

within their dating relationships. The cross-sectional nature of the data and the lack of

reliability given for the measure of attitudes were limitations of this study.

Using a sample of male and female high school students (*n* = 621), Williams et al.

(2008) measured attitudes approving of dating violence and dating violence perpetration

longitudinally over a 1-year period. The researchers measured dating-violence

perpetration by responses to seven items from the Revised Conflict Tactics Scale (Straus

et al., 1996) about respondents' current or most recent dating relationship: pushed,

grabbed, or shoved; slapped, kicked, or bit; physically twisted; threw, smashed, hit, or

kicked something at; slammed or held against a wall; hit or tried to hit with an object; and

choked, punched, or beat. The IPV measure was dichotomized (any abuse, no abuse).

Attitudes toward dating violence were measured by the Romantic Relationship Attitudes

Scale (Chamberland & Laporte, 1999), which measured respondents' acceptance of

dating aggression ($\alpha = 0.95$). Respondents were asked to rate aggression acceptability in

nine gender-specific situations in which a boy or girl was violent to his or her dating

partner (e.g., because the partner became too clingy or was violent). Possible responses

ranged from 1 (*totally unacceptable*) to 5 (*completely acceptable*). Researchers found

that attitudes approving of dating violence were predictive of dating-violence

perpetration. The respondents were predominately White, middle-class youth from two-parent households.

Attitudes approving of violence also have been found to be an important predictor of IPV perpetration and victimization among adults. For example, in a cross-sectional sample of 20,639 adult men and women in eight South African countries, Andersson, Ho-Foster, Mitchell, Scheepers, and Goldstein (2007) studied attitudes condoning sexual violence and physical IPV victimization. Respondents were interviewed alone in a private area. The IPV measure consisted of one item, "In the last year, have you and your partner had violent arguments where your partner beat, kicked or slapped you?" Attitudes condoning sexual IPV were measured by asking respondents to report their level of agreement with four statements (e.g., "Men have the right to have sex with their girlfriends if they buy them gifts." "Forcing your partner to have sex is not rape."). Reliability information was not given for this measure. The researchers found that respondents who were more condoning of sexual violence were more likely to report IPV victimization than those who were less condoning of sexual violence. The limitations of this study include a single-item measure of IPV victimization, a cross-sectional design, and a lack of reliability information for the measure of attitudes condoning sexual violence. Furthermore, because the sample was composed of respondents from South African countries, it is unclear whether these findings are generalizable to North American populations.

Carr and Vanduesen (2004) studied risk factors for male sexual aggression such as substance abuse, pornography consumption, and negative gender-based attitudes in a sample of male college students ($n = 99$). The sample was gathered from two large

introductory classes and fraternities. Attitudes were measured by the Hostility toward

Women Scale (Check, Malamuth, Elias, & Barton, 1985), which consisted of 30 items

that measured levels of hostile attitudes and behaviors directed at women ($\alpha = 0.80$).

Male sexual aggression was measured by the Sexual Experiences Survey (Koss & Oros,

1982), a self-report measure of sexual behavior on a continuum ranging from consensual

sex to coercion to actual rape. The researchers found that negative gender-based

attitudes, such as having hostile attitudes and behaviors toward women, along with heavy

alcohol use and pornography consumption, were predictors of sexual violence

perpetration. However, the generalizability of the results was limited due to the small,

predominantly White (90%) sample.

In a cross-sectional study conducted with male college students, Reitzel-Jaffe and

Wolfe (2001) studied attitudes approving of IPV, negative peer associations, and IPV

perpetration ($n = 585$). All data were collected by self-administered questionnaires. The

sample was approximately 75% White, 8% Asian, 2% Black, and 15% other racial

groups. The majority of respondents were middle class.

Negative peer associations were measured by the Peer Relations Inventory

(Wolfe, Grasley, & Wekerle, 1994) which included six items to which the respondents

indicated on a 10-point Likert Scale (ranging from 0 = *never* to 10 = *all the time*) how

much each item describes their best friends. The items reflected offensive jokes and

aggressive behavior ($\alpha = 0.76$). Items from the Conflicts in Relationships Inventory

(Wolfe, Reitzel-Jaffe, Gough, & Wekerle, 1994) were used to assess the frequency of

physically, sexually, and emotionally abusive behavior by the respondent toward a dating

partner over the preceding year. Sample items were not given for the Conflicts in

Relationships Inventory, nor was reliability information provided. The researchers measured attitudes approving of IPV using the Acceptance of Interpersonal Violence Scale (Burt, 1980). Respondents were asked to rate their level of agreement with six items:

1. "People today should not use an eye for an eye and a tooth for a tooth as a rule for living."

2. "Being roughed up is sexually stimulating to many women."

3. "Many times a woman will pretend she doesn't want to have intercourse because she doesn't want to seem loose, but she's really hoping the man will force her."

4. "A wife should move out of the house if her husband hits her."

5. "Sometimes the only way a man can get a cold woman turned on is to use force."

6. "A man is never justified in hitting his wife."

The reliability of this scale ($\alpha = 0.65$) is below the generally accepted cutoff of 0.70 needed to determine good reliability or internal consistency of a measure.

In that study, Reitzel-Jaffe and Wolfe (2001) found that attitudes approving of IPV were associated with IPV perpetration and negative peer associations. The study had similar limitations as noted for other studies above (i.e., cross-sectional data, nondiverse sample). Additionally, the measure of physical IPV perpetration consisted only of five items. Although five items are better than one, five items may still have underestimated physical IPV perpetration.

Koenig et al. (2006) investigated attitudes toward wife-beating norms and male-to-female physical IPV perpetration in northern India. The sample comprised 4,520 married men from Uttar Pradesh, a state in northern India. Physical violence was measured by the response to a single question, which asked whether the respondent had physically hit, slapped, kicked, or tried to hurt his wife during the preceding year. The researchers used a 3-item measure of attitudes:

1. "It is necessary to use verbal insults/physical abuse against wife when she does not follow husband's instructions."

2. "No physical beating/verbal insults should be used against wife if she disobeys husband's instructions."

3. "The following measures should be taken against wife if she disobeys husband's instructions: verbal insults, physical isolation, or a physical beating."

Information on the reliability or internal consistency of the measure of attitudes was not provided.

Koenig et al. (2006) found that attitudes approving of wife-beating norms were significantly associated with physical IPV perpetration among the sample. Uncertainty about the reliability of attitudes approving of wife-beating-norms measure as well as a single-item measure for physical IPV perpetration were limitations of this study. Furthermore, the sample consisted of people from rural communities in northern India, and therefore the findings may not be generalizable to North American populations.

The aforementioned studies provided evidence of a relationship between attitudes approving of violence and physical IPV perpetration. Studies have been conducted on

this association in multiple countries and in adolescence and adulthood. Regardless of the life stage as well as the country in which the studies were conducted, research has shown that there is a positive association between attitudes approving of violence and IPV perpetration in cross-sectional data. However, the studies cited above had a number of important limitations, such as one or few items to measure IPV, low reliability for measures of attitudes (or no reliability information given), and nonrepresentative samples. Additionally, all of the studies were cross-sectional, so the long-term effects of adolescent attitudes approving of violence on physical IPV perpetration in adulthood have not yet been established.

Correlates of Male-to-Female Physical IPV Perpetration

History of childhood physical or sexual abuse, young-adult alcohol use, and young-adult SES were controlled for in this study. These variables have been consistently associated with IPV perpetration in the past research. These control variables are discussed below.

Childhood physical abuse, sexual abuse, and male-to-female physical IPV perpetration. Studies have shown a direct link between having a history of childhood physical or sexual abuse and perpetrating IPV later in life (Fang & Corso, 2008; Gómez, 2010; Gupta et al., 2008; Whitfield et al., 2003). For example, Fang and Corso (2008) studied childhood physical and sexual abuse and IPV perpetration in young adulthood using data from Wave 1 (1994–1995) and Wave 3 (2001–2002) of the Add Health study. Childhood physical and sexual abuse was measured retrospectively. They found that for males, being a victim of childhood physical or sexual abuse significantly and directly increased the likelihood of young-adult (age 18–26) IPV perpetration by 17.6%.

Gómez (2010) also studied childhood physical and sexual abuse and IPV perpetration in young adulthood using data from the first three waves of Add Health. Gómez used a combined measure of physical and sexual abuse (termed *physical/sexual abuse*), measured as experiencing either type of abuse prior to the sixth grade. Physical/sexual abuse was measured retrospectively at Wave 3 (ages 18 to 26). Gómez found that childhood physical/sexual abuse was a significant predictor of male IPV perpetration in young adulthood. Whitfield et al. (2003) studied the relationship between experiencing childhood physical and sexual abuse and the risk of IPV in adulthood. The researchers used the Adverse Childhood Experiences study, which draws from a large (*n* = 3,955) but not nationally representative sample. Childhood maltreatment data were gathered retrospectively. The researchers found that, among men, there was a strong relationship between experiencing abuse as a child and the risk of perpetrating IPV in adulthood. Gupta et al. (2008) examined a nationally representative sample of South African men and found that, compared to men who did not experience childhood physical abuse, men who experienced physical abuse as a child were 1.73 times more likely to perpetrate IPV as an adult.

In sum, several North American studies and a South African study have found a positive association between a history of childhood physical or sexual abuse and male-to-female IPV perpetration. However, these studies measured childhood physical and sexual abuse retrospectively; this approach can lead to inaccurate data, and researchers have begun to argue for the use of other measures, such as prospective measures or official reports (Greenhoot, McCloskey, & Glisky, 2005; Tajima, Herrenkohl, & Whitney, 2004). For example, it is possible that individuals may not be able to remember

abuse as a young child or have repressed it. Prospective measures and official reports have important advantages, such as their proximity to the events and their ability to establish a temporal sequence of early experiences and later effects. Furthermore, official reports do not depend on an individual's willingness to report abuse.

Previous research on neighborhood disorder and IPV victimization and perpetration has controlled for a number of variables. For example, Wright (2008) controlled for gender, marital status, home ownership, race, residential mobility, years residing in the neighborhood, age, and SES. Cunradi (2007) controlled for age, race, educational level, and drinking level (heavy and binge drinking in the preceding month and any drinking in the preceding year). Cunradi (2009) controlled for age, highest level of education, employment status, household income, and acculturation level. These studies did not control for respondents' history of childhood physical or sexual abuse, which is a significant limitation given the body of research that has shown that such abuse predicts IPV perpetration (Fang & Corso, 2008; Gómez, 2010; Gupta et al., 2008; Whitfield et al., 2003).

Alcohol use and male-to-female physical IPV perpetration. According to White (1997), alcohol use may lead to short- or long-term cognitive impairments. These impairments may affect a person's judgment, ability to make decisions, and ability to understand consequences and lead to aggressive behavior (Chen & White, 2004). Caetano, Schafer, and Cunradi (2001) noted that alcohol use reduces inhibitions about engaging in IPV and may be used as an excuse to justify behavior that is normally unacceptable. Therefore, alcohol use is a risk factor for IPV perpetration. Empirical evidence for the association between alcohol use and IPV is discussed below.

The association between alcohol use and IPV has been well-documented in the literature (Field, Caetano, & Nelson, 2004). For example, White and Chen's (2002) longitudinal study showed that problem drinking (measured by respondents' reports of negative consequences during or after consumption of alcohol) was a significant predictor of IPV perpetration for men. The sample consisted mostly of Whites; therefore, it is uncertain if this finding holds up for other racial and ethnic groups. O'Leary and Schumacher (2003) analyzed the relationship between alcohol use and IPV perpetration using the 1985 National Family Violence Survey and 1985 National Survey of Families and Households data. O'Leary and Schumacher found a significant positive association between male drinking and IPV perpetration. In the National Family Violence Survey data, the occurrence of male-to-female physical IPV was measured using nine items about physical violence from the CTS (Straus, 1979). The National Survey of Families and Households only assessed physical IPV with a single item that asked, "During the past year, in how many arguments did you become physically violent with your wife?" In a cross-sectional study, Caetano et al. (2001) found that IPV was more likely to occur among couples with higher levels of alcohol use than those with lower levels of alcohol use. These researchers also found that males were more likely than females to be drinking when violence was perpetrated.

An important distinction exists between chronic drinking patterns being predictive of IPV perpetration and acute alcohol consumption being associated with the occurrence of a specific episode of IPV (Leonard, 2008). Scholars who have investigated IPV and alcohol use have measured drinking patterns as the frequency of alcohol consumption over the preceding year, with this measure, have found drinking patterns to be

significantly associated with IPV (Caetano et al., 2001; Cunradi, 2007, 2009) . The majority of these studies (Caetano et al., 2001; O'Leary & Schumacher, 2003) were cross-sectional and therefore could not establish a causal order of events; however, the studies did establish a positive relationship between patterns of drinking and IPV perpetration

Individual SES and male-to-female physical IPV perpetration. Studies have consistently indicated that as the income of a family increases, the likelihood of domestic violence decreases (Benson et al., 2003; Benson et al., 2004). Using data from Wave 2 of the National Survey of Families and Households and the 1990 U.S. Census, Benson et al. (2004) found a positive relationship between financial strain and male-to-female physical IPV. Male-to-female physical IPV was measured as whether a male assaulted a female intimate partner (spouse or cohabiting partner) during the 12-month period preceding the interview. The researchers found an IPV rate of 9.5% among couples who reported high levels of financial strain, compared with 2.7% for couples who reported low levels of financial strain. Benson et al.'s (2004) findings confirmed Greenfeld et al.'s (1998) analysis of 1996 National Crime Victimization Survey data, which found that rates of male-to-female IPV perpetration and victimization were 5 times greater for individuals with the lowest annual incomes than for individuals with the highest incomes. In sum, national studies have shown a negative association between SES and IPV.

This dissertation controlled for the established correlates of IPV perpetration reviewed above, including alcohol use in adulthood, individual-level SES in adulthood, and having a history of childhood physical or sexual abuse. Controlling for these

variables increased the confidence that this dissertation's findings are due to the hypothesized relationships and not due to the extraneous influences of these variables.

Associations Among the Predictors of Male-to-Female

Physical IPV Perpetration

Neighborhood Predictors of Peer Delinquency

In addition to having a positive association with IPV victimization and perpetration in cross-sectional samples (Cunradi, 2007; Cunradi, 2009; Wright, 2008), neighborhood disorder has also been shown to be a significant predictor of delinquent peer associations (Chung & Steinberg, 2006; Haynie et al., 2006). For example, Chung and Steinburg (2006) studied neighborhood disorder and peer delinquency in a cross-sectional study of 488 male respondents from Philadelphia, PA. The sample consisted of 14- to 18-year-old boys (the sample was 73% Black, 11% White, 13% Hispanic, and 3% other racial groups). Neighborhood disorder was measured by 21 items about physical and social disorder, modeled after the work of Sampson and Raudenbush (1999). Peer delinquency was measured by 10 items assessing antisocial behavior of peers, such as the number of peers who had sold drugs. Chung and Steinburg found that high levels of neighborhood disorder were associated with increased rates of peer delinquency. The study was limited by its cross-sectional design, and although the study did well to include a more diverse sample than most other studies reviewed so far, the lack of other minority groups prevented the researchers from drawing comparisons between groups. Despite these limitations, this study found a positive association between neighborhood disorder and peer delinquency among a sample of male adolescents.

Haynie et al. (2006) studied neighborhood disadvantage and violent peer exposure. Although they did not study impressions of neighborhood disorder, neighborhood disadvantage and neighborhood disorder have been shown to be highly correlated (Sampson & Raudenbush, 1999). Haynie et al. used data from Wave 1 of Add Health (n = 12,747) for their analysis. The sample consisted of adolescents in Grades 7 to 12; 53% were White, 21% were Black, and 26% identified themselves as belonging to another racial group. Their measure of neighborhood disadvantage came from the 1990 Census and consisted of neighborhood socioeconomic disadvantage, residential instability, immigrant concentration, and population size. They found that neighborhood disadvantage was positively associated with exposure to violent peers. Consistent with Akers's social learning theory, the researchers noted that exposure to delinquent peers appeared to affect socialization in adolescence and related outcomes in adulthood.

Furthermore, Harding (2009) conducted a qualitative study to explore violence, peers, and the socialization of adolescent males in disadvantaged neighborhoods. Data were collected from 60 adolescent boys (ages 13 to 18) in three Boston neighborhoods. The sample was primarily Black. Neighborhood disorder was assessed by asking respondents to report whether, in the preceding 6 months, they had witnessed (a) a fight with weapons, (b) a violent argument among neighbors, (c) a gang fight, (d) a theft of or assault in a home, and (e) an act of racism or xenophobia. Reliability information was not provided for this measure.

Harding (2009) found that adolescents in neighborhoods with higher levels of disorder tended to be associated with older, deviant peers, particularly those who were not working, not in school, involved in an underground economy such as selling drugs, or

some combination of the three. These peer associations served as a protective mechanism from threats of violence from other individuals or groups in the community. The researcher discussed the impact of delinquent peers as a crucial factor in youth socialization. Through exposure to delinquent peers, youth are influenced in terms of attitudes, decision making, and future behavior, including how they interact in romantic relationships. However, Harding did not distinguish between nonkin peers and kin peers in the study, which may have resulted in erroneously attributing some family effects to peer effects. Other limitations included a sample that was small and not generalizable to non-Black racial groups.

Overall, the aforementioned studies had a number of limitations such as cross-sectional data and a lack of established reliability of the measures. Chung and Steinburg (2006) and Harding (2009) operationalized neighborhood disorder differently in that they used 21 items and five items, respectively. Furthermore, only two studies have been conducted on the association between neighborhood disorder and peer delinquency; therefore, it cannot be concluded with certainty that neighborhood disorder is associated with peer delinquency.

Neighborhood Predictors of Attitudes Approving of Violence

Empirical evidence suggests a positive association between neighborhood disorder and attitudes approving of IPV (Button, 2008; Gracia, Herrero, Lila, & Fuente, 2009). For example, Gracia et al. (2009) investigated the relationship between neighborhood disorder and attitudes toward male-to-female IPV perpetration. The cross-sectional sample consisted of male and female Latino immigrants living in Valencia, Spain ($n = 350$). The average age of the sample was 33.5 years. All data were collected

by self-administered questionnaires. Neighborhood disorder was based on responses to the question, "In the last six months, which of the following situations have occurred in your neighborhood: fights with weapons, violent arguments in neighborhoods, gang fights, thefts or assaults in houses, and acts of racism?" Reliability information was not provided for this measure. Perceived severity of incidents of male-to-female IPV perpetration was evaluated using a 10-point Likert scale in which respondents rated the severity of eight hypothesized scenarios of male-to-female IPV perpetration ($\alpha = 0.92$). Attitudes approving of violence were evaluated using a 4-point Likert scale (no reliability information or items provided). Victim-blaming attitudes were assessed by one item on a 5-point Likert scale that asked the respondent to indicate how much they agreed with the statement "A cause of domestic violence against women is the provocative behavior of women." Results showed that there was a significant and positive association between neighborhood disorder and attitudes approving of male-to-female IPV perpetration. Also, higher neighborhood disorder was associated with lower perceived severity of incidents of domestic violence, greater acceptability of IPV, and a higher degree of victim blaming. The limitations of this study included uncertainty about the reliability of the measures of attitudes approving of violence and neighborhood disorder. Also, the measure of neighborhood disorder only consisted of five items, and the measure of victim-blaming attitudes included only one item. The number of items for each of these measures may be insufficient to capture these concepts. Moreover, the racial composition of the sample limits the generalizability of the findings.

Button (2008) studied the association between neighborhood disorder and attitudes approving of IPV. She used cross-sectional data from the Norfolk Police

Department (2000–2004), the 2000 Census, and the 2006 Norfolk Residents' Attitudes about Crime Survey. The sample consisted of 200 men and women. Neighborhood disorder was measured by respondents indicating the presence of litter, vandalism, broken windows, burglary, bars, unsupervised youth, sloppy repairs, noisy neighbors, public lighting, overcrowding, public drinking, run-down buildings, gang activity, and lack of police. Reliability information was not provided for this measure. Approval of IPV was indicated if a respondent agreed or strongly agreed with the statement "I can think of a situation when I would approve of a husband/wife slapping a husband/wife's face." This was a single-item measure, which may have been insufficient to capture approval of IPV. Button found a positive association between neighborhood disorder and attitudes approving of violence for this sample. Additionally, approximately 70% of the sample was White.

The Button (2008) and Gracia et al. (2009) studies found positive associations between neighborhood disorder and attitudes approving of IPV among samples of adult men and women. However, the studies lacked information on the reliability of their measures and were cross-sectional, confined to adults, and limited in diversity and generalizability (one had a completely Latino sample from Spain and the other had a majority White sample from Virginia). In general, few studies have examined the association between attitudes approving of violence and neighborhood disorder with Black respondents. Additionally, the literature lacks data on the long-term effects of neighborhood disorder on attitudes approving of violence.

Peer Delinquency and Attitudes Approving of Violence

In his social learning theory, Akers (1973) postulated that attitudes toward deviant behavior and peer delinquency influence one another. For example, having peers who engage in delinquent behavior may set the stage for acceptance of IPV perpetration through endorsement of negative and aggressive attitudes or behaviors toward partners. Also, having attitudes approving of violence may set the stage for choosing peers who engage in violence or other delinquent behaviors. Empirical research has supported the link between peer delinquency and adolescent attitudes (Mesch, Fishman, & Eisikovts, 2003; Silverman & Williamson, 1997). Studies in this area have examined attitudes toward crime, delinquent behavior, and violence. Because these concepts are related in that violence and delinquency are types of criminal behavior, I have included articles related to all of these areas below.

Empirical evidence has suggested that peer delinquency affects attitudes toward crime and delinquent behavior. For example, Tittle, Burke, and Jackson (1986) investigated the relationship between peer delinquency and attitudes accepting of criminal behavior, such as theft, battery, and vandalism. Their study was cross-sectional and included 1,993 adolescents ages 15–18 from New Jersey, Oregon, and Iowa. The researchers found that adolescents who associated with delinquent peers also had more accepting attitudes of criminal behavior than those who did not report associating with delinquent peers. Bruinsma (1992) conducted a cross-sectional study of 1,096 Dutch boys and girls ages 12–17 and found that peer delinquency had a positive association with attitudes approving of deviant behavior. These two cross-sectional studies suggest

that peer delinquency has a positive relationship with attitudes approving of crime and

deviant behavior.

Additionally, two studies have shown that attitudes approving of delinquent or

deviant behavior mediated the relationship between peer delinquency and delinquent

behavior. For example, Matsueda and Heimer (1987) studied whether attitudes toward

deviant behavior, such as theft, fights, and vandalism, mediated the relationship between

peer delinquency and delinquent behavior. Using cross-sectional data from the

Richmond Youth Study, their sample consisted of 1,588 White males and 1,001 Black

males in the 3rd and 4th years of high school. They found that attitudes toward deviant

behavior mediated the relationship between peer delinquency and respondents' own

delinquent behavior. Warr and Stafford (1991) used a longitudinal data set to investigate

peer delinquency, attitudes toward delinquent acts such as substance abuse and theft, and

respondents' own delinquent behavior. The sample consisted of 11- to 17-year-old males

and females from Waves 2 (1977) and 3 (1978) of the National Youth Survey. They

found that attitudes toward delinquency mediated the relationship between peer

delinquency and delinquent behavior.

Empirical evidence has suggested that peer perpetration of IPV affects attitudes

toward IPV. For example, in a cross-sectional sample of 193 male college students,

Silverman and Williamson (1997) studied those who reported associating with IPV

perpetrators and their attitudes toward IPV. The sample consisted mostly of Whites

(97%). To measure peer perpetration of IPV, respondents were given three descriptions

of situations involving men abusing their dating partners. Then, respondents indicated

the number of their male friends who had behaved in these specified ways on a scale of 1

(*none*) to 5 (*more than 10*; α = 0.69). Attitudes and beliefs related to IPV were assessed by the Inventory of Beliefs about Wife Beating (Saunders, Lynch, Grayson, & Linz, 1987). Respondents reported on their attitudes using a 7-point Likert scale to indicate their level of agreement with each statement (α = 0.85). Using path analysis to analyze the data, the researchers found that having male peers who had perpetrated IPV was associated with attitudes approving of and justifying violence against an intimate partner. The limitations of this study included that the Cronbach's alpha for the measure of peer perpetration of IPV fell below the generally accepted level of 0.70 needed to determine acceptable reliability or internal consistency of a measure. Additionally, the sample's racial composition limited the generalizability of the findings.

Mesch, Fishman, and Eisikovits (2003) studied the association between delinquent peers and attitudes approving of violence. They used a nationally representative, cross-sectional sample of adolescent Israeli youth from the Israeli National Youth Study (collected in 1998). The sample consisted of 909 adolescents between the ages of 14 and 18. Attitudes supporting violence were measured by respondents' level of agreement with four items on a 4-point Likert scale (1 = *lack of agreement* and 4 = *high agreement*).

1. "Hitting helps to educate more than words."

2. "Sometimes I want to hit a friend who does not behave as I expect."

3. "Sometimes children deserve to be hit by their parents."

4. "Sometimes you need to hit your friends."

Peer delinquency was measured by three items that asked respondents the extent to which their close friends engaged in (a) breaking into or stealing from cars (b)

breaking into or stealing from homes and (c) taking things from shops without paying (α = 0.79). The researchers found that peer delinquency was associated with attitudes approving of violence (α = 0.75). Despite showing acceptable levels of reliability for their measures, the study was cross-sectional. Additionally, the study was conducted with an Israeli population, so generalizability to other cultures is limited.

Overall, the literature reviewed above suggests a positive association between peer delinquency and adolescent attitudes toward crime and delinquent behavior. Two studies specifically investigated the relationship between peer delinquency and attitudes approving of violence, and one included attitudes toward IPV. Although these two studies found attitudes approving of violent behavior and peer delinquency to be associated, two studies is not enough evidence to determine with any certainty the relationship between these two variables.

Peer Socialization and Peer Selection

The temporal order of having attitudes approving of deviant behavior and having delinquent peers is unclear (Mesch et al., 2003). It has not been established whether affiliating with delinquent peers influences adolescents' attitudes toward deviant behavior or whether individuals with attitudes approving of deviant behavior choose delinquent peers as friends. There have been two major schools of thought in the research area of peer socialization and peer selection.

According to peer socialization theory, peer delinquency predicts attitudes approving of deviant behavior. This theory places a strong emphasis on group norms. It posits that the peer context provides encouragement, access, and rewards for delinquency. In other words, the peer context provides a normative influence that fosters development

of attitudes approving of delinquent behavior. For example, Bruinsma (1992) and Mesch et al. (2003) found that adolescents who associated with delinquent peers had attitudes more accepting of criminal and violent behavior than those who did not report associating with delinquent peers. According to peer selection theory, attitudes approving of delinquent behavior precede a person's selection of delinquent peers. In other words, adolescents specifically affiliate with peer groups who match their attitudes. Reitzel-Jaffe and Wolfe (2001) found that males whose attitudes were more accepting of IPV (i.e., who were more physically aggressive or told offensive jokes) were more likely to have negative peer associations than males who reported less attitudes accepting of IPV.

Delinquency is a complex issue and can arise from many sources by several processes. There is research to support both peer selection and peer socialization; that is, adolescents select their friends according to their own attitudes but are also susceptible to peer pressure to conform. Therefore, it is a bidirectional process, and both schools of thought are compatible with one another. Specifically, Tittle et al. (1986) found that both socialization and selection operated simultaneously when investigating peer delinquency and attitudes favorable to criminal behavior. There has been support for peer socialization, peer selection, and both operating simultaneously. However, the majority of these studies were cross-sectional; therefore, uncertainty about causation still exists. Furthermore, these studies did not examine racial or ethnic groups separately in their analyses, which limits the generalizability of their findings.

Racial Differences in Male-to-Female Physical IPV Perpetration

Numerous national studies have found levels of IPV perpetration to be higher among Black populations than among White populations (Caetano, Vaeth, & Ramisetty-

Mikler, 2008; Ellison, Trinitapoli, Anderson, & Johnson, 2007; Gómez, 2010). For example, Ellison et al. (2007) found that Black men were more than twice as likely as White men to commit acts of IPV. Caetano et al. (2008) found that Black couples had 3 times higher odds of reporting recurring male perpetration than White couples.

As a result of such past findings, many studies control for race when studying IPV (Cunradi, 2007; Wright, 2008). Controlling for race alone, however, does not allow for an accurate assessment of the differences between Black and White respondents. In fact, existing research fails to take into account that Blacks often live in more disadvantaged communities than Whites. Therefore, it may be neighborhood economic disadvantage, rather than race itself, that accounts for racial differences in rates of IPV (Benson et al., 2003; Benson et al., 2004; Sampson & Lauritsen, 1997). To test this assumption, Benson et al. (2004) examined the effects of the type of neighborhood (i.e., disadvantaged vs. nondisadvantaged) on IPV rates for both Black and White respondents. For both racial groups, the rate of IPV was highest in the most disadvantaged communities and lowest in the least disadvantaged communities. Race was not a significant predictor of IPV when neighborhood disadvantage was included in the model. Therefore, when studying neighborhood disorder and IPV, it is important to separately assess the impact of neighborhoods on IPV perpetration among ethnic and racial groups (Benson et al., 2003; Benson et al., 2004). Moreover, conducting analyses separately allows for the elimination of the masking effects that can occur when groups are analyzed together. Understanding ethnic and racial differences that account for IPV perpetration will be informative for developing culturally relevant IPV prevention programs.

Previous PYS-Related Studies

This section reviews research studies that have used PYS data and pertain to the problem of study. Separate sections are dedicated to male-to-female physical IPV perpetration, attitudes approving of violence, neighborhood disorder, and peer delinquency.

Male-to-Female Physical IPV Perpetration

Previous studies have examined male-to-female IPV perpetration using PYS data. Similar to this study, these studies examined adolescent predictors of young-adult, male-to-female IPV perpetration. For example, Solinas-Saunders (2007) conducted a longitudinal investigation of risk factors associated with male-to-female IPV perpetration in the oldest cohort of the PYS ($n = 329$). She used family violence, feminist, and life-course perspectives to frame her exploration of risk factors, which she grouped together by influence: family, sociocultural, and individual and personal influences. Solinas-Saunders assessed physical and nonphysical IPV perpetration with a current, past, or casual partner in the preceding year. Data were collected through 37 items at age 25, and all behaviors were summarized into one variable referred to as IPV. The variable was dichotomized into "any IPV" and "no IPV." Approximately one third of the sample reported having perpetrated some form of IPV. Using multilevel logistic regression, Solinas-Saunders found that non-White respondents who experienced frequent corporal punishment in their family of origin (ages 13–15) were more likely to perpetrate IPV during young adulthood than those who did not experience corporal punishment. The analysis indicated that among White respondents, those who had a weak bond with parents or caretakers were more likely to perpetrate IPV in young adulthood. Overall,

this study found that adolescent risk factors, including corporal punishment and parent–child relationships, predicted young-adult IPV perpetration among males in the PYS data set. Also, these adolescent risk factors differed by race, which emphasizes the importance of conducting analyses separately when possible.

Chen, White, Mun, Pardini, and Loeber (2010) studied both childhood and adolescent predictors of young-adult physical IPV perpetration using PYS data. They examined the association among childhood and early adolescent risk factors and male-to-female physical IPV perpetration in young adulthood for the youngest cohort of the PYS data ($n = 413$). They prospectively predicted male-to-female IPV using 63 early childhood and adolescent risk factors for violent crime. The risk factors included multiple domains such as child behaviors, child attitudes and cognitions, child psychiatric diagnoses, child offender histories, birth factors, parents seeking help for the child, family factors, peer factors (including childhood peer delinquency from age 7 to 11), school factors, and demographic factors.

In that study, Chen et al. (2010) assessed IPV perpetration in two ways: (a) any IPV and no IPV and (b) severe and mild abuse. The results indicated that, compared to nonabusers, physical abusers were more likely to have an early onset of delinquent behaviors, be cruel to people, be withdrawn, have positive attitudes toward delinquent behavior in adolescence, have lived in homes with parental stress, report lower academic achievement, report lower school motivation, be Black than White, have delinquent peers, and have teenage mothers at birth. Compared to mild abusers, severe physical abusers were more likely to report positive attitudes toward delinquent behavior and to have been diagnosed with Attention Deficit/Hyperactivity Disorder. Overall, this study

found that a number of childhood and adolescent risk factors influence young-adult, male-to-female physical IPV perpetration.

Both above studies contributed to the research area in that they extended the current literature in the area of IPV by examining childhood and adolescent risk factors of young-adult IPV perpetration and building on the strengths of the longitudinal data set. Few studies have examined early risk factors for IPV perpetration in a longitudinal data set (Chen et al., 2010; Solinas-Saunders, 2007). This dissertation also contributed to physical IPV perpetration research by examining adolescent risk factors on young-adult IPV. Similar, to the work of Chen et al. (2010), adolescent peer delinquency's effect on young-adult IPV perpetration was tested in this dissertation. However, in the present study it was tested as a mediating variable between neighborhood disorder and IPV perpetration. Furthermore, neither Solinas-Saunders (2007) nor Chen et al. (2010) investigated neighborhood-level factors in their studies. To further develop the field's understanding of these this dissertation looked specifically at how neighborhood disorder indirectly affected IPV perpetration via peer delinquency and attitudes approving of violence.

Attitudes Approving of Violence

White, Fite, Pardini, Mun, and Loeber (2011) examined attitudes toward violence, violent peers, neighborhood crime, alcohol use, and aggressive behavior. They used the youngest and oldest cohorts of the PYS data set. Their sample consisted of Black ($n = 556$) and White ($n = 415$) youth ages 13 to 18. Positive attitudes toward violence were measured using three items from the Attitudes towards Delinquent Behavior Scale (Elliott, Huizinga, & Ageton, 1985), which included children's self-reports of how wrong

they thought it was to (a) hit someone; (b) attack someone with a weapon or with the idea of seriously hurting that person; and (c) use a weapon, force, or strong-arm methods to get money. Responses were coded on a 4-point Likert scale ranging from 0 (*not wrong*) to 3 (*very wrong*). The positive-attitudes-toward-violence score was computed as the mean across the three items ($\alpha = 0.79$). Aggressive behavior was assessed by 20 items, which included behaviors such as getting into many fights, teasing a lot, destroying things, and being disobedient at home. Using a regression panel model, the researchers found a significant, positive association between increases in alcohol use and increases in aggressive behavior.

In their analysis, White et al. (2011) found that positive attitudes toward violence and neighborhood crime moderated the association between change in alcohol use and change in aggressive behavior. Respondents who had positive attitudes toward violence increased their aggressive behavior when they increased their quantity of drinking. In contrast, for those with less positive attitudes, increases in drinking did not influence their aggressive behavior. Attitudes toward violence were moderately related to level of aggression. Based on this finding, it seems likely that attitudes approving of violence would also have an impact on IPV perpetration, a type of aggressive behavior. This dissertation extended White et al.'s (2011) analysis by examining the effects of attitudes approving of violence on IPV perpetration in young adulthood.

Neighborhood Disorder

There were at least four studies to date that have used the Neighborhood Impressions Scale from the PYS data. For example, Loeber et al. (2005) prospectively predicted childhood and adolescent violence and homicide for the youngest (7–20 years

old), middle (10–13 years old), and oldest (13–25 years old) cohorts of the PYS ($n = 1,517$). There were 63 risk factors in the domains of child, family, school, and demographic characteristics (e.g., relationship with caregiver, onset of delinquency, parental depression, alcohol use, youth gang membership, peer delinquency, and parental reports of neighborhood disorder). Homicide offenders were those who were convicted of at least one homicide offense as identified through official court records. Violent offenders were those who had a court conviction of rape, robbery, or aggravated assault based on official court records or self-reports. Parents' neighborhood impressions were measured by 17 items for the youngest cohort at age 7 ($\alpha = 0.95$), the middle cohort at age 10 ($\alpha = 0.95$), and the oldest cohort at age 13 ($\alpha = 0.94$). The results indicated that, compared to parents of nonviolent offenders, parents of violent offenders were more likely to report higher levels of neighborhood disorder. In contrast, this difference was not found between parents of nonhomicide offenders and homicide offenders. The researchers suggested that these findings for homicide and nonhomicide offenders may be explained by the small sample size of homicide offenders ($n = 33$) as well as a complex array of situations that may lead to homicide offenses that were not accounted for in the study. This dissertation extended this research by studying adolescent predictors and another type of violent offending—male-to-female physical IPV perpetration.

White, Fite et al.'s (2011) Neighborhood Crime Scale was based on 10 items ($\alpha = 0.93$) from the Neighborhood Impressions Scale (Loeber et al., 2005). Respondents were asked to indicate the degree to which each of the following was a problem in their neighborhood: vandalism, sexual assault or rape, burglary, gambling, mafia or organized

crime, assault and mugging, delinquent gang activity, drug use or dealing in the open, and peddling of stolen goods. The sum score across these items was used from age 13 to 18 ($\alpha = 0.93$). The researchers included neighborhood crime in the study because they posited that neighborhoods with high levels of neighborhood crime provided learning models for violent behavior. The Neighborhood Crime Scale moderated the effects of increases in alcohol on increases in aggressive behavior. Increases in alcohol use were associated with increased aggression for the boys who lived in high-crime neighborhoods but not for those who lived in low-crime neighborhoods. The neighborhood scale was only weakly related to level of aggressive behavior ($r = .12$, $p < .05$).

White et al. (2010) investigated the effects of being in custodial placement on later depression and anxiety. They used longitudinal data from the youngest and oldest cohorts of the PYS data ($n = 510$). White et al. (2010) compared youth who were in custodial placement at age 15 and had depression and anxiety at age 16 to those neither arrested nor confined during adolescence. They identified 26 variables that were linked—theoretically or empirically—to arrest, incarceration, or both. These variables included cohort, race, and risk group, as well as individual, family, and neighborhood variables such as family welfare receipt; household structure; frequency of alcohol, marijuana, tobacco, and hard-drug use; frequency of delinquency, theft, and violence; frequency of selling drugs; gang membership; peer substance use; peer delinquency; amount of time spent with parents; amount of time spent with friends; history of running away, truancy, school suspension; low academic achievement; parents' impressions of the neighborhood; caretaker supervision, and caretaker-child communication. Parental reports of neighborhood impressions (when youth were age 14) were assessed by 17

items (e.g., prevalence of abandoned buildings, racial tensions, unemployment, and various criminal activities; α = 0.95). A propensity score was developed from the aforementioned 26 variables. These 26 variables from the Neighborhood Impressions Scale were used only for matching in the propensity score analysis. Youth who were first placed in institutional confinement for delinquency were matched with those who had not been confined for delinquent behavior. Matches were found for 37 pairs for depression and 34 for anxiety. There were no significant differences found between those who had been confined and those who had not in levels of depression or anxiety at age 16.

Cronley et al. (2012) investigated the effects of neighborhood context and race on adolescent alcohol, tobacco, marijuana, and hard drug use for Black and White adolescents. Longitudinal data were used from the youngest cohort, which included youth ages 5–18 (*n* = 473). Neighborhood context was measured by Census data based on 10 indicators, including size of the neighborhood population, percentage of the population that is Black, percentage living in the same house for at least 5 years, percentage unemployed, proportion of households on welfare, median household annual income, percentage of divorced or single parent homes, percentage of families below the federally defined poverty level, mean household size, and percentage of youth ages 10–19. Cronley et al. noted that neighborhood impressions were used as a control variable because it has been found to be associated with substance abuse outcomes for adolescents. This variable was assessed at age 10 using parents' responses on a 17-item questionnaire (α = 0.96). They found that the majority of the adolescents living in low-income, predominately Black neighborhoods were Black. This group also reported the lowest family SES, and their parents reported the most negative neighborhood

impressions. Black respondents reported greater adolescent lifetime prevalence of alcohol, tobacco, and hard drugs. Among White respondents, neighborhood affluence was a risk factor for adolescent substance abuse. White respondents were more likely to live in White, upper income neighborhoods than in racially mixed, middle-income neighborhoods and were more likely to try marijuana by age 18 than not. Researchers concluded that living in racially mixed neighborhoods may have some protective effect against marijuana use, especially for White youth.

In sum, the original 17-item Neighborhood Impressions Scale was used by at least three previous PYS studies. Loeber et al. (2005) used the scale as an independent variable. White, Shi, et al. (2010) used it as a matching variable. Cronley et al. (2012) used it as a control variable. A modified version using only 10 items was used to assess neighborhood crime in the White et al. (2011) study. For the purpose of this study, all 17 items of the Neighborhood Impressions Scale were used to measure parental impressions of neighborhood disorder to determine the direct effect of neighborhood disorder on attitudes approving of violence and peer delinquency and its indirect effect on IPV perpetration.

Peer Delinquency

Studies using PYS data have found peer delinquency to be associated with attitudes approving of delinquency, higher levels of family conflict, and delinquency. For example, Pardini, Loeber, and Stouthamer-Loeber (2005) studied peer delinquency, attitudes toward delinquency, and family conflict using longitudinal data from the youngest cohort. The respondents ranged from 11 years old to 17 years old ($n = 481$). Internal consistency was high across all six waves for peer delinquency (Cronbach's

alphas ranged from 0.86 to 0.96). Researchers found that having attitudes approving of delinquency in adolescence and higher levels of family conflict predicted peer delinquency.

Loeber, Pardini, Stouthhamer-Loeber, and Raine (2007) used the youngest cohort of the PYS (n = 503) to investigate cognitive, physiological, and psychosocial risk factors for delinquency. Peer delinquency was measured by nine behaviors on a 5-point Likert scale, and the mean was taken for ages 13 to 16. Reliability information was not given for peer delinquency. High peer delinquency was found to be a negative predictor of desistance from delinquency. Low peer delinquency predicted desistance from delinquency.

As previously described, Loeber et al. (2005) prospectively predicted childhood and adolescent violence and homicide for the youngest, middle, and oldest cohorts of the PYS (n = 1,517). There were 63 risk factors in the domains of child, family, school, and demographic characteristics. Peer delinquency was measured by nine items at age 7 for the youngest cohort (α = 0.82), 11 items at age 10 for the middle cohort (α = 0.84), and 11 items at age 13 for the oldest cohort (α = 0.90). The results indicated that, compared to nonhomicide offenders, homicide offenders were more likely to report that their peers engaged in delinquency during adolescence. The same findings held for nonviolent compared to violent offenders. The researchers suggested that their findings indicated that developmental processes associated with eventual violence and homicide were already in place in childhood.

The three studies discussed above show evidence that peer delinquency has significant associations with violent offending, delinquency, family conflict, and attitudes

approving of delinquency in adolescence. This dissertation extended this research by examining the effects of adolescent peer delinquency on young-adult IPV perpetration.

Synthesis of the Existing Literature

In sum, research suggests that there are positive relationships between neighborhood disorder and IPV perpetration, neighborhood disorder and IPV victimization, attitudes approving of violence and IPV perpetration, and neighborhood disorder and attitudes approving of violence in cross-sectional adult samples. Cross-sectional evidence suggests that there is a positive relationship between neighborhood disorder and peer delinquency in adolescence. In two longitudinal studies, researchers found adolescent peer delinquency to be positively associated with young-adult IPV perpetration. However, there are too few studies to show any certainty about these relationships. Furthermore, aside from the research on peer delinquency and IPV perpetration, none of the research on the other relationships to be examined in this dissertation has been longitudinal, to this author's knowledge.

Moreover, uncertainty remains about whether peer delinquency and attitudes approving of violence mediate the relationship between neighborhood disorder and IPV. There has been no research, to this author's knowledge, testing these mediating effects, despite past research suggesting a mediating effect. Researchers who have studied the relationships between adolescent peer delinquency and young-adult IPV perpetration and the relationships between adult neighborhood disorder and adult IPV perpetration have suggested that future research should test mediating relationships. Specifically, Cunradi (2007) suggested that future research should investigate the social mechanisms that underlie the associations between neighborhood disorder and IPV perpetration. Casey

and Beadnell (2010) suggested that future research should focus on delinquent peer groups, predictive models, and mediating relationships. Moreover, few studies in this research area have been able to conduct analyses separately for Black and White respondents, usually due to having too few Blacks in their samples.

The Present Study

This study attempted to address several gaps in the literature by examining the effects of neighborhood disorder on male-to-female physical IPV perpetration, attitudes approving of violence, and peer delinquency. The effects of attitudes approving of violence and peer delinquency on male-to-female physical IPV perpetration were also examined. Finally, this study tested whether attitudes approving of violence and peer delinquency mediated the relationship between neighborhood disorder and IPV perpetration. This dissertation extended previous research by examining these associations longitudinally and conducting separate analyses for Black and White samples.

CHAPTER 4

RESEARCH DESIGN AND METHODS

The purpose of this study was to examine the way in which neighborhood disorder, peer delinquency, and attitudes approving of violence during adolescence affected young-adult, male-to-female, physical IPV perpetration through an analysis of longitudinal data. This chapter describes the methodology, beginning with the sampling design and data-collection procedures. Details about the sample are then provided, followed by the measures of the variables and the analytic strategy.

Description of the Pittsburgh Youth Study

This dissertation uses the PYS data set. The PYS was originally funded by the Office of Juvenile Justice and Delinquency Prevention. Since then, the PYS has been funded by the National Institute on Mental Health, the National Institute on Drug Abuse, the National Institute on Alcohol Abuse and Alcoholism, the Centers for Disease Control, and state agencies and private foundations. The PYS is a prospective, longitudinal study that began in 1987–1988 and aims to document the development of antisocial behavior from childhood to adulthood among males.

The PYS sampled cohorts of boys from the first, fourth, and seventh grades from the Pittsburgh Public Schools. The respondents in first grade comprised the youngest cohort, those in the fourth grade were the middle cohort, and those in seventh grade were the oldest cohort (Loeber, Stouthamer-Loeber, Farrington, & White, 2008). The youngest cohort was used in the present study. For the youngest cohort ($N = 503$), IPV information from young adulthood was available for the past 6 years. By asking about IPV perpetration in the last 5 years at age 24/25 and last one year at age 19, it was likely

that information was gathered about more perpetrators, than the other cohorts which asked only about perpetration in the last year at selected assessments.

Data Collection Procedures

The interviews were highly structured to increase accuracy and precision in the data-collection process. A number of strategies were employed to ensure the validity of the data. Interviewers were trained in survey techniques at the beginning of each wave. At least 10% of families were called after interviews were completed by members of the research team to assess the interviewer's performance as well as the interview process. For the first 5 years of the study, interviewers recorded informant replies on paper. Then, from the 6th-year follow-up onward, data were collected on laptop computers. In addition, interviewers were assigned different families at each wave to reduce interviewer effects (Loeber, Farrington, Stouthamer-Loeber, & VanKammen, 1998).

At the beginning of the study, there were three informants for each respondent: the boy, his parent, and his primary teacher. In the PYS, one individual was designated as the primary caregiver. This person was referred to as the parent, who in most cases was the mother. Face-to-face interviews were used to collect data for the boys and parents separately, usually at the family home. Informants were interviewed in private. Parent interviews were administered from the beginning of the study until Wave 17 in the youngest cohort (mean age of boys = 18). Teachers completed rating forms about the child's behavior in the classroom. Teacher data were collected until Wave 15 in the youngest cohort (mean age of boys = 16). All interviews were conducted in English and lasted approximately one hour.

Sample Design

For the youngest cohort, the sampling process began by randomly selecting 1,165 first grade boys in Pittsburgh public schools during 1987-1988. At the first Wave of data collection, approximately 850 boys were screened for their level of risk for delinquent behavior. This screening was based on a number of antisocial behaviors indicated by the informants (i.e., boys, parents, and teachers). From this information, a risk score was calculated for each boy. Youth who scored at or above the upper 30th percentile on risk for antisocial behavior were considered the high-risk group ($n = 256$). Then, a group of boys was randomly selected from those who scored below the upper 30th percentile. This group was considered the low-risk group ($n = 247$). The sample included 280 (55.7%) Black youth, 204 (40.6%) White youth, and 19 boys (3.8%) who were either of another race or of mixed race.

The youngest cohort has been assessed 19 times from childhood to adulthood. Follow-ups were initially conducted twice per year up to 10 years old (mean age), and then annually up to 19 years old (mean age). The youngest cohort was reinterviewed between 2005 and 2007 (Wave 19; age = 24/25). This gap in assessments was due to lack of funding.

Inclusion Criteria

The inclusion criteria for the dissertation analyses consisted of having answered the IPV-perpetration questionnaire at Wave 18 or 19, being either Black or White, and not reporting a history of sexual relations with a male in the preceding year at Wave 18 or 19. In addition, people who reported no intimate relationship at Waves 18 and 19 were not included. A total of 39 young men were not included in the analyses based on these

three exclusion criteria. Specifically, 19 respondents were excluded because they did not identify as Black or White, eight were excluded because they reported a sexual relationship with a male at Wave 18 or 19, and 12 respondents were excluded because they reported no intimate relationship at Waves 18 (mean age 19) and 19 (age 24/25). With these exclusion criteria, the final sample consisted of 464 males. Then, a complete-case approach was used, meaning that only cases with complete data on all variables of interest were included in the analysis ($N = 315$). Differences between the excluded sample and the analytic sample were examined.

PYS Measures Employed in the Statistical Analyses

Predictors

Neighborhood disorder. Impressions of neighborhood disorder were measured by the Your Neighborhood Questionnaire (Loeber et al., 1998). The neighborhood scale measured the caretakers' perceived quality of the neighborhood in which their families resided. Caretakers were given a list of 17 problems that sometimes occur in neighborhoods and were asked to rate the degree to which each was a problem in their neighborhood on a 3-point Likert scale (1 = *not a problem*, 2 = *somewhat of a problem*, 3 = *a big problem*). The items on the questionnaire were high unemployment; different racial or cultural groups who do not get along with each other; vandalism, buildings, and personal belongings broken and torn up; little respect for rules, laws and authority; winos and junkies; prostitution; abandoned houses; sexual assaults or rapes; burglaries and thefts; gambling; run down and poorly kept buildings and yards; syndicate, mafia, or organized crime; assaults and muggings; delinquent gangs; transients, street people; drug

use and drug dealing in the open; and peddling of stolen goods. The questionnaires were administered to parents until their sons were approximately 18 years old.

For the purpose of this dissertation, neighborhood impressions were assessed at Wave 14, when boys were approximately 15 years old. The scores were summed across the 17 items. Higher scores indicated a more negative parental neighborhood impression. The potential scores ranged from 17 to 51. For this dissertation sample, the mean was 24.29 and the scores ranged from 17 to 51. Therefore, the mean indicated that the parents predominately reported that these problems were "not a problem" in their neighborhood when boys were 15 years old.

White, Shi, Hirschfield, Mun, and Loeber (2010) used this measure to assess caretakers' neighborhood impressions when boys were a mean age of 14. They reported that the measure had an acceptable reliability ($\alpha = 0.95$). The internal consistency was also 0.95 for the present study.

Peer delinquency. This dissertation used the peer-delinquency construct available in the PYS from the Peer Delinquency Scale (Elliott et al., 1985). The construct measured the proportion of a respondent's friends who engaged in 12 delinquent behaviors: skipped school without an excuse; lied, disobeyed, or talked back to adults such as parents, teachers, or others; purposely damaged or destroyed property that did not belong to them; stole something worth less than $5; stole something worth more than $5 but less than $100; stole something worth more than $100; entered or tried to enter a building to steal something; went joyriding; hit someone with the intention to hurt that person; attacked someone with a weapon or thought of seriously hurting that person; used

a weapon, force, or strong-arm methods to get money or things from people; sold hard drugs such as heroin, cocaine, or LSD.

For the purpose of this dissertation, peer delinquency was assessed at Waves 15 and 16, when the boys were approximately 16 and 17 years old. Respondents were asked to rate how many of their friends engaged in 12 specific delinquent acts over the preceding year using a 5-point Likert scale, where 0 = *none of them*, 1 = *few of them*, 2 = *half of them*, 3 = *most of them*, or 4 = *all of them*. The scores were summed, with higher scores indicating greater amounts of peers engaging in delinquent behavior as reported by the respondent. For the purpose of this dissertation, the mean score was derived from the scores from Waves 15 and 16. The mean score for Waves 15 and 16 was 7.50 and the scores ranged from 0 to 33.50. This indicated that the majority of respondents reported their peers engaged in low rates of delinquency.

Multiple studies (e.g., Pardini et al., 2005; Loeber et al., 2007; Loeber et al., 2008) have used the Peer Delinquency Scale. Pardini et al. (2005) reported good reliability ($\alpha = 0.91$) in the oldest cohort in the first follow-up. For the current sample, the internal consistency as measured by Cronbach's alpha was 0.92 for Waves 15 and 16.

Attitudes approving of violence. The Attitudes toward Delinquent Behavior Scale (Elliott et al., 1985) assessed the respondents' personal beliefs about how wrong it is to commit certain acts (the same 12 behaviors from the Peer Delinquency Scale described above). To measure attitudes approving of violence, the present study used the four items related to violence: (a) hit someone with the intention to hurt them (b) attack someone with a weapon or with intention of seriously hurting that person; (c) use a

weapon, force, or strong-arm methods to obtain money or things from people; and (d) purposely damage or destroy property that did not belong to them.

This study measured attitudes approving of violence at Waves 15 and 16, when the boys were a mean age of 16 and 17, respectively. The respondents were asked to rate their acceptability of each of the four violent acts on a 4-point Likert scale, where 0 = *not wrong at all*, 1 = *a little wrong*, 2 = *wrong*, and 3 = *very wrong*. The variable was computed by summing the four items. These items were reverse scored so that higher scores indicated an increased belief in the acceptability of the violent acts. The mean score for Waves 15 and 16 was 1.98, and the scores ranged from 0 to 11.50. The mean suggests that the respondents had attitudes disapproving of violence. Another study that used these items to measure attitudes approving of violence (White et al., 2011) reported an average Cronbach's alpha of 0.79 for ages 13–18. For the current sample, the internal consistency as measured by the Cronbach's alpha was 0.84 for Waves 15 and 16.

Dependent Variable: IPV Perpetration in Young Adulthood

Data on IPV perpetration in the PYS were collected for the youngest cohort at Waves 18 and 19, when respondents were approximately 19 and 24/25 years old, respectively. Respondents were asked about the occurrence of male-to-female physical IPV perpetration toward a current, past, or casual partner over the last year (asked at Wave 18) and the last 5 years (asked at Wave 19). The IPV measure used in the present study was based on the work of Chen et al. (2010), who studied IPV in the youngest cohort of the PYS. The measure consisted of a total of 11 items from the Revised Conflict Tactics Scale (Straus et al., 1996) and three items from the Domestic Conflict Inventory (Margolin, Burman, & O'Brien, 1990). These 14 items were categorized by

level of severity (e.g., mild or severe) based on the work of Moffitt and Caspi (1999).

The CTS is the most widely used instrument for identifying IPV. The Revised Conflict

Tactics Scale is an updated version that measures violence against a partner in a dating or

marital relationship with 40 items across four subscales: physical assault, psychological

aggression, sexual coercion, and negotiation. The Domestic Conflict Inventory is a 51-

item questionnaire that includes items representing physical aggression, verbal

aggression, and various forms of anger and withdrawal that may be exhibited in intimate

relationships. The scale asks respondents to report on the frequency of perpetration for

each item, with answers ranging from 0 (*never*) to 5 (*very frequently*).

Mild physical-abuse behaviors in the PYS questionnaire were physically twisted

your partner's arm; pushed, grabbed, or shoved your partner; slapped your partner; shook

your partner; threw or tried to throw your partner; threw an object at your partner; or

pulled your partner's hair. Severe physical-abuse behaviors in the questionnaire were

choked or strangled your partner; kicked, bit, or hit your partner with a fist; hit or tried to

hit your partner with something; beat up your partner; threatened your partner with a

knife or gun; used a knife or gun on your partner; or burned or scalded your partner.

Mild physical abuse ($n = 42$) was considered to be present if a respondent

reported at least one instance of less severe physical abuse but no instances of severe

physical abuse. Severe physical abuse ($n = 30$) was considered to be present if a

respondent reported at least one instance of severe physical abuse. The any-abuse

category ($n = 72$) combined the mild- and severe-abuse categories and consisted of

people who reported any mild physical abuse or any severe physical abuse. The no-abuse

category ($n = 243$) included people who did not endorse any mild or severe physical abuse.

For coding purposes in this study, no abuse was coded 0 (people who did not report any physical abuse), and any abuse was coded 1 (people who reported physical abuse on one or more of the 14 physical-abuse items). Among abusers, mild abuse was coded 0 (people who reported at least one instance of mild abuse but no instances of severe physical abuse), and severe abuse was coded 1 (people who reported at least one instance of severe abuse).

Control Variables

Based on the review of the literature, three control variables were included in the analysis: alcohol use, history of childhood physical or sexual abuse, and respondents' own SES. The descriptions for each of these variables are below.

Alcohol use in adulthood. For this study, alcohol use was assessed at Wave 18, when respondents were a mean age of 19 years old. Alcohol use was measured as the product of frequency times quantity. Frequency of alcohol use was the sum of the number of times respondents had used beer, wine, or hard liquor during the preceding year. Typical quantity (i.e., number of drinks) per occasion was assessed separately for beer, wine, and hard liquor. The maximum value was taken as the measure of alcohol quantity. The quantity was multiplied by frequency. The data were skewed (skew = 3.38). To make the distribution more normal, a transformation process was performed by taking the log of the variable (Munro, 2005). The transformed variable, the log of the frequency times quantity index, was used as the final control variable (skew = 0.11). The mean log score for this dissertation was 3.00, with a range from 0 to 7.91.

SES in adulthood. The SES of the young men was assessed using Hollingshead's (1975) index of social position. This index takes into account the respondent's occupation and education. Scores ranged from 6 to 66, with higher scores indicating higher SES. For this dissertation, SES was reverse coded for directional consistency with the other indicators (i.e., higher values indicated lower SES). This dissertation measured the construct at Wave 18, when respondents were a mean age of 19. The mean score was 43.87, with a range from 15 to 66.

History of childhood physical or sexual abuse. Childhood maltreatment data were collected from the Allegheny County Children and Youth Services (CYS) records (Loeber et al., 1998). The Maltreatment Classification System (Cicchetti & Toth, 1993) was used to code the data. The records of the youngest cohort were reviewed by PYS staff to determine if the children had experienced physical abuse, sexual abuse, or neglect from birth to age 13. Using the CYS reports, two PYS staff members initially coded all of the information for type of abuse and severity of maltreatment. Rating of coding agreements was more than 97% (Stouthamer-Loeber, Loeber, Homish, & Wei, 2001). Children were identified as victims when physical or sexual maltreatment was first substantiated by 13 years. Approximately 9% of respondents had an officially substantiated history of childhood physical or sexual abuse.

Sociodemographic Variable: Race

Information about race was collected through a demographics questionnaire during the first wave of data collection. Child's race was reported by parents (coded 0 for Black, 1 for White, and 2 for other or mixed). For this dissertation, only Blacks (51.1%, $n = 161$) and Whites (48.9%, $n = 154$) were included.

Sampling Error

Much effort was taken to reduce sampling errors during data collection by PYS researchers. Of all the families who were asked to participate in the initial screening, 84.6% agreed. During the first 18 waves of the study, annual follow-up rates averaged more than 90%. The high participation rates in this longitudinal study are attributed to close tracking of the respondents. Multiple strategies were employed to keep respondents and their families enrolled. Each family was asked to provide the names of two close friends or relatives along with their addresses and telephone numbers. In addition, families signed consent forms that allowed the researchers to obtain addresses and information about the families from schools. Researchers also went to the homes of respondents and searched public records to inquire about a missing family's whereabouts. Monetary incentives were offered as compensation at each wave to the boys and their parents, and the amount of compensation increased from $12 to $80–$100 for the boys and from $12 to $35–$65 for the parents (Loeber et al., 2008).

Nonsampling Error

In the PYS, answers to some questions were missing. Missing data resulted from respondents not being interviewed, respondents refusing to answer a specific question, respondents not knowing the answer, the interviewer accidentally skipping a question, or computer error.

Summary of the Variables Employed in the Statistical Analyses

Table 4.1 lists the variables that were included in the statistical analyses. Missing cases varied across the variables. Table 4.1 shows the age groups, reporter (or document used to obtain the data), type of variable, and number of missing cases for each variable.

Table 4.1

Variable Information

Variable	Ages	Reporter	Type	Missing cases
Independent Variables				
Neighborhood disorder	15	Parent	Continuous	58 (12.5%)
Peer delinquency	16, 17	Respondent	Continuous	51 (11%)
Attitudes approving of violence	16, 17	Respondent	Continuous	45 (9.7%)
Dependent Variable				

Physical IPV perpetration
  Yes
  No
	19, 24/25	Respondent	Dichotomous	53 (11.4%)

Physical IPV perpetration
  Mild IPV
  Severe IPV
	19, 24/25	Respondent	Dichotomous	0

Control Variables				
Alcohol use	19	Respondent	Continuous	85 (18.3%)
Individual SES	19	Respondent	Continuous	85 (18.3%)
History of childhood physical/sexual abuse	Birth–13	CYS records	Dichotomous	0
Sociodemographic Variable				
Race	6.2	Parent	Dichotomous	0

Note. $N = 464$.

Data Analyses

This study examined the effects of neighborhood disorder, peer delinquency, and attitudes approving of violence in adolescence on young-adult, male-to-female physical IPV perpetration. A complete-case approach was used for the analyses, meaning that only cases with complete data were used ($N = 315$). Statistical analyses were conducted

using SPSS 17. Means, standard deviations, percentages, ranges, skewness, and kurtosis for each variable were examined to determine the appropriateness of the variable distribution for the analyses. A one-way multivariate analysis of variance (MANOVA) and chi-square tests were conducted to test for differences between Black and White respondents. Chi-square tests were conducted to test for the differences between Black and White respondents on IPV perpetration and history of childhood physical or sexual abuse. The MANOVAs tested the differences between Black and White respondents on neighborhood disorder, peer delinquency, attitudes approving of violence, alcohol use, and SES. A MANOVA was used instead of t tests to reduce the possibility of a Type I error, which can occur with multiple independent t tests. Correlations were computed for the Black and White samples to test for the relationships among the variables and to determine any multicollinearity. There was no evidence of a problem with multicollinearity. Correlations ranged from −.316 to.599.

Statistical analyses also included path analyses, a subset of structural equation modeling, to test the hypothesized meditation model using the Analysis of Moment Structure statistical software package (Arbuckle, 2008). Path analyses can estimate different types of causation simultaneously in a multivariate, longitudinal model by allowing for simultaneous modeling of several related regression relationships. Path analyses provide estimates of the magnitude and significance of the hypothesized causal connections between variables (Byrne, 2001). Other researchers who have investigated a longitudinal mediation model that includes neighborhood, family, peer characteristics, and child adjustment have used path analyses to test their models (e.g., Criss et al., 2009). Criss et al.'s (2009) longitudinal study of boys from 18 months to 12 years old found that

family and neighborhood factors were indirectly related to adolescent adjustment through positive peer relationships.

A Sobel test (Sobel, 1982) was conducted to evaluate the magnitude of the indirect or mediated effect. An online program was used to run the Sobel test for this study, which calculated the significance level for the mediated pathway (Preacher & Leonardelli, 2012).

Several guidelines have been developed on the sample requirements to conduct a path analysis. Bentler and Chou (1987) suggested that the sample size should be at least 50 more than 8 times the number of variables in the model. On the other hand, Mitchell (1993) argued that there should be 10 to 20 times as many cases as variables. Finally, according to Stevens (1996), at least 15 cases per variable are needed to conduct a path analysis. All path analyses in this dissertation met the most conservative threshold of 20 cases per variable. The sample size for the path analyses was 156.

Presentation of the Findings

The findings are presented in chapter 5. Chapter 5 describes the effects of neighborhood disorder, peer delinquency, and attitudes approving of violence during adolescence on young-adult, male-to-female physical IPV perpetration for the Black and White samples. Tables are provided for the descriptive statistics, group differences, and correlational analyses. Given that neighborhood disorder was not significantly correlated with physical IPV perpetration or attitudes approving of violence, the hypothesized model was not tested. Instead, exploratory analyses examining the interrelationships among attitudes approving of violence, peer delinquency, and IPV perpetration were conducted.

CHAPTER 5

RESULTS

This chapter presents the results of analyses that addressed the following research questions.

1. What is the relationship between neighborhood disorder and male-to-female physical IPV perpetration?

2. What is the relationship between neighborhood disorder and attitudes approving of violence?

3. What is the relationship between neighborhood disorder and peer delinquency?

4. What is the relationship between attitudes approving of violence and male-to-female physical IPV perpetration?

5. What is the relationship between peer delinquency and male-to-female physical IPV perpetration?

6. Do attitudes approving of violence mediate the relationship between neighborhood disorder and male-to-female physical IPV perpetration?

7. Does peer delinquency mediate the relationship between neighborhood disorder and male-to-female physical IPV perpetration?

8. Will the hypothesized model vary by racial group?

Childhood physical or sexual abuse (collected from birth to age 13), alcohol use (mean age of 19), and individual SES (mean age of 19) were controlled due to their relationship with male-to-female physical IPV perpetration.

The chapter begins with the results from the attrition analyses, which examined the differences between the analytic and excluded samples. Next, the descriptive results are provided for the analytic sample. Bivariate analyses (correlations) were conducted but failed to find support for the relationships specified in the hypothesized model. Therefore, the results of the bivariate analyses were used to develop two explanatory models to examine the relationships among attitudes approving of violence, peer delinquency, and male-to-female physical IPV perpetration. Path analyses were used to test these models.

Attrition Analyses

Among respondents eligible for the study ($N = 464$), a total of 149 people were excluded from the analyses for not having complete data for all variables in the models tested. It was necessary to determine if the group of respondents excluded from the analyses was different from the group of respondents included in the analyses with respect to the variables of interest in this study. It is important to note that not all variables were able to be assessed for full attrition because approximately one third of the sample was lost by Wave 18 (mean age = 19).

Chi-squares and a MANOVA were used to test for differences between the analytic and excluded samples. Chi-square tests were used to assess group differences on the categorical variables, including race, history of childhood physical or sexual abuse, and IPV perpetration as measured at ages 19 and 24/25. A MANOVA test was used to assess group differences for the continuous variables, which included parental impressions of neighborhood disorder at the mean age of 15, peer delinquency at the mean ages of 16 and 17, attitudes approving of violence at the mean ages of 16 and 17,

and alcohol quantity–frequency index at the mean age 19, and respondents' own SES at the mean age of 19.

Table 5.1 shows that the respondents included in the analytic sample were less likely to be Black than those who were excluded. Respondents included in the analytic sample were less likely to perpetrate any physical IPV than those excluded from the sample. Moreover, respondents who were included in the analytic sample associated with fewer delinquent peers than respondents in the excluded sample.

Descriptive Results

Table 5.2 presents the means, standard deviations, percentages, ranges, skewness, and kurtosis for each variable used in the analyses for the Black ($n = 161$) and White ($n = 154$) samples. The Cronbach's alphas for neighborhood disorder, peer delinquency, and attitudes approving of violence are presented as well. Table 5.2 shows that the skewness and kurtosis were in the acceptable range for most variables, except for history of physical or sexual abuse, which was expected to be highly skewed and have excess kurtosis because it was a dichotomous variable. The reliability coefficients for neighborhood disorder, peer delinquency, and attitudes approving of violence were all above 0.75, indicating that each measure had acceptable internal consistency and reliability.

Table 5.2 also presents other characteristics for the Black and White samples. For the Black sample, almost 10% reported a history of childhood physical or sexual abuse. Approximately 27% reported having perpetrated male-to-female physical IPV perpetration at approximate ages 19 or 25. Among those who reported physical IPV perpetration, 59.1% reported mild abuse and 40.9% reported severe abuse. For the White

Table 5.1

Results of Attrition Analyses

Comparison variable(s)	Analytic sample			Excluded sample			Test	Mean difference	
	N	*M/SD*	%	*N*	*M/SD*	%		Coefficient	*p*
Race	315			149			Chi-square	17.77**	.00
Black			51.11			71.81			
White			48.89			28.19			
History of physical/ sexual abuse (birth to age 13)	315		8.89	149		10.73	Chi-square	.40	.53
Male-to-female physical IPV perpetration (ages 19/25)	315		22.86	96		36.46	Chi-square	7.07*	.01
Male-to-female physical IPV perpetration (ages 19/25)	72			35			Chi-square	.46	.50
Mild			58.33			51.43			
Severe			41.67			48.57			
Neighborhood disorder (mean age 15)	315	24.29/ 8.64		91	26.80/ 9.75		MANOVA	.81	.37
Peer delinquency (mean ages 16 and 17)	315	7.50/ 6.65		98	11.24/ 10.14		MANOVA	27.01**	.00
Attitudes approving of violence (mean ages 16 and 17)	315	1.98/ 1.89		104	2.10/ 2.08		MANOVA	2.18	.14
Alcohol use (mean age 19)	315	3.00/ 2.65		64	3.25/ 2.78		MANOVA	.90	.34
Individual SES (mean age 19)	315	43.87/ 9.69		64	46.22/ 11.42		MANOVA	2.93	.09

Note. This analysis used the MANOVA test for the continuous variables and chi-square tests for the dichotomous variables. The table shows the sample size, means, standard

deviations, percentages, types of analyses performed, mean difference coefficients, and *p* values for each variable. For the MANOVA test, *F* ratios were generated from a Pillai's statistic. The missing cases for each variable may be due to skipped interviews, refusal to answer the question, or computer error. All percentages are reflective of a response of *yes* unless otherwise indicated. Neighborhood disorder was measured using 17 items. Higher scores indicated more negative parental neighborhood impressions (mean age 15). Peer delinquency was measured using 12 items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated having a greater number of peers who engaged in delinquent behavior. Attitudes approving of violence were measured using four items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated attitudes that were more approving of violence. Alcohol use is a logged score based on a quantity-times-frequency index at mean age 19. Higher scores indicated greater frequencies and quantities of alcohol use. Respondents' SES was measured using the Hollinghead's Index of Social Status at mean age 19. Higher scores indicated lower SES.

*$p \leq .05$. **$p \leq .01$.

Table 5.2

Descriptive Statistics for Blacks (N = 161) and Whites (N = 154), Separately

Variable	*M/SD*	%	Range	Skewness	Kurtosis	Reliability α
			Black Respondents			
Neighborhood disorder	27.28/ 9.43		17–51	.77	−0.35	.95
Peer delinquency	8.39/7.33		0–33.50	1.34	1.56	.92
Attitudes approving of violence	2.28/ 2.17		0–11.50	1.14	1.62	.88
Any IPV		27.3	0–1	1.03	−0.96	
IPV type						
Mild		59.1	0–1	.38	−1.94	
Severe		40.9				
History of physical/ sexual abuse		9.9	0–1	2.70	5.38	
SES	44.89/ 10.74		15–66	−.14	−0.55	
Alcohol use	2.33/2.52		0–7.76	.52	−1.21	
			White Respondents			
Neighborhood disorder	21.16/6.39		17–47	2.07	4.43	.95
Peer delinquency	6.57/5.73		0–26	1.43	1.50	.92
Attitudes approving of violence	1.67/ 1.50		0–5.50	.80	−3.70	.76
Any IPV		18.2	0–1	1.67	0.79	
IPV type		57.1	0–1	.31	−2.06	
Mild						

Variable	*M/SD*	%	Range	Skewness	Kurtosis	Reliability α
Severe		42.9				
History of physical/ sexual abuse		7.8	0–1	3.18	8.22	
SES	42.81/ 8.35		22–61	−.37	0.04	
Alcohol use	3.69/2.61		0–7.91	−.31	−1.35	

Note. Neighborhood disorder was measured using 17 items. Higher scores indicated a more negative parental neighborhood impressions (mean age 15). Peer delinquency was measured using 12 items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated a greater number of peers who engaged in delinquent behavior. Attitudes approving of violence were measured using four items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated more approving attitudes of violence. Alcohol use is a logged score based on a quantity-times-frequency index at mean age 19. Higher scores indicated a greater frequencies and quantities of alcohol use. Respondents' SES was measured using the Hollinghead's Index of Social Status at mean age 19. Higher scores indicated a lower SES. The values for IPV (mild versus severe) represent only respondents who endorsed physical IPV. Therefore, $n = 44$ for the Black sample and $n = 28$ for the White sample. All percentages are reflective of a response of *yes* unless otherwise indicated.

sample, almost 8% reported a history of childhood physical or sexual abuse.

Approximately 18% reported having perpetrated male-to-female physical IPV

perpetration at approximate ages 19 or 25. Among those who reported physical IPV

perpetration, 57.1% reported mild abuse and 42.9% reported severe abuse.

Preliminary Analyses

Group Differences

Chi-square tests were conducted to test for differences between Black and White

respondents on physical IPV perpetration and history of childhood physical or sexual

abuse. The results revealed no significant differences between Black and White

respondents on either variable. These results are reported in Table 5.3.

Table 5.3

Prevalence of IPV Perpetration and History of Childhood Physical or Sexual Abuse Among Black and White Respondents

Variable	Blacks ($n = 161$) %	White ($n = 154$) %	χ^2	p	Df
Any IPV perpetration					
Yes	27.3	18.2	3.74	.05	1
No	72.7	81.8			
Type of IPV perpetration			.03	.87	1
Mild	59.1	57.1			
Severe	40.9	42.9			
History of physical or sexual abuse					
Yes	9.9	7.8	.45	.50	1
No	90.1	92.2			

Note. IPV perpetration was measured by 14 items at mean age 19 or 24/25. The values for IPV (mild versus severe) represent only the respondents who endorsed physical IPV. Therefore, $n = 44$ for the Black sample and $n = 28$ for the White sample. History of physical or sexual abuse was based on CYS records from birth to age 13.

A MANOVA was conducted to test for differences between the Black and White respondents on their parents' impressions of neighborhood disorder, peer delinquency, attitudes approving of violence, alcohol use, and respondents' own SES (mean age 19). The results revealed significant differences between the Black and White respondents on four of the five variables. Compared to Black respondents, White respondents reported less neighborhood disorder, lower peer delinquency, less approval of violence, and higher levels of alcohol use at age 19 (mean age). There were no significant differences between the two racial groups on respondents' own SES (mean age = 19). These results are reported in Table 5.4.

Table 5.4

Multivariate Analyses of Variance for Neighborhood Disorder, Peer Delinquency, Attitudes Approving of Violence, Alcohol Use, and SES to Assess Group Differences for Blacks (N = 161) and Whites (N = 154)

Source	F^a	p	η^2
Neighborhood disorder	45.11	.00	.13
Peer delinquency	6.03	.02	.02
Attitudes approving of violence	8.48	.00	.03
Alcohol use	22.10	.00	.07
SES	3.67	.06	.01

Note. Multivariate *F* ratios were generated from Pillai's statistic.

[a]Multivariate *df* = 1. Neighborhood disorder was measured using 17 items. Higher scores indicated a greater parental negative neighborhood impression (mean age 15). Peer delinquency was measured using 12 items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated having a greater number of peers who engaged in delinquent behavior. Attitudes approving of violence were measured using four items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated more approving attitudes of violence. Alcohol use is a logged score based on a quantity times frequency index at mean age 19. Higher scores indicated greater frequencies and quantities of alcohol use. Respondents' SES was measured using the Hollinghead's Index of Social Status at mean age 19. Higher scores indicated lower SES.

Correlations

Table 5.5 presents the correlations among the variables of interest for the Black and White samples within the total sample, and Table 5.6 presents the correlations for the IPV perpetrators only. The bivariate correlations were computed using Pearson's coefficients (Munro, 2005). The significance levels of the correlations were taken into consideration for later analyses.

Table 5.5

Correlations for Study Variables, for the Black (N = 161) and White (N = 154) Samples, Separately

Measure	1	2	3	4	5	6	7
1. Neighborhood disorder	—	.07	.03	.03	.03	.01	.16*
2. Peer delinquency	.07	—	.46**	.09	.19*	.25**	.17*
3. Attitudes approving of violence	.07	.53**	—	.10	.24**	.19*	−.02
4. Any physical IPV	.05	.30**	.13	—	.37**	.02	−.11
5. Alcohol use	−.13	.16*	.16*	.06	—	.04	−.08
6. SES	.11	.07	.04	.07	.11	—	−.04
7. History of physical/ sexual abuse	.12	.23**	.28**	.05	−.07	.12	—

Note. Black respondents are presented above the diagonal, and White respondents are presented below the diagonal. Neighborhood disorder was measured using 17 items. Higher scores indicated a greater parental negative neighborhood impression (mean age 15). Peer delinquency was measured using 12 items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated having a greater number of peers who engaged in delinquent behavior. Attitudes approving of violence were measured using four items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated more approving attitudes of violence. IPV perpetration was measured by 14 items at mean age 19 or 24/25. Alcohol use is a logged score based on a quantity times frequency index at mean age 19. Higher scores indicated greater frequencies and quantities of alcohol use. Respondents' SES was measured using the Hollinghead's Index of Social Status at mean age 19. Higher scores

indicated lower SES. History of physical or sexual abuse was based on CYS records from birth to age 13.

*$p \leq .05$. **$p \leq .01$.

Table 5.5 shows that, for both racial groups, there were statistically significant relationships between peer delinquency and attitudes approving of violence, peer delinquency and alcohol use, alcohol use and attitudes approving of violence, and history of physical or sexual abuse and peer delinquency. The correlations between alcohol use and any physical IPV perpetration, respondents' SES at mean age 19 and peer delinquency, respondents' SES at mean age 19 and attitudes approving of violence, and history of physical or sexual abuse and neighborhood disorder were only significant for the Black sample. The correlation between peer delinquency and any physical IPV perpetration and the correlation between attitudes approving of violence and history of physical or sexual abuse were only significant for the White sample.

Table 5.6 shows that, for both Black and White IPV perpetrators, there was a statistically significant relationship between peer delinquency and attitudes approving of violence. The correlation between peer delinquency and history of physical or sexual abuse was only significant for the Black sample. The relationship between neighborhood disorder and attitudes approving of violence was only significant for the White sample. However, among the sample's IPV perpetrators, type of IPV perpetration was not significantly related to any variables of interest in this study for either race. The lack of significant differences in this regard could have been due to the small number of cases and lack of power.

Table 5.6

Correlations for Study Variables with Dependent Variable, Mild/Severe IPV Perpetration, for the Black (N = 44) and White (N = 28) IPV Perpetrators, Separately

Measure	1	2	3	4	5	6	7
1. Neighborhood disorder	—	.09	−.01	−.02	.08	−.06	−.06
2. Peer delinquency	.21	—	.32*	.25	.18	.19	.31*
3. Attitudes approving of violence	.39*	.60**	—	.20	.29	.09	−.01
4. Type of IPV	−.15	−.08	−.06	—	.12	−.22	.26
5. Alcohol use	.01	.30	.34	−.05	—	.11	−.10
6. SES	−.11	−.06	−.10	−.32	.04	—	−.24
7. History of physical/ sexual abuse	.25	.34	.20	.17	.21	−.28	—

Note. Blacks are above the diagonal and Whites are below the diagonal. IPV perpetration was measured by 14 items at mean age 19 or 24/25. Black respondents are presented above the diagonal, and White respondents are presented below the diagonal. Neighborhood disorder was measured using 17 items. Higher scores indicated a more negative parental neighborhood impression (mean age 15). Peer delinquency was measured using 12 items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated having a greater number of peers who engaged in delinquent behavior. Attitudes approving of violence were measured using four items. The mean was used in the analysis and was computed based on the sums from Waves 15 and 16 (mean ages 16 and 17). Higher scores indicated more approving attitudes of violence. Alcohol use is a logged score based on a quantity times frequency index at mean age 19. Higher scores indicated greater frequencies and quantities of alcohol use. Respondents' SES was measured using the Hollinghead's Index of Social Status at mean age 19. Higher scores indicated lower SES. History of physical or sexual abuse was based on CYS records from birth to age 13.

*p ≤ .05. **p ≤ .01.

Hypothesized Model

The results of the bivariate analyses helped to determine the interrelationships among the variables of interest. Neighborhood disorder was not significantly related to attitudes approving of violence, peer delinquency, and physical IPV perpetration for the

Black or White samples. Among White perpetrators of physical IPV, there was an association between neighborhood disorder and attitudes approving of violence. Given that neighborhood disorder was not significantly correlated with any of the primary independent and dependent variables of interest for the White sample and most of the variables for the Black sample, it was not logical to test the conceptual model described in chapter 2, which relied on neighborhood disorder as a key predictor.

Missing Data

The bivariate analyses were rerun in this study using multiple imputation to account for the influence of missing data on the variables of interest. The imputation analyses were not presented as the primary results because the results from the multiple-imputation bivariate analyses were similar to those found when listwise deletion was used.

Multiple imputation involves replacing each missing data point with values to generate complete data sets. These complete data sets are analyzed, and results are then combined to reflect the uncertainty resulting from the missing data. Multiple imputation has been shown to have advantages over other procedures used for handling missing data. For example, listwise deletion handles missing data by eliminating cases with missing data; this method can bias results if the excluded cases are not representative of the entire sample (Little & Rubin, 1987). Given that the missing data in the present study showed an arbitrary pattern, the Markov Chain Monte Carlo method was used to create imputed data sets (Schafer, 1997). Following recommendations by Rubin (1987), a total of five imputed data sets were created because more than five imputations only gain a marginal level of efficiency.

The results from the bivariate correlations that used multiple imputation were similar to those presented above. The bivariate analyses of the variables of interest found that neighborhood disorder was not significantly correlated with attitudes approving of violence or peer delinquency for either racial group. The lack of significant results indicated that the hypothesized model should not be tested. The results of the bivariate correlation analysis can be found in the appendix.

Exploratory Analyses

Neighborhood Social Disorder

The Neighborhood Impressions Scale contained 17 items. Five items were identical to items used by Sampson and Raudenbush (1999) to measure neighborhood social disorder. Of the remaining items, none matched the items from the neighborhood physical disorder scale developed by Sampson and Raudenbush (1999). Therefore, only the five items on neighborhood social disorder were examined here. These five items were the presence of winos and junkies; prostitution; delinquent gangs; transients and street people; and drug use and drug dealing in the open. The Cronbach's alpha for this five item neighborhood social disorder scale was 0.60 and 0.73 for the White and Black samples, respectively. The Cronbach's alpha for the White sample was below the generally accepted 0.70 needed to determine adequate reliability or internal consistency of a measure. Therefore, the effects of neighborhood social disorder on peer delinquency, attitudes approving of violence, and IPV perpetration for the White sample were not examined. Bivariate correlations were conducted with the Black sample. For the Black sample, none of the variables of interest were significantly correlated with neighborhood social disorder.

Peer Delinquency and Attitudes Approving of Violence: Cross-Sectional Analysis

Based on the bivariate analyses (see Table 5.5), which showed that there were statistically significant correlations between attitudes approving of violence and peer delinquency and between peer delinquency and IPV perpetration for the White sample, an exploratory analysis was conducted. The exploratory analysis examined the effects of attitudes approving of violence on peer delinquency and peer delinquency on young-adult, male-to-female physical IPV perpetration. This analysis also was conducted to determine if peer delinquency mediated the relationship between attitudes approving of violence and male-to-female physical IPV perpetration.

There is theoretical and empirical support for the proposed meditational model. The peer-selection hypothesis suggests that individuals who have attitudes approving of violence will select peers who engage in antisocial behaviors (Reitzel-Jaffe & Wolfe, 2001; Tittle et al., 1986). This means that it is possible that attitudes approving of violence might precede the selection of delinquent peers. Cross-sectional investigations have found that attitudes approving of violence are associated with IPV perpetration (Malik, et al., 1997; O'Keefe, 1997; Reitzel-Jaffe & Wolfe, 2001; Riggs & O'Leary, 1996; Williams, et al., 2008). Longitudinal research has found that peer delinquency in adolescence predicts IPV perpetration in young adulthood (Capaldi, et al., 2001; Casey & Beadnell, 2010). Furthermore, studies have found that attitudes approving of violence are associated with peer delinquency (Reitzel-Jaffe & Wolfe, 2001). Based on this past literature and the peer-selection hypothesis (Thornberry, Krohn, Lizotte, Smith, & Tobin, 2003), the present study tested a longitudinal meditational model that postulated that peer

delinquency would mediate the relationship between attitudes approving of violence and IPV perpetration.

The exploratory analysis was conducted using only the White sample because the bivariate relationships for the Black sample did not show statistically significant relationships between peer delinquency and IPV perpetration. A model was developed and tested to examine the interrelationships among attitudes approving of violence, peer delinquency, and physical IPV perpetration (see Figure 5.1). As a result of excluding neighborhood disorder from the analysis, the sample size increased the White sample from 154 to 156.
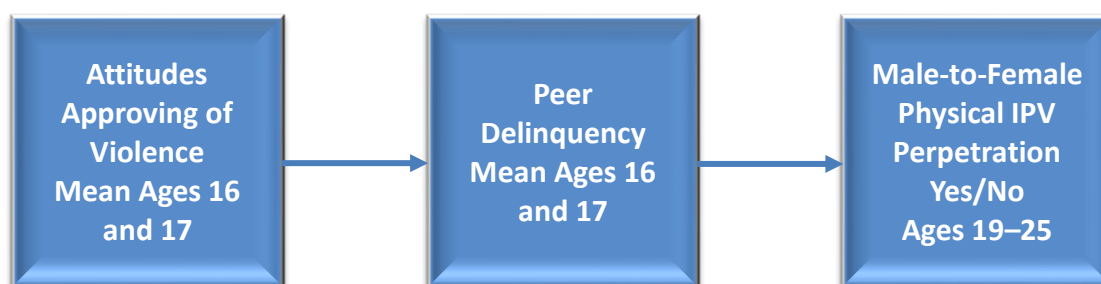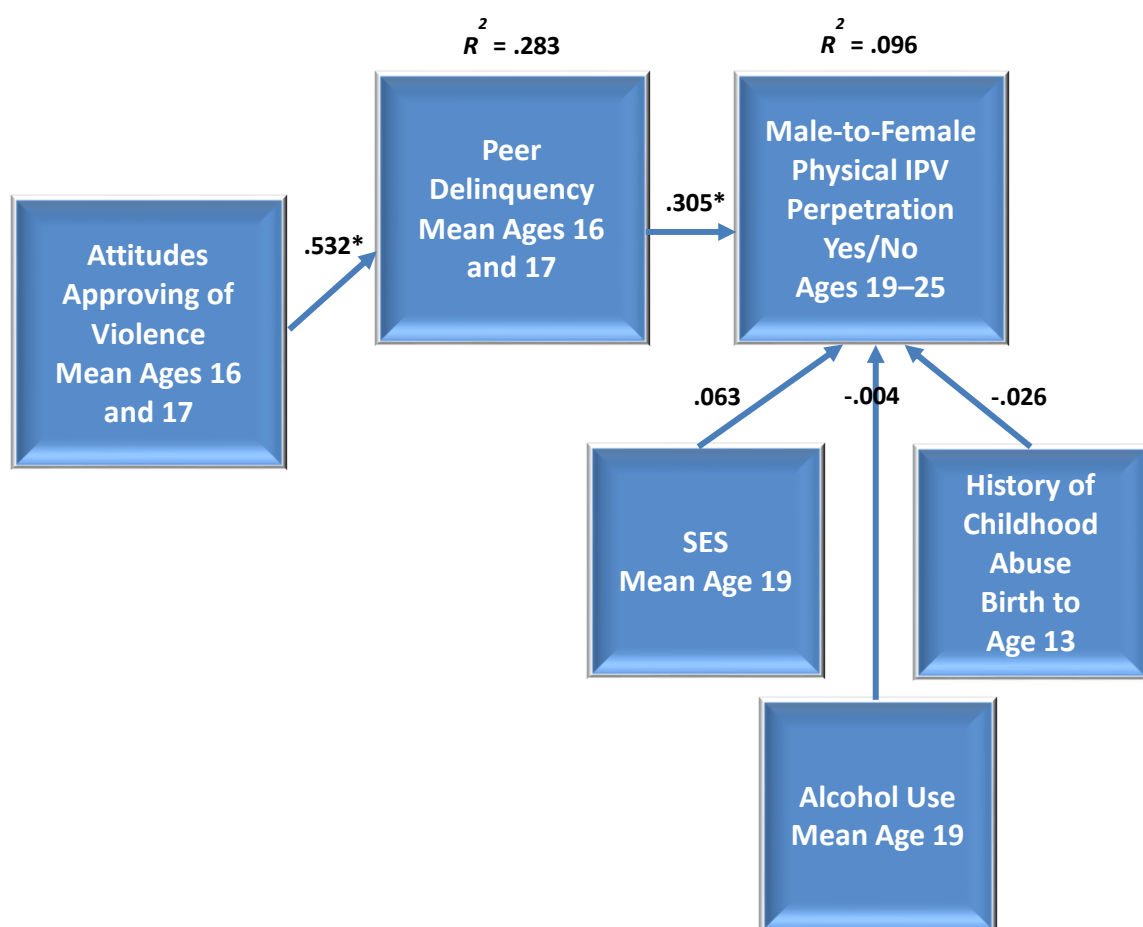

Figure 5.1. Exploratory model for the effects of attitudes and peer delinquency (mean ages 16 and 17) on young-adult IPV Perpetration for the White Sample. The model controls for childhood physical or sexual abuse (collected from birth to age 13), alcohol use (mean age of 19), and individual SES (mean age of 19) on male-to-female physical IPV perpetration.

Path analysis was used to test the postulated meditation model delineated in Figure 5.1 with the White sample ($N = 156$). The results provided support for the mediation model. Attitudes approving of violence (mean ages of 16 and 17) predicted peer delinquency (mean ages of 16 and 17; $\beta = .53$, $p < .01$). Peer delinquency (mean ages of 16 and 17) predicted IPV perpetration ($\beta = .31$, $p < .01$). The model accounted for 28.3% of the variance in peer delinquency (mean ages of 16 and 17) and 9.6% of the

variance in physical IPV perpetration. The standardized regression coefficients ranged from $-.03$ to $.53$ and are presented in Figure 5.2. The indirect effect was 0.16. The Sobel test statistic revealed a significant p value for the indirect effect of peer delinquency (mean ages of 16 and 17) as a mediator between attitudes approving of violence (mean ages of 16 and 17) and male-to-female physical IPV perpetration ($z = 3.70, p < .01$). Based on these results, it was concluded that there was an indirect effect of attitudes approving of violence on IPV perpetration.

Figure 5.2. Final model for predicting the effects of attitudes and peer delinquency (mean ages 16 and 17) on young-adult IPV perpetration for the White sample. Standardized parameter estimates for the final model. $N = 156$. *$p < .01$.

Peer Delinquency and Attitudes Approving of Violence: Longitudinal Analysis

Although the aforementioned findings suggested that attitudes approving of violence indirectly affected IPV via peer delinquency, the direction of the effect was unclear because attitudes approving of violence and peer delinquency were collected at the same time (mean ages of 16 and 17). To address this issue, the exploratory model was tested longitudinally. To examine the relationships longitudinally, peer delinquency and attitudes approving of violence, which were previously computed based on the mean of ages 16 and 17, respectively, were examined separately at mean ages 16 and 17.

Table 5.7 presents the correlations among the variables of interest for the exploratory analyses for the White sample. The statistical significance of the associations among the variables of interest was taken into consideration for further exploratory analyses. There were statistically significant relationships between attitudes approving of violence (mean age = 16) and peer delinquency (mean age = 17), peer delinquency (mean age = 16) and attitudes approving of violence (mean age = 17), and peer delinquency (mean age = 17) and any physical IPV perpetration. In addition, there were statistically significant relationships between peer delinquency (mean age = 16) and peer delinquency (mean age = 17), peer delinquency (mean age = 16) and attitudes approving of violence (mean age = 16), peer delinquency (mean age = 16) and any physical IPV, peer delinquency (mean age = 16) and alcohol use, peer delinquency (mean age = 16) and history of physical or sexual abuse, peer delinquency (mean age = 17) and attitudes approving of violence (mean age = 17), peer delinquency (mean age = 17) and history of physical or sexual abuse, attitudes approving of violence (mean age = 16) and attitudes approving of violence (mean age = 17), attitudes approving of violence (mean age = 16)

and history of physical or sexual abuse, and attitudes approving of violence (mean age =

17) and history of physical or sexual abuse.

Table 5.7

*Correlations for the Exploratory Analysis for the White Sample (N = 156)*

Measure	1	2	3	4	5	6	7	8
1. Peer delinquency (mean age 16)	—							
2. Peer delinquency (mean age 17)	.55**	—						
3. Attitudes (mean age 16)	.44**	.39**	—					
4. Attitudes (mean age 17)	.30**	.39**	.30**	—				
5. Physical IPV perpetration	.19*	.35**	.10	.12	—			
6. Alcohol use	.20*	.07	.13	.11	.05	—		
7. SES	.14	−.02	.07	.02	.08	.09	—	
8. History of physical/sexual abuse	21**	.20*	.20*	.25**	.05	−.08	.13	—

Note. Peer delinquency was measured using 12 items. Higher scores indicated having a greater number of peers who engaged in delinquent behavior. Attitudes approving of violence were measured using four items. Higher scores indicated more approving attitudes of violence. IPV perpetration was measured by 14 items at mean age 19 or 24/25. Alcohol use is a logged score based on a quantity times frequency index at mean age 19. Higher scores indicated greater frequencies and quantities of alcohol use. SES was measured using the Hollinghead's Index of Social Status at mean age 19. Higher scores indicated lower SES. History of physical/sexual abuse was based on CYS records from birth to 13 years old.

$*p \leq .05. **p \leq .01.$

Based on the results of the bivariate analysis for the White sample, a model was

developed and tested to examine the interrelationships among attitudes approving of

violence (mean age = 16), peer delinquency (mean age = 17), and physical IPV

perpetration (see Figure 5.3). The model controlled for the effects of peer delinquency at
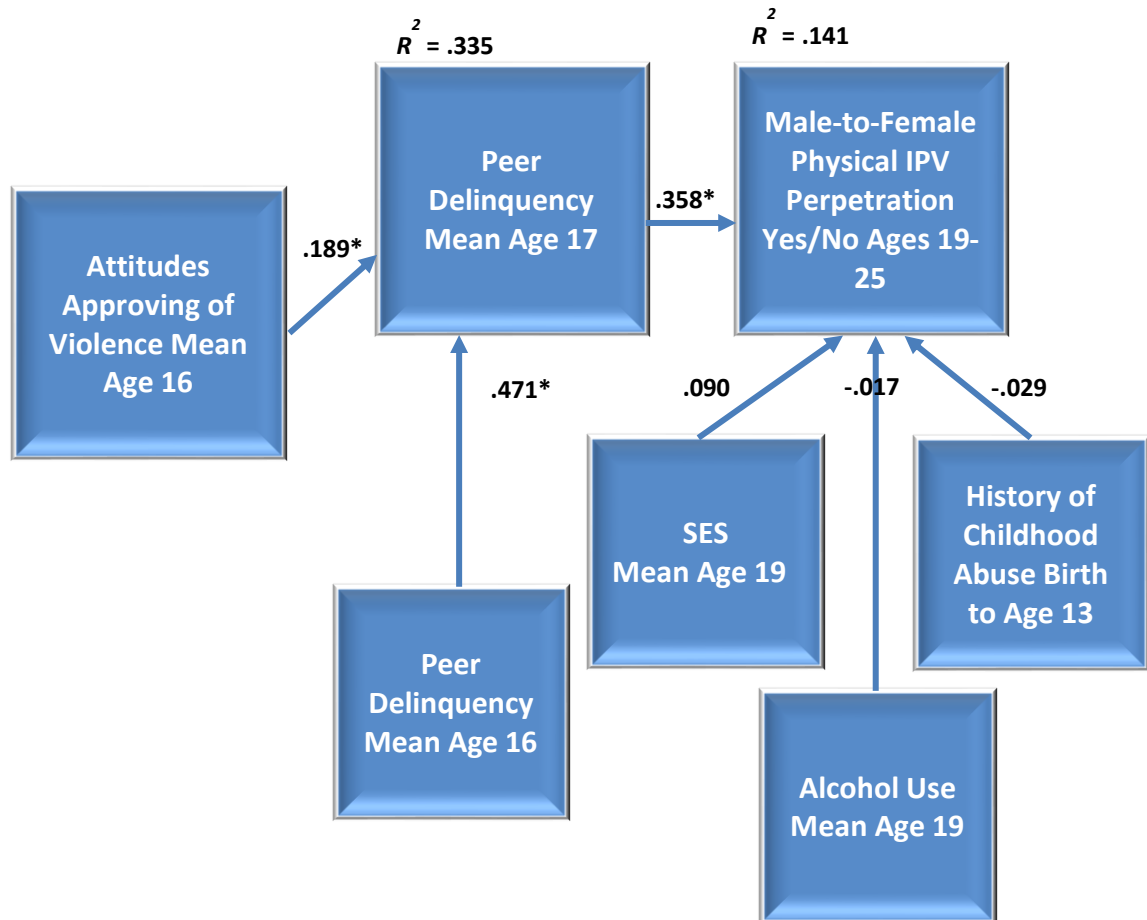
mean age 16 on peer delinquency at mean age 17 because the bivariate correlations

showed that they were significantly correlated.
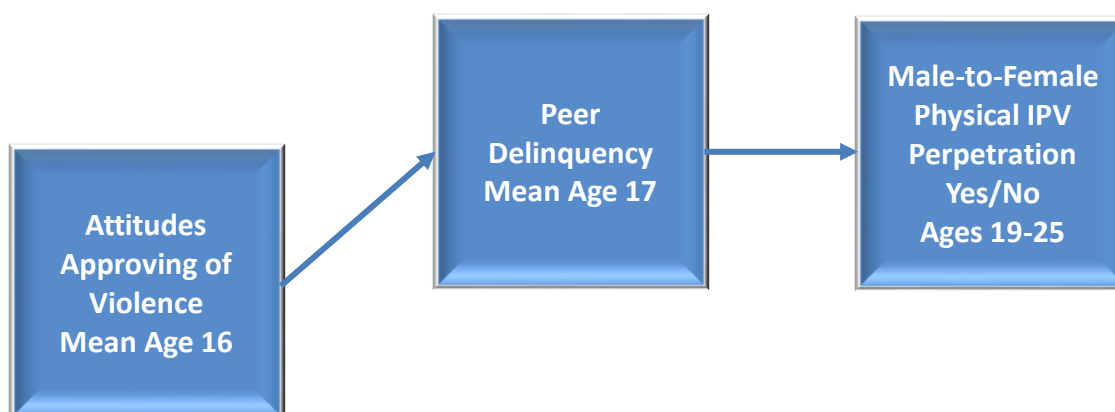
Figure 5.3. Exploratory model for the effects of attitudes (mean age 16) and peer delinquency (mean age 17) on young-adult IPV perpetration for the White Sample. The model controls for the effects of childhood physical or sexual abuse (collected from birth to age 13), alcohol use (mean age of 19), and individual SES (mean age of 19) on male-to-female physical IPV perpetration. Also, the model controls for peer delinquency (mean age of 16) on peer delinquency (mean age 17).

Path analysis was used to test the postulated meditation model delineated in

Figure 5.3 with the White sample ($N = 156$). The results provided support for the

mediation model. Attitudes approving of violence (mean age = 16) predicted peer

delinquency (mean age = 17; $\beta = .19$, $p < .01$). Peer delinquency (mean age = 17)

predicted IPV perpetration ($\beta = .36$, $p < .01$). The model accounted for 33.5% of the

variance in peer delinquency (mean age = 17) and 14.1% of the variance in physical IPV

perpetration. The standardized regression coefficients ranged from $-.03$ to .47 and are

presented in Figure 5.4. The indirect effect was 0.07. The Sobel test statistic revealed a

significant p value for the indirect effect of peer delinquency (mean age = 16) as a

mediator between attitudes approving of violence (mean age = 17) and male-to-female

physical IPV perpetration ($z = 2.24$, $p < .05$). Based on these results, it was concluded

that there was an indirect effect of attitudes approving of violence (mean age = 16) on

young-adult IPV perpetration.

Figure 5.4. Final model for predicting the effects of attitudes (mean age 16) and peer delinquency (mean age 17) on young adult IPV perpetration for the White sample. Standardized parameter estimates for the final model. $N = 156$, $*p < .01$.

CHAPTER 6

DISCUSSION AND IMPLICATIONS

Framed in Akers's social learning theory, this dissertation examined the impact of parental impressions of neighborhood disorder, peer delinquency, and attitudes approving of violence on male-to-female, physical IPV perpetration. The results demonstrated that the hypothesized model was not supported. This chapter summarizes the findings of the study and discusses the implications of the results for male-to-female, physical IPV perpetration based on the additional exploratory analyses. Limitations and directions for future research are also provided based on the results from the exploratory analyses.

Conclusion

This study evaluated eight hypotheses.

1. There will be an association between neighborhood disorder and male-to-female, physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES. This relationship was not supported.

2. There will be an association between neighborhood disorder and attitudes approving of violence. This relationship was not supported.

3. There will be an association between neighborhood disorder and peer delinquency. This relationship was not supported.

4. There will be an association between attitudes approving of violence and male-to-female, physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES. This relationship was not supported.

5. There will be an association between peer delinquency and male-to-female physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES. This relationship was supported for the White sample.

6. Attitudes approving of violence will mediate the relationship between neighborhood disorder and male-to-female, physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES. This relationship was not supported.

7. Peer delinquency will mediate the relationship between neighborhood disorder and male-to-female, physical IPV perpetration when controlling for childhood physical or sexual abuse, alcohol use, and individual SES. This relationship was not supported.

8. The hypothesized model will not vary by racial group. This hypothesis was not tested due to lack of statistically significant bivariate correlations for both the Black and White samples.

Discussion

Hypothesized Model

The findings demonstrated that there were no significant relationships between parental impressions of neighborhood disorder and the other variables of interest. Among perpetrators of physical IPV in the White sample, however, a significant relationship between parental impressions of neighborhood disorder and attitudes approving of violence was found. Based on the findings no further analyses were conducted to test the hypothesized model for neighborhood disorder.

Previous cross-sectional research on adults has found neighborhood disorder to be associated with attitudes approving of violence (Button, 2008; Gracia et al., 2009). However, those two studies were cross-sectional and analyzed adult samples that were either 100% Latin American or a majority White. There is a gap in the literature for studies with Black and adolescent samples. The analyses from this dissertation provide evidence that this association also existed among White youth who were perpetrators of male-to-female, physical IPV.

The analyses showed that when children were a mean age of 15 years old, parents' impressions of neighborhood disorder were not correlated with their children's physical IPV perpetration in young adulthood. This finding is consistent with the work of Rothman et al. (2011), who studied neighborhood disorder and adolescent dating-violence perpetration. Cross-sectional data came from two sources, which included data from a 2008 in-school survey of 1,530 public high school students and a random-digit-dial telephone survey of 1,710 adult residents of 38 neighborhoods in Boston. Neighborhood disorder data, from both adult and adolescent respondents, were examined separately to determine their relationship to dating-violence perpetration among adolescent respondents. Using adult impressions of neighborhood disorder, Rothman et al. did not find a significant relationship between neighborhood disorder and dating-violence perpetration among adolescents. In contrast, using adolescent impressions of neighborhood disorder, they found that greater neighborhood disorder was associated with an increased likelihood of dating-violence perpetration. The researchers suggested that failure to find a relationship between adult impressions of neighborhood disorder and dating violence was due to adults and adolescents not experiencing a neighborhood in the

same way; therefore, their perceptions varied. Similar to Rothman et al.'s study, the adult

reports of neighborhood disorder in this dissertation were not significantly related to IPV

perpetration, suggesting that using adult reports might have affected the results.

Exploratory Models

The 5-item scale of neighborhood social disorder modeled after Sampson and

Raudenbush's (1999) measure of neighborhood social disorder was not significantly

correlated with IPV perpetration, peer delinquency, or attitudes approving of violence for

the Black sample. The correlations were not examined for the White sample because the

scale was not reliable as determined by the low Cronbach's alpha (less than 0.70). The

findings for the Black sample were similar to Wright's (2008) findings that neighborhood

social disorder was not a significant predictor of physical IPV.

Previous studies have found that adolescent attitudes approving of violence were

associated with adolescent peer delinquency (Mesch et al., 2003; Silverman &

Williamson, 1997) and that adolescent peer delinquency predicted young-adult IPV

perpetration (Capaldi et al., 2001; Casey & Beadnell, 2010). Those studies also

suggested that peer delinquency may mediate the relationships between attitudes

approving of violence and IPV perpetration. However, to my knowledge, no study has

investigated these three variables together in one mediation model. This study began to

fill this gap in the literature.

The exploratory model investigated the interrelationships among attitudes

approving of violence, peer delinquency, and male-to-female physical IPV perpetration

for the White sample. It was hypothesized that attitudes approving of violence would

directly influence peer delinquency and that peer delinquency would directly influence

IPV perpetration. First, this model was tested using attitudes approving of violence and peer delinquency measured at the mean of ages 16 and 17. It was expected that peer delinquency (mean ages 16 and 17) would mediate the relationship between attitudes approving of violence (mean ages 16 and 17) and young-adult, male-to-female physical IPV perpetration, controlling for alcohol use (mean age 19), history of physical or sexual abuse, and the man's SES at mean age 19. Findings from the White sample showed support for the exploratory model. Attitudes approving of violence (mean ages 16 and 17) predicted peer delinquency (mean ages 16 and 17). Peer delinquency (mean ages 16 and 17) predicted young-adult, physical IPV perpetration. Also, the findings showed support for an indirect effect of attitudes approving of violence on IPV perpetration via peer delinquency.

Because the key variables were collected at the same time point in that analysis, a longitudinal model tested the relationship between attitudes approving of violence at mean age 16 and peer delinquency at mean age 17. It was expected that peer delinquency (mean age 17) would mediate the relationship between attitudes approving of violence (mean age 16) and young-adult IPV perpetration when controlling for peer delinquency (mean age 16), alcohol use (mean age 19), history of physical or sexual abuse, and the man's SES at mean age 19. The findings showed support for the longitudinal model. Attitudes approving of violence (mean age 16) predicted peer delinquency (mean age 17) and peer delinquency (mean age 17) predicted young-adult IPV perpetration. Also, the findings showed support for the indirect effect via peer delinquency.

The findings from the two exploratory models showed similarities as well as differences. Both models showed support for attitudes approving of violence indirectly

affecting IPV perpetration via peer delinquency. However, the first model, which used data on attitudes approving of violence and peer delinquency at the same points in time (mean ages 16 and 17), had a stronger indirect effect than the model tested when attitudes and peer delinquency were measured at ages 16 and 17, respectively. Although weaker, this latter model, which measured attitudes and peer delinquency at ages 16 and 17, respectively, was better able to test a causal relationship. The model demonstrated that adolescents who had attitudes approving of violence associated with delinquent peers, and in turn, associating with delinquent peers affected IPV perpetration in young adulthood.

The findings also showed support for peer selection theory, which posits that respondents' attitudes influence their choice of peers. The exploratory analyses found that adolescent attitudes approving of violence predicted associating with peers who engaged in delinquent behavior for the White sample. Various explanations can be given for why attitudes approving of violence preceded associating with peers who engaged in delinquent behavior. Gordon et al. (2004) suggested that individuals may be more likely to be drawn into delinquent peer groups when they already have attitudes approving of antisocial behaviors. Similarly, Thornberry et al. (2003) argued that individuals who already have attitudes approving of delinquent behavior are more attracted to peers who engage in delinquent behavior. As stated earlier in this dissertation, peer selection theory does not conflict with Akers's social learning theory because the latter postulates that attitudes and peer delinquency influence each other.

Past literature has found support for peer selection theory with cross-sectional samples (Reitzel-Jaffe & Wolfe, 2001; Tittle et al., 1986). This dissertation found

support for this theory using longitudinal data, which fills a gap in the literature. It is important to note that although the findings support peer selection, it cannot be concluded definitively that peer selection occurred and not peer socialization because the latter was not tested.

The significant effect of peer delinquency on IPV perpetration was expected based on Akers' social learning theory. Recall that this theory posits that peer delinquency provides the major social context in which social learning of deviant behavior occurs. In other words, associating with peers who engage in delinquent behavior has an impact on later deviant outcomes, such as IPV perpetration. The above findings are consistent with longitudinal studies on adolescent peer delinquency and IPV perpetration in young adulthood (i.e., Capaldi et al., 2001; Casey & Beadnell, 2010). Both Capaldi et al. (2001) and Casey and Beadnell (2011) found that adolescent males with more delinquent peers reported higher rates of physical IPV perpetration in young adulthood than did males with fewer delinquent peers.

Various explanations have been given for why peer delinquency predicts physical IPV perpetration. Casey and Beadnell (2010) noted that, within peer groups, behaviors are reinforced and peer-group norms influence members' behavior. If peers are acting out in violent ways and violent behavior is the norm, peer members are more likely to act the same way. Linder and Collines (2005) contended that peer relationships contribute to violent relationships in that youths are socialized in terms of what is acceptable and unacceptable in conflict resolution and violent behavior. Specifically, if youth's peer groups include violent interactions, then they may expect the same types of interactions in their intimate relationships.

The findings from this dissertation indicated that associating with peers who engaged in delinquent behavior predicted young-adult, male-to-female physical IPV perpetration among White men. Given Akers's social learning theory and empirical findings from Casey and Beadnell (2010) and Linder and Collines (2005), I speculate that individuals are socialized in adolescent peer relationships. These associations in adolescence have an impact on later decisions, behaviors, and interpersonal interactions in young adulthood, including physical IPV perpetration.

Racial Differences

This dissertation contributed to the research area by investigating the variables of interest separately by race (Black and White). It is important to study racial and ethnic groups separately, when possible, to determine any differences. For example, for the White sample in this study, the analyses revealed statistically significant correlations between peer delinquency and male-to-female, physical IPV perpetration and between attitudes approving of violence and history of childhood physical or sexual abuse. In the Black sample, there were statistically significant correlations between the respondents' SES and peer delinquency, respondents' SES and attitudes approving of violence, alcohol use and IPV, and history of childhood physical or sexual abuse and parental impressions of neighborhood disorder. The path model was not tested on the Black sample because no statistically significant correlations were found between the variables of interest.

The majority of the research that has found significant relationships between attitudes approving of violence and IPV perpetration (Carr & VanDeusen, 2004; Josephson & Proulx, 2008) and peer delinquency and IPV perpetration (Capaldi et al., 2001; Casey & Beadnell, 2010) that showed significant relationships was conducted with

samples that were a majority White. These differences found in the present study highlight the importance of investigating racial and ethnic groups separately because such findings might help explain how the collective experience of a racial or ethnic group shapes outcomes.

The present study did not find a significant difference for history of physical or sexual abuse among Black and White respondents. This is in contrast to past research with PYS data (Lee & White, 2012; Lee et al., 2012) and national studies (e.g., U.S. Department of Health and Human Services, 2010; Sedlak et al., 2010). Specifically, both studies by Lee et al. (2012) found higher levels of childhood maltreatment among Black than White PYS respondents (maltreatment was defined as substantiated physical or sexual abuse; physical neglect; emotional maltreatment; or moral, legal, or educational maltreatment with the first referral before age 13). These contrasting findings may be explained by the use of the complete-case approach for this dissertation in that only those who had complete data for all variables of interest up to 25 years old were included in the analyses. According to Lee and White (2012), those who experienced abuse as a child, compared to those who did not, had a greater risk for death during young adulthood. Furthermore, the attrition analysis of this dissertation found that respondents included in the analytic sample were less likely to be Black than those excluded. Therefore, due to death or higher rates of dropout, these individuals may not have been included in the final sample, which may have impacted these findings in that those Black men who had experienced childhood physical or sexual abuse may not have been included in the analytic sample. Past research supports that childhood physical and sexual abuse are

predictors of IPV perpetration. Therefore, it is possible that individuals who were more likely to perpetrate IPV were excluded from the analytic sample.

Implications

The results of this dissertation suggest that there is a need to provide IPV prevention strategies that target attitudes toward violence and affiliation with delinquent peers among White youth. Efforts could focus on preventing youth from forming friendships with peers who engage in delinquent behavior and assisting adolescents and young adults in being more resistant to the influence of such peers (Gest, Osgood, Feinberg, Bierman, & Moody, 2011), as well as changing their attitudes toward violence (Henry et al., 2000).

There are a number of prevention programs designed to address IPV. The majority of prevention programs target high school or college-age populations—usually within an academic setting—and focus on attitudes toward violence, conflict-management skills, and access to community resources. Examples of these programs include the Safe Dates Project (Foshee et al., 1996; Foshee et al., 2000; Foshee, Bauman, & Arriaga, 1998; Foshee et al., 2005; Cornelius & Resseguie, 2007), Break the Cycle (Jaycox et al., 2006), and End the Cycle of Violence (Jaffe, Reitzel, & Killip, 1992). Some of these programs target peer relationships. For example, Safe Dates teaches respondents to help friends identify indicators of dating abuse in their partner's behavior and learn how to confront a friend about their abusive behavior in dating relationships (Foshee et al., 2005).

The findings from this dissertation indicate that teaching youth how to identify other delinquent behavior, such as damaging property, stealing, and engaging in peer

violence, may also be helpful in challenging or changing norms deemed acceptable for delinquent behavior, decrease attitudes approving of violence and peer delinquency, and in turn decrease the risk for IPV perpetration. As Akers indicated in his social learning theory, a significant amount of learning of both attitudes toward deviant behavior and engagement in such behavior occurs in peer contexts.

Programs have been developed to support peer interventions, such as the bystander approach (Coker et al., 2011; Latane & Darley, 1970; Moynihan, Banyard, Arnold, Eckstein, & Stapleton, 2011). Bystander intervention programs include the Green Dot, which helps youth on university campuses and in high schools speak out against sexual violence (Edwards, 2009). These programs work to engage peers by encouraging them to intervene in helpful ways when faced with situations involving sexual violence. In other words, peers are encouraged to intervene to challenge norms or behavior deemed unacceptable. Bringing in the Bystander is another prevention program conducted with college students (such as members of sororities) to identify signs of sexual violence and IPV to prevent these forms of violence before they happen, intervene if necessary, or provide support to victims after abuse has occurred (Moynihan et al., 2011).

Similar to programs that use the bystander approach, these two aforementioned programs are limited to sexual violence and IPV prevention and intervention and focus on identifying red flags for sexual violence and IPV victimization and perpetration. The findings from this dissertation suggest that prevention efforts to reduce male-to-female IPV should include programs that target a wide range of delinquent behaviors such as peer violence, stealing, and damaging property. Currently, the federal government offers

funding for bystander education and prevention programs through the Violence against Women Act of 1994 (PL 103-322). This act provides funding to bystander programs through the Rape Prevention and Education Program administered by the CDC. One of the act's current funding priorities is prevention and youth programs, within which the federal government should extend funding towards programs that focus on a wide range of delinquent behavior to strengthen prevention efforts.

A recent study called for an integrative approach to prevention programs with youth. According to O'Leary and Slep (2012), IPV tends to co-occur with other risky health behaviors. O'Leary and Slep suggested streamlining various prevention groups together, including sex education, alcohol and drug prevention, and dating-violence and sexual-violence prevention work. In other words, instead of agencies and groups working individually for their own cause, they should start to think about ways to combine their prevention efforts into one program to improve service effectiveness and outcomes. Findings from this dissertation support a streamlined approach in that a variety of behaviors predicted later IPV. Prevention efforts that support identifying and challenging a wide variety of deviant behaviors may be more effective than limiting program focus to one area of deviant, delinquent, or violent behavior.

Future Research

Although this study's findings were only significant for Whites, this does not negate that interventions as well as future research should be targeted also toward Blacks. Research should, as much as possible, examine ethnic and racial groups separately. In this dissertation, the associations among potential risk factors for IPV varied for Whites and Blacks. More research should examine ethnic and racial groups separately to

determine if there are additional differences in risk and protective factors that might inform prevention programs.

Given the scarcity of research, future studies should also examine the effects of adolescent neighborhood disorder on peer delinquency, attitudes approving of violence, and IPV perpetration with other samples. For example, future research should use a nationally representative sample of males and females because the PYS data set may not be generalizable to other school districts or to individuals who are not Black or White male youth. More research with diverse samples such as Asians and Hispanics may provide more information for culturally sensitive prevention efforts. Moreover, this research should use adolescent impressions of neighborhood disorder and neighborhood-level Census data when studying the potential effects of adolescent neighborhood disorder on these aforementioned variables.

Future research should also evaluate programs such as the Safe Dates Project (Foshee et al., 1996; Foshee et al., 2000; Foshee, Bauman, & Arriaga, 1998; Foshee et al., 2005; Cornelius & Resseguie, 2007), Green Dot (Edwards, 2009), and Bringing in the Bystander (Moynihan et al., 2011) after they have been modified to include a component where they target a wide range of delinquent behaviors. The results of these program evaluations can be used to determine whether they are effective in changing attitudes and behaviors within peer groups and, thereby, decreasing IPV perpetration.

Limitations

This dissertation's strengths were the use of a longitudinal design, a racially diverse sample, and use of a mediation model. However, the study had several methodological limitations, mainly the reliance on respondents' self-reports of their peer

delinquency, physical IPV perpetration, and alcohol use. Self-reports can be biased by the perspective of the individual, how they view each situation, and how they want to be perceived (Stone et al., 2000). For example, IPV perpetration may have been underreported to some extent because the behavior is contrary to social norms and illegal (Fowler, 2002; Rodriguez, Lasch, Chandra, & Lee, 2001). In general, respondents might have underreported or misreported IPV perpetration, peer delinquency, and alcohol use, which could have affected the accuracy of the findings.

Official reports were used to measure physical and sexual abuse before the age of 13. There are limitations to using official reports. For instance, official reports have been associated with report and investigation bias, which may lead to overestimations of the prevalence of child abuse in certain populations (Widom, Czaja, & Dutton, 2008).

Another potential limitation is the use of a parental measure of impressions of neighborhood disorder. Parents' impressions of neighborhood disorder may not have been consistent with adolescent impressions of neighborhood disorder (Rothman et al., 2011). Given that a recent study (Rothman et al., 2011) found that adolescent impressions of neighborhood disorder were significantly associated with dating violence but adult impressions were not, adolescent impressions of neighborhood disorder may be a better measure. The measure of attitudes approving of violence also may have introduced a limitation in that the violence asked about was not contextualized. For example, PYS respondents were asked how wrong they thought it was to hit someone or attack someone with a weapon. Therefore, it is possible that some violent behaviors may have been interpreted by respondents in the context of self-defense. Furthermore, these attitudes were not specific to IPV perpetration.

This dissertation did not address other types of IPV perpetration, including psychological and sexual abuse. Therefore the results cannot be generalized to men who perpetrate psychological and sexual abuse. The data were not weighted, although the sample was selected to overrepresent boys at high risk for antisocial behavior. Furthermore, the PYS is not a nationally representative study and consisted of boys from just one city. Therefore, the findings are not generalizable to the country.

The attrition analyses found that there were significant differences between the analytic and excluded samples. Based on these findings, it appears that the respondents who remained in the study differed from respondents who exited or were excluded from the study by race, IPV perpetration, and peer delinquency. As a result, the findings from this dissertation may not be generalizable to the original population that was sampled.

Finally, due to limitations in the data, a number of important variables that have been shown to predict IPV perpetration were not controlled for in this dissertation, such as witnessing parental IPV and relationship satisfaction (Chen & White, 2004). A variable on relationship quality was available, but there was no way to know whether the relationship quality was measured for the same relationship in which IPV occurred.

Despite these limitations, the findings illustrate the importance of studying adolescent predictors of IPV. With more empirical evidence, the field will be better able to design interventions to reduce later risk.

Summary

In summary, the hypothesized relationships were not supported, including the relationship between neighborhood disorder and IPV. However, as predicted in the models, the exploratory analyses revealed that attitudes toward violence predicted peer

delinquency and that peer delinquency predicted male-to-female physical IPV perpetration in the White sample. Peer delinquency mediated the relationship between attitudes approving of violence and male-to-female physical IPV perpetration. The strength of the indirect effect was stronger in the model that tested attitudes approving of violence and peer delinquency at the same point in time than in the model that measured them over time. The exploratory models were not tested for the Black sample because the relationship between peer delinquency and IPV perpetration was not significant for this racial group. The findings suggest that prevention programs that include White male youth should target attitudes toward violence and peer delinquency as a strategy to reduce male-to-female IPV perpetration in young adulthood.

APPENDIX

CORRELATIONS FOR STUDY VARIABLES FOR THE BLACK AND

WHITE SAMPLES, SEPARATELY USING IMPUTED DATA

Measure	1	2	3	4
1. Neighborhood disorder	—	.04	.01	−.06*
2. Peer delinquency	.04	—	.29**	.14**
3. Attitudes approving of violence	.01	.55**	—	.11**
4. Physical IPV perpetration	.03	.33**	.17**	—

Note. Black respondents are presented above the diagonal and White respondents are presented below the diagonal.

*p ≤ .05. **p ≤ .01.

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