A DEVELOPMENTAL MODEL OF PARTNER VIOLENCE: A LONGITUDINAL STUDY

A Dissertation in
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by
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Abstract

Partner violence is a crime of national concern and has significant psychological and physical injury ramifications. This study tested a developmental model of partner violence. Three cohorts of children (n=754) were followed from kindergarten entry to the age of 18 years. Structural equation models revealed that poor parent-child relationship quality and childhood externalizing problems at age 6 years predicted partner violence indirectly via its influence on early adolescent conduct problems. Person-oriented group comparisons found no childhood risk differences between those who engaged in partner violence and those who did not. Implications for prevention efforts and future research directions will be discussed.
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Chapter 1

Introduction

Partner violence is a crime of national concern. One in three women murdered in the United States is killed by her intimate partner and almost half of all women have experienced partner violence of some kind (Lewis & Fremouw, 2001). Not only is this a problem among adult romantic partners, but increasing numbers of adolescents and young adults are also victims or perpetrators of partner violence, with estimated prevalence rates ranging from 15% to 42% (O’Keefe, Brockopp, & Chew, 1986; Spencer & Bryant, 2000). Partner violence victimization is associated with both physical injury, ranging from bruises to fractured limbs and permanent disability, and negative psychological outcomes such as post traumatic stress disorder and depression (Holtzworth-Munroe, Smutzler, & Sandin, 1997; Makepeace, 1986). Given the significant health and safety risks associated with partner violence, understanding its predictors is crucial for the development of prevention programs.

A number of studies have documented cross-sectional associations between conduct problems and partner violence, leading researchers to conclude that adolescents who engage in high rates of oppositional, aggressive, and antisocial behaviors toward others are also at heightened risk to perpetrate violence against their romantic partners (Gorman-Smith, Tolan, Sheidow, and Henry, 2001). Furthermore, a handful of studies suggest that this relation may be longitudinal, such that aggressive conduct problems in late childhood and early adolescence predate and predict the emergence of partner violence in late adolescence (Brendgen, Vitaro, Tremblay & Wanner, 2002). These findings suggest that partner violence may not be a unique type of violence, but rather may share the developmental roots and risk factors associated with other forms of adolescent antisocial behavior. If so, it would be of high relevance to determine whether risk for partner violence might be identified even earlier in the developmental cascade, possibly associated with early-starting antisocial behavior (Moffitt, 1993). Such knowledge could inform early prevention efforts.
I sought to address this question, and further explore the developmental roots of partner violence, using a longitudinal data set following children from 6 years old to 18 years old. In order to replicate prior research, the hypotheses that conduct problems exhibited in early adolescence would predict ongoing conduct problems in late adolescence, and would also predict the concurrent emergence of partner violence in late adolescence was tested. I then extended the developmental literature on partner violence in four important ways. First, the hypothesis that conduct problems exhibited in early childhood, at school entry, would predict the emergence of partner violence in late adolescence was tested. Second, the hypothesis that problematic family relations in early childhood, including poor quality parent-child relationships, harsh punishment, and interparental violence, would contribute independently to the prediction of partner violence in late adolescence was tested. Third, I compared direct and indirect pathways linking early childhood conduct problems and family relations with the prediction of partner violence in late adolescence, to determine whether adolescent conduct problems mediated these relations. Fourth, a full developmental model of partner violence in which problematic family relations were hypothesized to contribute to the development of childhood externalizing problems, which in turn predicted the continuation of conduct problems in early adolescence, which in turn predicted both partner violence and conduct problems in late adolescence was tested.

Complementary to the testing of these developmental influences, I used a person-oriented analysis to examine the characteristics of youth showing various patterns of late adolescent conduct problems and partner violence. Despite evidence of strong cross-sectional relations between conduct problems and partner violence in late adolescence, prior researchers have documented exceptions. That is, person-oriented analyses have demonstrated that there are a sizable number of adolescents who engage in partner violence but do not exhibit concurrent conduct problems, and conversely that a number of adolescents show high rates of conduct problems but no concurrent partner violence. Hence, one additional and important feature of the present study involved a comparison of the early childhood and family relation characteristics associated with four distinct profiles of late adolescence partner violence – e.g., youth who engaged in partner violence with and without concurrent conduct problems, youth who engaged in conduct problems but no partner violence, and youth who did not engage in either partner violence or conduct problems.

The following review will summarize both cross-sectional and longitudinal evidence on the relation between conduct problems and partner violence. Second, family risk factors that predict
partner violence will be reviewed. Third, previous developmental models of partner violence, incorporating both family risk factors and conduct problems, will be reviewed. Finally, the proposed developmental model and its additions to the literature will be summarized.

1.1 Conduct Problems and Partner Violence in Adolescence

Social learning theory posits that children learn to behave in aggressive and oppositional ways via observation and direct experience with both parents and peers (Bandura, 1973, 1977; Patterson, 1982). Aggressive, oppositional responding is reinforced when it is associated with the acquisition of a desired outcome (positive reinforcement) or the withdrawal of an aversive stimulus (negative reinforcement). Theoretically, as the child develops, the reinforcement of aggressive and oppositional responding by parents leads to the generalization of these behaviors to other settings and other relationships, using aversive, oppositional, and power assertive strategies with teachers, peers, and romantic partners (Capaldi, Shortt, & Kim, 2005; Patterson, 1986). Over time, with the reinforcement of social contextual influences in early adolescence, these oppositional strategies are tested across settings. These aggressive and oppositional strategies are refined based on further environmental feedback, escalating to conduct problems and partner violence later in life.

This developmental model suggests that conduct problems should precede partner violence, as children first learn to behavior aggressively in relationships, and then generalize this behavior into their romantic relationships. Consistent with this model, previous research documents strong associations between conduct problems and partner violence during adolescence.

Within the following literature review, the term ‘conduct problems’ has been used to describe the broad spectrum of oppositional, aggressive, and antisocial behaviors that represent symptoms of oppositional defiant disorder and conduct disorder. The specific studies reviewed here varied in terms of the measures used to assess conduct problems. I included studies that referred to aggressive, externalizing, or antisocial behavior problems, as well as studies that utilized clinical diagnoses of oppositional defiant disorder or conduct disorder. The term ‘partner violence’ was used to describe physical aggression occurring between romantic partners. Because adolescent partner violence is typically mutual or bidirectional (Capaldi & Crosby, 1997; Gray & Foshee, 1997), I included studies that assessed partner violence victimization or perpetration.
1.1.1 Concurrent conduct problems and partner violence

Cross-sectional studies have demonstrated concurrent relations between conduct problems and partner violence in late adolescence and early adulthood, suggesting that aggressive responding may represent a behavioral response that presents across different settings. For example, Gorman-Smith, Tolan, Sheidow, and Henry (2001) studied the prevalence and overlap of conduct problems and partner violence in a sample of 141 low-income minority adolescents, ranging in age from 15 to 19 years old. They found that the majority of youth who reported engaging in conduct problems (e.g., delinquent or violent behavior) also reported engaging in partner violence (e.g., the perpetration of physical aggression against their romantic partner). Although the correlation between conduct problems and partner violence was not explicitly tested, the findings suggest a relation between the two problematic behavior patterns.

In 2004, Ozer and colleagues assessed peer violence and partner violence in 247 adolescents, ranging in age from 16 to 20 years. Peer violence was significantly correlated with the concurrent perpetration of physical aggression against the romantic partner for males, but not for females. This gender difference may reflect the gender disparity in the incidence of peer violence. Whereas similar proportions of males and females reported perpetrating partner violence in this study (9.6% and 12.5% respectively), 5 times as many males as females reported engaging in peer violence (21.5% and 4.5% respectively). The low base rate of peer violence among females may have attenuated the correlation between partner violence and peer violence. In addition, these findings suggest that females, more than males, may engage in partner violence without exhibiting broader concurrent patterns of violence against peers.

1.1.2 Adolescent conduct problems and early adult partner violence

Expanding upon cross-sectional studies that found concurrent associations between conduct problems and partner violence, two recent longitudinal studies have documented predictive relations, linking adolescent conduct problems with early adult romantic violence. These findings support the theory that an aggressive and oppositional interaction style that develops and is reinforced in peer relationships during adolescence predicts the emergence of similar behaviors in romantic relationships later in life.
Specifically, in 2000, Swinford, Demaris, Cernkovich, and Giordano provided evidence that adolescent conduct problems were associated with partner violence in adulthood. In their study, 608 adolescents between the ages of 12 and 19 were assessed for adolescent conduct problems, defined as aggressive, deviant, and law-breaking behaviors. Partner violence was defined as a latent construct representing the propensity for partner violence perpetration. This latent construct was estimated from various observations of acts of physical aggression against a partner. Adolescent conduct problems were significantly correlated with partner violence in adulthood, assessed 10 years later.

Similarly, Andrews and colleagues (2000) assessed the influence of late adolescent conduct problems at age 17 on partner violence at age 23 in a sample of 254 participants. In this study, late adolescent conduct problems were assessed using parent reports of delinquent behavior and self reports of conduct disorder symptoms. Partner violence was defined as a perpetration of physical aggression against a partner. Late adolescent conduct problems predicted significant unique variance in young adult partner violence.

In summary, there is evidence that an oppositional, aggressive behavior style exhibited as conduct problems in adolescence is correlated with an extension of this same aggressive style in future romantic relationships (Andrews et al., 2000; Swinford, Demaris, Cernkovich, & Giordano, 2000). Although these two studies were longitudinal, both measured conduct problems in later adolescence, at a time when many youth had likely already initiated romantic relationships. Neither included measures of partner violence during late adolescence. For this reason, these studies demonstrated longitudinal associations between adolescent conduct problems and later partner violence, but did not document predictive relations, in which conduct problems existed prior to and predated the emergence of romantic violence. However, several additional longitudinal studies suggest this predictive relation exists.

1.1.3 Pre-existing conduct problems predict the emergence of partner violence

Finally, a third group of studies shows predictive associations between conduct problems exhibited in late childhood or early adolescence and the emergence of partner violence in late adolescence, suggesting that a generalization of responding across settings occurs even earlier.

Foshee and colleagues (2004) assessed the association between middle adolescent conduct problems and middle to late adolescent partner violence in a sample of over 1,200 adolescents
across 4 or 5 years (depending on wave). Middle adolescent conduct problems were defined as self reports of perpetrating aggression against a peer at age 14 or 15, and partner violence was defined as physical aggression that was likely to result in injury. Middle adolescent conduct problems significantly predicted onset of adolescent partner violence in univariate models. In addition, the severity of middle adolescent conduct problems predicted the number of future years of partner violence, described as partner violence chronicity.

Looking at early adolescent conduct problems, Brendgen, Vitaro, Tremblay, and Wanner (2002) assessed the influence of conduct problems at age 12 and 16 (e.g. violence or weapon use) and partner violence (physical aggression perpetration) at age 16 in a sample of Canadian males. Early adolescent conduct problems significantly predicted middle adolescent partner violence. In addition, middle adolescent partner violence and conduct problems were significantly correlated.

In conclusion, there is consistent evidence that conduct problems are a developmental precursor to partner violence. In other words, a behavioral repertoire of aggressive, oppositional, and antisocial responding with peers, family members, and authority figures earlier in life is predictive of violence perpetration and victimization in a romantic relationship later in life. As this review highlights, the evidence for this association spans multiple developmental stages from young adulthood to early adolescence for both the predictor and outcome. However, the operationalization of these developmental stages has been imprecise, as demonstrated by both conduct problems and partner violence being measured at some point during adolescence between the ages of 12 and 19 (Foshee, Bennfield, Ennett, Bauman, & Suchindran, 2004; Swinford, Demaris, Cernkovich, & Giordano, 2000).

Given consistent evidence that conduct problems predict later partner violence, it is critical to understand the early risk factors that influence the development of a behavioral repertoire of aggressive and oppositional responding that may present as externalizing problems, conduct problems, and partner violence. Family factors during childhood may predict both future conduct problems and partner violence (Loeber & Dishion, 1983; Capaldi & Clark, 1998).
1.2 Family Factors

Three family factors, in particular, have emerged in developmental research as risk factors associated with child conduct problems—harsh punishment practices, poor parent-child relationship quality, and interparental violence. These family factors may have an indirect influence on the development of partner violence, via their promotion of child conduct problems. In addition, there is some evidence that these family risk factors may independently and directly influence the perpetration of partner violence, although the evidence for a direct pathway is mixed (Andrews, Foster, Capaldi, & Hopps, 2000; Dutton, 1998). First, the evidence for an indirect association between family risk factors and partner violence will be reviewed. Then, the evidence for a direct relation between family risk factors and partner violence will be summarized.

1.2.1 Family factors associated with child conduct problems

As mentioned previously, social learning theory posits that children acquire aggressive response patterns via observation and experience. In particular, the way that parents model the use of aggressive tactics in their behavior toward their child, as well as the way that parents respond to child oppositional and aggressive behaviors are identified as central parenting practices that shape the child’s aggressive and oppositional responding.

After three decades of developmental research, a strong consensus has emerged that escalating patterns of increasingly aversive, aggressive parent-child interactions foster children’s development of a repertoire of aggressive, oppositional conflict strategies via multiple mechanisms (Coie & Dodge, 1998; Loeber & Hay, 1997; Patterson, 2005; Rubin & Burgess, 2002). First, harsh punishment provides a model for the child of coercive, aggressive responding. Second, inconsistent parenting hinders a child’s ability to identify rules and develop a repertoire of socially appropriate behavior. The child is inadvertently reinforced for engaging in aggressive or oppositional behavior that elicits the withdrawal of aversive parent behavior or attainment of a goal (e.g. received requested candy after having a temper tantrum.) Finally, these harsh parent-child interactions elicit feelings of frustration and anger in both parties, increasing the likelihood of future angry, hostile parent-child interactions and limiting the development of a warm parent-child relationship.
In his model of coercive family processes, Patterson (1995) describes this developmental pattern in detail, focusing on the contribution that daily conflicts between the parent and child play in building child oppositional and aggressive behaviors. Key factors of the coercive parenting process include a parent averagely intruding on a child’s activity. When the child responds with whining, complaining, or other oppositional tactics, the parent may withdraw his or her request in response to the child’s actions. This critical action rewards the oppositional child behavior via negative reinforcement. Alternatively, the parent may give into the child’s demands, positively reinforcing the child’s aversive, oppositional behavior. At times, the parent will not withdraw his or her request, but rather may escalate attempts to gain compliance, using increasingly harsh or aversive tactics. The coercive process model hypothesizes that this cycle of aversive control attempts escalates, as parents and children periodically reinforce each other, resulting in high rates of hostile, angry interaction and undermining positive support.

Observations of mother-child interactions provide evidence to support the coercive family process theory. For example, mothers of aggressive children are more likely to withdraw their requests when the child responds in an aggressive or oppositional way, compared to mothers of nonaggressive children (Synder & Patterson, 1995).

Across a wide range of longitudinal studies, harsh, inconsistent discipline practices have consistently been linked with risk for the development of conduct problems (Farrington, 2003; Lipsey & Derzon, 1998; Patterson & Dishion, 1985; Patterson & Stouthamer-Loeber, 1984; Shaw et al., 2003). In the National Longitudinal Study of Children and Youth, maternal hostility and punitive parenting was significantly associated with higher levels of conduct problems in a sample of 2,745 children and their families (Romano, Tremblay, Boulceres, & Swisher, 2005). Parenting marked by hostility, coercion, and inconsistency has also been associated with increased conduct problems in two samples followed over 3 and 4.5 years (Scaramella, Conger, Spoth, & Simons, 2002). In addition, harsh, coercive parenting has been associated with the emergence of child conduct problems across three generations of 411 families in the Cambridge Study in Delinquent Development (Smith & Farrington, 2004). Further, Capaldi, Pears, Patterson, and Owen (2003) assessed the influence of poor parenting (e.g., harsh, inconsistent discipline and poor quality parent-child relationship) on conduct problems and temperamental risk across three generations. Generation 1 poor parenting was significantly associated with the development of conduct problems in generation 2. In addition, generation 2 poor parenting was significantly
associated with generation 3 temperamental risk, or the toddler’s angry, challenging behavior. Further evidence for the association between coercive parenting processes, poor parent-child relationship and conduct problems is reviewed by Loeber and Hay (1997) and Coie and Dodge (1998). In sum, there is strong empirical support from numerous longitudinal, prospective studies for the association between harsh discipline practices, parent-child relationship quality and the development of conduct problems.

1.2.2 Family factors associated with partner violence

In addition to the indirect role that harsh discipline practices may play in promoting partner violence via their impact on child conduct problems, two other family characteristics have been posited to contribute directly to the development of partner violence – poor parent-child relationship quality and interparental violence (Dutton, 1998, 2007). In his model, the experience of these early traumas is hypothesized to lead to various psychological disturbances, particularly distrust and emotional dysregulation in the context of intimate relationships, which then may hinder the development of normative romantic relationships and increase the risk of partner violence. Dutton argues that these family risk factors are unique developmental antecedents that lead specifically to partner violence. Thus, in this model, people who have experienced these family risk factors in childhood are likely to have: a) a behavioral repertoire of aggressive conflict resolution strategies from witnessing or experiencing physical abuse, b) trauma symptoms such as high hostility, anger, and depression related to a history of parental shaming, and c) rejection sensitivity and ambivalence in the face of intimacy resulting from an insecure attachment history (Dutton, 2007; Dutton, Starzomski, & Ryan, 1996). Dovetailing with the social learning theory model, Dutton emphasizes that a child’s development of aggressive and oppositional behaviors via observation and experience is a critical predictor of partner violence. In contrast to the conduct problems literature, however, Dutton argues that it is the combination of a behavioral repertoire, trauma symptoms, and the consequences of an insecure attachment style that result in physical aggression in intimate, romantic relationships in contrast to aggression with strangers or peers. In support of this hypothesis, adult reports of fearful attachment style are significantly correlated with concurrent trauma symptoms and violence perpetration (Griffin & Bartholomew, 1994; Starzomski & Dutton, 1994). Dutton (1995) hypothesized that this fearful attachment style results from childhood experiences of harsh, abusive parenting.
1.2.2.1 Parent-child relationship quality

Poor parent-child relationship quality is also posited to increase risk for future partner violence. The nature of this relationship quality is largely determined by the caregiver’s sensitive responding to the child seeking parent proximity and closeness. Parental sensitivity to child emotional needs, and their supportive responding are posited to play a central role in the development of a secure parent-child relationship and to form a foundation for the child’s development of an adaptive internal working model of intimate relationships. Children who experience an insensitive, inconsistent, and unreliable caregiver are more likely to develop a lower quality of parent-child relationship, linked with insecure attachment and associated emotional vulnerability (Ainsworth et al., 1978; Dutton, 2007). Insecure parent-child relationships, in turn, are postulated to promote maladaptive internal working models of intimate relationships, including expectations that the self is unworthy of love, and that relationship figures are unreliable. Such internal working models are affectively laden, such that individuals are highly vulnerable to feelings of anxiety, anger, disappointment and rejection in the context of intimate relationships. Evidence drawn from attachment interviews with adults suggest that childhood experiences of poor parent-child relationship quality are related to distorted beliefs about relationships, which in turn negatively influence future relationship functioning (Collins & Read, 1990; Hazan & Shaver, 1987). Numerous studies have found an association between retrospective reports of parent-child relationship quality, harsh punishment and physical aggression in intimate relationships (Babcock et al., 2000; Bookwala & Zdaniuk, 1998; Dutton, Starzomski, & Ryan, 1996; Henderson, Bartholomew, & Dutton, 1997; Holtzworth-Munroe, Stuart, & Hutchinson, 1997).

Most of the evidence linking poor parent-child relationship quality with partner violence comes from cross-sectional studies. Only one prospective, longitudinal study has assessed parent-child relationship quality and partner violence. Gorman-Smith and colleagues (2001) used three waves of data from the Chicago Youth Longitudinal Study to assess the differences in parent-child relationship quality, as well as parenting practices, among male participants who exhibited conduct problems, those who engaged in partner violence, and those who engaged in both behaviors. Parent-child relationship quality was defined by child and parent reports of emotional cohesion in the relationship. Parenting practices included reward and discipline practices, as well as parent monitoring. Both parent-child relationship quality and parenting practices contributed
significantly to a discriminant function analysis that differentiated among males who engaged in no violence, only conduct problems, only partner violence, or both conduct problems and partner violence. Males who engaged in both types of violence experienced consistently poorer parent-child relationship quality and more coercive and inconsistent parenting practices than any other group.

1.2.2.2 Interparental violence

In addition to the family risk factors of harsh punishment and poor parent-child relationship quality, interparental violence is posited to increase the likelihood of physical aggression in a child’s later intimate relationships. This may occur through multiple mechanisms.

First, observation of interparental violence may serve as a direct model of conflict resolution tactics within a romantic relationship. Parents engaging in interparental violence provide a model of aggressive, hostile responding that their children observe. It has been demonstrated that children can learn and retain aggressive behavior patterns simply by observing violence that results in the acquisition of a goal (Bandura, 1973). It is hypothesized that via observational learning, children who are exposed to interparental violence acquire their own aggressive response patterns. Supporting this hypothesis, children who witness interparental violence are significantly more likely to exhibit externalizing conduct problems (Carlson, 1990; David, Steele, Forehand, & Annistead, 1996; Havey & Dodd, 1995; Jaffe, Wilson, & Wolfe, 1986). Children may internalize these relationship models, developing a relationship schema or belief structure in which aggression and intimacy are linked.

Second, there is evidence that children’s repeated exposure to marital conflict hinders their regulatory capacities, resulting in heightened reactivity to stress (Cummings, 1994; Cummings & Davies, 1996). A series of studies have demonstrated that children who experience prolonged exposure to marital conflict exhibit greater distress and reactivity, described as sensitization (see review, Cummings, 1994; Cummings & Davies, 2002). Sensitization has been demonstrated in field studies (Garcia, O’Hearn, Margolin, & John, 1997) and laboratory simulations (Cummings, Iannotti, & Zahn-Waxler, 1985; Davies, Myers, Cummings, & Heindel, 1999; El-Sheikh & Cummings, 1995). Two illustrative studies are reviewed below.

In an experimental condition, children were randomly assigned to observe either a series of unresolved, hostile couple conflicts or a series of mild, resolved couple conflicts (Davies, Myers,
Children then observed a standard conflict. After observing the standard conflict, girls who had previously observed hostile, unresolved conflict reported higher levels of fear and anger than girls who had previously observed a mild, resolved conflict.

In addition, both boys and girls who had observed the series of unresolved conflicts reported significantly higher levels of sadness. In addition, children’s experience of interparental violence is significantly correlated with their assessment of a neutral conflict as threatening and having a negative outcome (Grych, 1998). This heightened reactivity to stress and limited emotion regulation capacities may in turn increase the likelihood of aggressive responding during romantic conflicts marked by high stress and emotional arousal.

Interparental violence is a widely studied risk factor for partner violence perpetration. Hanson and colleagues (1997) demonstrated that, in a sample of approximately one thousand participants, men who engaged in partner violence were significantly more likely to have a history of conduct problems and to report that their parents engaged in partner violence than those who did not engage in partner violence. In a meta-analysis of 29 studies, a small but significant correlation was found between witnessing interparental violence and engaging in partner violence in adulthood (mean $r = .18$ for future perpetration, $r = .17$ for future victimization; Stith et al., 2000). Interestingly, gender was a moderator for the association between witnessing interparental violence and perpetrating partner violence, with men who witnessed interparental violence being significantly more likely to perpetrate partner violence than females. There were no gender differences in the association between witnessing and being a victim of partner violence. Using data from the National Family Violence Survey with a sample of 6,000 participants, Heyman and Smith-Slep (2002) also found a significant association between witnessing interparental violence and perpetrating partner violence.

Although there is rich evidence for the presence of a correlation between interparental violence and partner violence based on retrospective reports (see Holtzworth-Munroe, Bates, Smutzler, & Sandin, 1997; Hotaling & Sugarman, 1986; Kwong et al., 2003 for review), few prospective studies assess this association. In one of those few prospective studies, Foshee, Ennett, Bauman, Benefield and Suchindran (2005) analyzed the influence of interparental violence on the prediction of partner violence. They assessed over 1,000 adolescents, first at the beginning of 8th or 9th grade, then again 17 months later. A significant strength of this study was the assessment of partner violence at both time points, allowing for an analysis of factors that predict the
continuation of partner violence across time. For White participants, witnessing interparental violence was significantly correlated with partner violence at time 1, but not at time 2. Although similar correlations between interparental violence and time 1 partner violence were found for Black participants, these were not significant, likely due to power issues. After controlling for time 1 partner violence, witnessing interparental violence did not predict time 2 partner violence in a regression model. Two methodological weaknesses limit the strength of these findings. First, all data was based on adolescent self report across a relatively short span of 17 months. In addition, a single question was used to code interparental violence: “How many times have you seen one of your parents hit the other?” Unfortunately, this measure does not assess other types of exposure to interparental violence such as hearing the physical violence from somewhere else in the house or observing the resulting injuries after the interparental violence had ended.

Further studies by Foshee and colleagues failed to demonstrate a significant association between interparental violence and partner violence (Foshee, Bennefield, Ennett, Bauman, & Suchindran, 2004; Foshee, Linder, MacDougall, & Bandiwalla, 2001). Finally, Brendgen, Vitaro, Tremblay, and Wanner (2002) assessed the influence of interparental violence on the perpetration of partner violence at age 16 in a sample of Canadian males. Adolescent reports of interparental violence did not predict partner violence. A single question was used to code interparental violence: “How frequently do your parents fight with each other?”

In sum, family risk factors may directly or indirectly influence the development of partner violence. There is consistent evidence that harsh parenting directly predicts child conduct problems, which may be a developmental precursor to partner violence. In addition, Dutton (1998, 2007) argues that family risk factors such as poor parent-child relationship quality and exposure to interparental violence are critical and direct predictors of future partner violence. There is mixed evidence to support this hypothesis. Specifically, the majority of evidence for the association between these family risk factors and partner violence is based on correlational evidence using retrospective reports of childhood parenting variables. There are many problems with relying on retrospective reports as an empirical basis for a developmental model of partner violence. First, correlations between contemporaneous and retrospective reports of family and parenting variables are low to moderate at best (Henry, Moffit, Caspi, Longley, & Silva, 1994). Second, studies with identified samples of violent couples tend to inflate the association between risk
factors and outcomes, because the study, by design, does not include the people who experienced these risk factors but do not engage in partner violence in their romantic relationships.

There is limited evidence for the unique, independent influence of harsh punishment, parent-child relationship quality or interparental violence on the prediction of partner violence. There are many possible explanations for this absence of findings. There are few longitudinal, prospective studies on the influence of family risk factors on partner violence. Further empirical research is needed to clarify the link between these variables.

1.3 Multi-Component Developmental Models

Evidence from retrospective, cross-sectional, and longitudinal studies support a strong association between conduct problems and partner violence. A few longitudinal studies suggest that aggressive and oppositional responding patterns in middle childhood are a developmental precursor to both antisocial behavior and partner violence in late adolescence. In addition, a set of critical family risk factors have been linked with both child conduct problems and with partner violence. A few longitudinal studies have integrated these risk factors and tested multi-component developmental models linking family risk factors, child conduct problems, and the development of partner violence.

These models have assessed the contribution of family risk factors and childhood or adolescent conduct problems in the emergence of partner violence in adolescence. Interestingly, these studies present evidence for both the direct and indirect influence of conduct problems and family factors on the prediction of partner violence.

In 2002, Woodward, Fergusson, and Horwood used a prospective longitudinal data set to assess the influence of the developmental timing of conduct problems on partner violence perpetration and victimization in early adulthood. Conduct problems were defined as parent and teacher reports of aggression and defiant behavior in middle childhood (8-10 years old), parent and self reports of delinquent and criminal behavior in early to middle adolescence (12-16 years old), and partner and self reports of violence and criminal behavior in late adolescence (18 and 21 years old). Partner violence was defined as physically aggressive acts against a romantic partner. Three latent trajectory groups emerged in the analysis based on assessments of conduct problems across the life span: an early onset life course persistent group, a late onset group characterized by a
termination of offending in adolescence or adulthood, and a nonoffender group. First, the authors assessed trajectory group differences in childhood risk factors. Significant differences were found between each group, with the early onset conduct problems groups experiencing the highest levels of harsh punishment during childhood and adolescence and the nonoffending group experiencing the lowest level of these risk factors. Second, the researchers assessed for group differences in partner violence perpetration between the early onset conduct problems group, the late onset conduct problems group, and the nonoffender group. Significant group differences in partner violence perpetration emerged between each trajectory group. These group differences remained evident, even after controlling for the influence of childhood risk factors. Nonoffenders had the lowest rates of partner violence perpetration and victimization, with late onset participants having scores 3 times as high (Cohen’s $d=.27$, or small effect size), and early onset participants having scores 5 times as high as nonoffenders (Cohen’s $d=.64$, or large effect size). These results suggest that the developmental timing of conduct problems can have an important influence on the likelihood of subsequent partner violence after controlling for differences in early risk.

Ehrensaft and colleagues (2003) hypothesized that a host of childhood risk factors, including harsh punishment practices and interparental violence, would put a child at risk for developing middle adolescent conduct problems, defined as a diagnosis of oppositional defiant disorder or conduct disorder based on parent or self report (approximately age 15). Further, they hypothesized that middle adolescent conduct problems would, in turn, increase risk for engaging in partner violence in early adulthood. Harsh punishment was defined as mother and child reports of coercive parenting during middle childhood (approximately age 9). Partner violence was defined as perpetration of physical aggression against a romantic partner. The study used a randomly selected sample of 975 families from New York State who were assessed at 5 time points between 1975 and 1999. Contrary to the authors’ hypotheses, middle adolescent conduct problems did not mediate the association between childhood risk factors and partner violence. Childhood harsh punishment, childhood interparental violence, and middle adolescent conduct problems each made significant, unique contributions to the prediction of adult partner violence. A 0.31 correlation between harsh punishment and partner violence was found. In other words, experiencing harsh punishment in childhood accounted for 9% of the variance in the prediction of future partner violence, a small effect. Ehrensaft and colleagues did not provide data for similar effect size calculations on the predictive power of interparental violence or middle adolescent
conduct problems. Middle adolescent conduct problems conferred the greatest risk for future partner violence. Using logistic regression and an odds ratio calculation, participants who exhibited middle adolescent conduct problems were seven times more likely to engage in adulthood partner violence than participants who did not have middle adolescent conduct problems. Those who experienced interparental violence were three times as likely to engage in adulthood partner violence as compared to those who did not.

In 1998, Magdol and colleagues analyzed the influence of family risk factors and childhood and adolescent conduct problems on the prediction of partner violence in young adulthood (21 years). The sample was a birth cohort commonly known as the Dunedin sample, and the data included child, parent, and observer reports collected at multiple time points across 20 years. Family risk factors were defined as negative parent-child interactions in childhood (ages 3, 7 and 9), parent-adolescent relationship quality (age 15), and mother’s mental health status (when the child was 7, 9, and 15). Conduct problems were defined as parent and teacher reports of antisocial behavior and hyperactivity in middle childhood (ages 7 and 9) and parent, adolescent, and police reports of aggression and illegal behavior in middle adolescence (age 15). Partner violence was defined as physical aggression perpetration against a romantic partner. For males only, middle childhood conduct problems were significantly correlated with partner violence in young adulthood ($r=0.14$). For both males and females, partner violence in young adulthood was significantly correlated with conduct problems and parent-child relationship quality in middle adolescence (for males $r=.16$ and $r=-.16$ respectively, for females $r=.19$ and $r=-.23$ respectively). Again, these correlations are small, accounting for between 2 and 5% of the variance in the prediction of partner violence. The researchers also constructed a composite of all conduct problems variables measured across childhood and adolescence (internal reliability of 0.60). A family risk factors composite was also constructed (internal reliability 0.58). Both the conduct problems composite and the family risk factor composite were significantly correlated with partner violence perpetration. For females, the family risk factor composite made a significant, unique contribution to the prediction of partner violence, after controlling for the influence of all other risk factors. In both male and female samples, the conduct problems composite contributed unique, independent variance to the prediction of partner violence, after controlling for the influence of all other risk factors, accounting for approximately 10% of the variance in the prediction of partner violence. This suggests that the influence of harsh punishment and parent-child relationship quality, in
addition to conduct problems, may be especially important in the prediction of female partner violence.

Finally, Capaldi and Clark (1998) analyzed the relation between family risk factors, middle adolescent conduct problems and late adolescent partner violence. The sample was comprised of 119 young men at risk for delinquency and many of the constructs included parent, child and observer reports of behavior. When looking at simple correlations between predictors and outcomes, harsh parenting variables had a small effect on the prediction of partner violence, accounting for between 3 and 6% of the variance, depending on the parenting measure. Interparental violence also had a small effect on the prediction of partner violence, accounting for 2% of the variance. Conduct problems had a medium effect on the prediction of partner violence, accounting for between 10 and 18% of the variance, depending on the measure of conduct problems. A latent construct of middle adolescent conduct problems was estimated from observed variables of adolescent and parent reports of antisocial behavior and the adolescent’s number of arrests. A latent construct of partner violence was estimated based on observed variables of adolescent report of physical and psychological aggression perpetration, partner report of physical and psychological aggression victimization, and coder ratings of observed psychological and physical aggression. A latent construct of parenting practices was estimated from observed variables of poor discipline and poor monitoring. Harsh, inconsistent parenting practices during middle childhood and early adolescence (ages 9-14) predicted late adolescent partner violence via their effect on middle adolescent conduct problems. Middle adolescent conduct problems, measured at age 15-16 years, predicted adolescent partner violence, measured at age 17-20 years, accounting for 22% of the variance in the prediction of partner violence. In addition, Capaldi and Clark (1998) analyzed the relationship between interparental violence and adolescent partner violence. The associations between interparental violence, adolescent conduct problems, and partner violence were inconsistent. Using structural equation modeling, interparental violence directly influenced partner violence in an estimated model with data from the complete sample. Interestingly, interparental violence was not directly associated with partner violence when coercive parenting was included in the model. This suggests that interparental violence does not contribute unique, additional risk to the prediction of partner violence, over and above the risk associated with harsh punishment. Contrary to previous findings on the direct relation between family risk factors and partner violence, Capaldi and Clark (1998) provide the first evidence that family risk factors may
indirectly influence the prediction of partner violence via their influence on adolescent conduct problems.

In sum, there are few empirical, longitudinal analyses of developmental models of partner violence. Woodward and colleagues (2002) suggest that males and females who experience early onset, life course persistent conduct problems appear at most risk for future partner violence. Ehrensaft and colleagues (2003) provide evidence that family risk factors and middle adolescent conduct problems directly predict partner violence in both males and females. In contrast, Magdal and colleagues (1998) provide evidence that relations between early risk factors and partner violence differ between males and females. Finally, Capaldi and Clark (1998) provide evidence that adolescent conduct problems mediate the relation between family risk factors and partner violence among males. These findings raise new questions on the impact of a) the developmental timing of conduct problems on the prediction of partner violence, b) how risk factors for partner violence may differ by gender, and c) the direct or indirect influence of early family risk factors.

1.4 The Present Study

I first aimed to replicate previous findings that early adolescent conduct problems predict both the stability of conduct problems and the emergence of partner violence in late adolescence. I then extended the developmental literature on partner violence in a number of ways.

First, the hypothesis that conduct problems exhibited in early childhood, at school entry, would predict the emergence of partner violence in late adolescence was tested. Prior research suggests that children who demonstrate elevated conduct problems at school-entry (sometimes called “early-starters”) are especially likely to demonstrate elevated conduct problems throughout their life (Loeber, 1991; White, Moffit, Earl, & Robins, 1990). Specifically, early-starting aggression in childhood predicts conduct problems, criminal behavior, and violence in adolescence and adulthood (Farrington, 1994; Huesmann, Eron, et al., 1983; Stattin & Magnusson, 1989). Indeed, a child who demonstrates clinically-significant elevations in conduct problems at age 6 or 7 is 10 times as likely to demonstrate conduct problems in the next year, compared to their nonviolent peers (Loeber & Hay, 1997). By the end of first grade, teacher ratings of disruptive behavior problems detect future conduct disorder and oppositional defiant disorder psychiatric
diagnoses with sensitivity rates above .50 and specificity rates above .90 (Hill, Lochman, Coie, Greenberg, & CPPRG, 2004). The chronicity of early starting conduct problems supports a hypothesis that partner violence risk may be observed before adolescence.

Second, the hypothesis that problematic family relations in early childhood, including poor quality parent-child relationships, harsh punishment, and interparental violence, would contribute to the prediction of partner violence in late adolescence was tested. These family factors may directly or indirectly influence the development of partner violence. Specifically, there is some evidence that partner violence may be learned not only by the modeling of interparental violence, but also by the experience and observation of attachment relationships marked by aggression, hostility, and low warmth, which is then generalized to future relationships (Stith et al., 2000). Alternatively, these family risk factors may influence the emergence of partner violence via a negative cascade effect in which family risk factors heighten risk for the development and continuation of conduct problems from childhood through late adolescence conduct problems, which in turn heightens risk for partner violence. Aggressive and noncompliant behavior during childhood is learned and fostered in the parent-child relationship. When a child is exposed to harsh punishment and interparental violence, he or she is provided with models of aggressive responding. In addition, parents’ harsh and inconsistent responses to a child’s noncompliant behavior may foster and escalate the development of childhood conduct problems. These parenting practices further negatively impact the parent-child relationship quality, which is marked by anger, frustration, and fear. Together, these factors establish a context of aggressive, harsh, and angry parent-child interactions that over time put a child at risk for the development of conduct problems (Farrington, 2003; Lipsey & Derzon, 1998; Patterson & Dishion, 1985; Patterson & Stouthamer-Loeber, 1984; Shaw et al., 2003). Both direct and negative cascade pathways between family risk factors and late adolescent partner violence were examined.

Third, I compared direct and cascading pathways linking early childhood conduct problems and family relations with the emergence of partner violence in late adolescence, to determine whether adolescent conduct problems mediated these relations. Childhood conduct problems and early family risks could confer unique risk for partner violence, in addition to the risk posed by early adolescent conduct problems. This is supported by the theory that children who exhibit problems early in life are especially prone to canalization, in which these problems are more likely to be chronic and pervasive. Put simply, children who early in life master oppositional and
aggressive ways of interacting may be at unique risk for continuing this pattern of interacting across domains of functioning and types of relationships. In contrast, childhood conduct problems and early family risks may foster future partner violence primarily via the influence they have on early adolescent conduct problems. In other words, childhood conduct problems and early family risks may increase a child’s propensity to behave reactively and violently when upset. If this pattern of behavior sustains through early adolescence, it may indicate risk for future partner violence. These alternative hypotheses regarding the direct versus indirect pathways by which early childhood factors predict romantic violence were tested in the present study.

I also extended the developmental literature by assessing gender differences in the prediction of partner violence in a large, diverse sample of males and females. Previous studies have provided conflicting evidence on gender differences in the prediction of partner violence (Magdol et al., 1998; Ozer et al., 2004).

Finally, a person-oriented analysis was used to examine the characteristics of youth showing various patterns of late adolescent conduct problems and partner violence. Although conduct problems are associated with partner violence, it should be noted that there is increasing evidence to suggest that conduct problems and partner violence are not consistently overlapping behaviors. Studies assessing conduct problems and partner violence have observed correlations ranging from .02 to .36 between the two variables (Brendgen, Vitaro, Tremblay, & Wanner, 2002; Ozer, Tschann, Pasch, & Flores, 2004). The majority of adolescents who engage in conduct problems or partner violence will engage in only one of these activities, not both. Only one-tenth to one-fifth of participants in any given sample endorse conduct problems and partner violence, with the remaining majority of the sample engaging in only one or neither of these behaviors (Gorman-Smith, Tolan, Sheidow, & Henry, 2001; Magdol, Moffitt, Caspi, Newman, Fagan, & Silva. 1997; Pepler, Craig, Connolly, Yuile, McMaster, & Jiang, 2006). In addition, conduct problems and partner violence demonstrate different patterns of sex perpetration. Males are more likely than females to engage in conduct problems, whereas boys and girls equally engage in partner violence (Capaldi, Kim, & Shortt, 2004; Mash & Barkley, 1996). Given evidence that conduct problems and partner violence are not entirely overlapping behaviors, it follows that there may be unique developmental mechanisms that contribute to partner violence, in addition to the previously reviewed conduct problems risk factors.
Chapter 2

Methods

2.1 Participants

Participants were drawn from the Fast Track multisite investigation of the development and prevention of conduct problems (Conduct Problems Prevention Research Group, 1992). This study included youth from the high-risk control and normative samples to obtain an over-sampling of children with disruptive behavior problems at school entry, thus enabling the study of gender and race differences in the pattern and predictability of those problems. Youth who received preventive intervention services as part of Fast Track were not included. High-risk youth were identified using a multiple-gating screening procedure that combined teacher and parent ratings of aggressive-disruptive behavior. Initially, 55 schools serving poor neighborhoods at four sites were identified (Durham, NC; Nashville, TN; Seattle, WA; and rural central Pennsylvania). Within each site, the schools were divided into one or two sets matched for demographics (size, percentage free or reduced lunch, ethnic composition), and the sets were randomly assigned to intervention and control conditions. Using a multiple-gating screening procedure that combined teacher and parent ratings of disruptive behavior (Lochman, 1995), all 9,594 kindergarteners across three cohorts (1991-93) in these 55 schools were screened initially for classroom conduct problems by teachers, using the Teacher Observation of Child Adjustment-Revised (TOCA-R) Authority Acceptance Score (Werthamer-Larsson, Kellam, & Wheeler, 1991). Those children scoring in the top 40% within cohort and site were then solicited for the next stage of screening for home behavior problems by the parents, using items from the Child Behavior Checklist (Achenbach, 1991) and similar scales, and 91% agreed (n=3,274). The teacher and parent screening scores were then standardized and combined into a sum score. Children were selected for inclusion into the high-risk sample based on this screen score, moving from the highest score downward until desired sample sizes were reached within sites, cohorts, and conditions. Deviations were made when a child failed to matriculate in the first grade at a core school (n=59) or refused
to participate (n=75), or to accommodate a rule that no child would be the only girl in an intervention group. 95% of the selected sample scored in the top 20% on both the parent and teacher screening measures. Note that these levels of problems are defined relative to other children in these high-risk schools. On the kindergarten Teacher’s Report Form of the Child Behavior Checklist (TRF), which provides national norms, the average Externalizing T-score (available for 88% of the high risk sample) was 66.4, and 76% of these children scored in the clinical range (T-scores of 60 or higher).

In addition, approximately 100 youth were randomly selected from control schools at each site to represent a “normative” sample. Participants in this study included 754 children who comprised the normative (n=386) and high-risk control (n=446) samples. The sample included 316 (42%) females and 438 (58%) males.

2.2 Procedure

Most of the independent variables for this study were collected during home interviews in the summers after the youth completed kindergarten, ninth, tenth, eleventh, and twelfth grade. Research staff members received extensive training, including watching videotapes of interviews, observing live interviews, practicing interviews with supervisors, and conducting pilot interviews while being observed. They were required to achieve minimum criteria for reliability of ratings before conducting any independent interviews. For behavior observations, such as the parent-child interaction task, additional formal reliability checks were conducted throughout each summer.

During the home interviews, one research staff member met with the parent and another research staff member met with the child/adolescent in a separate room. Research staff members read all questionnaire items to all parents to avoid problems related to literacy. Parents received $75 for their time. Children were rewarded with small toys and prizes.

At kindergarten completion, parent, teacher, and observer reports of child oppositional or deviant behavior, family’s socio-economic status, family structure, maternal depression and early harsh punishment were collected.
2.3 Measures

The following measures used in the study are described in detail at www.fasttrackproject.org. All measures were scored so that higher scores reflect more of the factor.

*Childhood Externalizing problems* Two kindergarten measures were included to represent the latent construct of childhood externalizing problems: 1) parent report on the externalizing problems subscale of the Child Behavior Checklist and 2) parent report of the hyperactive, opposition, and aggressive behaviors on the Parent Daily Report. Mothers completed the 113-item *Child Behavior Checklist (CBCL)-Parent Report Form*, a reliable and valid measure of child behavior (Achenbach, 1991). The externalizing behavior subscale of the *CBCL-Parent Report Form* was used in the present study (alpha for this sample = .80). Mothers also completed the *Parent Daily Report* (PDR; Chamberlain & Reid, 1987), a 30 item checklist of behavior problems that occurred in the previous 24 hours. The 11 items reflecting hyperactive, oppositional, aggressive behavior were summed to represent the second observed variable of childhood externalizing problems (alpha for this sample = .86). The first administration of the PDR took place during the summer interview with parents. Then, parents received several follow-up telephone calls from interview staff during the two weeks following the summer interview. During the first year of the project, four follow-up telephone calls were made to parents. After initial analyses suggested that it required only three reports to get a reliable estimate of child behavior problems, the number of follow-up telephone calls was reduced to two (in addition to one administration at the time of the interview).

*Harsh punishment* Two measures were used to represent the latent construct of harsh punishment: 1) parent report of harsh discipline and 2) observer ratings of physical discipline. During the first home interview following kindergarten, the interviewer presented the parent with six hypothetical vignettes taken from Dodge, Bates, and Pettit (1990), each depicting a parent-child interaction in which the child misbehaves. The parent responded with the behavioral reaction that she would give, which was scored for physical punishment (0 if it was not mentioned at all, 1 if it was mentioned, 2 if it was described as a typical discipline). The items were averaged to yield a score for harsh discipline (alpha for this sample= .55). During the kindergarten interview, parents were asked open-ended questions about the types of discipline they used with their child, following the protocol of Dodge, Bates, and Pettit (1990). Parents were asked to
describe their typical discipline strategy now that their child was in kindergarten, as well as to describe the typical strategy they used when the child was younger (in the prekindergarten year.) Following a discussion about how the parent typically disciplined the child, including a discussion of the most severe episodes, the interviewer completed a 5-point rating scale, describing the degree to which parents used physical discipline with the child, called physical discipline - interviewer rating. The scores representing parental reports of discipline during the prekindergarten and kindergarten years were summed to assess interviewer ratings of physical discipline (alpha for this sample = .84)

Interparental violence Two measures were used to assess interparental violence: 1) parent report of physical aggression perpetration against a partner and 2) parent report of physical aggression victimization. During the summer interview after the child’s kindergarten year, parents completed the perpetration and victimization physical aggression subscales of the Conflict Tactics Scale (Straus, 1979). Parents used a seven-point response scale (0, never to 6, almost every day) to indicate the frequency with which they had used physically aggressive conflict tactics in response to disagreements with their partners during the past year (alpha for this sample = .75). Parents also reported the frequency that they had experienced physical aggression perpetrated by their partner (alpha for this sample = .86). Occurrence of interparental violence was determined by endorsement of any of eight physical aggression items (e.g. “I beat up my partner”, “my partner beat up me”). Both the perpetration and victimization subscales were used as indicators of a latent construct representing exposure to interparental violence throughout childhood. Because there is little evidence that parent-specific perpetration or victimization is uniquely harmful, these two indicators were set to equally contribute to the latent construct of interparental violence to account equally for both types of interparental violence exposure. It should be noted that if the parent did not have a partner, the family was given a score of zero for interparental violence, since the single-parent nature of the family structure resulted in no opportunity for child exposure to interparental violence. Instead, it was determined that assigning a score of zero to the single parent families without partners would result in the most conservative estimate of the influence of interparental violence in predicting late adolescence partner violence. Thirty-nine percent of the sample were single parent headed households and were assigned a “0” for that reason.
Parent child relationship quality During the kindergarten summer interview, parent and observer ratings were used to assess parent-child relationship quality. The parent was asked open-ended questions about his/her relationship with the child. Parents were also asked to rate on a scale of 1 to 5 how pleasant it has been to raise their child, how difficult it has been to raise their child, how well the parent gets along with the child, and how satisfied the parent is with the child’s behavior, with 1 representing a very negative response and 5 representing a very positive response (alpha for this sample = .70). Observers then rated the parent’s description of the child, the parent’s insight about the child, the parent’s affect when speaking about the child, and the parent-child relationship on a scale of 1 to 5, with 1 representing a very negative response and 5 representing a very positive response (alpha for this sample = .87).

Early adolescent conduct problems Two measures were used to assess conduct problems in early adolescence: 1) symptom criterion counts for oppositional defiance disorder and 2) symptom criterion counts for conduct disorder. At completion of grade 9, adolescents were asked if they experienced specific symptoms related to psychiatric disorders during the past year using the NIMH Diagnostic Interview Schedule for Children. The total number of oppositional defiance disorder diagnostic criteria met and the total number of conduct disorder diagnostic criteria met were used to estimate the latent construct of early adolescence conduct problems.

Late adolescent conduct problems Two measures were used to assess late adolescent conduct problems: 1) symptom criterion counts for oppositional defiance disorder and 2) symptom criterion counts for conduct disorder. At completion of grade 12, adolescent were asked if they experienced specific symptoms related to psychiatric disorders during the past year using the NIMH Diagnostic Interview Schedule for Children. The total number of oppositional defiance disorder diagnostic criteria met and the total number of conduct disorder diagnostic criteria met were used to estimate the latent construct of late adolescent conduct problems.

Partner violence Two scores were used to assess partner violence: 1) the proportion of relationships in which the adolescent perpetrated physical aggression and 2) the proportion of relationships in which the adolescent was the victim of physical aggression. Partner violence was assessed by self reports, using an adapted version of the Conflict Tactics Scales (Dodge, Bates, & Pettit, 1997; Straus, 1979). In this questionnaire, adolescents reported on their romantic relationships. This questionnaire was completed at the end of 10th, 11th, and 12th grade. (Virtually every adolescent reported being in a dating relationship at least once during those assessment
The physical aggression subscale was used to assess the presence of partner violence perpetration and victimization. Eight items assessed aggressive behaviors such as hitting a partner or kicking a partner. The same items were asked twice to assess behaviors that were initiated and behaviors that were received. Reliability alphas for the 10th grade physical aggression perpetration and victimization subscales were .82 and .87, respectively. Reliability alphas for the 11th grade perpetration and victimization physical aggression subscales were .88 and .88, respectively. Reliability alphas for the 12th grade perpetration and victimization physical aggression subscales were .81 and .81, respectively. To more accurately estimate the occurrence of partner violence within a population with varying relationship frequency (i.e. varying opportunity for partner violence to occur) during the three years of assessment, proportion scores were used to assess partner violence. For example, if a participant endorsed having one romantic relationship during the 10th, 11th, or 12th grades and he/she both perpetrated partner violence and was a victim of partner violence during this relationship, he/she was given a score of 1 for perpetration and 1 for victimization. If a participant endorsed having three romantic relationships during the 10th, 11th, or 12th grades and he/she both perpetrated partner violence and was a victim of partner violence during one of the three relationships, he/she was given a score of .33 for perpetration and .33 for victimization. The proportion scores for physical aggression perpetration and physical aggression victimization were used to estimate the latent construct of partner violence.
Chapter 3

Results

3.1 Plan of analysis

The original sample included an over-representation of children at high risk for conduct problems based on early evidence of externalizing problems at home and school in kindergarten. The data was proportionally weighted to represent the population-based distribution of early externalizing problems.

Data analyses proceeded in two stages. In the first stage of data analysis, variable centered analyses focused on the prediction of conduct problems and partner violence in late adolescence. A measurement model was estimated and measurement invariance was tested across gender. Then, structural equation models were estimated to examine direct and indirect pathways linking childhood risk factors (family risks and child externalizing problems), early adolescent conduct problems, and late adolescent partner violence. In the direct pathway model, I hypothesized that childhood family risk factors and childhood externalizing problems would each make unique and significant contributions to the prediction of partner violence in later adolescence. In the indirect, or negative cascading pathway model, I hypothesized that childhood family risk factors and childhood externalizing problems would predict early adolescent conduct problems, which in turn, would predict late adolescent partner violence. In each model, I controlled for contributions to late adolescent conduct problems when examining prediction to late adolescent partner violence. These analyses were performed using Mplus. This software allowed for maximum likelihood estimation with robust standard errors and a chi-square test statistic that was robust to non-normality. Maximum likelihood estimation identifies parameters that optimize the probability that the observed data is representative of the larger population.

¹Each participant case was given a proportional weighting in which the weight represents the % stratum in the population / % of stratum in the sample, determined by the TOCA and parent screen scores. Therefore, participants with high rates of externalizing problems, who were oversampled, were given a proportional weight less than 1 and participants who were undersampled were given a proportional weight score of greater than 1.
In the second stage of data analysis, person oriented data analyses assessed the risk factor characteristics of adolescents displaying distinct profiles of behavior (e.g., conduct problems, only partner violence, both conduct problems and partner violence, and neither conduct problems nor partner violence). These analyses were performed using SPSS. Missing data were imputed using Schafer’s NORM program, a free standing multiple imputation software program.

### 3.2 Descriptive analyses

Descriptive statistics for all measures are presented in Table 3.1. Data were available for 66% of the original sample at grades 9 and 12. In the weighted sample, 73% of adolescents reported no oppositional or conduct problems symptoms at grade 12 (n=411), and the remaining 151 adolescents reported between 1 and 7 oppositional or conduct problem symptoms. Fifty-six percent of adolescents denied any partner violence in grades 10, 11, and 12 (n=319), and the remaining 251 adolescents reported at least one romantic relationship in which they were physically aggressive. \(^2\)

Pearson correlations were computed to assess the associations among the predictor variables (Table 3.2). A consistent pattern of significant associations emerged among the measures of parent-child relationship quality, harsh punishment, and child externalizing problems, replicating prior research on coercive family processes associated with child conduct problems. The correlations between the 6 measures reflecting family coercion (e.g., parent-child relationship quality, harsh punishment, and child externalizing problems) and the two measures of interparental conflict (interparental violence and interparental victimization) were less consistent, with only 5 of the 12 correlations reaching statistical significance, and all being relatively small in value (\(r\)s ranged from -.08 to .12).

Pearson correlations were also computed to assess associations among the early and late adolescent outcomes (see Table 3.3). Significant correlations emerged among the 6 measures representing outcomes, including measures of early adolescent conduct problems, late adolescent conduct problems, and partner violence.

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\(^2\)In the original sample, 67% of adolescents reported no oppositional or conduct problems symptoms at grade 12 (n=360), with the remaining 176 adolescents reporting between 1 and 7 oppositional or conduct problem symptoms. Fifty-two percent of adolescents denied any partner violence in grades 10, 11, and 12 (n=296), with the remaining 266 adolescents reporting at least one aggressive romantic relationship.
Table 3.1. Means and standard deviations for all variables

<table>
<thead>
<tr>
<th></th>
<th>Normative Sample (n=386)</th>
<th>High Risk Sample (n=446)</th>
<th>Weighted Sample (n=754)</th>
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<tr>
<td><strong>Kindergarten predictors</strong></td>
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<tr>
<td>Parent-child relation - P</td>
<td>3.94 (.60)</td>
<td>3.61 (.61)</td>
<td>4.01 (.58)</td>
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<tr>
<td>Parent-child relation - O</td>
<td>3.54 (.74)</td>
<td>3.39 (.78)</td>
<td>3.64 (.72)</td>
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<td>Interparental violence - P</td>
<td>.09 (.32)</td>
<td>.12 (.39)</td>
<td>.10 (.36)</td>
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<tr>
<td>Interparental victimization - P</td>
<td>.07 (.36)</td>
<td>.13 (.51)</td>
<td>.07 (.28)</td>
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<td>Harsh punishment - P</td>
<td>.19 (.22)</td>
<td>.24 (.24)</td>
<td>.18 (.21)</td>
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<tr>
<td>Harsh punishment - O</td>
<td>4.64 (1.63)</td>
<td>5.12 (1.60)</td>
<td>4.44 (1.5)</td>
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<td>Child externalizing (CBCL) - P</td>
<td>12.14 (8.45)</td>
<td>17.77 (8.30)</td>
<td>11.19 (7.76)</td>
</tr>
<tr>
<td>Child externalizing (PDR) - P</td>
<td>.46 (.37)</td>
<td>.62 (.41)</td>
<td>.42 (.34)</td>
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<tr>
<td>Conduct symptoms - Y</td>
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<td>.65 (1.31)</td>
<td>.47 (1.02)</td>
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<tr>
<td>Oppositional symptoms - Y</td>
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<td><strong>Late adolescent outcomes</strong></td>
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<td>Partner violence victimization - Y</td>
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<td>.29 (.39)</td>
<td>.23 (.34)</td>
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Note: Standard deviations are reported in parentheses. P = parent report, O = observer report, Y = youth report. CBCL: Child Behavior Checklist; PDR: Parent Daily Report
Table 3.2. Correlations among early childhood predictors

<table>
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<tbody>
<tr>
<td>Parent-child relation - P</td>
<td>-</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent-child relation - O</td>
<td>.46***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interparental violence - P</td>
<td>0</td>
<td>-.08*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interparental victimization - P</td>
<td>-0.05</td>
<td>-0.03</td>
<td>.34***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harsh punishment - P</td>
<td>-.16***</td>
<td>-.18***</td>
<td>.10**</td>
<td>0.04</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harsh punishment - O</td>
<td>-.32***</td>
<td>-.38***</td>
<td>.11**</td>
<td>.10**</td>
<td>.38***</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child externalizing (CBCL) - P</td>
<td>-.58***</td>
<td>-.32***</td>
<td>0.04</td>
<td>.11**</td>
<td>.19***</td>
<td>.34***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Child externalizing (PDR) - P</td>
<td>-.39***</td>
<td>-.16***</td>
<td>.08*</td>
<td>.08*</td>
<td>.12**</td>
<td>.23***</td>
<td>.56***</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01, ***p < .001.

<table>
<thead>
<tr>
<th></th>
<th>Early Adolescent</th>
<th>Late Adolescent</th>
<th>Partner Violence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conduct symptoms</td>
<td>Oppositional symptoms</td>
<td>Conduct symptoms</td>
</tr>
<tr>
<td>Early adolescent conduct problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct symptoms</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppositional symptoms</td>
<td>.47***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Late adolescent conduct problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct symptoms</td>
<td>.26***</td>
<td>.13**</td>
<td>-</td>
</tr>
<tr>
<td>Oppositional symptoms</td>
<td>.21***</td>
<td>.22***</td>
<td>.38***</td>
</tr>
<tr>
<td>Late adolescent partner violence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peretration</td>
<td>.29***</td>
<td>.20***</td>
<td>.16**</td>
</tr>
<tr>
<td>Victimization</td>
<td>.35***</td>
<td>.19***</td>
<td>.19***</td>
</tr>
</tbody>
</table>

* *p < .05; **p < .01, ***p < .001.
Finally, Pearson correlations were computed to assess simple relations among each of the predictors and the early and late adolescent outcomes (see Table 3.4). As expected, and replicating prior research, kindergarten externalizing problems (CBCL and PDR ratings) were stable over time, significantly predicting early adolescent and late adolescent conduct problems. Three of the four predictive correlations linking kindergarten externalizing problems and late adolescent partner violence were also significant, but small in magnitude.

Consistent with prior research and theory, early childhood parent-child relationship quality predicted adolescent conduct problems and partner violence, with 10 of the 12 correlations reaching statistical significance. Similarly, as hypothesized, harsh punishment in early childhood consistently predicted adolescent conduct problems, when it was assessed by observer ratings. Observer ratings of harsh punishment did not predict partner violence. Parent-reported harsh punishment was less consistent as a predictor, but was significantly associated with 2 of the 6 measures of adolescent conduct problems and partner violence. However, in contrast to expectations, interparental violence exposure in kindergarten did not predict partner violence or early adolescent conduct problems. The only significant prediction in this domain was between the parent report of his/her perpetration of interparental violence and youth reports of conduct problems and oppositional behavior in late adolescence.

Table 3.4. Correlations between early childhood predictors and adolescent outcomes

<table>
<thead>
<tr>
<th></th>
<th>Early Adolescent</th>
<th></th>
<th>Late Adolescent</th>
<th></th>
<th>Partner Violence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conduct symptoms</td>
<td>Oppositional symptoms</td>
<td>Conduct symptoms</td>
<td>Oppositional symptoms</td>
<td>Perpetration</td>
<td>Victimization</td>
</tr>
<tr>
<td>Parent-child relation - P</td>
<td>-.20***</td>
<td>-0.18***</td>
<td>-.17***</td>
<td>0.19***</td>
<td>-0.09*</td>
<td>-0.12**</td>
</tr>
<tr>
<td>Parent-child relation - O</td>
<td>-.13***</td>
<td>-0.07</td>
<td>-.10**</td>
<td>-0.10*</td>
<td>-0.07</td>
<td>-0.10**</td>
</tr>
<tr>
<td>Interparental violence - P</td>
<td>0.01</td>
<td>0.08</td>
<td>0.11**</td>
<td>0.12**</td>
<td>-0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td>Interparental victimization - P</td>
<td>0.02</td>
<td>0.02</td>
<td>0.06</td>
<td>0.08*</td>
<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>Harsh punishment - P</td>
<td>.09*</td>
<td>0.02</td>
<td>0.06</td>
<td>0.08*</td>
<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>Harsh punishment - O</td>
<td>.11**</td>
<td>0.12***</td>
<td>0.15***</td>
<td>0.15***</td>
<td>0.05</td>
<td>0.07</td>
</tr>
<tr>
<td>Child externalizing (CBCL)- P</td>
<td>.21***</td>
<td>0.25***</td>
<td>0.22***</td>
<td>0.20***</td>
<td>0.12***</td>
<td>0.16***</td>
</tr>
<tr>
<td>Child externalizing (PDR)- P</td>
<td>.20***</td>
<td>0.18***</td>
<td>0.10*</td>
<td>0.13***</td>
<td>0.06</td>
<td>0.08*</td>
</tr>
</tbody>
</table>

*p < .05 ; **p < .01, ***p < .001.

3.3 Measurement model

Next, prior to testing the developmental pathways, a measurement model was estimated to assess the fit of each set of observed variables on the latent constructs. All factor loadings are shown in Figure 3.1. The measurement model included 14 observed variables with 2 observed variables loading on each latent construct.

The latent constructs representing early childhood risk factors were as follows: 1) parent-child relationship quality, comprised of a parent report (.85) and an observer rating (.55), 2) interparental violence, represented by parent reports of partner violence perpetration (.52) and partner violence victimization (.66), 3) harsh punishment, comprised of observer ratings (.86) and parent reports (.45), and 4) child externalizing problems, including CBCL ratings (.93) and PDR daily reports (.61). The latent construct of early adolescent conduct problems was estimated using self reports of early adolescent oppositional symptoms (.59) and conduct symptoms (.80). Finally, late adolescent outcomes included a conduct problems construct, estimated using self reports of oppositional symptoms (.62) and conduct symptoms (.61), and a partner violence construct, estimated using self reports describing the perpetration of partner violence (.82) and the receipt of partner violence (.94). All relations between observed measures and latent constructs were statistically significant at the .001 probability level. Evaluation of model fit was assessed using a $\chi^2$ index, the Bentler Comparative Fit Index (CFI; Bentler, 19990), the Tucker-Lewis Index (TLI, also known as the Bentler-Bonett Non-normed Fit Index; Bentler and Bonett, 1980), and the Root Mean Square Error of Approximation (RMSEA, Browne & Cudeck, 1993). The non-significant $\chi^2$ is considered an indicator of good model fit of the observed data, but this index is quite sensitive to sample size. For these reasons, the $\chi^2$ is typically supplemented by additional fit indexes. Scores above .90 on the CFI and TFI indicate a good fitting model and scores below .05 on the RMSEA indicate a close fitting model. The measurement model provided a good fit of the observed data, $\chi^2$ (df = 57, N=754) = 81.69, $p < .05$. Although a non-significant $\chi^2$ is preferable, that is rare in large samples, and the other indices reflected a good fit: CFI=.98, TLI=.96, RMSEA=.02.
Fig. 3.1. Measurement model
3.4 Measurement invariance across subsamples

Given mixed evidence regarding gender differences in partner violence and the prediction of partner violence, it was unclear whether one measurement model would provide an adequate and invariant fit for both males and females. To assess measurement across gender, a more restrictive model in which the factor loadings were constrained to be equal across groups was compared to a less restricted model in which factors loadings were free to vary across groups. Typically, measurement invariance is assessed by comparing the $\chi^2$ and degrees of freedom of the two models. If the $\chi^2$ difference test is significant, this indicates that the more restrictive model provides a significantly worse fit of the data, and thus, that the model is not invariant. Because the model was estimated using maximum likelihood estimation with robust standard errors, it is recommended that the $\chi^2$ statistic be divided by a scaling correction to better approximate the chi-square under assumptions of non-normal outcomes. This is referred to as the Satorra-Bentler scaled chi-square. The Satorra-Bentler scaled chi-square cannot be used for chi-square difference tests because a difference between two scaled chi-squares for nested models is not distributed as a chi-square. Instead, a chi-square difference test including both scaling factors was computed, as recommended by Satorra and Bentler (1999) and at www.statmodel.com. The result of this calculation supported the hypothesis that the measurement model was invariant across gender.

3.5 Structural Equation Models: Predictors of Partner Violence

Next, structural equations models were estimated. The purpose of these analyses was to test direct and cascading pathways of developmental influence linking kindergarten risk factors (family characteristics and child externalizing behavior) to late adolescent partner violence and conduct problems.

The first model (figure 3.2) was designed to assess the direct influence of childhood risk factors on the prediction of partner violence and conduct problems ten years later. It was hypothesized that poor quality parent-child relationships, harsh punishment, and interparental violence, along with child externalizing behaviors would each contribute to the prediction of partner violence and conduct problems in late adolescence. This model provided an adequate fit of the data ($\chi^2$ (df = 61, N=754) = 112.26, p < .001, CFI=.95, TLI=.93, RMSEA=.03). No childhood risk factors predicted partner violence.
Fig. 3.2. Childhood predictors to late adolescent outcomes

Model 1

<table>
<thead>
<tr>
<th>Post-kindergarten</th>
<th>Early Adolescence</th>
<th>Late Adolescence</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent-child relationship</td>
<td>n.s.</td>
<td>partner violence</td>
</tr>
<tr>
<td>interparental violence</td>
<td>-0.50***</td>
<td>n.s.</td>
</tr>
<tr>
<td>harsh parenting</td>
<td>0.15**</td>
<td>n.s.</td>
</tr>
<tr>
<td>child externalizing problems</td>
<td>0.43***</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

* p < 0.05; ** p < 0.01; *** p < 0.001
The second model (figure 3.3) tested the hypothesis that childhood risk factors may influence the prediction of partner violence via their influence on the development of early adolescent conduct problems. In this cascade effects model, it was hypothesized that the paths from each childhood risk factor to early adolescent conduct problems would be significant. It was also hypothesized that the path between early adolescent conduct problems and the two late adolescent outcomes, partner violence and conduct problems, would be significant. This model provided a good fit of the data ($\chi^2$ (df = 65, N=754) = 94.45, $p = .01$, CFI=.97, TLI=.96, RMSEA=.03). No significant paths emerged between family risk factors and early adolescent conduct problems. As hypothesized, the path between childhood externalizing problems and early adolescent conduct problems was significant ($\beta = .29$, $p<.05$). As hypothesized, the path between early adolescent conduct problems and partner violence was significant ($\beta = .45$, $p<.001$). In addition, the path between early adolescent conduct problems and late adolescent conduct problems was significant with a standardized path coefficient of .56 ($p<.001$). In other words, childhood externalizing problems contributed directly to the prediction of early adolescent conduct problems and indirectly to the prediction of partner violence, via their influence on early adolescent conduct problems. Early adolescent conduct problems, in turn, significantly predicted the continuation of conduct problems in late adolescence and the emergence of late adolescent partner violence.

Finally, a full developmental model of partner violence was estimated in an effort to elucidate the contribution of family risk factors to the development of childhood externalizing behaviors as well as assess the indirect influence of problematic family relations on the emergence of partner violence in late adolescence (figure 3.4). In this negative cascading model, childhood family risk factors were hypothesized to contribute to the development of childhood externalizing problems, which in turn predicted the continuation of conduct problems in early adolescence, which in turn predicted both partner violence and conduct problems in late adolescence. This model included an estimate of all mediating paths as well. The third model provided a good fit of the data ($\chi^2$ (df = 68, N=754) = 96.24, $p = .01$, CFI=.97, TLI=.97, RMSEA=.02). As hypothesized, a significant path emerged between parent-child relationship quality and childhood externalizing problems ($\beta = -.68$, $p<.001$). In addition, the path from interparental violence to childhood externalizing problems emerged as a non-significant trend ($\beta = .09$, $p=.07$). As hypothesized, childhood externalizing problems significantly predicted early adolescent conduct problems ($\beta = .41$, $p<.001$). In addition, early adolescent conduct problems significantly predicted both
Fig. 3.3. Early adolescent conduct problems indirect influence

* p < 0.05; ** p < 0.01; *** p < 0.001
Note indirect effects: childhood externalizing problems on partner violence $\beta = 0.13$, $p < 0.05$. 

- $r = -0.71$, **p < 0.01**
- $r = 0.43$, ***p < 0.001
- $r = -0.50$, ***p < 0.001
- $r = 0.20$, **p < 0.01
- $r = 0.15$, *p < 0.05
Fig. 3.4. Full developmental model

Model 3

Post-kindergarten

Early Adolescence

Late Adolescence

parent-child relationship

-0.08

interparental violence

n.s.

harsh parenting

n.s.

child externalizing problems

0.56***

conduct problems

partner violence

0.45***

0.56**

conduct problems

-0.88***

* p < 0.05; ** p < 0.01; *** p < 0.001

Note indirect effects: parent-child relationship quality on partner violence $\beta = -0.13$, $p < 0.01$; childhood externalizing problems on partner violence. $\beta = 0.19$, $p < 0.01$; interparental violence on partner violence $\beta = 0.02$, $p = 0.11$. 
late adolescent conduct problems ($\beta=.56$, $p<.001$) and late adolescent partner violence ($\beta=.45$, $p<.001$).

### 3.6 Person-oriented group comparisons

The next set of analyses took a person-oriented approach with the unweighted data. Youth were characterized as having or not having late adolescent conduct problems ($n=161$ versus $n=333$) and as engaging or not engaging in partner violence ($N=233$ versus $N=261$). Both late adolescent conduct problem and partner violence information was available for 494 participants. Of these participants, 40% of adolescents did not report either problem; 13% reported conduct problems only; 28% reported partner violence only and 20% reported engaging in both conduct problems and partner violence. Chi-square analyses were completed to assess gender differences in group membership. Interestingly, gender proportions were significantly different only within the conduct problems only group ($\chi^2(1, n=494) = 14.06$, $p < .001$.) Within the conduct problems only group, 73% of the 64 participants were male ($n=47$), as opposed to 27% ($n=17$) female participants. Gender proportions among all other groups were not significantly different. The no problems group was comprised of 109 males and 88 females. The partner violence group was comprised of 68 males and 68 females. The both conduct problems and partner violence group was comprised of 56 males and 41 females. As mentioned previously, these analyses were performed using SPSS. Missing data for the predictor variables was imputed using Schafer’s NORM program, a free standing multiple imputation software program. A series of ANOVAs were performed to assess group differences. A 2 x 2 x 2 ANOVA was performed to assess for childhood risk factor differences based on partner violence perpetration, conduct problems engagement, and gender and the interaction of these factors (Table 3.5). The main effects of this analyses are reported below. Four of eight risk factors significantly differed between those who engaged in conduct problems in late adolescence and those who did not. Differences were found across all four domains: parent-child relationship quality, interparental violence, harsh punishment and childhood externalizing problems. First, participants who engaged in late adolescent conduct problems had significantly lower parent-child relationship quality, based on parent report, $M = 3.65$ vs. $M = 3.89$, ($F(1, 486)=13.10$, $p<.001$, Cohen’s $d=.38$). Second, adolescents who exhibited conduct problems experienced significantly higher rates of interparental violence ($M =$
Third, participants who engaged in late adolescent conduct problems experienced significantly harsher punishment based on parent report (M = 0.25 vs. M = 0.19; F(1, 486) = 5.43, p < .05, Cohen’s d = .25). Fourth, those who engaged in late adolescent conduct problems demonstrated significantly higher rates of childhood externalizing problems, with a mean score of 16.64 on the Child Behavior Checklist, as compared to a mean score of 13.50 for those who did not engage in late adolescent conduct problems (F(1, 486) = 8.33, p < .01, Cohen’s d = .37).

In contrast, no risk factor differences were found between those who engaged in partner violence in late adolescence and those who did not (Table 3.5).

### Table 3.5. Early childhood risk factors for youth with different adolescent problem profiles

<table>
<thead>
<tr>
<th>Kindergarten predictors</th>
<th>Conduct Problems M (SD)</th>
<th>Partner Violence M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No n=333</td>
<td>Yes n=161</td>
</tr>
<tr>
<td>Parent-child relation - P</td>
<td>3.89 (.60)</td>
<td>3.65 (.66)</td>
</tr>
<tr>
<td>Parent-child relation - O</td>
<td>3.56 (.74)</td>
<td>3.39 (.78)</td>
</tr>
<tr>
<td>Interparental violence - P</td>
<td>.08 (.29)</td>
<td>.16 (.44)</td>
</tr>
<tr>
<td>Interparental victimization - P</td>
<td>.10 (.41)</td>
<td>.08 (.24)</td>
</tr>
<tr>
<td>Harsh punishment - P</td>
<td>.19 (.21)</td>
<td>.25 (.26)</td>
</tr>
<tr>
<td>Harsh punishment - O</td>
<td>4.73 (1.67)</td>
<td>5.00 (1.57)</td>
</tr>
<tr>
<td>Child externalizing (CBCL) - P</td>
<td>13.50 (8.31)</td>
<td>16.64 (8.64)</td>
</tr>
<tr>
<td>Child externalizing (PDR) - P</td>
<td>.50 (.41)</td>
<td>.58 (.37)</td>
</tr>
</tbody>
</table>

* p < .05; **p < .01, ***p < .001.
Note: (p) : parent report; (o): observer report; CBCL: Child Behavior Checklist; PDR: Parent Daily Report

Three of the eight childhood risk factors significantly differed by participant gender. Males experienced significantly lower levels of parent-child relationship quality than females, based both on parent report (M = 3.74 vs. M = 3.90; F(1, 486) = 4.46, p < .05, Cohen’s d = .26) and observer ratings (M = 3.46 vs. M = 3.57; F(1, 486) = 4.60, p < .05, Cohen’s d = .15). Males also exhibited higher levels of childhood externalizing problems than females, based on the Child Behavior
Checklist (M=15.91 vs. M=12.71; F(1, 486)=15.31, p<.001, Cohen’s \( d = .38 \)). No other main effects for participant gender emerged.

No significant two-way or three-way interactions emerged.

An additional two-way ANOVA was completed to assess group differences in early adolescent conduct problems (Table 3.6). Interestingly, both those who engaged in late adolescent conduct problems and those who engaged in partner violence endorsed significantly higher rates of early adolescent conduct problems. Participants who engaged in late adolescent conduct problems reported significantly more early adolescent oppositional symptoms, \( M=0.82 \) vs. \( M=0.33 \), \( (F(1, 486)=16.26, p<.001, \text{Cohen’s } d = .43) \) and significantly more early adolescent conduct symptoms, \( M=0.82 \) vs. \( M=0.33 \), \( (F(1, 486)=12.74, p<.001, \text{Cohen’s } d = .42) \) than those who did not engage in late adolescent conduct problems. Similarly, participants who engaged in partner violence reported significantly more early adolescent conduct symptoms, \( M=0.68 \) vs. \( M=0.29 \), \( (F(1, 486)=11.75, p<.001, \text{Cohen’s } d = .22) \), but no significant difference in early adolescent oppositional symptoms, than those who did not engage in partner violence. In addition, males engaged in significantly higher rates of early adolescent conduct symptoms compared to females (\( M=0.59 \) vs. \( M=0.33 \), \( (F(1, 486)=5.41, p<.05, \text{Cohen’s } d = .24) \)

No significant two-way or three-way interactions emerged.

In summary, youth who engaged in late adolescent conduct problems experienced a host of risk factors in early childhood, including lower quality parent-child relationships, higher interparental violence, harsher punishment, and higher rates of childhood externalizing problems compared to those who did not engage in late adolescent conduct problems. In contrast, the childhood context of those who engaged in partner violence in late adolescence was not significantly different from those who did not engage in partner violence. Elevated levels of early adolescent conduct problems characterized youth with either type of late adolescent behavior problem – conduct problems or partner violence. Interestingly, no significant two-way or three-way interactions emerged, indicating no significant risk differences between those who engaged in only one late adolescent problem behavior (conduct problems or partner violence), and those who engaged in both behaviors. In terms of gender differences, males demonstrated higher rates of childhood externalizing problems, more early adolescent conduct symptoms, and lower parent-child relationship quality than females.
<table>
<thead>
<tr>
<th>Early adolescent conduct problems</th>
<th>No conduct problems Mean (standard deviation)</th>
<th>Conduct problems Mean (standard deviation)</th>
<th>F (1, 486)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oppositional symptoms</td>
<td>n=328</td>
<td>n=113</td>
<td></td>
</tr>
<tr>
<td>Conduct symptoms</td>
<td>0.33 (0.88)</td>
<td>0.82 (1.33)</td>
<td>16.26***</td>
</tr>
<tr>
<td></td>
<td>0.31 (0.82)</td>
<td>0.82 (1.52)</td>
<td>12.74***</td>
</tr>
<tr>
<td>No partner violence</td>
<td>n=261</td>
<td>n=180</td>
<td></td>
</tr>
<tr>
<td>Mean (standard deviation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppositional symptoms</td>
<td>0.38 (0.83)</td>
<td>0.62 (1.28)</td>
<td>2.06</td>
</tr>
<tr>
<td>Conduct symptoms</td>
<td>0.29 (0.63)</td>
<td>0.68 (1.47)</td>
<td>11.75***</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (standard deviation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppositional symptoms</td>
<td>0.56 (1.22)</td>
<td>0.41 (0.83)</td>
<td>1.62</td>
</tr>
<tr>
<td>Conduct symptoms</td>
<td>0.59 (1.19)</td>
<td>0.33 (1.01)</td>
<td>5.41*</td>
</tr>
</tbody>
</table>

*p < .05 ; **p < .01. ***p < .001.
Chapter 4

Discussion

The results of this study support a developmental model of partner violence in which childhood family risk factors, childhood externalizing problems, and early adolescent conduct problems are all important predictors of late adolescent partner violence. An important contribution is the finding that early childhood risk factors (family risks and early externalizing problems) contribute primarily to the prediction of partner violence via a negative developmental cascade, by increasing risk for early adolescent conduct problems which, in turn, predict partner violence in late adolescence. Stated succinctly, this study suggests that early externalizing behaviors represent a key risk factor for later partner violence, but one that is realized primarily when those early behavior problems continue and escalate into a broad pattern of conduct problems in early adolescence. Direct links between early childhood risks (harsh discipline, poor quality parent-child relationships, child externalizing problems) and late adolescent partner violence did not emerge, suggesting that models of the development of partner violence need to consider early childhood precursors, but also need to attend to developmental experiences and contextual factors that are more proximal developmentally to the emergence of romantic relationships.

4.1 Predictors of Partner Violence: Evidence for Direct vs. Indirect Effects

Based upon previous research and developmental theory, a central hypothesis of this study was that family risk factors of poor parent-child relationship quality and harsh punishment would predict partner violence (Gorman-Smith et al., 2001; Pettit et al., 2006). Consistent with this hypothesis, small but significant correlations emerged between the quality of the parent-child relationship (measured by parent report and observer rating at age 6) and youth reports of partner violence perpetration and victimization in late adolescence. Also as hypothesized, childhood externalizing problems were fairly stable over time, predicting early adolescent and late adolescent
conduct problems. These results replicate previous evidence that early-starting aggression is related to future conduct problems across adolescence (Loeber, 1991; White, Moffit, Earl, & Robins, 1990). Finally, linear associations also emerged linking childhood externalizing problems with late adolescent partner violence, replicating and extending previous findings (Ehrensaft et al., 2002; Magdol et al., 1998; Woodward, Fergusson, & Horwood, 2002).

The predictive power of both parent-child relationship quality and childhood externalizing problems was small in magnitude, explaining only a few percentage points of variation in the partner violence outcome. This finding is similar to previous findings and may be explained, in part, by the temporal distance between the predictor and outcome (Capaldi & Clark, 1998; Ehrensaft et al., 2002). The predictive effect of early adolescent conduct problems was larger, representing a small to medium effect size based on Cohen’s classification. Again, this effect is similar to previous findings (Capaldi & Clark, 1998). Predictive effects may have been dampened by methodological limitations of the present study. Specifically, childhood predictors were measured at one time point. As demonstrated, the influence of parenting risks at age 6 has a small effect on behavior in late adolescence. Modeling the cumulative influence of harsh parenting, interparental violence, parent-child relationship quality, and interparental violence across childhood would have more accurately represented the child’s experience of these risk factors. It also may have demonstrated a stronger predictive effect on late adolescent partner violence. That being said, even small effect sizes can have important implications for health outcomes (McCartney & Rosenthal, 2007). Reducing the risk of partner violence, even minimally, is argued to have significant practical importance for the adolescents who may be protected from physical violence, as well as the associated physical and psychological consequences of that violence.

When the full developmental model was estimated, however, a more complex picture of the influence of family risk factors, externalizing problems, and conduct problems emerged. Put simply, family risk factors, particularly poor quality parent-child relationships, contributed to the prediction of childhood externalizing problems, which predicted early adolescent conduct problems, which in turn predicted both late adolescent conduct problems and partner violence. These analyses suggest that partner violence and conduct problems share common developmental roots. Early adolescent conduct problems is the proximal developmental precursor to both types of late adolescent problems. In turn, children with early childhood externalizing problems and with parent-child relationships that are negative, aversive, conflictual, and lacking in positive
emotions are more likely than children without these early experiences to develop early adolescent conduct problems and thereby be at risk for emerging partner violence.

The early family risks may operate by undermining the child’s development of self-regulation skills. Functionally, this could mean that at school entry, these children have inadequate resources to regulate their own emotions and behavior, instead acting out when frustrated, angry, or overwhelmed. This pattern of child responding is stable across time, predicting antisocial behavior 9 years later. Previous research suggests that children who enter elementary school with elevated levels of aggressive-disruptive behavior experience a negative cascade of socialization difficulties, as they often alienate peers and teachers and experience discipline and learning difficulties in the school setting. During this time, children may also escalate and diversify their aggressive and oppositional responding patterns to achieve goals and manage relationships at home and at school as they develop into adolescents (as reviewed by Coie & Dodge, 1998; Dishion & Patterson, 2006).

The presence of conduct problems in early adolescence is significantly related to partner violence across the subsequent 3 years. In other words, these adolescents, who have not enjoyed close or warm relationships with their parents, may have, by adolescence, developed and refined hostile, cruel, and aggressive ways of interacting with the world around them, and hence be very likely to continue these same behaviors within the context of a romantic relationship.

Interestingly, contrary to previous evidence (Foshee et al., 2005; Stith et al., 2000), interparental violence was not predictive of future violence. The simple correlations between the child’s exposure to interparental violence at age 6 and the partner violence assessed in late adolescence were near zero. In the full developmental model, interparental violence at age 6 showed a positive relation with child externalizing behavior measured at the same time, but the effect was not strong and reached only a trend toward statistical significance. There are many potential explanations for this finding. One possibility is that the high rate of single-parent headed households in the present sample attenuated an effect that may exist in two-parent homes. As opposed to being a limitation, the percentage of single-parent headed households in this sample (39%) represents a larger demographic trend. In 2000, one-fourth of American families were headed by one adult. The lack of association between exposure to interparental violence and partner violence may represent the reality that a new generation of at-risk children do not have the same
likelihood of exposure to interparental violence as children born 30 or 40 years ago, when the vast majority of families were headed by two adults.

As noted in the introduction, although there is extensive evidence for the association between interparental violence and partner violence based on retrospective reporting, there is little evidence for the relation in prospective studies. It may be that when individuals who perpetrate partner violence are asked to recall childhood experience, their past experiences involving the witness of interparental violence is quite salient. When a broader sample is followed longitudinally, however, as in the current study, more precise assessments between exposure to interparental violence and the future development of partner violence are possible, and are less strong than in more extreme, pre-selected samples. However, it is also possible that interparental violence was not measured effectively in this study. For example, a “no interparental violence” score was assigned to all parents without partners. Although this was considered the most conservative way to address the issue of the many single parent families in our sample, it is possible that this choice underestimated a child’s exposure to inter-adult violence. It is possible that parents did not report on violent relationships with people who they were sexually or emotionally involved with but did not consider to be their “partner”. This could have resulted in an absence of significant findings based not on the absence of a predictive relation between interparental violence and partner violence, but on the absence of accurate data on a child’s exposure to these risks.

4.2 Person-oriented Group Comparisons

The person-oriented analyses complemented the structural models and provided additional evidence to elaborate the complex nature of the development of partner violence. The person-oriented group comparisons demonstrated that adolescents who engaged in conduct problems (with or without engaging in partner violence) had childhood experiences of significantly lower quality parent-child relationships, higher interparental violence, harsher punishment, and higher rates of childhood externalizing problems compared to those who did not engage in late adolescent conduct problems. In contrast, those who engaged in partner violence did not experience any of these risk factors at significantly different rates than those who did not engage in partner violence. No significant interaction terms emerged, suggesting no additional level of childhood risk among youth who showed the combination of late adolescent conduct problems and partner
violence and those who showed only one of these late adolescent problems. This study is the first to examine the early childhood risks of youth who develop partner violence, and the finding is surprising in terms of the absence of association with early childhood family risk factors (parent-child quality, harsh parenting, inter-parental violence) or early child externalizing problems. This picture changes slightly as we follow these children into adolescence. At early adolescence, those who will engage in partner violence endorse significantly higher rates of conduct symptoms than those who will not engage in partner violence. These findings suggest two explanations.

First, these findings could indicate that, although those who will engage in partner violence did not experience riskier childhood environments, influences during the years between school entry and 9th grade impacted their involvement in risky behavior and endorsement of conduct symptoms. This hypothesis is consistent with theoretical models of the development of partner violence that highlight the importance of external influences during later childhood and the pubertal transition. Specifically, Capaldi and Gorman-Smith (2003) suggest that deviant peer association and assortative partnering are precursors to partner violence. Whereas the vast majority of research on the etiology of partner violence cites the importance of parent and family precursors, a few recent studies suggest that deviant peer affiliation is associated with partner violence as well (Brendgen, Vitaro, Tremblay, & Wanner, 2002; Capaldi, Dishion, Stoolmiller, & Yoerger, 2001; Kim & Capaldi, 2004; Pettit et al., 2006). This relation is posited to occur through multiple mechanisms (Dishion & Patterson, 2006).

First, deviant peer affiliation may reduce the likelihood that the adolescent develops friendships with typical, prosocial peers. Thus, the adolescent may miss opportunities to engage in positive friendships that model more adaptive relationship and behavior examples. Second, deviant peers act as models and provide reinforcement for aggressive behavior (Elliott et al., 1985; Dishion, 2000). Deviant peers demonstrate new types of deviant activity, they model aggressive behavior, and reinforce the adolescent’s aggressive behavior. In observations of deviant adolescents and their peers, peers’ contingent responses of laughter in response to discussions of deviant behavior were associated with future increases in deviant behavior, even after controlling for previous behavior. This dynamic process has been called deviancy training (Dishion, Eddy, Haas, Li, & Spracklen, 1997). Third, peer socialization may support the adolescent’s belief that engaging in aggressive or deviant behavior is not wrong (Thornberry, 1998). Fourth, it is possible that the deviant peer group offers elevated opportunities for aggressive and deviant behavior. There is
consistent evidence that deviant peer affiliation is associated with initiation of aggressive behavior and escalation of both the frequency and severity of aggressive and deviant acts (Elliot et al., 1985; Thornberry & Krohn, 1997; Thornberry, 1998). The majority of juvenile offenses are committed as part of a group. Thus, the deviant peer group can provide this cluster of collaborators observed as group perpetrators in the majority of adolescent crime. Deviant peer friendships also involve more negative and aggressive interactions within the group, increasing again the likelihood of being both a victim and perpetrator of aggression. Fifth, deviant peer affiliations increase the likelihood of assortative partnering, in which an aggressive male and an aggressive female form a romantic relationship. There is evidence to suggest that partner violence is more likely in these pairs, in which aggressive interactions and escalation within these interactions is likely, given their aggressive history and their lack of alternative conflict resolution strategies (Capaldi & Crosby, 1997; Kim & Capaldi, 2004). Finally, there is evidence that, among boys, deviant peer socialization can include discussion and reinforcement of hostile and aggressive beliefs about women that influence the occurrence of later partner violence. Capaldi, Dishion and colleagues (2001) found evidence that mutual hostile talk about women between deviant peers contributed uniquely to the prediction of partner violence three years later, after controlling for previous antisocial behavior. Factors such as academic difficulties, low parent supervision, and early physical maturation may also increase the likelihood that adolescents disengage from school, affiliate with deviant and potentially older peers, and have ample opportunity to engage in early adolescent conduct behaviors and late adolescent partner violence.

It is also important to note that partner violence may be accounted for by characteristics of the relationship, which were not assessed here. It has been argued that partner violence, especially in adolescence, is typically mutual or bidirectional (Capaldi & Crosby, 1997; Gray & Foshee, 1997), indicating that partner violence may be an interactional process that is the result of both partners individual relationship or behavioral styles as well as the interaction of these two styles. Unfortunately, there is no evidence on the behavioral interactional styles that occur leading up to partner violence perpetration and victimization.

In general, these findings suggest that developmental models of partner violence that rely heavily on early childhood family risks (e.g., parent-child relationship quality, interparental violence, harsh punishment) may be insufficient to explain an important sub-group of youth who develop partner violence. Specifically, although those family risks are implicated in the
development of conduct problems, and may contribute in important ways to the escalation of early adolescent conduct problems into late adolescent partner violence, the evidence available in this study suggests that they do not predict the subgroup of youth who engage in partner violence without concurrent conduct problems. For these youth, the current findings suggest that future research may benefit from a focus on factors that contribute to the escalation of adolescent conduct problems at the transition into middle school.

However, it is also possible that this study may not have included critical predictors of partner violence, such as child maltreatment, post-traumatic stress symptoms, and adolescent alcohol use. Wekerle and Avgoustis (2003) propose a theoretical model in which children who have experienced maltreatment, defined as physical or sexual abuse or neglect, develop relational schema or internal working models of relationships that are characterized by intimacy, aggression, and fear. They hypothesize that these relational schema (and post-traumatic symptomatology resulting from maltreatment) are reactivated in adolescent romantic relationships. It is argued that both general (high affect, sexual arousal) and specific (unique sexual act, specific phrases) relationship triggers reactivate distorted relational schema and trauma symptoms such as increased arousal and re-experiencing symptoms such as flashbacks. Further, it is hypothesized that triggered adolescents are then more likely to respond in automatic, reflexive ways, re-enacting a violent relational schema. Wekerle and Avgoustis (2003) suggest that maltreated youth are also more likely to engage in substance use, which simultaneously reduces inhibitions as well as reflective decision making, increasing the likelihood of violence in partner interactions. Although substance use is a significant predictor of partner violence (O'Keefe, 1997), there is mixed evidence for the association between childhood maltreatment and partner violence (as reviewed by Wekerle & Avgoustis, 2003). There is also evidence that family socio-economic status may moderate relations between child predictors and the prediction of partner violence, with variables predicting partner violence within low SES families, but not moderate or high SES families (Pettit, Bates, Holtzworth-Munroe, Marshall, Harach, Cleary, and Dodge, 2006). These findings indicate that it may be important to include a rich assessment of both family relational characteristics as well as contextual variables such as socio-economic status.

This study also did not assess genetic variables that may account for the prediction of conduct problems and partner violence. Studies that have assessed both genetic and social influences on the etiology of conduct problems have demonstrated that it is the interaction of
nature and nurture that account for the most predictive power (Caspi, Henry, McGee, Moffitt, & Silva, 1995). Put another way, the negative influence of social variables on the prediction of conduct problems is especially potent for children who are born with specific genetic polymorphisms associated with negative emotionality and low behavioral constraint (Blonigen, Hicks, Krueger, Patrick, and Iacono, 2005). For example, Jaffee and colleagues (2005) found that the predictive power of maltreatment victimization on conduct problems was 12 times stronger for children with genetic risk factors for conduct problems. It may be that family risk factors are significant predictors of conduct problems and partner violence only for children with genetic risk as well. Unfortunately, this interaction of genetic and social influences could not be assessed in the present study.

Finally, no conduct problems by partner violence interactions were found. In other words, those who engaged in partner violence and conduct problems did not experience different risk contexts than those who engaged only in partner violence or only in conduct problems.

4.3 Gender differences

As highlighted in the introduction, there is some evidence that gender differences may exist in the prediction of partner violence (Magdol et al., 1998; Ozer et al., 2004; Stith et al., 2000). Although more males than females engaged in only conduct problems, gender proportions among all other behavior groups (partner violence only, both conduct problems and partner violence, and no problem behaviors) were not significantly different. In addition, although males experienced lower quality parent-child relationship quality and exhibited higher rates of of both childhood and early adolescent externalizing problems/conduct symptoms, no gender differences emerged in the predictors of partner violence. This may indicate that no gender differences exist in the developmental model of partner violence. Conversely, the studies’ outcome may not have been sensitive to gender differences. Specifically, there is evidence that although adolescent partner violence is bidirectional with girls and boys equally engaged in both perpetration and victimization, males are more likely to initiate violent interactions and are more likely to perpetrate sexual violence or severe physical violence (such as punching; Cascardi, Avery-Leaf, O’Leary, Smith-Slep, 1999; Molidar & Tolman, 1998; O’Keefe, 1997). There is also evidence that females are more likely to incur both physical injury and negative psychological consequences as a result
of partner violence (Cascardi, Avery-Leaf, O’Leary, Smith-Slep, 1999; Molidar & Tolman, 1998; O’Keefe, 1997). Gender differences in the prediction of partner violence may have emerged if we assessed an outcome of partner violence initiation as opposed to partner violence involvement.

4.4 Methodological Contributions

Although a handful of studies have assessed the association between conduct problems and partner violence, these studies demonstrate consistent methodological weaknesses that limit the strength of the findings. Specifically, these weaknesses include cross-sectional studies, one-question assessments of interparental violence or partner violence, retrospective reporting, only male samples, and only one reporter on a construct. Each of these previous gaps were addressed. This longitudinal study of males and females included a richer assessment of interparental violence and partner violence. In addition, many constructs included both parent and observer reports. To maximize the measure of childhood risk factors, latent constructs were created using two observed variables measured at the same time point. Structural equation modeling was employed to assess the influence of all risk factors on outcomes. The study also assessed a developmental model in which family risk factors influence the emergence of partner violence via a negative cascade effect in which family risk factors heighten risk for the development and continuation of conduct problems from childhood through late adolescence conduct problems, which in turn heightens risk for partner violence. This represented a significant addition to the literature by modeling both early starting conduct problems as well as chronic conduct problems across early childhood, early adolescence, and late adolescence. Both structural equation modeling to assess relations between predictors and outcomes on a group level, as well as person-oriented group comparisons to assess the specific developmental precursors to specific behaviors, was employed, representing a significant advance in the sophistication and depth of examination of the developmental precursors of partner violence. It is recommended that future studies employ similar complementary analyses with the goal of furthering our understanding of both the correlates, predictors, and group differences of partner violence.
4.5 Conclusions and future directions

The results of this study suggest that family risk factors and childhood externalizing problems influence the development of partner violence, albeit indirectly, via their influence on the development of early adolescent conduct problems for both males and females. A behavior pattern of oppositional and aggressive responding in early adolescence, particularly one characterized by aggression, deceitfulness, and rule-breaking, is a critical precursor to both partner violence and conduct problems in late adolescence. Interestingly, those who engage in partner violence cannot be identified by early childhood risk factor differences. This represents the first longitudinal study spanning twelve years of parent, child, and observer information to test a negative developmental cascade model of partner violence.

The present study is not without its weaknesses. In the structural equation model, only two observed indicators were used to estimate each latent construct. Although it is a relative strength that two of the four predictor latent constructs included both parent and observer reports, it would have been optimal to have included parent, child, and observer reports in the estimation of each latent construct. Similarly, partner reports could have increased the reliability of the estimates of both interparental violence and late adolescent partner violence. It should also be noted that the current study did not test the complete triad of developmental precursors that Dutton argues are uniquely predictive of partner violence. Specifically, the present study did not assess children’s trauma symptoms and assessed parent-child relationship quality as a proxy for their attachment style. The absence of these two variables may have weakened the test of hypotheses regarding unique predictors of partner violence. In addition, this study assessed childhood predictors at one time point. It may be that the influence of these stressors is cumulative over time, such that chronic interparental violence exposure or poor-parent child relationship quality across childhood has a significant influence on the development of partner violence. This influence could not be determined with this methodology. Finally, this study was limited by the partner violence data available. Significant unique childhood predictors of partner violence may have been found if the partner violence outcome data had included an assessment of more severe types of violence or injury resulting from partner violence.

This study represents an important first step in exploring the common developmental roots of conduct problems and partner violence. It also suggests a number of future research
directions. First, a comprehensive developmental model of partner violence might include a richer assessment of factors during early adolescence that may increase the likelihood of future partner violence, such as low parental supervision, early pubertal maturation, deviant peer affiliation, and assortative partnering. This developmental model would also include a wider variety of early childhood experiences posited to influence the development of partner violence could. An assessment of the parent-child attachment style, a child’s relational attachment style over time, child maltreatment, child trauma symptoms, family socio-economic status and a richer assessment of a child’s exposure to both family and community violence, along with the early childhood risk factors assessed, could provide more information on the cumulative or interactive influence of these risk factors on the development of partner violence. Although the influence of externalizing problems and exposure to interparental violence was assessed, future studies should test the influence of a behavioral repertoire of aggressive conflict resolution strategies, trauma symptoms, and an insecure attachment history to completely assess Dutton’s model. While preliminary evidence that the influence of these childhood factors influence partner violence only indirectly was found, future studies that assess childhood externalizing problems, insecure attachment style instead of parent-child relationship quality, and childhood trauma symptoms would more fully assess Dutton’s model. Finally, future research on the interaction of partner relational styles as well as the behavioral sequence that results in partner violence in a relationship is needed to explore precursors to partner violence that cannot be examined focusing solely on individuals.

The results also provide information to inform prevention efforts. These results suggest that partner violence perpetrators cannot be identified by childhood risk factors alone. In addition, the influence of childhood risk factors occur indirectly, via their influence on early adolescent conduct problems. This evidence suggests that prevention programs targeting children may be too early to influence the trajectory to partner violence. Although childhood risk factors may represent the first steps in a developmental cascade to partner violence, more steps must be mapped out to discern those who will engage in partner violence. These results suggest that early adolescence may be a critical developmental window at which to intervene to prevent the development of partner violence. Unfortunately, there is sparse evidence as to which risk factors attenuate or escalate the risk for the development of partner violence. As more information is gained as to which adolescent risk factors are critical in the developmental cascade, these areas that occur more proximally to the behavior may be targeted.
In summary, these results suggest that early adolescents who exhibit conduct symptoms are at increased risk of continuing aggressive and hostile ways of interacting across multiple domains, including within romantic relationships. Prevention programs that target conduct problems in early adolescence may play an important role in preventing partner violence. That being said, 136 adolescents in the sample reported engaging in partner violence, but not in conduct problems. More research on the developmental precursors of partner violence in the absence of conduct problems is needed to develop appropriate prevention programs for these adolescents.
References


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