The Mediating Roles of Maternal Psychological Distress and Parenting on The association Between Intimate Partner Violence and Adolescent Delinquent Behavior

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ABSTRACT

THE MEDIATING ROLES OF MATERNAL PSYCHOLOGICAL DISTRESS AND PARENTING ON THE ASSOCIATION BETWEEN INTIMATE PARTNER VIOLENCE AND ADOLESCENT DELINQUENT BEHAVIOR

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Intimate partner violence (IPV) impacts one in four women in their lifetime, with the reported violence most commonly occurring around childbearing age. Unfortunately, children and adolescents are often unintended victims of IPV, and years of evidence suggest a strong link between maternal IPV and a host of negative adolescent outcomes, including a greater likelihood of engaging in delinquent behavior. Given the negative outcomes linked to adolescent delinquency, the field has been interested in identifying factors that contribute to the association between maternal experiences of IPV and adolescent delinquent behavior, such as the influence of maternal psychological distress and parenting. Many IPV victims experience internalizing mental health symptoms and psychological distress, which have been positively associated with adolescent delinquency. Furthermore, studies have found links between maternal psychological distress and parenting characterized by less warmth and increased harshness. To date, evidence suggests pathways through maternal psychological distress and parenting behaviors, both resulting from IPV, may be positively associated with child externalizing behaviors; however, there is a dearth in the longitudinal research on these associations focused on delinquency among adolescents. Thus, more rigorous methodology is needed to examine how maternal psychological
distress and parenting may function sequentially to impact the link between maternal IPV and adolescent delinquency. The present study used longitudinal data from the Welfare, Children, and Families: A Three City Study and included 1156 mothers with one focal adolescent ages 9 to 15 at Time 1. A sequential mediation model using structural equation modeling examined the associations between mothers’ reports of IPV and their psychological distress at Time 1, and adolescent reports of parenting behaviors at Time 2, and delinquent behaviors at Time 3. Results found that maternal psychological distress and positive parenting did not sequentially mediate the relationship between maternal experience of IPV at Time 1 and adolescent delinquent behavior at Time 3. However, maternal IPV was associated with higher psychological distress at Time 1, and maternal psychological distress mediated the relation between maternal IPV and adolescent delinquency. Lastly, lower positive parenting at Time 2 was associated with higher adolescent delinquency at time 2. Implications regarding the impact of maternal IPV on parent and adolescent functioning are discussed.
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BY
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A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE MASTER OF ARTS

DEPARTMENT OF PSYCHOLOGY

Doctoral Director:
Laura D. Pittman
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I extend my gratitude to my advisor, Dr. Laura Pittman, for her patient support through this journey. I am also infinitely grateful for my parents, sisters, and boyfriend, Jesse Graham, who have always offered joy, support, and belief in my ability to reach this milestone.
DEDICATION

To my grandmother, Esperanza Olvera, who exemplified and inspired perseverance
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CHAPTER 1
INTRODUCTION

Intimate partner violence (IPV) is a pervasive problem that is linked to several negative outcomes for victims and their families. Although IPV victimization is not limited to a particular population or setting, female victims appear to endure the global burden of IPV, which is most often experienced as violence perpetrated by male partners or ex-partners (Brieding et al., 2014; Coker et al., 2002). IPV has been defined narrowly by the type of abuse (e.g., physical aggression) or more broadly as a comprehensive term for various forms of abuse including physical, sexual, and psychological abuse, occurring in the context of any current or past intimate relationship (Brieding et al., 2015). For the purposes of this review and study, IPV will be limited to violence against women by male partners. The most recent population-based surveys estimate that one in four women experience IPV in their lifetime (Smith et al., 2015). Due to the high prevalence rates, IPV is considered a public health issue with extensive consequences for victims and society, including the high cost of medical care needed for victims, the elevated incarceration and recidivism rates for perpetrators, and the intergenerational nature of violence in families (Holmes et al., 2017; Kimber et al., 2018; Modi et al., 2014). In addition, children of mothers reporting IPV experience poorer emotional and behavioral outcomes as compared to children of non-IPV victims (Artz et al., 2014; Carlson et al., 2019). Most of the extant literature considers behavioral and emotional outcomes in children aged 4 to 12 of IPV victims, which has led to a strong consensus that IPV is positively associated with greater
internalizing and externalizing problems for children (see Fong et al., 2019 for a review). However, fewer studies have focused specifically on the link between maternal IPV and adolescents’ engagement in delinquent behaviors (but see Ireland & Smith, 2009). Given that adolescent delinquent behaviors are linked to a host of negative life-course outcomes (e.g., poor academic achievement and emotional well-being, drug and alcohol related problems, and adult criminal behavior; Lanctôt et al., 2007), further research is needed to understand the ways in which maternal IPV contributes to adolescent delinquent behavior.

Broadly, there is a consensus in the literature that maternal IPV contributes negatively to youth development and is specifically associated with adolescents’ engagement in delinquent behaviors (Carlson, 2019; Fong et al., 2019). Multiple meta-analyses synthesizing the extant research suggest maternal IPV victimization is related to poorer socioemotional functioning, poor academic outcomes, and greater psychological sequelae in children and adolescents (Evans et al., 2008, Sternberg et al., 2006; Vu et al., 2016; Wolfe et al., 2003). Findings also suggest that adolescents of mothers who have experienced IPV are more likely to exhibit problematic externalizing behaviors relative to peers from non-violent homes (Carlson et al., 2019; Fong et al., 2019; Kitzmann et al., 2003.). Given the robust empirical evidence for this association, which will be reviewed in greater detail below, next steps should involve examining more complex models that consider the possible mechanisms by which IPV influences adolescent development such as maternal mental health and parenting behaviors.

Decades of research provide well-founded support that IPV has an adverse effect on women’s mental health and is related to elevated levels of depression, anxiety, somatization, posttraumatic stress disorder, and suicidality (Dillon et al., 2013; Golding, 1999; Loxton et al., 2017). Further, poorer maternal mental health is an established risk factor for negative child and
adolescent development (Campbell et al., 2009), and specifically, has been linked to adolescent delinquent behavior (Campbell et al., 2009; Cummings & Davies, 2000; Downey & Coyne, 1990). It is possible that the poorer mental health associated with maternal experience of IPV is linked to less optimal parenting characterized by the use of harsher parenting practices such as spanking and yelling (Krishnakumar & Buehler, 2000) and less warmth (Chiesa et al., 2018). Although several studies have examined these proposed mechanisms on child and adolescent externalizing behaviors in partner violent homes, few have used models examining maternal mental health and negative parenting in a sequential manner to better understand possible processes through which mothers’ IPV experiences are linked to a particular adolescent outcome, such as delinquent behavior. Most studies have looked at maternal mental health and negative parenting as possible independent mediators and are mostly interested in externalizing outcomes, although some research is specific to adolescent delinquency. However, much of the literature regarding adolescent delinquency considers maternal mental health and parenting as predictors during early and middle childhood, rather than during the adolescent period (e.g., Schmidt et al., 2020; Shaw & Gilliam, 2017). The few studies examining the sequential links among maternal mental health and negative parenting were limited to samples of children under the age of 10 and focused on broader externalizing behavior outcomes rather than delinquency (Huang et al., 2010; Zarling et al., 2013). Thus, there is a need to consider maternal psychological distress and negative parenting collectively as they relate to adolescent behavioral outcomes, and in particular, adolescent delinquency. The current study seeks to build on the maternal IPV and adolescent outcome literature. While the association between maternal IPV and adolescent delinquent behavior may have genetic underpinnings (Capaldi et al., 2020), this study will focus
on environmental influences and examine the association sequentially through maternal psychological distress and negative parenting behaviors.

Adolescent Delinquent Behavior

Adolescence is a developmental period characterized by autonomy seeking and higher risk of engaging in risky or delinquent behaviors (Cicchetti & Rogosch, 2002; Steinberg & Morris, 2001). Delinquent behaviors can be conceptualized as ranging from minor transgressions (i.e., lying) to more serious and violent criminal offenses (i.e., assault). In the developmental psychology literature, a common comprehensive definition that will be used to guide this review refers to delinquent behavior as criminal and non-criminal acts such as truancy, disobedience of authority figures, stealing, substance use, and other aggressive acts (Loeber & Loeber, 1998). These behaviors are concerning given the known link to poorer outcomes in multiple domains including academics (Okano et al., 2020), peer and family relationship functioning (Vazsonyi & Flannery, 1997), adult criminality (Lanctôt et al., 2007), adult psychopathology (Pang & Thomas., 2020), and adult employment (Carter, 2019; see also Artz et al., 2014 for a review). Most adolescents engage in some delinquent behavior but tend to decrease these behaviors as they transition into adulthood (Moffit, 1993). However, repeated and more severe acts of delinquency are linked to more adverse outcomes (Lanctôt et al., 2007; McLeod et al., 2012). In the past three decades, recognition of the prevalence and serious consequences of adolescent delinquency prompted researchers to investigate the etiology of delinquent behavior to better inform prevention and intervention efforts. A systematic review by Azeredo et al. (2019) highlights the main factors found to be associated with delinquent behavior in the literature: genetics, parents, and peer groups. Although genetics and peers play a substantial role
in delinquency, this study will focus on developing a better understanding of adolescent delinquent behaviors in the context of the family environment. Prior research confirms that the family environment is critical in adolescent development (Steinberg & Morris, 2001) and specifically, that parental conflict, including IPV, is linked to adolescent delinquency (Loeber & Stouthamer-Loeber, 1988; Menon et al., 2018; Ryan & Claessens, 2013; Smith et al., 2010).

Theoretical Framework

Several theories have been utilized to help explain the development of adolescent delinquent behavior in the context of IPV. Social learning theory (Bandura, 1977; Bandura & Jeffrey, 1973) has been commonly used to guide studies considering how adolescent exposure to IPV is associated with perpetration of aggressive and violent behavior (Ireland & Smith, 2009), taking the perspective that adolescents learn or model aggression and anti-social behaviors from violent parents. Other studies utilized a less linear framework through underscoring other contextual factors that may directly or indirectly influence the relation between maternal IPV experiences and child and adolescent conduct problems or delinquent behaviors (e.g., parent psychopathology, socioeconomic status, child temperament; Grant et al., 2003; Gustafsson et al., 2012). Given this study’s focus on parental level contributions to delinquent behavior, the proposed pathways are best guided through an ecological systems framework (Bronfenbrenner, 1986), which posits that development occurs as an interaction between multiple systems of an individual’s life. Furthermore, since the literature to date has identified influential parent level factors related to child and adolescent externalizing and delinquent behaviors, the next steps would be to conduct research that accounts for these factors and their time dependent processes. The spillover hypothesis states that disruptions in one family system or domain can “spill over”
to disrupt other systems and individuals within those systems (Erel & Burman, 1995). Together, the ecological systems theory and the spillover hypothesis can be applied to better understand the mechanisms and processes underlying the association between maternal IPV and adolescent delinquency.

**Ecological Systems Theory**

The ecological systems theory (Bronfenbrenner, 1979, 1986) posits that adolescents’ development is largely influenced by the interaction of multiple facets of their immediate and distant environment. According to this well-established, life-span developmental perspective, an adolescent’s environment consists of a system of interconnected levels (i.e., micro-, meso-, exo- and macro-systems) that account for proximal and distal influences. The micro system is a lower order system and includes the adolescents’ direct interpersonal relationships (e.g., parents, teachers, peers), including parenting behaviors. The meso-system is also considered lower order and involves relationships between the factors within the microsystem (e.g., parent characteristics, parenting behaviors, and parental IPV). The higher order systems (i.e. exo- and macro-) refer to distal influences, such as an individual’s culture or socioeconomic status (SES) interacting with the larger environment (Bronfenbrenner, 1979). Broadly, the literature suggests that just as healthy adjustment is influenced by positive family processes, negative family processes contribute to less optimal child and adolescent adjustment. For example, findings from a meta-analysis identified certain family characteristics (e.g., conflict/aggression, negative parental functioning) as placing children and adolescents at a higher risk for internalizing and externalizing problems while positive family characteristics (e.g., cohesiveness, warmth and support) lessened the risk (Repetti et al., 2002; see also White & Renk, 2012). Thus, grounding
the current study in an ecological framework is consistent with prior research and provides support for the examination of the contextual influences on adolescent delinquent behavior such as family relationships characterized by conflict and aggression, maternal individual differences, and parenting behavior (see Carlson et al., 2019 for a review).

The Spillover Hypothesis

The ecological systems approach to understanding adolescent delinquent behavior is comprehensive, albeit broad. To narrow the focus of the current study's conceptualization of maternal influences on adolescent delinquent behavior, further support is drawn from the spillover hypothesis. The spillover hypothesis assumes parents’ individual characteristics and experiences (e.g., maternal mental health, discord in their intimate relationships) “spills over” to influence their parenting behaviors, which then contributes to the psychological and socioemotional development of their children (Erel & Burman, 1995, Krishnakumar & Beuhler, 2000). Support for the spillover hypothesis in explaining the link between parental IPV and child externalizing or delinquent behavior is evident in the literature with several studies modeling significant pathways from interparental conflict to parental stress, harsh parenting behaviors, less parental warmth, and child and adolescent externalizing behavior (Awada et al., 2020; Gerard et al., 2006; Krishnakumar & Buehler 2000). To date, much of the literature examining spillover processes involves younger children (e.g., ages 4-10) so there is a lack of reportable findings to support this hypothesis regarding adolescent delinquency (ages 10-18). However, Gerard et al. (2006) found that adjustment in youth in middle childhood and adolescence are negatively impacted by spillover effects, specifically through parental conflict and harsh parenting. This finding highlights the need for further specificity in examining the spillover pathways linking
parental conflict to adolescents’ delinquent behavior. In addition, higher order factors such as economic strain can contribute to adolescent delinquency through its spillover effects on family relationships (Wadsworth & Compass, 2002). The current study seeks to add to the spillover literature on delinquent behavior in adolescents, specifically examining how mothers’ experiences of IPV and her associated poorer mental health are predictive of harsher, less warm parenting behaviors and later adolescent delinquent behavior. Studies examining IPV and externalizing behaviors in younger children will be reviewed to lend support to the proposed model, considering the lack of specific studies predicting adolescent delinquent behavior.

Maternal IPV and Adolescent Delinquency

Although there are many proposed pathways to delinquency with theoretical and empirical backing in the literature, it is clear that the ecological context in which an adolescent develops is important when considering adolescent behaviors. Disruptions in normative development during adolescence, such as IPV exposure, may lead to the expression of new behaviors, or exacerbate existing behaviors (McCloskey, 2011). In research examining the influence of IPV on child and adolescent outcomes, there are concerns about how ‘exposure’ to IPV is defined. Researchers attempting to refine the literature were interested in differences between confirmed witnesses’ experiences and assumed witnesses’ experiences. Kitzman et al. (2003) conducted a meta-analysis on psychosocial outcomes of children exposed to parental IPV and found that careful assessment of children’s exposure to parental violence (e.g., direct witnessing vs assumed exposure) did not moderate the magnitude of the effect size. That is, being the child of an IPV victim, whether you have witnessed the violence directly or not, is linked to an increased risk of externalizing behavior compared to children whose mothers
reported no IPV. There are several possible reasons for this finding including a high likelihood that children and adolescents whose mothers were victims of IPV had been exposed to violence in the home that was not reported or measured. Another potential reason is that children and adolescents may experience the aftermath of violence against their mothers through its effect on parenting. Given the range of experiences evident in the literature, this study will utilize the term “exposure” and a definition by Holden (2003) that states child exposure is directly witnessing violence through seeing or hearing, or indirectly, through experiencing the aftermath of the violence on their mother. Similarly, Edelson (1999) argued that the definition of witnessing IPV should account for all of the ways children experience it. Using a wide range of exposure experiences is also supported by studies including case records, archival data, mothers’ reports, and youth’s own reports of their experiences (Finkelhor et al., 2011). By clearly defining exposure to IPV in this study, we are addressing a limitation noted in several reviews of the extant literature (e.g., Bender et al., 2017; Cage et al., 2021, Holmes et al., 2022; Holt et al., 2008).

Another limitation in studies examining how exposure to IPV is linked to child outcomes is the use of broadband measures of internalizing and externalizing symptoms, which only provide an overarching understanding of the possible patterns. Parental IPV’s association with specific adolescent behaviors is important to parse out to gain a clearer understanding of risk. For example, some findings indicate that adolescent exposure to IPV was related to substance use, a form of delinquency, but not to aggression or violence (Fagan & Wright, 2011). More research is needed focusing on more narrow dimensions of externalizing behaviors, such as delinquency. It is likely that the aggressive nature of IPV may have unique contributions to adolescent delinquent behavior that warrants particular attention in order to identify those most at risk for
delinquency. Given few studies have focused on adolescent delinquency, those studies focusing on the broadband construct of externalizing behaviors will be included in this review to provide further support for the association between maternal IPV and adolescent delinquent behaviors.

As previously mentioned, there is a consensus in the literature that children and adolescents exposed to IPV are more likely to exhibit externalizing and delinquent behaviors compared to their non-exposed counterparts (e.g., Azeredo et al., 2019; Evans et al., 2008; Fong et al., 2019). In fact, many children of IPV victims showed externalizing problem behaviors in the borderline to clinical range (Kernic et al., 2003; Sternberg et al., 2006). Meta-analytic findings from a review of longitudinal studies indicated that exposure to IPV is positively linked to child externalizing behaviors, and that the associations are stronger when there is a greater time between the assessment of IPV exposure and the assessment of externalizing behaviors. (Vu et al., 2016). These findings suggest that externalizing problems following IPV exposure may have a lagged effect, highlighting the need for further longitudinal studies with adolescent samples.

While limited, some studies have specifically focused on the relation between maternal IPV and adolescent delinquency. For example, exposure to IPV was positively related to adolescent delinquency, after accounting for other risks (e.g., gender, other family stressors), although delinquency was higher when the adolescent was also a victim of child abuse (Moyan et al., 2010), which are forms of family violence that commonly co-occur (Herrenkohl et al., 2008). Evidence from other longitudinal studies supports these findings indicating IPV exposure should be considered an independent factor beyond other forms of family violence, negatively impacting adolescent outcomes (e.g., Cisler et al., 2012, Sousa et al., 2011). Specifically, in one study IPV exposure was a greater risk than other types of trauma, where adolescents reporting
cumulative IPV exposure (i.e., exposure to maternal IPV over time) were more likely to engage in delinquency as compared to adolescents with non-IPV traumatic event exposure (Cisler et al., 2012).

Although studies on the cumulative effect of IPV exposure are important given that cumulative IPV exposure is the norm rather than the exception for adolescents (Cisler et al., 2012), research has also investigated the role of severity of IPV in its relation to child and adolescent outcomes. In general, studies have found that greater IPV severity (e.g., higher frequency, use of a weapon, physical or sexual aggression) is predictive of more child externalizing problems (Graham-Bermann et al., 2010, Gresson et al., 2014; Jouriles et al., 2016) and adolescent delinquency (Ireland & Smith, 2009). In a longitudinal study by Ireland and Smith (2009), adolescents living in partner violent homes had a 1.7 times risk of engaging in externalizing behaviors and violent crime during mid-adolescence. As adolescents aged into adulthood, the risk between IPV exposure in adolescence and antisocial behavior and aggression was reduced. However, Ireland and Smith (2009) also looked at exposure to more severe IPV and found that adolescents raised in severe partner violent families were at increased risk for violent crime and violent relationships in mid-adolescence and into adulthood. Overall, few studies have investigated direct associations between adolescent exposure to IPV and delinquency longitudinally, whether IPV was measured dichotomously (i.e., exposure to IPV versus not), or through a continuous assessment of the severity of IPV exposure. Thus, while there is sufficient evidence to conclude IPV exposure is linked to child and adolescent externalizing behaviors, more research examining adolescent delinquency is needed. Further, research examining the possible mechanisms between this association would add to our understanding of the phenomena.
It has been well established that IPV is a serious and complex form of victimization that can be detrimental to both physical and mental health (Campbell, 2002; Coker et al., 2002; Dillion et al., 2013). IPV is the most common form of violence against women in the world (Devries et al., 2011). Victimization carries a mental health burden to such a degree that female victims of IPV have nearly double the risk of experiencing adverse mental health consequences such as depression, anxiety, PTSD, suicidality, and low self-esteem when compared to non-victimized counterparts (e.g., Dillion et al., 2013; Dichter et al., 2017; Stockman et al., 2015). Additionally, Vos et al. (2006) suggested depression accounted for 34.7% of the total disease burden of IPV, while anxiety accounted for 27.3%. Somatization is less studied but has been found to be positively associated with IPV victimization in women (Lown & Vega., 2001; Loxton et al., 2017; Samelius, 2007). Not surprisingly, women who have experienced IPV often experience co-morbid depression, anxiety, and somatization symptoms (McFarlane et al., 2017). Although the mental health correlates of IPV victimization are not limited to the aforementioned symptoms, much of the literature on the psychological impact of IPV has focused more on the presence of depressive, posttraumatic stress, and anxiety symptoms (Dutton, 1993; Pico-Alfonso, 2006).

Several meta-analyses highlight the positive association between intimate partner violence and depressive symptoms (Bacchus et al., 2018; Beydoun et al., 2012; Devries et al., 2013; Golding, 1999), with the magnitude of the effect sizes being reported as moderate to strong. For example, in a systematic review of sixteen longitudinal studies, Devries et al. (2013)
found a clear, positive relationship between female IPV victimization and the incidence of depression with an odds ratio of 1.97. Similarly, the meta-analysis by Beydoun et al. (2012) found a 1.5-to-2-fold increased risk of depressive symptoms for women exposed to IPV as compared to non-exposed women. This is consistent with a retrospective cohort study, where nearly 50% of female survivors of IPV reported depression as compared to 24% of non-exposed women who were matched on demographic characteristics (Chandran et al., 2020). Further, among women seen at the veteran’s health administration, those with recent IPV exposure (i.e., past 12 months) were twice as likely to report one or more mental health diagnoses compared to those who did not report IPV victimization, even after controlling for military sexual and combat trauma (Dichter et al., 2018). Among the mental health diagnoses assessed, depression, PTSD, and anxiety were the most diagnosed, which is consistent with findings from other studies (see Lagdon et al., 2014; Spencer et al., 2019; see also Patton et al., 2022 for a review) Further, research supports that greater severity and number of IPV experiences is positively related to the severity of mental health symptoms (Lagdon et al., 2014). Together, these findings suggest that female IPV victimization, whether experienced recently or endorsed during the lifetime, is highly associated with depressive and anxiety symptoms. Further, the mental health disruptions mothers face in response to IPV are thought to increase the risk of externalizing and delinquent behaviors in their offspring.

**Maternal Psychological Distress and Adolescent Delinquency**

Several studies have documented the adverse effects of maternal psychological distress on child externalizing and adolescent delinquent behavior. Most studies have focused specifically on maternal depression as it relates to child and adolescent behavioral outcomes,
with fewer considering other indicators of maternal mental health such as anxiety and somatization. For example, a meta-analysis found a significant, but small, association between maternal depression and children’s externalizing behaviors, with stronger associations found for low-income families \((r = .21; \text{Goodman et al., 2011})\). In examining moderators, they found that family income was a significant moderator, where the association between maternal depression and youth externalizing behaviors was stronger for those with lower income. This is consistent with other literature documenting low income and impoverished mothers as at greater risk for poorer mental health compared to middle or upper-class mothers (Goodman et al., 2009; Smith & Mazure, 2021) and suggests the need to understand these processes among low-income families. Additionally, Goodman et al. (2011) found no significant differences in effect size between maternal depression and youth externalizing symptoms among mothers clinically diagnosed with depression, and those reporting elevated symptoms on a rating scale. Collectively, this suggests a need to examine how maternal mental health influences children’s externalizing problems, even when the maternal symptoms may not be at a clinical level.

Like the meta-analysis by Goodman et al. (2011), longitudinal studies have found that higher levels of maternal depression are linked to adolescent externalizing behavior over time. For example, using longitudinal data to classify mothers into latent classes of depression according to stability and severity, adolescents whose mothers reported sub-clinical, but chronic or elevated depressive symptoms endorsed more externalizing symptoms at age 15 compared to adolescents whose mothers denied depressive symptoms (Campbell et al., 2009). Similarly, a longitudinal study aimed at examining the link between maternal depressive symptoms and adolescent delinquency employed a latent class growth analysis to identify trajectories of maternal depression from child’s age of 4 to 15 that were then linked to child and adolescent
outcomes (Wickham et al., 2015). Adolescents exposed to higher maternal depressive symptoms engaged in non-violent delinquency in adolescence more than low exposed and non-exposed counterparts. Those exposed to maternal depression in middle childhood evidenced greater levels of engagement in substance abuse and non-violent delinquency than any other group. Finally, results from Shaw et al. (2016) longitudinal study further supports that maternal depression is linked to adolescent delinquency such that the presence of maternal depression when adolescents were 12 years old was positively associated with adolescent reported delinquent behavior at age 15. Together, these findings support middle childhood and adolescence as a potential vulnerable period to the effects of maternal depression on behavioral outcomes. However, more studies are needed considering how maternal depression functions as a potential mediator between maternal IPV experiences and adolescent behavioral problems, especially delinquency.

**Maternal Psychological Distress as a Mediator**

As previously established above, IPV is a risk factor for maternal psychological distress, suggesting that adolescents with mothers who have experienced IPV may be experiencing at least two ecological stressors and, therefore, boosting risk of poorer behavioral outcomes (Fong et al., 2019). Developmental perspectives posit that underlying mechanisms account for some of the variance in the relation between maternal experiences of IPV and adolescent delinquent behavior. Several studies have proposed that maternal psychological distress acts as one such mechanism, such that IPV’s negative effects on adolescent delinquency are, in part, explained by poorer maternal mental health (e.g., Maddoux et al., 2016; Schmidt et al., 2020). For example, a longitudinal study conducted with a sample of mothers residing in a domestic violence shelter found the direct association from severity of mothers’ IPV experiences to youth externalizing
behavior was no longer significant once maternal mental health was included in the model, indicating that maternal mental health was mediating the link between IPV and child outcomes (Maddoux et al., 2016). In addition, a longitudinal study utilizing structural equation modeling to examine the strength of the relations between IPV, maternal psychological distress, and child socioemotional outcomes over 4 years found that mothers experiences of intimate partner violence predicted more psychological distress (i.e., depression, anxiety, somatization), and that children of mothers with more psychological distress showed more externalizing behaviors (e.g., aggressive and hostile actions; McFarlane et al., 2017). Although limited, longitudinal research findings suggest that the indirect path between IPV exposure and adolescent aggressive or externalizing behavior through maternal mental health symptoms is significant (e.g., Holmes et al., 2017; McFarlane et al., 2017), with one study owing 21% of the variance in the association between IPV and adolescent aggression to maternal depressive symptoms (Holmes, 2013).

Cross sectional findings also lend support to a mediation model. Results from structural equation modeling with mothers residing in domestic violence shelters indicated that IPV had an indirect effect on child externalizing behavior through maternal mental health (i.e., PTSD, depression, anxiety, somatization; Fredland et al., 2015). Similarly, psychological distress among partner abused mothers, indicated by depressive, anxious, and somatic symptoms, mediated the relation between both physical and non-physical partner abuse and externalizing symptoms among African-American youth ages 8 to 12 years (Owen et al., 2009). Miranda et al. (2011) also reported that mothers’ depression mediated the positive link between IPV and youth externalizing behaviors in a sample of Spanish mothers and their children, ranging in age from 7 to 18 years. However, one study did not find a significant mediational pathway (McCloskey et al., 1995), although it is worth noting that this study did not parse apart youth internalizing and
externalizing symptoms. Overall, there exists a dearth in the literature on how broader maternal psychological distress (i.e., depression, anxiety, somatization) in the context of IPV is linked longitudinally to adolescent specific outcomes, such as delinquent behavior. However, there is a substantial amount of literature between maternal mental health and parenting, and a decent amount on these factors in the context of maternal IPV.

IPV, Maternal Psychological Distress, and Negative Parenting

IPV and Negative Parenting

A process model developed by Belsky (1984) highlights the different factors that contribute to parenting behaviors, or determinants of parenting. Three main contextual factors are featured in the model and include the psychological well-being of the parent, the youth’s behavior, and sources of stress and support. IPV is considered a contextual source of stress that has been associated with negative parenting. In fact, in a recent meta-analysis of 21 studies, IPV victimization was positively associated with negative parenting, which was characterized by physical and psychological aggression and neglect (Chisea et al., 2018). Specifically, associations between experiences of IPV and parenting assessed as physical aggression and neglect were positive and significant, but small; however, associations with psychological aggression were not significant. Many studies on IPV and parenting focus on younger children (e.g., Chung et al., 2021; Gerard et al., 2006; Letourneau et al., 2007; Levendosky et al., 2003), so there is a gap in our understanding of maternal IPV and parenting adolescents. However, using data that the current study will utilize, Murray et al. (2012) found that mothers of adolescents aged 10 to 14 who experienced recent IPV (i.e., past year) reported using more harsh
discipline than mothers of adolescents who did not experience IPV in the past year. While the links found tend to find maternal IPV experiences are associated with worse parenting, it should be noted that in two studies focused on families with young children, mothers were found to potentially compensate for IPV experience by showing more positive discipline and less decrease in warmth as children age (Letourneau 2007; Levendosky et al., 2003). Thus, more research is needed to determine when maternal IPV experiences is linked with worse parenting.

**Maternal Psychological Distress and Negative Parenting**

As suggested by Belsky’s (1984) determinants of parenting model, maternal psychological distress may also be related to negative parenting. It suggests that in the context of IPV parents’ psychological resources may become compromised making it difficult for the parent to maintain positive parent-child relationships, and deficits in parenting may occur. The relationship between poor maternal mental health and negative parenting, defined here as consisting of high levels of harsh discipline and low levels of warmth, is well documented in the literature. Harsh discipline is often characterized by a range of physical and verbal aggressive behaviors such as threatening gestures, expressed anger, and spanking or slapping (Bender et al., 2007). Parental warmth involves parental tendencies to be accepting, supportive, affectionate, and generally expressive of positive emotions towards children (Darling & Steinberg, 1993; Zhou et al., 2002). Low maternal warmth would therefore involve decreased levels of these traits. In general, harsh discipline and low warmth are associated with child and adolescent externalizing behavior problems (Burt et al., 2005; Crouch et al., 2017).

Consistent with the determinants of parenting approach, several studies have underscored the important relationship between maternal psychological health and negative parenting. In a
meta-analysis focused on maternal depression and negative parenting, Lovejoy et al. (2000) reviewed 46 studies that included direct observation of parenting behaviors. Results of the meta-analysis found that depressed mothers displayed higher levels of negative parenting behavior, characterized by hostile or coercive behaviors such as threatening gestures, and expressed anger, compared to non-depressed mothers, although the effect sizes were considered small (i.e., .20, .14, respectively). Depressed mothers also exhibited lower positive maternal behavior (e.g., affectionate contact), again with a small effect size (i.e., .08). Overall, the meta-analysis provides support that maternal depression is a risk factor for negative parenting, although it is important to note that only 17% of the included studies had children 6 years of age or older, and moderation analyses were not able to be conducted on potential differences in mothers of adolescents. Other meta-analytic reviews have discussed the link between poorer maternal mental health and parenting behavior of mothers with adolescent children and found that mothers’ with higher levels of depressive symptoms tend to engage in more negative parenting (Goodman et al., 2011; Goodman et al., 2020).

Longitudinal studies suggest that maternal depression is predictive of harsher parenting, and specifically the use of physical and psychological aggression (e.g., spanking, threatening), although maternal depression was measured when children were younger rather than in early or middle adolescence (Marcal et al., 2021; Wolford et al., 2019). Another study specifically examining maternal depressed mood and parenting aggression in a sample of adolescents supported a positive longitudinal association between higher maternal depressed mood and higher aggressive parenting (Sutton & Simmons, 2021).

It should be noted that much of the literature linking maternal psychological distress and negative parenting focuses on maternal depression. However, some research has been conducted
on other psychological health symptoms such as anxiety and somatization. For example, Newland et al. (2013) did not find a significant relationship between symptoms of depression, anxiety, or somatization on harsh parenting, but depression and somatization were linked to less sensitive parenting behaviors (e.g., lower levels of warmth and enjoyment in parenting). In addition, one study conducted with the sample in the current proposed study found that higher levels of maternal psychological distress, measured as a global construct that included symptoms of depression, anxiety, and somatization, were associated with lower levels of positive parenting behavior (i.e., trust and communication, and monitoring; Prelow et al., 2010). Overall, it is clear that maternal depressive symptoms is a factor in determining parenting behaviors (i.e., warmth, harsh parenting), although there is a need for further studies concerning maternal psychological distress, more broadly, and parenting adolescents. Understanding these pathways in the context of families with IPV is suggested by these research findings.

Maternal Psychological Distress as a Mediator Between IPV and Negative Parenting

The notion that the negative impact of IPV on parenting can be a result of poorer mental health has been discussed in the literature (e.g., Sousa et al., 2021). Mothers who are grappling with the mental toll of violence may find their emotional distress interfering with their parenting. In a qualitative study with 26 mothers experiencing IPV, Lapierre (2010a, 2010b) reported that mothers disclosed a high desire to protect their children from the violence in the home, but that their parenting felt compromised due to the impact of IPV on their physical and mental health. In their recent systematic scoping review, Sousa et al. (2021) identified 22 studies looking at the relationship between poorer mental health (depression, PTSD, stress, somatic responses) and parenting among families whose mothers had experienced IPV and found a pattern supporting
the links between the three constructs. For example, one longitudinal study found that mothers of young children who endorsed physical IPV at baseline experienced higher depressive symptoms eight months later, which was in turn related to increases in harsh parenting nine more months later (Gustafson & Cox., 2012). Another study found that poorer maternal mental health mediated the link between IPV and lower maternal warmth in homes with children between the ages of 3 and 8 (Holmes, 2013). However, other studies have found no support for psychological distress as a mediator in the relation between IPV and negative parenting (Levendosky et al., 2006; Yoo & Huang, 2013). Thus, further examination of maternal psychological distress as a mediator between IPV experiences and parenting is needed.

Negative Parenting and Delinquency

Given the links between IPV, maternal psychological distress and parenting, it is important to recognize how parenting may influence adolescents’ outcomes, including delinquent behaviors. The contribution of parenting in adolescent behavior has historically involved differing views, with the classical view suggesting that parenting and family relationships play a minimal role as adolescents age, and contemporary views underscoring the dynamic ecological environment the adolescent develops in and optimal balance between autonomy seeking and continued parent involvement (Bauramind, 1991). This view implies that adolescent behavior is at least, in part, due to parent behavior. The contemporary view has dominated the field such that research on negative parenting and adolescent externalizing and delinquent behaviors is robust. In general, the consensus has been that negative parenting behaviors involving higher harshness and lower warmth are directly related to child and adolescent externalizing behavior problems (e.g., Calders et al., 2020, Di Giunta et al., 2020,
Pinquart, 2017). Two meta-analyses have reviewed several studies examining this relationship. In a review of 1,345 longitudinal studies, Pinquart (2017) concluded that parental harsh control, a related construct to harsh discipline, predicted increases in adolescent externalizing behaviors, whereas parental warmth predicted decreases in adolescent externalizing behaviors over time. Further, the negative and positive associations between maternal warmth and harsh control and youth externalizing behaviors were stronger for older children and adolescents than younger children. In another meta-analysis focused on parenting and delinquency, the authors found aspects of negative parental support (i.e., rejection and hostility) to be positively associated with youth delinquency, with modest effect sizes (Hoeve et al., 2009). Together, these meta-analyses support that negative parenting characterized by low support and warmth, hostility, and harsh punishment is related to adolescent delinquent behavior.

Specific longitudinal studies also support the link between negative parenting behaviors and adolescent delinquency. For example, in a sample of adolescent girls, harsh punishment in early adolescence predicted later delinquency after controlling for low-income, race, and single parent status (Henneberger et al., 2014). Cross-cultural support for the link between negative parenting and adolescent externalizing behaviors has also been found through a longitudinal study examining harsh parenting in nine countries (Di Guinta et al., 2020). Together, the literature suggests that negative parenting has a deleterious impact on child and adolescent externalizing and delinquent behavior. There are many reasons why parents may engage in negative parenting, such as the aforementioned psychological distress. Other likely factors include experiences of IPV, which has shown direct links to negative parenting. Collectively, the literature points to examining how the associations between maternal IPV experiences and
adolescent delinquency may be explained through maternal psychological distress and negative parenting.

Examining the Full Model

Given the established associations discussed above, it is logical to consider how maternal psychological distress and parenting may explain the associations found between exposure to IPV and adolescents’ delinquency. In fact, using structural equation modeling, Zarling et al. (2013) found the direct association from IPV exposure to externalizing symptoms among children 6 to 8 at the time of enrollment was no longer significant when harsh discipline was included as a mediator in the model, thus suggesting harsh discipline fully mediates this link. Similarly, in a study interested in the relation between IPV exposure and early delinquency (i.e., age 9), Huang et al. (2015) found that maternal IPV at year 1 and year 3 significantly predicted higher levels of neglectful parenting and harsh discipline at year 5, and child delinquent behaviors at year 9. However, in another study, these links were not found (Greeson et al., 2014). Specifically, while a significant lagged effect was found between IPV on women’s parenting practices 4 months later, the parenting practices did not mediate the links to children’s behavior problems among children aged 3 to 13. In another longitudinal model testing possible mediators explaining the link between IPV and child externalizing behavior five years later, maternal IPV experiences when the child was 1 year old were directly related to poorer maternal mental health at year 3, and subsequently related to child externalizing problems at year 5. In addition, IPV at year 1 was associated with harsh parenting at year 3, which was linked to child externalizing problems when they were five (Huang et al., 2010). Although Huang et al. (2010) included maternal depression and harsh discipline in their model, the two were not examined as sequential
mediators. In a rare study, examining the sequential pathways from IPV at child age 1 and/or 3 and delinquent behavior at child age 15 through parenting stress (which is influenced by maternal psychologist distress) and harsh parenting, Awada et al. (2020) found that the sequential mediation was supported with parenting stress and psychologically harsh parenting (e.g., shouting or screaming at child, calling child dumb) but not for parenting stress and physically harsh parenting (e.g., slapped or pinched child). Thus, there are mixed and limited findings related to the possible mediating mechanisms explaining how IPV exposure may be linked with child outcomes, where findings may vary based on parenting behaviors examined, types of child outcomes considered, and the age of the child. Further research is needed to continue to develop our understanding of these associations.

The Present Study

The present study extends the literature on the relationship between mothers’ experiences of recent intimate partner violence on adolescent delinquency over time. Although research has established the negative influences of maternal psychological distress and parenting on adolescent delinquency, few studies have examined these processes simultaneously as explanatory mechanisms between maternal IPV experiences and children’s psychological outcomes. Further, to our knowledge, none have studied their links specifically to adolescent delinquency longitudinally, beginning in the adolescent developmental period. The current study attempts to address common limitations highlighted in a recent review of the past 50 years of empirical research on child exposure to IPV (Holmes et al., 2022). Of note, this study specifically addresses the call for more longitudinal research to help identify meaningful points of intervention, and adds greater specificity to the literature by focusing on the developmental
period of adolescence and on delinquent behavior, rather than broader externalizing outcomes. In addition, this study goes beyond depressive symptoms as a single indicator of maternal psychological distress, and instead will use a global measure of psychological distress that includes depression, anxiety, and somatization symptoms. Lastly, this study utilizes a representative community sample, rather than convenience samples of mothers and children residing in domestic violence shelters. By incorporating maternal psychological distress and negative parenting as sequential mediators in the link between maternal experiences of IPV and adolescent delinquency, we will better understand what mechanisms explain the expected link between maternal IPV and adolescent delinquency. In other words, the sequential model is important to better understand how the risk factors of maternal psychological distress and higher negative parenting may “spill over,” and, thus, provide greater information on who is at greater risk for developing delinquent behaviors. As shown in Figure 1, a model testing the links between maternal IPV, psychological distress, negative parenting, and adolescent delinquency was examined, and the following hypotheses were tested with this model:

**Hypothesis 1 (H1):** Higher maternal IPV at Time 1 would be associated with higher levels of maternal psychological distress at Time 1.

**Hypothesis 2 (H2):** Higher levels of maternal psychological distress at Time 1 would be associated with higher levels of negative parenting at Time 2.

**Hypothesis 3 (H3):** Higher levels of negative parenting at Time 2 would be associated with higher adolescent delinquency at Time 3.

**Hypothesis 4 (H4):** The association between maternal experiences of IPV at Time 1 and adolescent delinquent behavior at Time 3 would be sequentially mediated by maternal psychological distress at Time 1, and negative parenting behaviors at Time 2.
**Hypothesis 5 (H5):** Maternal IPV would be positively associated with adolescent delinquent behavior after accounting for other paths in the model.

![Figure 1. Path diagram of proposed SEM model for the current study.](image-url)
CHAPTER 2

METHODS

Sample

Data were drawn from three waves of the main survey component of Welfare, Children, and Families: A Three-City Study (Winston et al., 1999). The purpose of this longitudinal study was to investigate the well-being of low-income children and their families residing in low-income, urban neighborhoods of Boston, Chicago, and San Antonio after the passage of a federal welfare reform act in 1996. This stratified random sample of approximately 2,400 low-income children and caregivers is representative of the low-income neighborhoods of Boston, Chicago, and San Antonio. Primary caregivers and their children participating in the study were interviewed three times over the course of five years. Time 1 data were collected in the years 1999 and 2000, and included approximately 2,400 primary female caregivers and one focal child ages zero to four, or ages 9 to 15. If a mother had more than one child within these age ranges, the focal child for the study was randomly selected. Time 2 data were collected approximately 18 months later (i.e., 2000-2001) and consisted of 88% of Time 1 respondents. Approximately five years after Time 1 (i.e., 2005-2006) 80% of the original sample completed Time 3. This study focused on families with children in late middle childhood and early adolescence at Time 1 (i.e., 10-15 years old) who participated in the Welfare, Children and Families study ($n = 1158$). Two caregiver/adolescent dyads were removed from the dataset due to missing data across all
variables of interest, resulting in a total sample size of 1156 female caregivers and their adolescents.

At Time 1, adolescent participants ranged in age from 9 to 15 years old ($M = 11.96$, $SD = 1.45$), with 51.3% identifying as female. Only one adolescent’s gender was not reported. Of the adolescents who completed surveys and interviews at Time 1, 909 had valid data for the dependent variable (i.e., delinquency) at Time 3. Further, adolescent participants were approximately 5 to 6 years older at Time 3 as compared to Time 1, and ranged from 14 to 21 years old ($M = 17.75$, $SD = 1.51$). At Time 1, biological mothers comprised 89.6% of the caregivers in the sample. The remaining sample consisted of other types of female caregivers including grandparents (5.9%), adoptive parents (1.3%), aunts (1.3%) and the remaining 3.2% were stepparents, foster parents, siblings, cousins, other blood relatives, and other non-relatives. Given that the majority of the sample is comprised of biological mothers, caregivers will be hereafter referred to as mothers. At Time 3, 14.1% of adolescent participants were separated or no longer living with their main caregiver from Time 1. Mothers ranged in age from 18 to 74 ($M = 38.36$, $SD = 8.46$) with the majority identifying as Hispanic (46.1%) and Non-Hispanic Black (40.8%), and the remaining sample as Non-Hispanic White (11.2%) and Other (1.9%). Mothers reported on their current marital and cohabitating status at Time 1, with most indicating they were not married or cohabitating (78.9%), and others indicating they were married (15.9%), or cohabiting (4.6%). The remaining less than 1% of participants reported cohabitation or marital status that could not be determined. Mothers also reported on their highest level of education, with 37.3% reporting no high school degree, 62.7% reporting a high school degree or equivalent, or above. The majority of the sample was considered low-income, and an income-to-needs ratio was used as a proxy of participants’ socioeconomic status as compared to the poverty line in
2000. At Time 1, 64.7% reported an income-to-needs ratio below the poverty line, and 95.8% reported income to needs ratio two times below the poverty line.

Procedure

Participants in the Three-City Study were recruited through door-to-door household screening interviews in low-income neighborhoods in Boston, Chicago, and San Antonio. To be eligible for the study, families had to have at least one child aged birth to four years old or aged 10 to 15. Caregivers and adolescents were both paid a financial incentive for their participation. The main survey component of the Three-City study included an interview with mothers in which a wide range of topics including employment status, relationships, family outcomes, parenting, and child behavior was covered for approximately two hours. When the focal child was an adolescent, they were interviewed for about half-an-hour and provided information about their socioemotional functioning, parent-child relationships, and schooling. For measures gathering sensitive information from both mothers and adolescents such as illegal activities or domestic violence, participants answered questions through the Automated Computer-Assisted Survey Interview (ACASI). They were given the interviewer’s laptop with headphones and responded to audio-recorded items. This system was employed to enhance privacy and increase the response rate to questions regarding sensitive behavior. Additionally, the main survey was translated into Spanish to accommodate participants less comfortable with the English language. This study focused on mothers’ experiences of IPV, their psychological distress, negative parenting behaviors and adolescent delinquency.
Measures

Intimate Partner Violence

Mothers’ history of IPV victimization was assessed at Time 1 using items from the Conflict Tactics Scale (CTS; Straus, 1979), a widely used self-report measure designed to capture the behaviors or tactics individuals use in the context of romantic relationships, including the use of reasoning, verbal aggression, and violence. This study used an adapted version of the CTS developed for the University of Michigan’s Women’s Employment Study (WES; Danziger et al., 2000), in which only items from the violence subscale were included ($\alpha = .82$; Straus 1979). Thus, this study asked participants to report on 13 items concerning whether a partner had ever engaged in specific violent behaviors, and how frequently these behaviors occurred in the past 12 months. Participants were first asked to respond on a Likert-type scale (i.e., 1 = never, 2 = once or twice, 3 = several times and 4 = often) if a specific behavior had occurred in their lifetime (e.g., have you been slapped, kicked or punched in a romantic relationship?). Participants endorsing a behavior were then asked to respond on a range from “never” to “more than 20 times” regarding the number of times this behavior occurred in the last 12 months (e.g., in the last 12 months, how often have you been slapped, kicked, or punched in a romantic relationship?). Previous research has supported acceptable to excellent psychometric properties for the CTS (as ranging from .79 to .95, Straus 1990), including in cross-cultural samples (Straus, 2004). For the current study, a total domestic violence score was calculated using the frequency items to reflect the mean level of IPV frequency reported in the last 12 months. The scale demonstrated good internal consistency ($\alpha = .90$).
To measure mothers’ experiences of psychological distress at Time 1, participants completed the 18-item Brief Symptom Inventory (BSI-18; Derogatis, 2000). The BSI-18 is an abbreviated version of the 53-item BSI (Derogatis & Spencer, 1982) designed to quickly capture the presence of somatization, anxiety, and depressive symptoms. In this study, the BSI-18 asked participants to report the frequency with which they experienced symptoms in the past seven days using a five-point scale (1 = not at all, 2 = a little bit, 3 = moderately, 4 = quite a bit, 5 = extremely). The 18-item version was designed to determine a global score and is highly correlated with the 53-item version (correlations between .91 and .96), supporting the validity of the shorter version (Derogatis & Fitzpatrick, 2004). In addition to a global score, the BSI-18 has three subscales (i.e., a depression subscale, anxiety subscale, and somatization subscale), which each include 6 items. Higher scores on each subscale reflect higher distress. The BSI-18 has demonstrated good psychometric properties (Derogatis, 2000) which have also translated across ethnically and racially diverse samples (Wiesner et al., 2010). Specifically, the internal consistency of each of the subscales has been found to be acceptable to good (αs range from .74-.84; Derogatis, 2000). In the current study, the depression, anxiety, and somatization subscales demonstrated good internal consistency at Time 1 (α = .86, α = .86, α = .85, respectively). This study used each of the three subscale scores as indicators for the latent construct of maternal psychological distress.
Maternal Parenting

Maternal parenting will be assessed through aspects of maternal warmth and harsh parenting. To assess maternal warmth at Time 1 and Time 2, adolescents reported on the mother-child relationship using 12 items from the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). The IPPA has been commonly used to assess maternal warmth and acceptance in samples of adolescents (e.g., Pittman & Chase-Lansdale, 2001; Rodgers & McGuire, 2012). Adolescents reported on items related to trust, communication, and alienation using a 5-point scale ranging from 1 = never true to 5 = always true. The original IPPA measures the cognitive and affective dimensions of adolescents’ relationships with their parents and close friends and included three subscales (i.e., Trust, Communication, and Alienation) based on factor analysis. In prior work with this sample, exploratory factor analysis found that items related to trust and communication loaded on to the same scale. Thus, two subscales (i.e., trust and communication, and anger and alienation) will be utilized as a measure of parental warmth in this study. Previous research has supported adequate psychometric properties of both the original and revised IPPA, with alpha coefficients of slightly lower on the revised scale (\( \alpha = .91, \alpha = .89 \), respectively). In addition, the IPPA has also been used in ethnically diverse and economically disadvantaged populations and found to have acceptable reliability (Coley & Chase-Lansdale, 1999; Pittman & Chase-Lansdale, 2001). Furthermore, a study by Formoso et al. (2000) comparing psychometric properties of the IPPA across Latino, African American, and Caucasian samples found alphas ranging from .89 to .93, indicating cross-cultural acceptability. The internal consistencies for the current study demonstrate acceptable reliability for the trust and
communication subscale ($\alpha_T1 = .74$, $\alpha_T2 = .78$), and questionable to acceptable reliability for the anger and alienation subscale ($\alpha_T1 = .61$, $\alpha_T2 = .74$).

To assess mothers’ use of punishment or harsh discipline strategies (e.g., spanking), adolescents reported on five items from the Maternal Punishment Scale (McLoyd et al., 1994) using a 7-point scale ranging from 1 (several times a day) to 7 (never) at Time 1 and Time 2. In the present study, the maternal punishment scale has demonstrated acceptable reliability ($\alpha_T1 = .70$, $\alpha_T2 = .70$) and appears to be valid as it has been found to be significantly correlated with greater negative perceptions of maternal role, greater depressive symptomatology, and lowered perception of availability of instrumental support and poorer relations with the reporter’s mother (McLoyd et al., 1994). In the present study, the harsh discipline scale, and the two subscales from the IPPA (i.e., trust and communication, and anger and alienation) will serve as indicators for the latent construct of negative parenting.

**Adolescent Delinquent Behavior**

To assess adolescent delinquency, adolescents reported on their frequency of engaging in delinquent behaviors at Time 1 on 17-item delinquency scale, and at Time 3 on a 24-item delinquency scale whereby seven items were added to the original Time 1 delinquency scale to account for more serious delinquency that is more likely to occur in older adolescence. The scale was adapted from the delinquency scale used in the National Longitudinal Study of Youth (NLSY; Borus et al., 1982) and from the Youth Deviance Scale (Gold, 1970; Steinberg et al., 1991). The Three City delinquency scale included items related to more serious delinquent acts (e.g., “how often have you purposely damaged or destroyed property that did not belong to you?”), substance use (e.g., “how often have you gotten drunk?”) and school related delinquency
Adolescent participants self-reported on their involvement in these behaviors in the past 12 months on a 4-point scale ranging from 1 = never to 4 = often. At Time 1, the total delinquency scale was calculated by taking the mean of the z-score of the 17 items. The scale demonstrated good internal consistency ($\alpha_T1 = .88$). At Time 3, seven additional items were added to account for delinquency likely to occur at older ages (e.g., “How often have you knowingly sold drugs”). Further, approximately 250 adolescents did not complete school delinquency items at Time 3 due to aging out of school by Time 3. As such, an exploratory factor analysis (EFA) with Principal Axis Factoring and Promax rotation as conducted in SPSS with the 19 non-school, delinquency items, resulting in five extracted factors that generally fell in the categories of Illegal Activities, Drug and Alcohol Use, Criminal Involvement, Aggression, and Police Involvement (Table 1). As noted on the table, three items did not load above .40 on any of the five factors and, thus, were deleted from the analyses. These five delinquency subscales demonstrated acceptable to good internal consistencies (i.e., Illegal Activities $\alpha = .83$; Drug and Alcohol Use $\alpha = .74$; Criminal Involvement $\alpha = .86$; Aggression $\alpha = .73$; Police Involvement $\alpha = .78$).
Table 1

Exploratory Factor Analysis of the Delinquency Scale Items at Time 3

<table>
<thead>
<tr>
<th>Delinquency Item</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Factor 1- Illegal Activities</td>
<td></td>
</tr>
<tr>
<td>6. In the past 12 months, how often have you stolen something from a store or another person?</td>
<td>0.44</td>
</tr>
<tr>
<td>18. In the past 12 months, how often have you traded sex for money?</td>
<td>0.51</td>
</tr>
<tr>
<td>19. In the past 12 months, how often have you used any hard drugs such as heroin, cocaine, or LSD?</td>
<td>0.44</td>
</tr>
<tr>
<td>20. In the past 12 months, how often have you broken into a building?</td>
<td>1.03</td>
</tr>
<tr>
<td>21. In the past 12 months, how often have you knowingly sold or held stolen goods?</td>
<td>0.87</td>
</tr>
<tr>
<td>Factor 2- Drug and Alcohol Use</td>
<td></td>
</tr>
<tr>
<td>5. In the past 12 months, how often have you smoked cigarettes or used chewing tobacco?</td>
<td>-0.16</td>
</tr>
<tr>
<td>10. In the past 12 months, how often have you gotten drunk?</td>
<td>-0.08</td>
</tr>
<tr>
<td>16. In the past 12 months, how often have you smoked marijuana or hashish (pot, grass, hash)?</td>
<td>0.11</td>
</tr>
<tr>
<td>Factor 3- Criminal Involvement</td>
<td></td>
</tr>
<tr>
<td>23. In the past 12 months have you ever been in jail or a detention center?</td>
<td>0.06</td>
</tr>
<tr>
<td>24. In the past 12 months, have you been a member of a gang?</td>
<td>-0.06</td>
</tr>
<tr>
<td>Factor 4- Aggression</td>
<td></td>
</tr>
<tr>
<td>8. In the past 12 months, how often have you carried a weapon?</td>
<td>0.13</td>
</tr>
<tr>
<td>9. In the past 12 months, how often have you used a phony ID?</td>
<td>-0.01</td>
</tr>
<tr>
<td>14. In the past 12 months, how often have you gotten into a physical fight?</td>
<td>0.01</td>
</tr>
<tr>
<td>15. In the past 12 months, how often have you attacked someone with the idea of seriously hurting or killing them?</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Table continued on following page
Table 1 (continued)

<table>
<thead>
<tr>
<th>Disciplinary Item</th>
<th>Factor Loading</th>
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<tr>
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<tr>
<td><strong>Factor 5- Police Involvement</strong></td>
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<tr>
<td>7. In the past 12 months, how often have you gotten in trouble with the police?</td>
<td>-0.07</td>
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<tr>
<td>8. In the past 12 months, how often have you been arrested.</td>
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<tr>
<td><strong>Dropped Items</strong></td>
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<tr>
<td>11. In the past 12 months, how often have you run away from home?</td>
<td>0.16</td>
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<tr>
<td>13. In the past 12 months, how often have you purposely damaged or destroyed property that did not belong to you?</td>
<td>0.33</td>
</tr>
<tr>
<td>17. In the past 12 months, how often have you used hard drugs such as heroin, cocaine, or LSD?</td>
<td>0.26</td>
</tr>
</tbody>
</table>

*Notes.* $N=909$. The extraction method for the EFA was principal axis factoring with an oblique rotation. Factor loadings above 0.40 are in bold. Three items were dropped due to lacking sufficient loading on any one factor.
CHAPTER 3

RESULTS

Preliminary Analyses

Analyses for Skewness, Kurtosis, and Outliers

Using SPSS, preliminary analyses were performed to determine descriptive statistics of all variables. Descriptive statistics were examined for skewness, kurtosis, and outliers. Several variables were observed to have significant skewness and kurtosis values and were transformed by the original study team. The previously transformed variables were used in this analysis and those values are presented in Table 2. Time 1 IPV total mean frequency was transformed with a square root transformation. Time 1 maternal psychological distress variables (i.e., Depression, Anxiety, and Somatization) were transformed by adding 1 to the raw score and taking the natural log. The subscales serving as indicators of the latent variable positive parenting at Time 1 and Time 2 were not transformed due to acceptable skewness and kurtosis. The Time 1 adolescent total delinquency mean score, and the four subscales informed by the EFA conducted on Time 3 items were transformed according to the original study team conducted transformations to address the skewed distribution of each subscale by adding 1 to the mean and taking the natural log of the value. These values are represented in Table 2. Even after transformation, significant skewness and kurtosis was still present for the Illegal Activities scale at Time 3. Within the sample, 27% of all mothers reported experiencing some type of IPV in the last year, while 73%
reported no IPV. Additionally, a portion of the sample reported clinically significant scores (i.e.,
\( t \) scores of 63 or above) on the BSI-18. Specifically, 14.7% of mothers reported elevated levels
of somatization, 7.9% reported elevated levels of anxiety, and 10.7% reported elevated levels of
depression (i.e., \( t \) scores of 63 or above).

**Correlations and T Tests**

Bivariate correlations were run between all independent and dependent variables to
examine patterns among the main variables of interest (Table 3). Correlations among maternal
psychological distress subscales were all intercorrelated in the expected directions. Mothers’
experiences of past year IPV was positively correlated with maternal depression, anxiety, and
somatization, but not correlated with T2 parenting or T3 adolescent delinquency. Maternal depression, anxiety, and somatization were positively correlated with adolescent-reported anger and alienation parenting, while only maternal anxiety and somatization were negatively correlated with adolescent-reported trust and communication. Maternal depression was positively associated with adolescent drug and alcohol use, while maternal anxiety was positively associated with adolescent drug and alcohol use, and aggression. Adolescent-reported parenting at Time 2 was significantly correlated with adolescent reported delinquency at Time 3 in the expected directions, such that trust and communication was negatively associated with all delinquency scales except criminal involvement, while anger and alienation was positively associated with Illegal Activities, Drug and Alcohol Use, and Aggression, but not criminal involvement or police involvement. Harsh parenting at Time 2 was positively associated with all delinquency scales at Time 3, except criminal involvement. The adolescent delinquency subscales were correlated with each other in the expected direction (r’s from .39 to .48), with the exception of criminal involvement which was only associated with drug and alcohol use (r =.07), and police involvement (r =.09). Time 1 total delinquency was positively associated with Time 1 IPV and maternal anxiety, depression, and somatization. Further, Time 1 total delinquency was negatively correlated with Time 1 and Time 2 trust and communication parenting, and positively correlated with Time 1 and Time 2 anger and alienation parenting, and harsh parenting. Time 1 total delinquency was also positively associated with all Time 2 delinquency variables with the exception of criminal involvement. Lastly, T1 and T2 parenting measures were significantly correlated with each other (i.e., absolute value of r’s from .17 to .48).
Table 3

Bivariate Correlation Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlations</th>
<th></th>
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<tr>
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<tr>
<td>M</td>
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<td>.76***</td>
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<tr>
<td>M Som (1)</td>
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<td>.67***</td>
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<tr>
<td>T &amp; C (2)</td>
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<td>-.05</td>
<td>-.06*</td>
<td>-.08*</td>
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<td>.09***</td>
<td>.09**</td>
<td>.49***</td>
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<td>Harsh P (2)</td>
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<td>.02</td>
<td>.03</td>
<td>.05</td>
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<td>.43***</td>
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<td>Illegal Act (3)</td>
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<td>.13***</td>
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<td>-.03</td>
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<td>-.04</td>
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<td>.08***</td>
<td>.03</td>
<td>-.10***</td>
<td>.07*</td>
<td>.12***</td>
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<td>.47***</td>
<td>.03</td>
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<td>.06</td>
<td>.05</td>
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<td>-.03</td>
<td>.12***</td>
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<td>.41***</td>
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<td>.46***</td>
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<td>T &amp; C (1)</td>
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<td>-.03</td>
<td>-.02</td>
<td>-.03</td>
<td>.48***</td>
<td>-.35***</td>
<td>-.17***</td>
<td>-.06</td>
<td>-.11***</td>
<td>.01</td>
<td>-.04</td>
<td>-.06</td>
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<tr>
<td>A &amp; A (1)</td>
<td>.00</td>
<td>.10***</td>
<td>.08***</td>
<td>.08**</td>
<td>-.24***</td>
<td>.36***</td>
<td>.18***</td>
<td>.04</td>
<td>.09**</td>
<td>.00</td>
<td>.06</td>
<td>.03</td>
<td>-.30***</td>
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<tr>
<td>Harsh P (1)</td>
<td>.04</td>
<td>.03</td>
<td>.03</td>
<td>.05</td>
<td>-.21***</td>
<td>.27***</td>
<td>.44***</td>
<td>.09**</td>
<td>.10**</td>
<td>.01</td>
<td>.12***</td>
<td>.11***</td>
<td>-.31***</td>
<td>.32***</td>
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<tr>
<td>Total DQ (1)</td>
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<td>.08**</td>
<td>.09**</td>
<td>.08**</td>
<td>-.24***</td>
<td>.19***</td>
<td>.22***</td>
<td>.09**</td>
<td>.27***</td>
<td>-.02</td>
<td>.22***</td>
<td>.24***</td>
<td>-.26***</td>
<td>.22***</td>
<td>.23***</td>
</tr>
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</table>

N = 1156

Note. * p < .05; ** p < .01; *** p < .001. IPV = Intimate Partner Violence; M Dep = Maternal Depression; M Anxiety= Maternal Anxiety; M Som = Maternal Somatization; T&C= Trust and Communication; A & A = Anger and Alienation; Harsh P = Harsh Parenting; Illegal Act = Illegal Activities; Drug Use = Drug and Alcohol Use; Crim Inv = Criminal Involvement; Agg= Aggression; Pol Inv= Police Involvement; Total DQ= Total Delinquency. (1) = Time 1; (2) = Time 2; (3) = Time 3.
Further correlations were run to determine whether continuous demographic variables (i.e., income to needs, mothers age, and adolescent age) were associated with dependent variables (see Table 4). Household income-to-needs ratio was not associated with any dependent variables, likely due to the limited variability because of the overall low-income status of the sample. Adolescent age was positively associated with Drug and Alcohol use at Time 3, but surprisingly, negatively associated with all other delinquency scales at Time 3. Adolescent age was also negatively associated with Time 2 trust and communication parenting, and positively associated with Time 2 anger and alienation parenting, but not associated with Time 2 harsh discipline. Mothers’ age was negatively associated with IPV, suggesting older mothers experienced less IPV in the past year. In addition, mothers’ age was negatively associated with depression, suggesting older mothers experienced lower levels of depression.

Table 4

Bivariate Correlations Between Continuous Demographic Variables and Independent and Dependent Variables

<table>
<thead>
<tr>
<th>Independent/Dependent Variables</th>
<th>Continuous Demographic Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 Intimate Partner Violence</td>
<td>Mother age</td>
</tr>
<tr>
<td>T1 Maternal Depression</td>
<td>-.07*</td>
</tr>
<tr>
<td>T1 Maternal Anxiety</td>
<td>-.01</td>
</tr>
<tr>
<td>T1 Maternal Somatization</td>
<td>.01</td>
</tr>
<tr>
<td>T2 Trust and Communication</td>
<td>-.02</td>
</tr>
<tr>
<td>T2 Anger and Alienation</td>
<td>-.05</td>
</tr>
<tr>
<td>T2 Harsh Parenting</td>
<td>-.02</td>
</tr>
<tr>
<td>T3 Illegal Activities</td>
<td>-.02</td>
</tr>
<tr>
<td>T3 Drug and Alcohol Use</td>
<td>-.05</td>
</tr>
<tr>
<td>T3 Criminal Involvement</td>
<td>-.06</td>
</tr>
<tr>
<td>T3 Aggression</td>
<td>.01</td>
</tr>
<tr>
<td>T3 Police Involvement</td>
<td>-.04</td>
</tr>
</tbody>
</table>

Note. * p < .05; ** p < .01; *** p < .001. Note. * p < .05; ** p < .01; *** p
A series of *t* tests (Table 5) was conducted to determine whether any Time 1 demographic categorical variables were related to all independent and dependent variables. Results indicated that males reported higher trust and communication and less anger and alienation with their mothers, as compared to female adolescents. In addition, adolescent males reported more engagement in illegal activities, drug and alcohol use, aggression, and police involvement as compared to adolescent females. Mothers’ education level was related to maternal psychological distress, such that mothers with no high school degree reported higher depression, anxiety, and somatization as compared to mothers with a high school or equivalent degree. In addition, adolescents of mothers with a high school degree or equivalent reported that their mothers used more harsh discipline at Time 2 than mothers with no high school degree.

Finally, analyses of variance (ANOVA) were run to examine any differences among dependent variables and mothers’ race/ethnicity (i.e., non-Hispanic White, non-Hispanic Black, Hispanic, and Other; Table 6). When the ANOVA was significant, the means of the groups were compared using post-hoc Bonferroni comparisons to determine which groups differed from each other. Mean differences were observed based on mothers’ race/ethnicity for Time 1 IPV, $F(3, 1138) = 2.61, p = .05$, such that Non-Hispanic Black mothers reported higher levels of recent IPV experiences compared to Non-Hispanic White mothers. Non-Hispanic White mothers and Hispanic mothers reported higher anxiety than Non-Hispanic Black mothers, $F(3,1144) = 4.22, p = .006$. At Time 2, adolescents of Non-Hispanic Black mothers reported that their mothers used more harsh discipline as compared to adolescents of Hispanic mothers, $F(3,1014) = 2.99, p = .03$. At Time 3, adolescents of Hispanic mothers reported more drug and alcohol use as compared to adolescents of Non-Hispanic Black mothers, $F(3,896) = 5.68, p < .001$. Adolescents of Non-Hispanic White mothers reported higher criminal involvement as compared
### Table 5

**T Tests for Demographic Characteristics Predicting Dependent Variables**

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Male M (SD)</th>
<th>Female M (SD)</th>
<th>T</th>
<th>No HS Degree M (SD)</th>
<th>HS Degree M (SD)</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 Intimate Partner Violence</td>
<td>0.13 (0.25)</td>
<td>0.14 (0.28)</td>
<td>-0.27</td>
<td>0.13 (0.26)</td>
<td>0.14 (0.27)</td>
<td>-0.54</td>
</tr>
<tr>
<td>T1 Anxiety</td>
<td>0.83 (0.84)</td>
<td>0.87 (0.88)</td>
<td>-0.89</td>
<td>0.93 (0.90)</td>
<td>0.81 (0.84)</td>
<td>2.24*</td>
</tr>
<tr>
<td>T1 Depression</td>
<td>1.02 (0.89)</td>
<td>1.02 (0.89)</td>
<td>0.01</td>
<td>1.09 (0.93)</td>
<td>0.97 (0.86)</td>
<td>2.25*</td>
</tr>
<tr>
<td>T1 Somatization</td>
<td>0.85 (0.85)</td>
<td>0.93 (0.88)</td>
<td>-1.65</td>
<td>0.96 (0.90)</td>
<td>0.84 (0.84)</td>
<td>2.24*</td>
</tr>
<tr>
<td>T2 Trust and Communication</td>
<td>4.17 (0.72)</td>
<td>4.05 (0.85)</td>
<td>2.28*</td>
<td>4.14 (0.81)</td>
<td>4.10 (0.78)</td>
<td>0.95</td>
</tr>
<tr>
<td>T2 Anger and Alienation</td>
<td>2.23 (0.80)</td>
<td>2.46 (0.92)</td>
<td>-4.26***</td>
<td>2.31 (0.90)</td>
<td>2.37 (0.87)</td>
<td>-0.91</td>
</tr>
<tr>
<td>T2 Harsh Discipline</td>
<td>1.78 (0.68)</td>
<td>1.82 (0.73)</td>
<td>-1.05</td>
<td>1.72 (0.67)</td>
<td>1.85 (0.73)</td>
<td>-2.90**</td>
</tr>
<tr>
<td>T3 Illegal Activities</td>
<td>0.04 (0.36)</td>
<td>-0.06 (0.21)</td>
<td>4.91***</td>
<td>-0.04 (0.27)</td>
<td>-0.01 (0.31)</td>
<td>-1.49</td>
</tr>
<tr>
<td>T3 Drug and Alcohol Use</td>
<td>-0.12 (0.68)</td>
<td>-0.29 (0.61)</td>
<td>4.26***</td>
<td>-0.20 (0.62)</td>
<td>-0.20 (0.66)</td>
<td>0.04</td>
</tr>
<tr>
<td>T3 Criminal Involvement</td>
<td>-0.48 (1.09)</td>
<td>-0.45 (1.12)</td>
<td>-0.37</td>
<td>-0.39 (1.10)</td>
<td>-0.51 (1.11)</td>
<td>1.58</td>
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<tr>
<td>T3 Aggression</td>
<td>-0.01 (0.46)</td>
<td>-0.11 (0.37)</td>
<td>3.98***</td>
<td>-0.07 (0.40)</td>
<td>-0.06 (0.42)</td>
<td>-0.57</td>
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<tr>
<td>T3 Police Involvement</td>
<td>-0.02 (0.61)</td>
<td>-0.26 (0.41)</td>
<td>6.88***</td>
<td>-0.14 (0.53)</td>
<td>-0.15 (0.52)</td>
<td>0.29</td>
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</tbody>
</table>

*Notes.* *p* < .05, **p** < .01, ***p** < .001. HS=High School
Table 6
Means, Standard Deviations, and One-Way ANOVA Statistics for Demographic Characteristics Predicting Dependent Variables

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Racial/Ethnic Group</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>Non-Hispanic White</td>
</tr>
<tr>
<td>T1 Intimate Partner Violence†</td>
<td>0.08 (0.20)</td>
</tr>
<tr>
<td>T1 Anxiety†</td>
<td>0.97 (0.89)</td>
</tr>
<tr>
<td>T1 Depression †</td>
<td>1.04 (0.91)</td>
</tr>
<tr>
<td>T1 Somatization†</td>
<td>0.95 (0.83)</td>
</tr>
<tr>
<td>T2 Trust and Communication</td>
<td>4.17 (0.79)</td>
</tr>
<tr>
<td>T2 Anger and Alienation</td>
<td>2.19 (0.77)</td>
</tr>
<tr>
<td>T2 Harsh Discipline</td>
<td>1.72 (0.65)</td>
</tr>
<tr>
<td>T3 Illegal Activities†</td>
<td>0.01 (0.37)</td>
</tr>
<tr>
<td>T3 Drug and Alcohol Use†</td>
<td>0.01 (0.70)</td>
</tr>
<tr>
<td>T3 Criminal Involvement†</td>
<td>-0.46 (1.10)</td>
</tr>
<tr>
<td>T3 Aggression†</td>
<td>0.04 (0.51)</td>
</tr>
<tr>
<td>T3 Police Involvement†</td>
<td>-0.11 (0.57)</td>
</tr>
</tbody>
</table>

Note: Means in the same row that do not share superscripts differ at $p < .05$ in the Bonferroni comparison. * $p < .05$, ** $p < .01$, *** $p < .001$. † indicates transformed variable
to adolescents of Non-Hispanic Black mothers, $F (3, 898) = 3.79, p = .01$. Finally, adolescents of Non-Hispanic White mothers reported more aggression than adolescents of Hispanic mothers, $F (3,895) = 2.68, p = .046$. Due to these significant differences across groups, three dummy variables were created for mothers’ race/ethnicity (i.e., Non-Hispanic White, Non-Hispanic Black, and Other), with Hispanic as the reference category and used as covariates in the primary analyses.

In addition to race/ethnicity, mothers’ marital status (i.e., single, married, and cohabiting) was considered as a potential covariate (Table 7). ANOVA results showed that single mothers who were not cohabitating reported higher recent IPV than mothers who were married, $F (4,1137) = 2.95, p = .02$. Mothers who were single and not cohabitating, and single and cohabitating reported higher anxiety and depression than mothers who were married, $F_{\text{anxiety}} (4,1143) = 3.82, p = .004; F_{\text{depression}} (4,1142) = 4.72, p < .001$. Lastly, mothers’ who were single and not cohabitating, and single and cohabitating, reported higher somatization than mothers who were married, $F(4,1143) =3.31, p = .01$. Thus, mothers’ marital status was dummy coded into three categories: married, cohabitating, with single and not cohabitating as the reference category.

Based on these results, the following covariates were entered in all pathways in the model: (a) dummy coded maternal race/ethnicity (i.e., White, Black, other, reference group Hispanic); (b) adolescent gender (0 = male, 1 = female); (c) maternal age; (d) adolescents’ age; (e) maternal education (i.e., 1 = high school or equivalent degree, 0 = no high school or equivalent degree); and (f) dummy coded relationship status (married, cohabitating, reference group single). To control for continuity, Time 1 total delinquency and the latent construct of
Time 1 positive parenting with three indicators (i.e., trust and communication, anger and alienation, harsh discipline) were included as covariates in the model.

Table 7

One-Way ANOVA Statistics for Demographic Characteristics Predicting Dependent Variables

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Marital Status</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single, Not cohabitating</td>
<td></td>
</tr>
<tr>
<td>T1 Intimate Partner Violence</td>
<td>0.15 (0.27) a</td>
<td></td>
</tr>
<tr>
<td>T1 Anxiety</td>
<td>0.16 (0.24) a b</td>
<td>2.95*</td>
</tr>
<tr>
<td>T1 Depression</td>
<td>0.07 (0.20) b</td>
<td></td>
</tr>
<tr>
<td>T1 Somatization</td>
<td>0.92 (0.86) a</td>
<td></td>
</tr>
<tr>
<td>T2 Trust and Communication</td>
<td>4.09 (0.82)</td>
<td>1.72</td>
</tr>
<tr>
<td>T2 Anger and Alienation</td>
<td>2.35 (0.89)</td>
<td>0.18</td>
</tr>
<tr>
<td>T2 Harsh Discipline</td>
<td>1.81 (0.72)</td>
<td>0.62</td>
</tr>
<tr>
<td>T3 Illegal Activities</td>
<td>-0.02 (0.30)</td>
<td>1.40</td>
</tr>
<tr>
<td>T3 Drug and Alcohol Use</td>
<td>-0.20 (0.64)</td>
<td>1.31</td>
</tr>
<tr>
<td>T3 Criminal Involvement</td>
<td>-0.46 (1.10)</td>
<td>1.08</td>
</tr>
<tr>
<td>T3 Aggression</td>
<td>-0.07 (0.40)</td>
<td>0.79</td>
</tr>
<tr>
<td>T3 Police Involvement</td>
<td>0.02 (0.93)</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>Single, Cohabitating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.16 (0.24) a b</td>
<td>2.95*</td>
</tr>
<tr>
<td></td>
<td>0.07 (0.20) b</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.69 (0.82) b</td>
<td>3.31*</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.78 (0.81) b</td>
<td>4.72***</td>
</tr>
<tr>
<td></td>
<td>0.69 (0.82) b</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Means in the same row that do not share superscripts differ at p < .05 in the Bonferroni comparison. s * p < .05, ** p < .01, *** p < .001.

Missing Data

To examine the dataset for patterns of missing data, Little’s (1988) test for missing data was run using the Nanir package (Tierney & Cook, 2023) in R Studio. The Little’s test yielded non-significant results ($\chi^2 = 66.1$, df = 82, $p = .90$), suggesting the pattern of missing data is likely to be missing completely at random (MCAR). Because data in the current study are assumed to be missing completely at random, full information maximum likelihood estimation
(FIML) was used to estimate the maximum likely value of missing data points based on patterns of non-missing data.

**Confirmatory Factor Analysis**

The primary analysis utilizes structural equation modeling (SEM) with four latent constructs (i.e., Time 1 maternal psychological distress, Time 1 and 2 parenting, and Time 3 adolescent delinquency). Therefore, preliminary analysis included testing for convergent validity of the latent constructs by performing confirmatory factor analyses (CFA) within a measurement model. This preliminary analysis checks the factor loadings for proposed latent constructs and how well the model fits the data. To assess the overall fit of the measurement models for each latent construct, Chi-Square tests of model fit were examined, where non-significance (i.e., \( p > .05 \)) indicates that the model fits the data well. It should be noted that chi-square test of model fit has been shown to be sensitive to large sample sizes (Kenny, 2020), so additional goodness-of-fit statistics (e.g., Comparative Fit Index; CFI, and Tucker-Lewis Index; TLI) were analyzed. CFI and TLI values of .95 and above indicate good fit (Hu & Bentler, 1999). Lastly, small RMSEA and SRMR values (i.e., < .05, and <.08, respectively) indicate good model fit (Browne & Cudeck, 1992; MacCallum et al., 1996).

CFAs were run for each latent variable to ensure convergent validity of the observed indicator variables on the latent constructs. The CFAs for Time 1 maternal psychological distress, and Time 1 and Time 2 parenting all yielded just-identified models, whereby the number of estimated model parameters (6) was equal to the number of variances and covariances, and degrees of freedom are equal to zero. As such, fit indices were perfect and not reported; however, the factor loadings for all three latent constructs were acceptable. The
convergent validity for the three indicators of the maternal mental health latent construct was confirmed with factor loadings above 0.5. The depression, anxiety, and somatization scaled yielded standardized factor loadings of 0.84, 0.91, and 0.74, respectively.

The indicators for Time 1 and Time 2 positive parenting similarly yielded factor loadings at or above 0.5, confirming convergent validity. However, while it was thought that the negative parenting construct would result in negative factor loadings of trust and communication, and positive loadings of anger and alienation, and harsh discipline, the opposite was true. Time 1 trust and communication, anger and alienation, and harsh discipline had factor loadings of 0.53, -0.55, and -0.59, respectively, while the same indicators at Time 2 yielded factor loadings of 0.62, -0.80, and -0.55, respectively. Based on these loadings, the parenting variable was conceptualized as positive parenting, and will be referred to as such hereafter.

The Time 3 adolescent delinquency latent variable indicated by the five factors yielded by the EFA (i.e., Illegal Activities, Drug and Alcohol Use, Criminal Involvement, Aggression, and Police Involvement; see Table 1) yielded adequate model fit ($\chi^2 [5] = 9.41, p = .09, CFI = 0.99, TFI = 0.99, RMSEA = .03, and SRMR = 0.02$). However, while four of the five delinquency subscales showed acceptable factor loadings (.66 for Illegal Activities, .63 for Drug and Alcohol Use, .72 for Aggression, and .66 for Police Involvement), the Criminal Involvement subscale factor loading was poor (.08). As such, the indicator variable of Criminal Involvement was dropped from the model. The revised model yielded good model fit ($\chi^2 [2] = 3.48, p = .18, CFI = .99, TFI = 0.99, RMSEA = .03, and SRMR = 0.01$) with all four delinquency subscales showing adequate standardized factor loadings: Illegal Activities (0.66), Drug and Alcohol Use (0.63), Aggression (0.72), and Police Involvement (0.66). The total measurement model demonstrated poor model fit based on the chi-square test statistic ($\chi^2 [59] = 291.35, p < .001$).
However, goodness-of-fit (e.g., CFI) and misfit (e.g., RMSEA and SRMR) were used as alternatives to the chi-square statistic given the large sample size, and indicated good model fit (CFI = .99, TFI = 0.99, RMSEA = .03, and SRMR = 0.01).

Primary Analyses

For the present study, an SEM was conducted using the Lavaan package (Rosseel, 2012) in the statistical program R Studio (version 4.2.1). Specifically, a structural model that specified the paths seen in Figure 2 was conducted to test hypotheses one through five. The sequential model assumes IPV negatively impacts maternal mental health (i.e., Hypothesis 1) which then negatively impacts positive parenting (i.e., Hypothesis 2) which then leads to higher adolescent delinquent behavior (i.e., Hypothesis 3). In addition to testing the direct links, the model tested the indirect pathways between maternal experiences of IPV and adolescent delinquent behaviors sequentially through maternal psychological distress and positive parenting (i.e., Hypothesis 4). The sequential mediation model is designed to test the indirect effect of two or more mediator variables occurring in a specific direction. The presumed direction is often based on theoretical justification; therefore, the position of the mediators in the model matters. Specifically, this model tested the hypothesized indirect pathways from maternal experiences of IPV and adolescent delinquent behavior through maternal psychological distress and positive parenting. The model also allows for additional direct and indirect paths in the model to be analyzed. Specifically, paths between maternal IPV and positive parenting, and maternal psychological distress and adolescent delinquency are included. In addition, the indirect pathways from maternal experiences of IPV to adolescent delinquency through maternal psychological distress, and the indirect pathway from maternal experiences of IPV to adolescent delinquency through
positive parenting, are included in the model. Paths were included from all demographic covariates (i.e., maternal race, maternal education, maternal age, maternal marital/cohabiting status at baseline, adolescent age, adolescent gender) to each primary variable in the model. To control for continuity, the following additional pathways were included: Time 1 positive parenting to Time 2 positive parenting, and Time 1 adolescent total delinquency to the latent construct of adolescent delinquency at Time 3.

Figure 2: Structural equation model of the relationship between maternal IPV and adolescent delinquency sequentially mediated by maternal psychological distress and positive parenting. Standardized coefficients of direct and indirect paths are shown. All analysis controlled for mothers’ race, age, marital status, education level, and Time 1 positive parenting as well as adolescent gender, age, and Time 1 delinquency. * $p < .05$. ** $p < .01$. *** $p < .001$. 
An examination of the chi-square statistic for the structural model indicated poor fit ($\chi^2[173] = 686.53, p < .001$), however, the chi-square statistic is known to be sensitive to large sample sizes (Kenny, 2020). Therefore, goodness-of-fit (e.g., CFI) and misfit (e.g., RMSEA and SRMR) indices were used as alternatives to the chi-square statistic to evaluate how well the model fits the data. The CFI (0.88), and TLI (0.85) also demonstrated poor model fit according to the Hu and Bentler (1999) cutoff criteria that specifies values close to 0.95 as indicative of good model fit. Misfit indices demonstrated reasonable model fit (RMSEA= .05, SRMR=.05) according to criteria proposed by Browne and Cudeck (1992). Based on the fit indices available, the measurement model is minimally acceptable.

Results revealed the direct positive link between recent maternal IPV at Time 1 and higher Time 1 maternal psychological distress was supported in the model (i.e., Hypothesis 1), such that mothers with recent IPV reported higher levels of psychological distress at Time 1 ($\beta = .31, p < .001$). However, the direct negative link between higher maternal psychological distress at Time 1 and lower levels of positive parenting at Time 2 (i.e., Hypothesis 2) was not supported ($\beta = -0.06, p = .09$), although the finding was in the expected direction and trending toward significance. Hypothesis 3 proposed that lower levels of positive parenting at Time 2 would be associated with higher adolescent delinquency at Time 3. This hypothesis was supported ($\beta = -0.15, p = .001$), showing that lower positive parenting is associated with higher adolescent delinquency in this sample. Hypothesis 4 posited that the association between maternal experiences of IPV at Time 1 and adolescent delinquent behavior at Time 3 would be sequentially mediated by maternal psychological distress at Time 1, and positive parenting behaviors at Time 2. A test of this indirect pathway did not support this hypothesis ($\beta = 0.003, p = .14$). Finally, it was hypothesized that maternal IPV would be positively associated with
adolescent delinquent behavior after accounting for other paths in the model (i.e., hypothesis 5). Results did not support the direct link between maternal IPV and later adolescent delinquency ($\beta = -0.01, p = .87$) when taking into account other variables included in this model.

Outside of these hypothesized associations, a few additional paths were worth noting. As expected, positive parenting at Time 1 was strongly associated with positive parenting at Time 2 ($\beta = .81, p < .001$). Time 1 adolescent delinquency was associated with the latent construct of adolescent delinquency at Time 3 ($\beta = 0.26, p < .001$). In addition, while IPV at Time 1 was not associated with Time 2 parenting ($\beta = -0.02, p = 0.61$), maternal psychological distress was positively related to adolescent delinquency ($\beta = 0.09, p = .04$). Finally, although this path was not hypothesized, the model demonstrated that the indirect path from Time 1 IPV to maternal psychological distress to Time 3 adolescent delinquency was significant ($\beta = 0.03, p = 0.04$). The indirect path from Time 1 maternal IPV to Time 2 positive parenting to Time 3 adolescent delinquency was not supported ($\beta = .00, p = 0.60$).

Post-Hoc Analyses

To test the impact of the inclusion of Time 1 corresponding constructs, an alternative model was run whereby Time 1 positive parenting was not included as a covariate in the model (Figure 3). Thus, continuity across parenting was not considered in this second model. The structural model demonstrated improved model fit based on the CFI, TFI, RMSEA and SRMR fit indices, ($\chi^2 [111] = 327.19, p < .001; \text{CFI} = 0.94, \text{TFI} = 0.91, \text{RMSEA} = .04, \text{SRMR} = .04$). Similar findings were present for this model as compared to Model 1 such that the direct positive link among Time 1 IPV and maternal mental health was supported ($\beta = .31, p < .001$). In contrast to the first model, the direct negative link between Time 1 maternal psychological distress and
Time 2 positive parenting was supported, ($\beta = -0.11, p = 0.01$). The direct negative link between Time 2 positive parenting and Time 3 adolescent delinquency was also supported ($\beta = -0.15, p = 0.003$), as it was in the first model. Notably, the sequential mediation as assessed through the indirect pathway from Time 1 maternal IPV to T3 adolescent delinquent behavior through Time 1 psychological distress and Time 2 positive parenting was marginally significant ($\beta = 0.01, p = 0.06$) in this model. Similar to the first model, maternal IPV was not positively associated with adolescent delinquent behavior after accounting for other paths in the model ($\beta = -0.01, p = 0.51$).

![Figure 3: Structural equation model of the relationship between maternal IPV and adolescent delinquency sequentially mediated by maternal psychological distress and positive parenting. Standardized coefficients of direct and indirect paths are shown. All analysis controlled for mothers’ race, age, marital status, and education level, as well as adolescent gender, age, and Time 1 delinquency. Time 1 parenting was not included as a covariate in this model. * $p < 0.05$. ** $p < 0.01$. $p < 0.001$.](image-url)
Additional pathways of note indicate that Time 1 IPV was not associated with Time 2 positive parenting ($\beta = -0.01, p = 0.79$), as also found in the first model. Time 1 maternal psychological distress was again associated with Time 3 adolescent delinquency ($\beta = 0.09, p = 0.04$). This model also supported the indirect path from Time 1 IPV to maternal psychological distress to Time 3 adolescent delinquency ($\beta = 0.03, p = 0.05$), and did not support the indirect path from Time 1 maternal IPV to Time 2 positive parenting to Time 3 adolescent delinquency ($\beta = 0.00, p = 0.79$).
CHAPTER 4
DISCUSSION

The present study expanded on existing research linking maternal intimate partner violence to children’s outcomes by considering an older population and focusing on adolescent delinquency. Further, the study examined important proximal factors in this association, including mothers’ psychological distress, and parenting practices. While maternal psychological distress and parenting are well-established as being linked to child and adolescent outcomes (Calders et al., 2020; Goodman et al., 2020), the research on these associations with mothers experiencing IPV largely focuses on those with young children. In addition, many studies linking maternal IPV to child outcomes utilize samples of women and children located in domestic violence shelters and may not be generalizable to the broader population of mothers in society who experience IPV. This study addressed these gaps by utilizing a sample of low-income mothers and adolescents from the community, and employing a longitudinal, sequential mediation design to examine how mothers’ recent experiences of IPV influence adolescent delinquent behavior through maternal psychological distress and parenting practices. Of interest were the direct pathways between maternal IPV and maternal psychological distress, maternal psychological distress and positive parenting, and positive parenting and adolescent delinquency, as well as the sequential indirect effect of maternal mental health and positive parenting on the association between maternal IPV and adolescent delinquency.
Results from this study are congruent with previous literature demonstrating a positive association between mothers’ experiences of IPV and psychological distress (McFarlane et al., 2017). This link is not surprising as IPV is a significant stressor with high rates of associated depression, anxiety, and PTSD (Chandan et al., 2020; Dillon et al., 2013). Previous literature examining the association between IPV and psychological distress (i.e., depression, anxiety) reports effect sizes in the moderate to strong range, while the effect size in this study was in the small to moderate range (i.e., 0.31). This may be in part due to the use of a community sample, who were not seeking out services for IPV or residing in domestic violence shelters. Specifically, less than a quarter of the sample reported clinical levels of depression, anxiety, or somatization and only 27% of mothers reported any IPV in the last year. Thus, this study suggests the importance of moving beyond a focus on mothers seeking resources related to IPV to understand the links in the general population. Additionally, previous studies have suggested that younger women (e.g., age 20 to 24) who have young children are at the greatest risk for IPV and the negative mental health correlates (Catalano, 2006). Given the focus on families with adolescents in this study, the mean age of mothers in this study was approximately 38 years old, suggesting that the negative impact of IPV is not limited to mothers of young children. Importantly, IPV and maternal psychological distress were both measured at Time 1, so the direction of the association cannot be assumed. However, there is adequate support in the literature pointing to the causal link between IPV experiences and increased psychological distress. In fact, two meta-analyses of longitudinal studies support the ordering of the link, where earlier female IPV is positively associated with later depressive symptoms (Bacchus et al., 2018, Devries et al., 2013); however, the longitudinal association to other aspects of psychological distress (e.g., anxiety, somatization) has less frequently been examined. Overall, this study adds to the literature by
extending support for the positive association between IPV and maternal psychological distress previously found among mothers of infants or young children (Beydoun et al., 2012; Gustafson et al., 2012) to mothers of adolescents.

Surprisingly, in the structural equation model, higher levels of maternal psychological distress were not associated with lower levels of positive parenting when parenting at Time 1 was included as a covariate in the model. There were small but significant bivariate correlations among the maternal psychological distress subscales and the parenting subscales, but the associations were no longer significant when the subscales were combined into a latent construct with Time 1 parenting controlled in the model. The lack of a significant association is incongruent with much of the previous literature, which finds that when mothers are struggling with their mental health, aspects of their parenting may be compromised (e.g., Lovejoy et al, 2000). Importantly, literature on mothers’ mental health and parenting practices has been largely focused on depressive symptomology, as opposed to other aspects of psychological distress such as anxiety or somatic symptoms. Thus, it may be that our measure of broad psychological distress did not have the same association with parenting that may be found if the study had focused on just depressive symptoms.

The stringent design of our study, including controlling for Time 1 parenting, may have also contributed to the lack of significant findings. When Time 1 positive parenting was taken out as a covariate in the model, the direct link was significant, albeit small in strength, which is consistent with prior studies (for a review see Goodman et al., 2020). This suggests earlier parenting accounts for a large portion of the variance in parenting two years later and is consistent with research showing relative, but not absolute, stability in parenting of adolescents (Forehand & Jones, 2002; Loeber et al., 2000). Further, the use of multiple reporters (i.e.,
mothers reporting on their own mental health and adolescents reporting on their mothers’
parenting) may have influenced the results. A meta-analysis of longitudinal studies interested in
moderators of the well-established relation among mothers’ mental health and parenting found
stronger effect sizes when a composite of mothers’ and children’s reports of parenting was
utilized, as compared to single reports (Goodman et al., 2020). Future research examining this
model should consider creating a composite parenting construct utilizing multiple reporters or
compare a parent report model and adolescent report model.

Another possible reason for the lack of significant findings is in the way positive
parenting was conceptualized in this study. The parenting literature is somewhat inconsistent
with its conceptualization of parenting, with some literature focused on parenting style,
behaviors, or overall quality (i.e., positive versus negative). Although Goodman et al. (2020)
found that effect sizes were stronger among mother’s depression and parenting quality when
studies conceptualized parenting in a composite way, as done in this study with aspects of
warmth and relationship quality (i.e., trust and communication, anger, and alienation) and
practices (i.e., harsh discipline), it may be that the inclusion of other aspects of psychological
distress (i.e., anxiety and somatization) are weakening the association. In addition, it may be
important to examine specific aspects of parenting in order to detect associations. For example,
at the bivariate level in the current study, maternal distress was associated with anger and
alienation, but not harsh discipline. Narrower, as opposed to global, constructs of parenting in
similar models may contribute to different or significant findings. Further, in Goodman et al.
(2020), the relation between mothers’ depression symptoms and parenting was stronger for
children in middle childhood (i.e., ages 5 to 11) as compared to infants or adolescents. It may be
that mothers’ psychological distress is less impactful on parenting quality in the adolescent
developmental period. In sum, the negative link between maternal psychological distress and positive parenting did not have strong support in this study when considering earlier parenting but did support a small association when Time 1 parenting was not included.

Regardless of whether Time 1 parenting was included in the model, lower levels of positive parenting at Time 2 significantly predicted higher adolescent delinquency at Time 3, supporting the third hypothesis. This finding is congruent with well-established research highlighting parenting quality as an important risk factor for engagement in delinquent behavior (Henneberger et al., 2014; Pinquart, 2017). If children and adolescents receive less warmth and more harsh parenting, they are at greater risk for engaging in delinquent and aggressive behaviors (Henneberger et al., 2014; Hoeve et al., 2009). While bidirectional associations were not examined in this study, the literature on coercive interactions in families posits that children’s conduct problems may elicit harsher parenting, which then elicits more child conduct problems (Patterson, 1982). More recent research suggests these processes developed earlier in childhood amplify the trajectory towards anti-social or delinquent behavior in adolescence (Smith et al., 2014). This cycle implies a key way that delinquency may be fostered overtime. As such, although this study adds further support to the literature suggesting lower positive parenting may contribute to delinquency problems for adolescents, future research may consider examining the bi-directional relationship among parenting and adolescent delinquent behavior. These studies may help inform clinical intervention or prevention efforts in the treatment of children and adolescents presenting with externalizing or delinquent behavior problems.

The hypothesis that the association between maternal experiences of IPV at Time 1 and adolescent delinquent behavior at Time 3 would be sequentially mediated by maternal psychological distress at Time 1, and positive parenting behaviors at Time 2, was not supported
when Time 1 positive parenting was included as a covariate in the model. Without the inclusion of Time 1 parenting, the indirect association was marginally significant suggesting there may be a small indirect influence. This is an important initial finding for the adolescent delinquency literature, especially taken in consideration with previous studies that have employed similar longitudinal models where IPV was measured pre-adolescence (Awada et al., 2020; Huang et al., 2010; Renner & Boel-Studt, 2013). Awada et al. (2020) found that mothers’ experiences of IPV when their children were younger was associated with adolescent delinquency nine years later, sequentially mediated through parenting stress and psychologically harsh parenting, but not physically harsh parenting. Taken together, it may be that mothers’ experiences of IPV when children are younger as opposed to IPV that occurs in their children’s adolescence represents a greater risk for the development of delinquent behavior in adolescence when considering the sequential influence of maternal stress and parenting. However, the trending significance when the study design was less stringent points to the need to not ignore these processes when mothers of adolescents are victimized, as it may spill over to influence adolescent behavior. However, future research may extend the current study by controlling for earlier maternal IPV experiences to determine if there is a unique impact on adolescent exposure to maternal IPV for later delinquency through maternal mental health and parenting. Greater specificity regarding mothers IPV experiences may aid in tailoring prevention or intervention efforts to mothers and adolescents in the context of IPV.

The hypothesized relationship between IPV at Time 1 and adolescent delinquency at Time 3, when controlling for all other paths in the model, was not supported. The association was also not significant at the bivariate correlation level. Importantly, the literature on maternal IPV as it relates to adolescent delinquency is relatively sparse and is somewhat inconsistent in
findings. In a longitudinal study, Ireland and Smith (2009) found that living in partner violent homes during adolescence was related to aggressive and antisocial behavior in adolescence and emerging adulthood. However, the authors noted that the risk for aggressive and anti-social behavior dissipated as adolescents aged into early adulthood and were not as strong in early adolescence, pointing to a potentially vulnerable time in mid-adolescence for the negative effects of maternal IPV. In addition, studies have shown that greater severity of IPV negates the dissipation of this relationship into early adulthood, suggesting that adolescents of mothers exposed to severe IPV are at greater risk, no matter what stage of adolescence they are in at time of the IPV. The sample in the current study was notable for lower levels of IPV and adolescent delinquency, so it is likely that the relation between early IPV and later delinquency over a 5-year period follows the same pattern noted in Ireland and Smith (2009) whereby delinquent behavior dissipates into early adulthood. The current sample also did not endorse a high rate of violent IPV or delinquency, which may limit the ability to detect associations.

Previous literature showing significant findings between IPV and child externalizing or adolescent delinquency has often been conducted with those residing in a domestic violence shelter and, thus, the levels of IPV are likely more severe in such samples. Further, the level of direct exposure children may have had to IPV among shelter populations is likely higher. The inconsistency in our findings compared to previous studies may be related to the severity of IPV, but also whether assessment of IPV exposure considers children and adolescent witnessing the IPV. This study did not specifically examine how adolescents may have been exposed to IPV and assumed mothers’ experiences of IPV was sufficient to spill over and influence delinquency. Some previous research has considered exposure as mothers experiencing IPV (Holden, 2003), and other research has more specifically measured how children and adolescents may have
directly witnessed IPV (Ireland & Smith, 2009; Kitzmann et al., 2003). An extension of the current study may consider including more nuanced measurement of adolescent exposure to IPV.

While not a focus of this study, other direct and indirect pathways in the model were considered. A direct negative relation among IPV and positive parenting two years later was not found in both the original and post-hoc models (i.e., controlling and not controlling for Time 1 parenting). Consistent with the theoretical idea that parenting can be influenced by a number of risk factors (Belsky, 1984), studies have found support for IPV as one such stressor compromising parenting quality (Chisea et al., 2018; Murray et al., 2012). The stress of experiencing IPV may create a sense of crisis around managing responsibilities in one’s life, including parenting. However, there is no consensus in the literature that IPV is directly related to lower levels of positive parenting. Other studies have found that experiencing IPV was related to higher quality parenting behaviors in order to compensate for IPV in the home, although this has largely been looked at with children and not adolescents (Letourneau 2007; Levendosky et al., 2003; Nixon et al., 2017). The current study’s findings support previous research that IPV itself may not compromise positive parenting and adds new information to the literature regarding this pathway among adolescents. The mechanisms through which IPV may influence parenting, whether to compensate for IPV or not, is a pathway that needs further study. For example, future research should consider whether there is an indirect path from IPV to positive parenting, through maternal psychological distress, as this indirect influence also shows mixed findings in previous literature (Gustafson & Cox, 2012; Levendosky & Graham-Berman, 2001; Yoo & Huang, 2013). A review by Sousa et al. (2021) points to the need for nuanced theories and research regarding the impact of IPV on parenting, varying the age of children, timing of IPV, and perhaps the type of parenting being considered.
Although not hypothesized, there was a significant indirect pathway from maternal IPV to adolescent delinquency through maternal psychological distress. The indirect influence of maternal psychological distress is not surprising given the support found in the literature for this pathway (Holmes et al., 2017; McFarlane et al., 2017). Specifically, in a longitudinal study, Holmes et al. (2017) found that maternal experiences of IPV were related to maternal depression and aggressive behaviors in children. The authors found lagged effects of mother’s depression at child age three, and aggressive behaviors at child age eight. However, there is a dearth in the research regarding the indirect influence of maternal psychological distress among adolescents whose mothers have experienced IPV. This study adds to the literature and points to maternal IPV as a risk factor for adolescent delinquency in part as a function of maternal psychological distress. Findings from the current study also support previous literature directly linking mothers’ psychological distress to adolescent delinquent behaviors. Although this pathway was not hypothesized, and the strength of the association is small, this finding is congruent with previous meta-analytic reviews (Goodman et al., 2011) and longitudinal studies (e.g., Keenan-Miller et al., 2010) finding adolescents exposed to maternal psychological distress are at greater risk for later conduct problems, aggression, and engagement in delinquent behaviors. Although much is known regarding mothers’ depression symptoms and adolescent internalizing and externalizing behaviors, this study provides more evidence that broader maternal psychological distress, including depression, anxiety, and somatization symptoms, is related to adolescent delinquent behavior approximately five years later. Interventions focused on reducing or preventing adolescent delinquent behaviors should consider family level factors and specifically, mothers’ broad psychological distress.
An additional path examined in the model was the indirect effect of maternal IPV on adolescent delinquency through positive parenting. Although the direct negative association between positive parenting and adolescent delinquency was supported, parenting as a mechanism in the relation between IPV and adolescent delinquency approximately 5 years later was not supported in either model. Previous studies employing parenting as a mediator in the association between IPV and offspring externalizing behaviors also show mixed findings. Specifically, some studies have found that mothers with IPV experiences may parent in harsher ways, both psychologically and physically, and their parenting is characterized by less warmth, both of which are associated with later delinquent behaviors (Awada et al, 2020; Huang et al., 2015; Zarling et al., 2013). Others did not find a link between IPV and delinquency or externalizing behaviors through parenting (Greeson et al., 2014) and instead indicated that mothers’ IPV experiences were related to authoritative parenting and resulted in fewer child behavior problems. Similarly, Levendosky et al. (2003) found that mothers may overcompensate for violence in the home by exhibiting warm and positive parenting practices and resulting in less externalizing behavior among pre-school aged children. As discussed earlier, many of the previous studies are conducted with mothers experiencing more frequent and severe levels of IPV, and thus in this sample associations may not be found.

Taken together, although the full sequential indirect pathway was not fully supported, our findings suggest the key link through which IPV is related to adolescent delinquency is through mothers’ psychological distress. Thus, reducing maternal psychological distress when creating or providing interventions is likely an important consideration in the context of IPV. This study has several strengths and attempted to address the call for a better understanding of how proximal factors like mothers psychological functioning in the context of IPV spills over to influence their
parenting, which then influences adolescent behavior. However, there are limitations that may have impacted any implications that can be drawn from this study.

Limitations

As with all studies, there are limitations that need to be acknowledged. Despite a design that considers the sequential impact of risk factors for adolescent delinquency, this study is not experimental and unable to establish causality. No variables in this study were manipulated and findings should only be interpreted as correlational. In addition, the sample used in this study is representative of low-income, ethnic minority mothers and adolescents, and not those seeking services. While there are strengths to findings for such a population, the findings are not generalizable to those who may be seeking services for IPV or adolescent delinquent behavior, who would likely report higher or clinically significant levels and greater impairment in functioning. Further, using Caucasian or more affluent samples may result in different relations among the variables.

As suggested by Vu (2016), accurately understanding the impact of IPV is a complex issue in research, where it is difficult to understand the nuanced ways members of the household experience IPV. For example, although the primary question for this study focused on understanding the spill-over impact of maternal experiences of IPV on adolescent delinquency, whether adolescents in the study witnessed IPV or were themselves the victims of abuse were not considered. Some studies have found that the way children or adolescents are exposed to violence in the home (e.g., direct witnesses, witnesses and abused victims) differentially impacts emotional and behavioral outcomes (Sousa et al., 2011; Sternberg et al., 2006), and those exposed to greater severity of violence are at greater risk for higher internalizing and
externalizing behaviors (Hamby & Grych, 2013). Further, youths exposed to violence in the home, even indirectly, are 40% more likely to be victims of physical violence themselves (Hamby & Grych, 2013). It is likely that at least some of the adolescents in this sample directly witnessed IPV against their mothers, which may influence the spill-over paths in the model. To determine whether mothers’ experiences of IPV alone spill over to influence adolescent delinquency, controlling for adolescents’ level of exposure, would be necessary to best understand the relation. Alternatively, it may be useful to compare the model among those who have directly witnessed IPV and those who have been indirectly exposed to help understand the development of delinquency. Future research would do well to include adolescent assessment of their exposure to IPV and their own victimization experiences when studying impacts of maternal IPV experiences on adolescent outcomes.

Another complication sometimes considered in the literature examining IPV is that the type of IPV one experiences may be related to different consequences, both on mothers’ mental health and on offspring outcomes. Some research suggests that mothers recover mentally from physical violence more quickly than psychological violence (Lagdon et al., 2014; Mechanic et al., 2008; Pico-Alfonso, 2006). This study did not differentiate between different types of IPV, which may be important for better understanding the true spill-over effects of IPV on adolescent outcomes. Further, previous research suggests cumulative IPV is related to poorer outcomes for mothers’ and their offspring (Miranda et al., 2011). This study did not measure mothers’ experiences of IPV outside of the past year; however, research suggests many women experience chronic IPV over years (Sonis & Langer, 2008). Therefore, it is likely that some mothers experienced IPV beyond the previous year. It is possible that mothers’ lifetime experiences of IPV may contribute to adolescent delinquency differently than recent, past year IPV. Further, it
is well-established that victims of IPV are likely to be perpetrators of IPV as well (Swan et al., 2008) and mutually violent partners may result in different consequences for children (Straus & Michel-Smith, 2014). Future research may consider assessing and controlling for IPV perpetrated by female victims in examining the relation and mechanisms among IPV and adolescent delinquency.

A strength of this study is the inclusion of adolescent reports of their mothers’ parenting, and their engagement in delinquent behavior; however, parents and adolescents may perceive parenting differently (Schofield et al., 2016). Future research may extend this study by comparing models using mother reports of parenting and adolescent delinquency to models using adolescent report as done in this study. In addition, utilizing multiple raters’ reports to construct the latent variable of parenting and delinquency may be beneficial. For example, studies that used composite scores from both child and parent report in assessing parenting typically have yielded stronger effect sizes (e.g., Goodman et al., 2020).

Future research could also consider other adolescent outcomes. For example, previous research has shown a positive relationship between maternal experiences of IPV and adolescent internalizing problems (see Kitzman et al., 2003 for a review). In addition, a study utilizing a sample of adolescents found that those who witnessed physical IPV, and experienced harsh punishment, were at greater risk for internalizing problems. Further, in a longitudinal study with young children, Zarling et al. (2013) found that mothers’ psychological functioning mediated the relation between mothers’ experiences of IPV and child internalizing symptoms, but not externalizing problems. As such, future research may consider examining the model tested in this study with a focus on predicting internalizing problems.
Other family related factors are important in the development of adolescent delinquency, including father involvement, fathers’ parenting, and family structure (Carlson et al., 2006). A limitation of this study is that we did not assess father involvement or parenting as a potential covariate. Although marital status was controlled for, previous studies suggest the impact of cohabitation on aggression is particularly pronounced when the residential parent is the perpetrator and biological father (Apel & Kaukinen, 2008; Moretti et al., 2006). In addition, Hoeve et al. (2011) found that fathers’ neglectful and harsh parenting was associated with higher levels of adolescent delinquency. Taken together, future research should consider assessing and controlling for paternal parenting, especially harsh parenting, as it has been shown to be important in the development of adolescent delinquency. Relatedly, a significant limitation in this study is not accounting for change in family structure at the subsequent time points. Previous studies show that such family transitions are a risk factor for greater engagement in adolescent delinquency (Brown, 2006, but see Schroeder et al., 2010, who did not support this pattern). Importantly, recent studies indicate that regardless of family structure, parenting quality is more related to adolescent engagement in delinquent behavior than family structure (Jacobsen & Zaatut, 2022). Therefore, future research should examine other possible predictors of parenting and delinquency, in addition to change in family structure. For example, factors such as maternal social support (Casanueva et al., 2008), and co-parenting (e.g., Zvara et al., 2019) may influence parenting quality, while peer influences and neighborhood violence (Haynie et al., 2006), may contribute to adolescent delinquency. Examining such influences as possible covariates would extend this research.

This study may also be limited by the age of the dataset, which was collected between 1999 and 2006. The findings may not be generalizable to the current climate given the
technological advancements and changes in the way information is spread. There may be greater access to supports for women experiencing IPV as research over the last two decades is more accessible and has informed interventions which may impact the family dynamic (Austin et al., 2019). Although things may have changed over the years, IPV, mental health, parenting, and delinquency still exist and interact in the world today.

Conclusion

Overall, this study is consistent with previous literature suggesting IPV, maternal mental health, and parenting are related to adolescent delinquent behavior. While a sequential mediation was not supported, the direct and indirect associations provide additions to the adolescent delinquency literature, in the context of IPV. The strength of the associations were weak, but point to the need to consider maternal mental health and parenting quality when engaging in prevention or intervention work in the context of IPV. Most importantly may be the positive link between maternal IPV and maternal psychological distress, and the mediating effect of maternal psychological distress on the relation between maternal IPV and adolescent delinquency. This link suggests a possible need to focus on reducing maternal psychological distress in the context of IPV because of its link to adolescent delinquency. This study also adds to the literature because of its focus on adolescence. Several longitudinal studies have taken a developmental approach and examined how childhood exposure to IPV contributes to later externalizing or conduct problems (e.g., Greene et al., 2018; Sousa et al., 2011; see also Vu et al., 2016). While it is important to know how children’s earlier experiences influence their development, adolescent behavior may be influenced by family processes in a different way during this developmental period. Understanding these important nuances are needed to further the research on effective
prevention or intervention efforts for adolescent outcomes, especially in the context of family violence. The lack of a significant direct association between IPV and both positive parenting and adolescent delinquency in a representative community sample point to possible strengths when considering mothering adolescents in the context of IPV. Future research is needed to continue to improve the field’s understanding of how IPV exposure during adolescence influences both family processes and psychological outcomes.
REFERENCES


APPENDIX A

MODIFIED CONFLICT TACTICS SCALE INTERVIEW
Modified Conflict Tactics Scale Interview

Now, think about all of the romantic relationships you have had in your life:

1a. Has anyone you have been in a romantic relationship with ever threatened to hit you?
   - No
   - Yes
   - Don’t Know

1b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know

2a. Has anyone you have been in a romantic relationship with ever thrown something at you?
   - No
   - Yes
   - Don’t Know
2b. If “yes”, How often has this occurred in the past 12 months?

- Never
- Once or twice
- Several times
- Often
- Don’t Know

3a. Has anyone you have been in a romantic relationship with ever pushed, grabbed or shoved you?

- No
- Yes
- Don’t Know

3b. If “yes”, How often has this occurred in the past 12 months?

- Never
- Once or twice
- Several times
- Often
- Don’t Know
4a. Has anyone you have been in a romantic relationship with ever slapped, kicked, bit, or punched you?
   o No
   o Yes
   o Don’t Know

4b. If “yes”, How often has this occurred in the past 12 months?
   o Never
   o Once or twice
   o Several times
   o Often
   o Don’t Know

5a. Has anyone you have been in a romantic relationship with ever beaten you?
   o No
   o Yes
   o Don’t Know
5b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know

6a. Has anyone you have been in a romantic relationship with ever choked or burned you?
   - No
   - Yes
   - Don’t Know

6b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know
7a. Has anyone you have been in a romantic relationship with ever used a weapon or threatened to use a weapon on you?
   o  No
   o  Yes
   o  Don’t Know

7b. If “yes”, How often has this occurred in the past 12 months?
   o  Never
   o  Once or twice
   o  Several times
   o  Often
   o  Don’t Know

8a. Has anyone you have been in a romantic relationship with ever forced you into any sexual activity against your will?
   o  No
   o  Yes
   o  Don’t Know
8b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know

9a. Has anyone you have been in a romantic relationship with ever threatened to hurt your children or take them away from you?
   - No
   - Yes
   - Don’t Know

9b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know
10a. Has anyone you have been in a romantic relationship with ever threatened to hurt your child or take [him/her] away from you?
   - No
   - Yes
   - Don’t Know

10b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know

11a. Has anyone you have been in a romantic relationship with ever interfered with your attempts to go to work, training or school?
   - No
   - Yes
   - Don’t Know
11b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know

12a. Has anyone you have been in a romantic relationship with ever harassed you at work, training, or school?
   - No
   - Yes
   - Don’t Know

12b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know
13a. Has anyone you have been in a romantic relationship with ever caused you to miss work, school, or training because of their behavior?
   - No
   - Yes
   - Don’t Know

13b. If “yes”, How often has this occurred in the past 12 months?
   - Never
   - Once or twice
   - Several times
   - Often
   - Don’t Know

14a. Has anyone you have been in a romantic relationship with ever caused you to lose a job because of their behavior?
   - No
   - Yes
   - Don’t Know
14b. If “yes”, How often has this occurred in the past 12 months?

- Never
- Once or twice
- Several times
- Often
- Don’t Know
APPENDIX B

BRIEF SYMPTOM INVENTORY (BSI-18)
Below is a list of problems that people sometimes have. Please read each one carefully. Then circle the number that best describes how much that problem has distressed or bothered you during the past 7 days including today.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Faintness or dizziness………... 0 1 2 3 4
2. Feeling no interest in things…… 0 1 2 3 4
3. Nervousness or shakiness inside… 0 1 2 3 4
4. Pain on heart or chest………… 0 1 2 3 4
5. Feeling lonely ………………… 0 1 2 3 4
6. Feeling tense or keyed up……… 0 1 2 3 4
7. Nausea or upset stomach……… 0 1 2 3 4
8. Feeling blue………………… 0 1 2 3 4
9. Suddenly scared for no reason…… 0 1 2 3 4
10. Trouble getting your breath…… 0 1 2 3 4
11. Feeling worthless…………… 0 1 2 3 4
12. Spells of terror or panic………… 0 1 2 3 4
13. Numbness or tingling in parts of your body……………………………
   0 1 2 3 4

14. Feeling hopeless about the future.. 0 1 2 3 4
15. Feeling so restless you could not sit still……………………………
   0 1 2 3 4

16. Feeling weak in parts of your body 0 1 2 3 4
17. Thoughts of ending your life……. 0 1 2 3 4
18. Feeling fearful……………………
   0 1 2 3 4
APPENDIX C

INVENTORY OF PARENT AND PEER ATTACHMENT (IPPA)
Inventory of Parent and Peer Attachment (IPPA)

The following statements ask about your feelings about your mother. For each item, please tell me how true that statement is for you.

Never true  Rarely true  Sometimes  Often true  Always true

1. My mother accepts me as I am.  1  2  3  4  5
2. I like to get my mother’s point of view on things I’m concerned about.  1  2  3  4  5
3. Talking over my problems with my mother makes me feel ashamed or foolish.  1  2  3  4  5
4. My mother expects too much from me.  1  2  3  4  5
5. I get upset a lot more than my mother knows about.  1  2  3  4  5
6. When we discuss things, my mother cares about my point of view.  1  2  3  4  5
7. My mother has her own problems, so, I don’t bother her with mine.  1  2  3  4  5
8. I tell my mother about my problems and troubles.  1  2  3  4  5
9. I feel angry with my mother.  1  2  3  4  5
10. I get a lot of attention from my mother.  1  2  3  4  5
11. I trust my mother.  1  2  3  4  5
12. My mother doesn’t understand what I’m going through these days.  1  2  3  4  5
Harsh Discipline Scale

Now I’d like to ask how often your mother does various things with you.

<table>
<thead>
<tr>
<th>Never in the past 12 months</th>
<th>A few times</th>
<th>Once a month or more</th>
<th>Once a week or more</th>
<th>Almost everyday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. During the past 12 months, how often has your mother scolded or yelled at you?

   1  2  3  4  5

2. During the past 12 months, how often has your mother spanked or hit you?

   1  2  3  4  5

3. During the past 12 months, how often has your mother threatened to spank or hit you?

   1  2  3  4  5

4. During the past 12 months, how often has your mother told you she would punish you if you didn’t behave?

   1  2  3  4  5

5. During the past 12 months, how often has your mother threatened to put you out of the house?

   1  2  3  4  5
APPENDIX E

DELINQUENCY SCALE
Delinquency Scale

These next questions are about things you may or may not have done in the past 12 months.

<table>
<thead>
<tr>
<th>Never</th>
<th>Once or twice</th>
<th>Several times</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. In the past 12 months, how often have you copied homework or a class assignment from somebody else? 1 2 3 4
2. In the past 12 months, how often have you been given detention or made to stay after school? 1 2 3 4
3. In the past 12 months, how often have you cheated on a class test? 1 2 3 4
4. In the past 12 months, how often have you been suspended or expelled from school? 1 2 3 4
5. In the past 12 months, how often have you smoked cigarettes or used chewing tobacco? 1 2 3 4
6. In the past 12 months, how often have you stolen something from a store or another person? 1 2 3 4
7. In the past 12 months, how often have you gotten in trouble with the police? 1 2 3 4
8. In the past 12 months, how often have you carried a weapon? 1 2 3 4
9. In the past 12 months, how often have you used a phony ID? 1 2 3 4
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. In the past 12 months, how often have you gotten drunk?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>11. In the past 12 months, how often have you run away from home?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>12. In the past 12 months, how often have you skipped a full day of school or work without an excuse?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>13. In the past 12 months, how often have you purposely damaged or destroyed property that did not belong to you.</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>14. In the past 12 months, how often have you gotten into a physical fight?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>15. In the past 12 months, how often have you attacked someone with the idea of seriously hurting or killing them?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>16. In the past 12 months, how often have you smoked marijuana or hashish (pot, grass, hash)?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>17. In the past 12 months, how often have you used hard drugs such as heroin, cocaine, or LSD?</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>18. In the past 12 months, how often have you traded sex for money?+</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>19. In the past 12 months, how often have you sold any hard drugs such as heroin, cocaine, or LSD?+</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>20. In the past 12 months, how often have you broken into a building?+</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
21. In the past 12 months, how often have you knowingly sold or held stolen goods?\(^+\)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
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<tr>
<td></td>
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</tbody>
</table>

22. In the past 12 months have you ever been in jail or a detention center? \(^{r}\)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

23. In the past 12 months, have you been a member of a gang? \(^{rr}\)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

*Note.* \(^+\) indicates item added to the Time 3 delinquency items, that were not included in the Time 1 total delinquency scale. Items 1-17 reflect the Time 1 total delinquency scale. \(^r\) indicates item was removed from Time 3 delinquency items due to dichotomous response options, rather than a frequency seen in the other 21 items.