

**INTIMATE PARTNER VIOLENCE AND
MATERNAL INCARCERATION AS
CUMULATIVE RISK FOR THE DEVELOPMENT OF
CHILD BEHAVIOR PROBLEMS**

by

Leigh Andrea Ellis

A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Master of Science in Human Development and Families Studies

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ABSTRACT

The goal of the current study was to examine whether internalizing and externalizing behaviors in preschool aged children are increased, decreased, or remain consistent for children experiencing intimate partner violence (IPV) and maternal incarceration separately and for children experiencing these traumas concurrently. Data were drawn from the first, second, and third wave of the Fragile Families and Child Wellbeing Study (FFCWS), a nationally representative, stratified, multi-stage, probability sample of children. This study utilized independent variables of intimate partner violence and maternal incarceration and dependent variables of children's internalizing and externalizing behavior problems as measured by the Child Behavior Checklist (CBCL). A series of Ordinary Least Squares (OLS) regression analyses were used to test each of the specific aims in the current study. All analyses controlled for child's age, sex, and race and mother's household income, education level, and marital status with child's biological father. The hypotheses of increased behavior problems for children experiencing intimate partner violence exposure, maternal incarceration, or both events were not supported in the study's findings. A list of possibilities for insignificant findings is discussed. However, overarching themes that contribute to the literature on environmental disadvantages and risk factors were found. Scores predicted Hispanic children consistently had higher internalizing

behaviors problems and boys had higher levels of externalizing behavior problems.

Mother's education and relationship with child's biological father at time of baseline were found to act as protective factors against negative behavioral problems for children.

Chapter 1

INTRODUCTION

In an ever-changing society, it is all too common for children to experience a variety of traumatic or potentially traumatic events during their early years of development. In a healthy cohort of children, it was found that approximately 26% witnessed or experienced a traumatic event before the age of 4 (Briggs-Gowan, Ford, Fraleigh, McCarthy, & Carter, 2010). Minority children in inner-city environments are more likely to experience such trauma due to high community crime, drug use, and poverty rates (Holmes, Levy, Smith, Pinne, & Neese, 2014). Exposure to a traumatic event can include, but is not limited to, intimate partner violence, sexual abuse, physical abuse, familial mental illness, exposure to crime, and parental separation (Snyder et al., 2012). Traumatic events can be described as actual or perceived threats to the life or physical wellbeing of the child or another individual, most significantly their caregiver (Briggs-Gowan, Carter et al., 2010). Snyder and colleagues (2012) found that the most commonly experienced traumatic events for young children were separation from caregiver (62%), seeing or hearing an assault between family members (43%), family members threatening harm to each other (37%), injury of a family member (36%), and a family member's arrest or incarceration (31%). These numbers attest to the possibility of young children being witnesses to parental violence or being separated from a caregiver as a consequence of parental arrest or incarceration.

It is also likely that children who are exposed to one traumatic event are exposed to multiple traumatic events, and multiple events can have accumulating associations with negative outcomes for children (Snyder et al., 2012; Graham-Bermann, Castor, Miller, & Howell, 2012). Children with multiple exposures to traumatic events or risk factors within their families have been noted as experiencing environmental extremes in an unpredictable world with adults who do not provide appropriate stability (Streeck-Fischer & Van Der Kolk, 2000). Experiencing early, chronic trauma places children at risk for developing behavioral, emotional, and social problems, which can inhibit healthy development (Sternberg, Baradaran, Abbott, Lamb, & Guterman, 2006; Snyder et al., 2012; Streeck-Fischer & Van Der Kolk, 2000). Therefore, it is not surprising that childhood exposure to traumatic events, such as intimate partner violence (IPV) and parental incarceration, especially of a mother, can negatively impact children's behavioral functioning, which may manifest as increased rates of both internalizing and externalizing problem behaviors.

Theoretical Framework

Developmental risk research initially focused on singular risk factors known or thought to increase the probability of negative child outcomes. However, research has demonstrated that there are increased effects on development due to exposure to multiple risk factors. Cumulative risk theory, the most common developmental multiple risk model, examines the total number of risks experienced, rather than the intensity or pattern of risk exposure (Rutter, 1979). Risk factors are variables that are associated with an increased likelihood of poor physical, emotional, and behavioral outcomes and include things such as exposure to violence, poverty, crime, and substance abuse (Gewirtz & Edleson, 2007). In his examinations of multiple traumatic

events or risk factors in behavioral research, Rutter (1979) found that it is not necessarily a particular risk factor or event but the number of risk factors or events that a child experiences that may lead to negative outcomes. Risk factors are found to be cumulative in that, as risk factors increase, so do higher probabilities of negative outcomes (Seifer, Sameroff, Baldwin, & Baldwin, 1992). Cumulative risk demonstrates that after a certain number of risk factors are experienced, a dramatic increase in problem behavior occurs, such that risk factors may potentiate each other and their combined effect is far worse than a mere summation of their separate effects (Rutter, 1979).

Rutter (1979) also established that the increasing number of concurrent risk factors yield a cascading, deleterious effect on later developmental outcomes. Therefore, not only are the cumulative, coexisting risk factors important to development, but the timing of experiencing risk factors can significantly impact child outcomes as well. Earlier exposure to such traumatic events and adversities may lead to more substantial changes in later outcomes and may increase maladaptive behavior because they occur during foundational periods of development. Therefore, these negative and potentially damaging experiences can influence the child's subsequent interactions with their environment and how they understand and respond to the world around them (Sroufe, Carlson, Levy, & Egeland, 1999). Notably, children in their early childhood years of development are also more likely to be exposed to risk factors such as IPV and a mother's arrest due to the high probability of being in the home with their primary caregiver as opposed to at school or with friends (Fusco & Fantuzzo, 2009; Gabel & Johnston, 1995).

Both IPV exposure and the experience of maternal incarceration are traumatic events that can cause stress and act as risk factors for young children. With the high prevalence of exposure to both traumatic experiences separately, it is likely that, for many children, these traumatic events may co-occur. Women offenders have consistently reported high rates of physical and/or sexual assaults, most commonly in the year prior to incarceration. This highlights the possibility of violence and the presence of police authority happening in a household at the same time (Green, Miranda, Daroowalla, & Siddique, 2005; Lynch, Fritch, & Health, 2012). The high prevalence of IPV and interpersonal trauma experienced by women offenders evokes interest in the relationship between these two circumstances and how witnessing such events may influence a young child's development and outcomes. However, no prior research has examined these two types of trauma, IPV exposure and maternal incarceration, as accumulating risk factors for children. For children who are both exposed to violence in the home and are separated from their mother due to arrest, cumulative risk theory provides a lens through which to examine the accumulation of these two risk factors on internalizing and externalizing behavior problems for children.

Intimate Partner Violence

Intimate partner violence (IPV) is defined as threatened or completed physical, sexual, or psychological abuse committed by a spouse, ex-spouse, current or former boyfriend or girlfriend, or dating partner of opposite or same sex (Breiding, Basile, Smith, Black, & Mahendra, 2015). IPV is prevalent across all ages, cultures, racial and ethnic backgrounds, sexual orientations, and income levels (Renzetti, Edleson, Bergen, 2011). In the National Intimate Partner and Sexual Violence Survey of 2011,

it was reported that women were more heavily affected by all categories of IPV, with a substantial portion of adult females in the United States experiencing some form of IPV during their lifetime (Breiding, 2015). It has been estimated that between 25-54% of adult women, between the ages of 18 and 64, years old are affected by IPV at least once in their lifespan, depending on the definition of IPV, the sampled population, and the methods used to obtain data (Thompson et al., 2006). With such high prevalence rates, IPV is a detrimental, widespread social problem for women and their children.

Child Exposure to IPV

Recent estimates suggest that approximately 15.5 million American children live in a household in which IPV has occurred within the last year, with 7 million of these children being in homes with severe cases of violence (McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006). Additionally, many children exposed to IPV have been facing chronic exposure since birth (Bogat, DeJonghe, Levendosky, Davidson, & von Eye, 2006). Uncertainty of prevalence must be noted due to the absence of an absolute definition of IPV; discrepancies in what constitutes as exposure for children; and the accuracy of collected data, as it is usually collected through mothers' reports, which may be underestimated (Carlson, 2000). For children, exposure to IPV, in its totality, should be conceptualized to include sensory exposure (seeing or hearing violence), being physically involved in a violent situation between partners, and/or enduring the aftermath of an abusive attack (Postmus, 2009).

Carpenter and Stacks (2009) report almost half of all instances of IPV occur in homes with a child under the age of 12. Children under the age of 6 are more likely to witness IPV, while children under the age of 3 are more likely to be victims of abuse themselves (Carpenter & Stacks, 2009). In homes where a woman is being abused,

60% to 75% of the children are also experiencing abuse (Osofsky, 1999). Children may be deliberately abused, inadvertently hurt during a violent situation, or injured while trying to stop the violence (Postmus, 2009).

Furthermore, Fusco and Fantuzzo (2009) found that even among children who were not victims of abuse, many not only heard and saw the violence occurring in their homes, but also were also considerably involved in the violence. Involvement in abusive situations can include children being present in the events leading up to abuse, calling for help, and physically intervening. Children up to age 6 were more likely to be involved physically in the violence or in the precipitating events, while older children were more likely to call for help (Fusco & Fantuzzo, 2009). Therefore, children of any age are not passive observers of IPV, but are often active participants.

Associations between IPV and Child Behavioral Outcomes

A large body of research shows that IPV has negative effects on children who are being exposed to such violence in their own homes. It has been noted that the children exhibit increased behavioral, social/emotional, and cognitive problems as well as detriments in physical health (Evans, Davies, & DiLillo, 2008; Graham-Bermann, Lynch, Banyard, DeVoe, & Halabu, 2007; Voith, Gromoske, & Holmes, 2014; Graham-Bermann & Seng, 2005; Postmus, 2009). Postmus' (2009) research describes the behaviors children use to cope as ways to defend themselves against their fear by disguising it in other problems. These behaviors can manifest as internalizing problems, such as withdrawal, anxiety, and posttraumatic stress disorder, or externalizing tendencies, such as aggression towards others, truancy, and delinquency (Holmes, 2013; Postmus, 2009; Voith et al., 2014; Emery, 2011).

Evans, Davies, and DiLillo (2008) conducted a meta-analysis of the relationship between childhood exposure to IPV and its negative impact on child development. They found that IPV was significantly associated with increased childhood externalizing and internalizing behaviors and trauma symptoms (e.g. re-experiencing events in dreams or flashbacks, hyperarousal and exaggerated startle response, emotional withdrawal) in exposed children. Other research has also found that children exposed to IPV had higher levels of total behavioral problems when compared to non-exposed peers (Kernic, et al., 2003). Similarly, Emery (2011) found that IPV exposure was associated with significant increases in both internalizing and externalizing behavior problems, most profoundly in younger children. In a study of preschool aged children, it was found that aggressive behavior was associated with subsequent deficits in prosocial skills over a two year time period, with aggressive behavior also showing an increase prospectively (Voith et al., 2014). Similarly, it was found that IPV when a child was one year old had direct effects on externalizing and internalizing behavior problems at age 5, indicating the long term effects of IPV exposure (Huang, Viske, Lu, & Yi, 2015). Thus, the body of evidence suggests that IPV exposure during early childhood is linked to maladaptive behavioral development over time.

Behavioral consequences such as externalizing and internalizing problems can be disruptive in multiple developmental domains as well as predictive of later negative outcomes (Jouriles, McDonald, Rosenfield, Stephens, Corbitt-Shindler, & Miller, 2009). These negative outcomes may include problems in school, such as difficulties forming peer relationships, acting out in the classroom, diminished concentration and memory, challenges with organizational or language abilities, and perfectionist

tendencies (Postmus, 2009). Such problems have also been linked to negative rapport with peers, hostile understanding of authority, and familial strain, as well as the subsequent development of delinquent behaviors, thus inflicting cost on society (Emery, 2011).

How IPV can Influence Child Outcomes

Additional Risk Factors

Intimate partner violence does not occur in isolation but often within an adverse environment. In homes experiencing intimate partner violence, other commonly experienced disadvantages are poverty, single-parent household, low parental educational attainment, and substance exposure (Osofsky, 2003). These risk factors may be better characterized as the effects of an underprivileged environment, which can continue to permeate difficulty throughout a child's life (Gewirtz & Edleson, 2007). Children who are exposed to IPV are also more likely to be exposed to community violence and to be victims of physical and sexual abuse (Osofsky, 2003). Exposure to community violence can be as severe as witnessing a robbery, stabbing, shooting, and/or killing. In an urban sample from a Boston pediatric survey, 10% of children under the age of six had witnessed a shooting or a stabbing in their community (Fitzpatrick & Boldizar, 1993). Lambert and colleagues (2011) describe exposure to community violence as being influential on child development, as it increases the likelihood that children will exhibit behavioral and mental health problems, internalizing problems, and post-traumatic stress symptoms. In regards to physical abuse, in a study of Head Start preschoolers, 50% of families experiencing IPV were also experiencing child abuse (Graham-Bermann et al., 2012). Preschool

aged children were found to exhibit external and internal behaviors in the clinical range when they were both witnesses to and victims of abuse, demonstrating the amplifying nature of additional violence exposure (Sternberg et al., 2006; Kernic et al., 2003).

Exposure to Men as Batterers

With increased research on child exposure to IPV, most studies focus solely on the relationship between the mother and child when examining child outcomes. Although extremely scarce, some studies have begun to address the batterer as a father figure and, therefore, influential on child outcomes. A child's relationship with their mother's abuser, whether it was the father, stepfather, or a non-father figure, has been found to be a meaningful variable in examining child wellbeing (Sullivan, Juras, Bybee, Nguyen, & Allen, 2000). Some research has begun to examine whether the associations between IPV and child outcomes differ based on whether the abuser is a biological father or some other father figure. One study found that, although physical abuse did not differ between abusers, children whose mothers' abusers were not father figures scored higher in all subscales of competency and self-worth. Children with abusive stepfathers were more fearful and experienced higher levels of emotional abuse. Biological abusive fathers were the most likely to be emotionally available, however their children demonstrated the lowest self-competency (Sullivan et al., 2000). Additional findings suggest that a father's parenting quality may be more compromised than mother's parenting when the relationship consists of conflict, with studies noting that fathers show less engagement and more negativity towards their children (Cummings, Goeke-Morey, & Papp, 2004). Israel and Stover (2009) found that there were no significant differences between children who witnessed IPV

involving a biological father or a non-biological father figure; however, children who experienced IPV with multiple violent father or father figures had significantly more behavioral problems.

Stover and colleagues (2003) found that fewer visitations between children and previously abusive fathers were associated with higher internalizing and externalizing problems for children, suggesting that despite the occurrence of IPV, children still benefit from having contact with their fathers. However, when compared to frequency of visitations, the severity of the violence witnessed was a stronger predictor of children's externalizing problems, suggesting that children may only benefit from contact when fathers are relatively less violent. Similarly, Hunter and Graham-Bermann (2013) found that a child's contact with a less violent father or father figure might have a buffering effect on behavior problems in children who witness IPV. Another noteworthy finding is that children have been reported to have a positive relationship with a biological father, even after their father has perpetrated violence (Israel & Stover, 2009). However, McDonald and colleagues (2000), found an increase in child internalizing and externalizing behavior problems due to paternal violence after controlling for demographic variables, parent-child aggression, and maternal marital aggression. These findings demonstrate the complicated relationship between young children witnessing violence and having the perpetrator of this violence be their father or father figure.

Maternal Functioning and Parenting Quality

Some studies have shown that maternal functioning is directly related to child internalizing and externalizing problems (McFarlane, Symes, Binder, Maddoux, & Paulson, 2014; Yoo, 2014). Maternal psychological problems (e.g., depression,

anxiety) that may result from IPV have been found to correlate with lower parenting quality and thus can influence child outcomes (Hungerford, Wait, Fritz, & Clements, 2012; Yoo, 2014). Levendosky and colleagues (2003) found that IPV was correlated with maternal psychological health through increased levels of depression and PTSD, which in turn correlated with lower levels of parenting effectiveness. With decreased levels of parenting effectiveness, higher levels of children's externalizing behaviors were exhibited (Levendosky, Huth-Bocks, Shapiro, & Semel, 2003).

However, other research has found that mothers who experienced recent IPV were emotionally available and used non-corporal punishment to discipline their children, indicating that abuse of mothers did not affect their level of parenting stress or use of harsh discipline, thus suggesting that violence exposure does not always adversely affect parenting quality (Sullivan, Nguyen, Allen, Bybee, & Juras, 2000). Other research suggests that mothers who have experienced IPV in fact have higher levels of mother-child attachment compared to mothers who do not experience IPV, suggesting that the mother-child relationship may be protected from the damaging effects of IPV and that mothers may attempt to overcompensate in their parenting following violence exposure (Levendosky et al., 2003).

Variations in Associations between IPV and Child Outcomes

Characteristics of Violence

The duration, severity, and forms of violence that children experience can influence wellbeing and outcomes. Jouriles and colleagues (1998) found that children who were exposed to intimate partner violence involving knives or guns were more likely to exhibit problem behaviors than children exposed to violence without

weapons. Similarly, it has been found that although exposure to verbal conflict was associated with moderate levels of behavior problems, verbal conflict combined with physical aggression was associated with clinically significant levels of internalizing and externalizing behavior problems for children (Fantuzzo, DePaola, Lambert, Martino, Anderson, & Sutton, 1991). Greater duration of inter-parental violence is correlated with children's increased reaction to future violence as well as increased problem behaviors (Grych & Fincham, 1990; Grych, Wachsmuth-Schlaefel, & Klockow, 2002). Therefore, violence that is more intense, severe, and/or continuous contributes to elevated levels of child maladjustment.

Gender

An emergent pattern within the literature has described boys and girls as responding differently to violence exposure, with evidence that boys were more likely to exhibit externalizing behaviors while girls were more likely to exhibit internalizing behaviors (Holt, Buckley, & Whelan, 2008). Supporting evidence was presented by Evans and colleagues (2008) who showed that, although gender was not linked with differences in internalizing behavioral, boys did exhibit higher levels of externalizing behaviors. Externalizing behaviors have been associated with boys' experiences of higher levels of threat during violence exposure, and internalizing behaviors have been associated with girls' higher levels of self-blame of violence (Grych, Fincham, Jouriles, & McDonald, 2000; Kennedy, Bybee, Sullivan, & Greeson, 2009). However, in Sternberg and colleagues' (2006) meta-analysis examination of type of violence, age, and gender differences and the effects of children's behavior problems, they found that behavior problems as consequence of violence exposure did not differ by gender. Due to such inconsistencies, data do not reliably support specific gender

differences as a predictor of severity or nature of the effects intimate partner violence exposure has on children (Carlson, 2000).

Age

Some researchers have examined different age-related effects of violence exposure. It was found in Sternberg and colleagues' (2006) meta-analysis that, even though younger children were exposed to violence during the development of early childhood capacities, their externalizing and internalizing behaviors were not higher than those of unexposed children. Similarly, Evan and colleagues (2008) found that there were no differences in the results between children aged 0-5, 6-12, or 13-18 years old. Despite these findings, it must be noted that due to the dependency of preschoolers on their caregivers for security and safety of their environment, in addition to their likelihood of being present during violence occurrences, it is reasonable to consider younger children to be at an elevated level of risk in their exposure to intimate partner violence. With earlier and increased exposure to intimate partner violence, it has been argued that younger children exhibit more severe problems in addition to disruption of subsequent developmental stages (Cunningham & Baker, 2004). In a compilation of research findings, Carlson (2000) summarizes preschool effects of witnessing partner violence through multiple domains of development. Behaviorally, children showed aggression and behavior problems. Emotionally, they displayed fear and anxieties, sadness, worry about their mother, posttraumatic stress disorder, and negative affect. Physically, they were highly active, demanding, whiny, clinging, and regressive. Preschoolers were also found to have limited understanding about violence and high levels of self-blame. Socially, children exhibited trouble interacting with peers and adults and ambivalent relationships with

caregivers. With these contradictory findings, it is important to scrutinize whether or not a child's developmental stage may act as an additional risk factor for maladjustment for IPV exposure.

In summary, the existing research shows that being exposed to IPV is a traumatic event for a child that can have lasting influences on their development in multiple domains. Preschool aged children have a higher likelihood of exposure to violence in their home compared with older children, therefore putting them at elevated risk. IPV often occurs in addition to other environmental adversities, with a significant possibility that violence in the home will lead to police contact. Thus, children are likely to experience both IPV and the arrest and incarceration of a parent. Although women are most commonly found to be the victims of violence, there is the possibility that police response to IPV could cause incarceration of mothers as well. In addition, research has indicated that past experiences of IPV are significantly higher among incarcerated than non-incarcerated women (Green et al., 2005) likely due to the fact that female prisoners often experience a multitude of adverse events prior to incarceration. Therefore, it is important to examine the outcomes for children who not only experience IPV exposure, but also experience the arrest and sentencing of their mother in their early childhood years, especially as there may be cumulative effects on child behavior.

Maternal Incarceration

In 2007 it was reported that the nation's prisons held approximately 65,600 mothers, more than doubling the number of minor aged children with a mother in prison since 1991 (Glaze & Maruschak, 2008). In the month prior to incarceration, mothers were more likely than fathers to live in a single-family household with their

child, thus acting as the predominant provider of daily care, both financially and emotionally (Glaze & Maruschak, 2008). During incarceration, mothers were more likely to report the child's grandmother as the current caregiver, followed by the father, other relatives, and foster homes, agencies, or institutions, respectively, whereas families with incarcerated fathers are more likely to remain intact (Reed & Reed, 1997). Additionally, mothers were more likely than fathers to re-assume the parenting role following the completion of their sentence (Glaze & Maruschak, 2008). These findings demonstrate the importance of the roles and responsibilities that mothers have in regard to their children prior to and following their incarceration. As women offenders are the fastest growing group of prisoners (Reed & Reed, 1997), this has great implications for their children's wellbeing.

Women Offenders

Greenfeld and Snell (1999) found characteristics of women offenders were as follows: predominantly minority races, between 25 and 34 years old, never married, with a high school degree or GED equivalent, with slightly more than 2 children on average, and lacking full time employment prior to their incarceration. When compared to male counterparts, women received lighter sentences and served shorter amounts of time (Greenfeld & Snell, 1999). Significantly, mothers were also more likely than fathers to report maintaining contact with children during their incarceration, with more than 50% having weekly contact (Glaze & Maruschak, 2008). Mothers were more likely than fathers to have a family member who was also incarcerated, to have a parent or guardian who abused drugs or alcohol during their youth, to report homelessness, to have medical and mental health problems, and to claim substance dependency or abuse. Women were more likely to be incarcerated for

drug or substance related charges than any other charges (Glaze & Maruschak, 2008). The substance dependence is further demonstrated as nearly 60% of women in state prisons used drugs in the month prior to their offense and approximately 50% described themselves as regular substance users (Greenfeld & Snell, 1999).

Most importantly, it has been found that women offenders report high rates of previous trauma exposure, specifically intimate partner violence and childhood trauma (Green et al., 2005). Estimates indicate that approximately half of all incarcerated women have been physically or sexually assaulted before their imprisonment (Greenfeld & Snell, 1999). This statistic is supported by other findings indicating that between 44% and 98% of women offenders report having IPV experiences prior to incarceration (Grella & Greenwell, 2007; Green et al., 2005). It has also been noted that many reports of victimization are often within the year prior to incarceration (Lynch et al., 2012). Additionally, studies show correlations between women's IPV experiences and criminalization and multiple health concerns such as depression, PTSD symptoms, and substance dependency (Green et al., 2005; Lynch et al., 2012). Drug use has similarly been shown to be correlated with negative life events and adversities, such as violence and abuse, for both males and females (Sharp, Peck, & Hartsfield, 2012). These studies illustrate that trauma is a significant precursor to incarceration for females and that experiences of interpersonal violence may be connected to their onset of criminalization (DeHart, Lynch, Belknap, Dass-Brailsford, & Green, 2014).

Although the intersection of criminalization, substance abuse, and violence victimization for women offenders has been examined in recent research, the interpretation of the findings are more complicated. It has been found that, for some

offenders, criminal activity was committed as a direct response to physical victimization, such as using drugs to self-medicate post abuse, being forced by an abuser into prostitution, shoplifting, or other crimes, or as consequence of retaliation against an abuser (Bowles, DeHart, & Webb, 2012; DeHart, 2008). While many women describe using drugs to cope with victimization, drug use also has a strong association with other criminal activity that becomes necessary to support their addiction, such as stealing, prostituting, and violence (Bowles et al., 2012). Research has also suggested that substance abuse may be a catalyst for violence, such that women who abuse drugs are likely to be in relationships with partners who also abuse drugs, and that such relationships are more prone to violence (Kantor & Asdigian, 1997). While drug use itself has been found to increase the possibility that IPV will occur, it has been noted that drug use is illegal and characteristic of a risky lifestyle which may be more predictive of IPV experience than drug use itself (Testa, Livingston, & Leonard, 2003). While a causal relationship is difficult to discern, the connection between substance abuse, victimization, and criminalization has been well documented in the examination of pathways to prison for women offenders.

Children Experiencing Maternal Incarceration

Given the recent rise in female incarceration rates, it is appropriate to predict that an increasing number of children will experience the social phenomenon of maternal incarceration. While considered to be among the most vulnerable and at-risk, children with imprisoned mothers are also described as one of the least visible populations, even nonexistent to larger society (Reed & Reed, 1997). The exact number of children affected by maternal incarceration is unknown because corrections departments, jails, and schools do not require data to be collected from this population

(Young & Smith, 2000; Poehlmann, Dallaire, Loper, & Shear, 2010). There are no federal, state, or local agencies responsible for gathering information about the children who are separated from their mothers or what happens to them during her incarceration, and there are no formal policies to inform welfare or law enforcement agencies to keep track of these children (Dallaire, 2007a). Additionally, the information that has been gathered is obtained from inmates in correctional facilities and focused on them rather than their children (Arditti, Lambert-Shute, & Joest, 2003). This information then tends to be viewed through a criminological, demographic, or sociologic lens and not one of reform or intervention (Arditti, 2005). Although narrow in accuracy, estimates suggest there are 1.3 million children in the United States with a mother in jail, prison, or on parole (Mumola, 2000).

Maternal Incarceration as Ongoing Trauma

A family member's incarceration can be just one of a continuous string of traumatic events for young children. Approximately 1 out of 5 children are present to witness a mother's actual arrest, thus exposing them to trauma before the incarceration actually occurs (Gabel & Johnston, 1995). Mothers have described the arrest as frightening and emotionally distressing for the children, with accounts of sudden nighttime arrests, doors being broken down, and sometimes, violence (Murray & Murray, 2010). Following an arrest, children often do not have stable or enjoyable contact with their incarcerated mother (Shafer & Poehlmann, 2010). Female offenders have the lowest probability of being in a facility located near family, which has been found to be a great influence on the frequency of visitations (Casey-Acevedo & Bakken, 2002). Caregivers responsible for coordinating and financing visitations between mothers and children have been reported to be economically disadvantaged

and to experience health concerns, emotional stress, and parenting strain (Arditti et al., 2003). It is not surprising that most prisons are not child-friendly. Accounts of child visitations have been described as upsetting due to a lack of physical contact, frightening staff and procedures, and overall unpleasantness (Arditti, 2003; Shlafer & Poehlmann, 2010).

Associations between Maternal Incarceration and Child Behavioral Outcomes

Although there is scarce high-quality research on this unique population of children, the current data suggest children experience significant disadvantages following maternal incarceration, which influences multiple developmental outcomes. Parental incarceration has been found to have a high correlation with child psychopathology (Murray & Murray, 2010) in terms of antisocial and internalizing behaviors. Additionally, children of incarcerated mothers are more likely to exhibit problem behaviors, to have cognitive disadvantages, and to experience their own incarceration (Murray & Murray, 2010; Poehlmann, 2005a; Dallaire, 2007b).

According to the mothers and caregivers in Poehlmann (2005a), most young children exhibited multiple emotional and behavioral reactions, such as separation sadness, confusion, worry, anger, acting out, developmental regression, and sleep problems following a mother's incarceration. Geller, Garfinkel, Cooper, and Mincy (2009) found that maternal incarceration is associated with economic, family, and residential instability, as well as increased aggressive behavior by age 3. Maternal incarceration during childhood is strongly related with a child's own subsequent criminal behavior and adult conviction even after controlling for background risk factors (Huebner & Gustafson, 2007; Dallaire, 2007b). Factors that elevate the risk of future criminal behavior in preschool-aged children experiencing maternal

incarceration include inappropriate expression of emotions through aggressiveness, belief that the justice system is unfair, and lack of school readiness (Cunningham & Baker, 2003). Similarly, Wildeman and Turney (2014) found that children of incarcerated mothers showed more internalizing problems (e.g., withdrawn or depressed behaviors) and that at age 5, there were also indications of increased externalizing behavior problems.

In addition to focusing on studies that are specific to maternal incarceration, it is also important to consider research that has looked at *parental* incarceration more generally, as some such studies have found differences in child outcomes based on which parent is incarcerated. Shlafer & Poehlmann, (2010) found that children displayed high levels of both externalizing and internalizing behaviors (e.g., fighting, withdrawal, and challenges with friendships and peers) when experiencing either paternal or maternal incarceration. However, for children experiencing maternal incarceration specifically, there was a decrease in caregiver stability, which indicated increased risk for that child. It was noted in Murray & Murray (2010), in comparison, incarcerated mothers reported greater child behavior problems than incarcerated fathers following their arrest. Teachers in Dallaire, Ciccone, and Wilson's (2010) study found that children with incarcerated parents exhibited challenging behaviors including emotional disturbances and externalizing and internalizing behaviors, with children of incarcerated mothers being at a unique disadvantage due to having less social support and greater instability. Dallaire and colleagues (2015) found that children who experienced risk factors that were specifically related to a mother's incarceration (e.g., not being in contact with mother, changing schools, being separated from siblings, or having a new caregiver) demonstrated heightened levels of

internalizing and externalizing behaviors. As previously stated, children of incarcerated mothers are more likely to follow a path of delinquency and criminality. Findings reported by Dallaire (2007b), in a comparison between mothers and fathers, indicated that incarcerated mothers were 2.5 times more likely than incarcerated fathers to report having an adult child who had been incarcerated. Ultimately, with the likelihood of the mothers being primary caregivers to young children prior to their arrest, as well as the probability that the child will have to disrupt its environment multiple times following an arrest, it is important to focus specifically on how a mother's incarceration influences child wellbeing.

How Maternal Incarceration can Influence Child Outcomes

Risk Factors

Prior to incarceration, mothers have been found to experience multiple risk factors such as poverty, familial incarceration, a history of abuse or neglect, limited education, unemployment, mental health problems, alcohol and drug abuse, and experienced interpersonal violence and trauma (Makariev & Shaver, 2010; Myers, Smarsh, Amlund-Hagen, & Kennon, 1999; Dallaire, 2007a, Green et al., 2005). With the understanding that these mothers are also the primary caregivers to their children prior to incarceration, children whose mothers are incarcerated experience this traumatic event as one of many ongoing risk factors. Poehlmann (2005a) found that among young children experiencing maternal incarceration, 88% also experienced 4 or more other risk factors across contextual levels, such as biological risk (e.g., premature birth), maternal risk (e.g., mental illness and depression), and caregiver risk (e.g., caregiver stress and financial burden). The greater exposure to risk factors was

related to increased cognitive disadvantage in the form of lower functioning and delays. When these various risk factors are exacerbated by a mother's incarceration, children are highly susceptible to trauma related responses such as fear, anxiety, and sadness or grief, which can be manifested in reactive behaviors such as physical and verbal aggression, withdrawal, and hyper-vigilance (Reed & Reed, 1997). Dallaire, Zeman, and Thrash (2015) found that children experiencing risk factors specific to maternal incarceration were at higher risk for maladjustment than those exposed to general environmental risk factors.

Quality Caregivers and Attachment Disruption

Maternal incarceration results in subsequent disruptions and displacements in a child's environment. Children are not only separated from their primary caretaker, but usually experience at least one additional change in either caregiver or environment following a mother's incarceration (Dallaire 2007b; Myers et al., 1999; Poehlmann, 2005b). During this tumultuous time, caregiving can either provide support or increase the risk for these children. Research has shown that as risk factors increase for the current caregivers, they become less likely to provide a stimulating and safe environment for children (Poehlmann, 2005b). Similarly, it was found that children who felt lower levels of warmth and acceptance from their current caregiver displayed higher scores in both internalizing and externalizing behaviors. These caregivers also reported that they experienced lower warmth and acceptance and higher levels of stress when children exhibited difficult behaviors (Mackintosh, Myers, & Kennon, 2006). Given that maternal incarceration often leads to lengthy mother-child separations and numerous disruptions in caregiving and environment for children, the risk for insecure attachment and later psychopathology is high (Murray & Murray,

2010). One study found that a majority of the children (63%) showed evidence of insecure attachments to both their incarcerated mother and their current caregiver (Poehlmann, 2005b). With attachment representation acting as the context for a child's development of mental representations of self and others that influence behavioral and emotional reactions to their environment and relationships, insecure attachment is noted as leading toward interpersonal incompetence (Bowlby, 1982; Bretherton, 1996).

Social Stigma

“Children of incarcerated parents” is becoming a common term, however it should be remembered that this label delineates a group of children who share only their stigmatized characteristic of having a parent in prison (Phillips & Gates, 2011). Unlike the loss of a parent due to death or divorce, the loss of a parent due to incarceration is often not socially accepted. Society does not respond with sympathy or support, which may in turn lead to a child's feeling of shame or guilt (Arditti et al., 2003). Even if discrimination is not based on a characteristic possessed by a child, they are still aware of social perceptions of stigmatized groups and stereotypes and how it may affect the way in which others judge them (Nesmith & Ruhland, 2008). Due to the attached stigma, children often hide the fact that their parent is incarcerated from friends, teachers, and other possible social supports. Individuals who hide stigmatized differences often experience increased stress due to fear of social discovery and may in turn isolate themselves (Phillips & Gates, 2011). Thus, stigma prevents children from receiving appropriate support, which is needed after losing a parent to incarceration. This stigmatization is hypothesized to be an influential factor

in the development of behavioral and emotional problems in children with incarcerated parents (Phillips & Gates, 2011).

Variations in Associations between Maternal Incarceration and Child Outcomes

Gender

Similar to exposure to IPV, gender could be considered a factor that moderates children's risk for negative effects of maternal incarceration. To date, however, there has been no definitive study documenting gendered outcomes for children experiencing maternal incarceration. A number of studies that have examined gender differences have failed to find significant evidence that outcomes differ for boys versus girls. For example, Dallaire and colleagues (2015) found no gender differences between internalizing and externalizing behaviors among children with incarcerated mothers. Wildeman and Turney (2014) also found that girls and boys did not respond significantly differently to maternal incarceration in any of the 21 outcomes considered. These outcomes were focused on behavior problems reported by both the caregiver and a teacher, such as aggression, attention difficulties, internal, and external behaviors. However, it was noted that the interaction coefficient sometimes indicated a less favorable effect for boys. Conversely, Block and Potthast (1998) found that incarcerated mothers reported that their daughters had more emotional problems such as depression, anger, and bedwetting following a mother's arrest. Overall, however, there does not appear to be sufficient evidence to suggest that the effects of maternal incarceration differ by child gender.

Age

Masten and Cicchetti (2010) discuss early experiences as potentially leading to developmental cascades, which refer to the cumulative developmental consequences that result from interactions and transactions occurring within a child's changing ecology. These developmental cascades result in changes in development across domains and ages. Given that developmental consequences accumulate over time, it is reasonable to expect that earlier traumatic events may be more detrimental than those that occur later in life. Separation from a primary caregiver is a significant adverse event that is most likely to occur among children who are under 10 years of age (Mumola, 2000). Specifically, Gabel and Johnston (1995) described preschool aged children as being the most likely to witness the crime and arrest of a mother. Young children may witness the criminal activities leading up to the arrest as well as events during the arrest, which can be stressors in addition to the separation from their primary caregiver. Maternal incarceration during the preschool years can lead to a regression in behavior, the inability to develop autonomy and independence, and failure to demonstrate a confident self-concept (Myers et al., 1999). Gabel and Johnston (1995) also found that children in early childhood have a difficult time recognizing themselves as completely distinct from their parents and therefore experience their caregiver's trauma as their own. Preschool-aged children may also feel guilty or responsible for their parent's removal (Myers et al., 1999). Young children often have a limited ability to understand maternal incarceration and they may lack skills to cope with their emotions appropriately (Cunningham & Baker, 2003). Therefore, early childhood may be a particularly vulnerable period for children of incarcerated mothers, as it is during the early years that children are most likely to witness both crimes and arrests and because young children may lack the skills needed

to understand and cope with the associated trauma. When considered in conjunction with the fact that young children are likely to experience continued displacement of caregivers, environments, and schools, this population may be the most susceptible to negative outcomes following maternal incarceration. Therefore, it is imperative that research focuses on this age group to better understand their unique needs and provide support and services.

Summary

As previously stated, IPV is threatened, attempted, or completed physical, sexual, or emotional abuse between romantic partners. With the likelihood of young children being present in the house, their inability to conceptualize the reality of the situation, and the perceived threat to their primary caregiver, their mother, IPV is a traumatic and emotional event. Similarly, young children who experience their mother's imprisonment are also surrounded by detrimental events that are very similar to those experienced by children who witness IPV. Children who witness their mother's arrest and imprisonment are also likely to be in the home during the arrest, to be unable to understand the disruption in their household and living environment, as well as to be removed from their primary caregiver. IPV and maternal incarceration are both traumatic and stressful experiences that have been shown to be associated with children's behavioral problems. Not only are these two experiences traumatic independently, they are both found to be associated with additional risk factors that increase a child's probability of further negative outcomes. With the high prevalence of IPV prior to incarceration for women, it is probable that many children experience both of these traumatic circumstances as well. Cumulative risk theory can provide a lens through which to examine the relation between IPV and maternal incarceration

congruently to assess whether there are cumulative influences on children's developmental outcomes. For young children who experience high levels of trauma and risk, and whose environment and relationship with their primary caregiver is threatened and disrupted, it is likely that exposure to both IPV and maternal incarceration would be associated with higher levels of behavioral problems than would be seen among children who experience only one of these risk factors individually.

Current Study

Given the previously reviewed literature, IPV and maternal incarceration are both stressful, potentially traumatic events that many children experience. However, the literature is lacking in examining these two significant traumatic events congruently during a child's early years of development. To date there have been no examinations of the possible behavioral outcomes for preschool age children who have been exposed to both maternal incarceration and IPV. With the possibility that IPV and incarceration may cluster within households, children could experience these potentially traumatic events concurrently. The probability of these two experiences happening in a young child's life is based on the review of previous literature, which suggests that women are usually the victims of IPV (Breiding, 2015), that many of these women are mothers (Glaze & Maruschak, 2008), and that young children typically witness such violence (Fusco & Fantuzzo, 2009). In addition, many incarcerated women report being the victims of IPV in the year prior to their incarceration (Grella & Greenwell, 2007; Green et al., 2005). It is possible that mothers may be arrested following an IPV dispute, which brings the police to the residence, but it is more likely for an arrest to be made for other criminal activities that

occur in households that also experience IPV. As noted previously, substance abuse and crimes related to IPV are often described for women offenders. Drug use to cope with victimization, crimes committed to support a drug habit, or being coerced by an abuser into criminality such as prostitution or stealing have all need documented through examinations between IPV, incarceration, and drug use for women (Bowles et al., 2012). Cumulative risk theory suggests that as risk factors increase, so do negative developmental outcomes (Seifer et al., 1992). Using this theoretical lens, the cumulative risk of both IPV exposure and maternal incarceration on child behavioral outcomes can illuminate the specific needs that may be warranted for this unique population of children. To date, no study has attempted to examine both IPV and maternal incarceration using this theoretical perspective.

Chapter 2

METHODS

Given the current gaps in the literature, the goal of the current study was to examine links between both IPV and maternal incarceration and child internalizing and externalizing behaviors during the preschool years. This study expands on existing research in a number of ways. First, it expands current insight into the negative relations between potentially traumatic events and preschool-aged child outcomes for both IPV exposure and maternal incarceration. Similar to previous studies, the potential effects of exposure to IPV and maternal incarceration were studied separately in order to observe the associations these individual experiences have on child outcomes. Then, it is the first study to examine the possible accumulating risk of experiencing both potentially traumatic events together. This study also expands current knowledge with the use of a unique, national sample of children living in primarily low income, fragile families. The results describe the possible outcomes for children who are exposed to IPV, who experience maternal incarceration, or who have endured both events by the age of five. The following specific aims were examined:

Specific aim 1. To examine whether there are negative associations between IPV exposure and child behavioral outcomes among urban, low-income children by the age of five. It was hypothesized that children who experienced IPV would exhibit higher internalizing and externalizing behaviors by the age of five.

Specific aim 2. To examine whether there are negative associations between maternal incarceration and child behavioral outcomes among urban, low-income

children by the age of five. It was hypothesized that maternal incarceration would be associated with higher internalizing and externalizing behaviors by the age of five.

Specific aim 3. To examine whether there is a cumulative effect of both maternal incarceration and IPV exposure on children's internalizing and externalizing behaviors at age 5. It was hypothesized that there would be increased internalizing and externalizing behavioral problems among children who experience both maternal incarceration and IPV by age five.

Data and Sample

To examine the relationship between IPV, maternal incarceration, and preschool aged child outcomes, data were drawn from the longitudinal *Fragile Families and Child Wellbeing Study* (FFCWS). FFCWS is a nationally representative, stratified, multi-stage, probability sample of children born in 20 large U.S. cities with populations over 200,000. Baseline data were collected between February 1998 and September 2000 and interviews with mothers and fathers were conducted in hospitals within 48 hours of the child's first birth, with non-marital births being oversampled. Subsequent interviews were conducted when children were 1, 3, 5, and 9 years old with the child's primary caregiver and father (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Response rates were relatively high throughout all interviews, 89%, 86%, 85%, and 74% for one, three, five, and nine-year follow-ups respectively (Reichman et al., 2001). FFCWS was designed to examine the roles of social and material disadvantage in determining child wellbeing (Geller et al., 2009).

The current study utilizes data from the first, second, and third follow-up waves of the FFCWS, which included interviews with mothers, fathers, and caregivers of children who were one, three, and five years old at the time of each interview. The

analytic sample was limited to children who had complete data on all key variables at each wave of data collection. This resulted in an analytic sample of 2,216 children. Given the large oversample of non-marital births and the low-income urban nature of the sample, the families in the current study may be more likely than the general population to experience potentially traumatic events such as maternal incarceration and IPV, thus affording greater power to detect significant associations with child outcomes. The following study was submitted to the University of Delaware IRB for approval on December 1st 2015 and was granted exemption from further IRB review on December 2nd 2015. For full IRB Approval see Appendix A.

Measures

The current study utilizes data that were drawn from mother, father, and primary caregiver reports when the children were 1, 3, and 5 years old. Full descriptive information can be found in Table 1. The following measures were included in the analyses:

Independent Variables: Mother's Report of IPV, Maternal Incarceration, or Both

IPV. IPV was measured using multiple questions from each wave of interviews, which were recoded to create a final IPV variable. In each wave, mothers were asked about acts of violence they had experienced since the time of the last interview from either biological fathers with whom they were still romantically involved, biological fathers with whom they were no longer together, and their current partner. These questions included whether or not they had been slapped or kicked, had been hit with a fist or other objects, or had been sexually coerced. Mothers answered whether these experiences happened often, sometimes, or never. If mothers indicated

that violence occurred sometimes or often they were recoded to 1 to indicate that IPV occurred. If they answered that violence never occurred, they were recoded to 0 to indicate that IPV did not occur. At year 5, mothers' interviews included questions about additional acts of violence such as having something thrown at them and being pushed, shoved, or grabbed. If mothers reported any physical or sexual coercion by any partner at any point of their interview in any of these three waves, they were considered to have experienced IPV (coded as a 1, versus codes of 0 for mothers who never indicated any instance of violence). Additionally, interview questions at year 3 and year 5 included clarifications as to whether the violence had occurred in front of the child or while the child was in the home. These questions were recoded to a dummy variable indicating whether children had been exposed to IPV (i.e., whether it had ever occurred in front of the child or while the child was present in the home). This variable was used to examine whether children who were exposed to IPV exhibited higher internalizing or externalizing behavior problems.

Incarceration. Maternal incarceration was measured using a series of direct and indirect questions drawn from a number of reporters at each wave. Direct questions were specifically included in the year three interview and asked mothers if they had spent time in a correctional institution and whether or not this was an adult correctional facility, each being coded as 1 for mothers who reported that they had spent time in a correctional institution. More indirect questions were asked at years one, three, and five to determine mother's incarceration. Mothers were asked at each of these waves about whether they had ever been separated from their child, and if so what the reason was for the separation. For the current analyses, mothers were coded as 1 if they indicated that they were separated from their child because they were

incarcerated. Additionally, mothers were asked about their current living situation, with one possible response being that they currently lived “in jail.” Mothers who indicated living in jail were also coded as one to indicate that experienced incarceration. Finally, unemployed mothers were also asked to report why they were not currently looking for a job, with one of the possible response categories being that they were not looking because they were currently incarcerated; these mothers were also coded as a 1 in the current analyses.

In addition to mothers’ reports of their own incarceration, fathers were also asked to report on mothers’ incarceration. Fathers who were no longer in a relationship with mothers were asked to report the reason the relationship ended, to which they could respond, “mother’s incarceration” at all waves. In year three and five, fathers were asked directly if the mother had been in jail recently or was currently in jail. Year five also included a question to the father about why the mother did not see the child, in which “she is in jail” was an included response. If fathers indicated that mothers had been incarcerated on any of the above items, mothers received a code of 1 indicating that they had been incarcerated. Maternal incarceration was thus determined if either mothers or fathers indicated that the mother had been incarcerated on any of the indirect or direct questions. The final maternal incarceration variable was created as a dummy variable in which mothers were coded as 1 if there was any indication that they had been incarcerated by the time of the year 5 interview and as 0 if there was no indication of incarceration (i.e., if they were coded as not being incarcerated on all of the above questions).

Dependent Variable: Child Internalizing and Externalizing Behavior Problems

Child Behavior Problems. Child internalizing and externalizing behaviors were measured using the Child Behavior Checklist (CBCL), which was reported by the mothers or primary caregivers at year 5. The CBCL is a widely used method of identifying problem behaviors as a component of the Achenbach System of Empirically Based Assessment (Achenbach & Rescorla, 2000). The preschool checklist (CBCL/1 ½ -5) was used to measure problems identified by parent or current caregiver for children in this study. The checklist consists of a number of statements about the child's behavior (e.g. Gets in many fights, Too fearful or anxious) and responses are recorded on a Likert scale: 0 = *Not True*, 1 = *Somewhat or Sometimes True*, 2 = *Very True or Often True* (Achenbach & Rescorla, 2000). The preschool checklist contains 100 questions with similar questions grouped into a number of syndromes such as aggressive behavior and their scores are summed to produce a score for the syndrome. Some syndrome scales are further summed to provide scores for Internalizing and Externalizing problem scales (Achenbach & Rescorla, 2000), which are the two scales used in the current analyses. The final Internalizing Behaviors scale ranged from 0 to 20 and the final Externalizing Behaviors scale ranged from 0 to 41. Higher scores indicate more problem behaviors.

Control Variables

The current study utilized both child and mother covariates to control for potentially confounding factors. Child age was coded as a continuous variable indicating age in months, which ranged from 56 – 74 months. Child race was coded using a series of dummy variables indicating whether children were Non-Hispanic White, Hispanic, or Other Race (with non-Hispanic Black being the excluded

variable). Child's sex was coded as 1 = male and 0 = female. Household income (measured in dollar increments) was also controlled for, ranging from \$0 – \$133,750. Mother's education was reported by mothers and was coded as a continuous variable, with mothers ranging from 0 = less than a high school degree up to 3 = college or graduate school. Analyses also controlled for mothers' reports of whether they were married or cohabiting with child's father at the time of the child's birth, using dummy variables for either "1 = yes" or "0 = no" answers (with single being the excluded category).

Analyses

A series of OLS regression analyses was used to test each of the specific aims in the current study. The first set of regression analyses regressed each outcome variable (i.e., CBCL externalizing and CBCL internalizing) on IPV exposure and a full set of covariates. The second set of analyses regressed the outcome variables on maternal incarceration and all of the covariates. Finally, the last set of analyses utilized dummy variables indicating whether children experienced: 1) no IPV and no maternal incarceration; 2) IPV only; 3) maternal incarceration only; or 4) both IPV and maternal incarceration. Post-hoc analyses enabled a complete comparison of internalizing and externalizing behaviors for each of these groups. All analyses controlled for the child's age, sex, and race and for the mother's household income, education level, and marital status with child's biological father. The primary analyses were run using SPSS version 23 and post-hoc analyses were run using Stata MP.

Chapter 3

RESULTS

Analyses of the data were done to determine whether IPV, maternal incarceration, or both were associated with child's internalizing and externalizing problem behaviors at age five. First, descriptive statistics are discussed, followed by the findings from the OLS regression analyses.

Descriptive Statistics

In the current sample, 3.7% of mothers were reported to have experienced maternal incarceration by the time of the year 5 interviews. More mothers (12.3%) reported any experience of IPV and 2.4% of mothers were reported to experience both IPV and incarceration. Descriptive analyses show the average child was just over five years old (61.87 months) at the time of the wave 4 interviews, with 47.6% being female and 52.4% being male. Most children were Non-Hispanic Black (44.7%), with Hispanic, Non-Hispanic White, and Other making up the remainder at 22.7%, 15.8%, and 16.8% respectively. On average, household income was \$31,994.04. Approximately one-third (34.7%) of mothers had less than a high school degree, versus 65.2% having a high school education or higher. Mothers were found to be mostly single (39.4%), followed by cohabitating (36.4%) and married (24.2%). These statistics highlight the specific population of families that participated in this study and the Fragile Families and Child Wellbeing Study overall. Additional descriptive statistics can be found in Table 1.

Table 1. Descriptive statistics (*n* =2216)

	Total Sample
	<i>M</i> (<i>SD</i>)/ %
<i>Independent Variables</i>	
% of Moms incarcerated by wave 4	3.7%, (n=180)
% of Moms experiencing IPV by wave 4	12.3%, (n=601)
% of Moms experiencing IPV and incarceration by wave 4	2.4%, (n=119)
<i>Covariates</i>	
Household Income (range=\$0-\$133,750)	31,994.04 (31,567.17)
Child Age (range 56-74 months)	61.87(2.86)
Child Race	
Non-Hispanic Black	44.7%
Hispanic	22.7%
Non-Hispanic White	15.8%
Other	16.8%
Child Gender	
Female	47.6%
Male	52.4%
Mothers' Education	
Less than high school	34.7%
High school education	30.2%
Some college	24.3%
College or graduate school	10.7%
Mom married	24.2%
Mom cohabiting	36.4%
Mom is single	39.4%
<i>Outcomes</i>	
CBCL Internalizing behavior problems (range = 0-20)	4.3 (3.5)
CBCL Externalizing behavior problems (range = 0-41)	9.9 (6.7)

Regression Analyses

A series of OLS regression analyses were used to examine the associations between mother's report of IPV, mother's incarceration, and reports of both IPV and maternal incarceration and child internalizing and externalizing behaviors.

IPV Predicting Children's Behavior Problems

The first regression analysis (shown in Model 1 of Table 2) examined the association between mothers' reports of IPV by wave 4 and child internalizing behaviors. The overall model examining the association between IPV and children's internalizing problems was significant ($F = 10.89$, $df = 10$, $p < .001$), accounting for 5% of the variance in internalizing behaviors ($R^2 = .05$). In this first analysis, mother's education was found to be significant, such that for each additional level of education mothers attained, children's internalizing behaviors were predicted to decrease by .27 ($p < .010$, $SD = .092$). It was also found that household income was a significant predictor of internalizing behaviors, with higher income being associated with fewer internalizing problems. In addition, children who reported being of some other race had higher predicted internalizing problems than non-Hispanic Black children. The strongest predictor of internalizing problems was being Hispanic, as these children had predicted scores that were 1.56 points higher than scores for non-Hispanic Black children. In contrast to what was hypothesized, there were no differences in internalizing scores for children whose mothers experienced IPV versus those whose mothers did not ($\beta = -.220$, $SD = .183$, $p > .05$).

The second model (Model 2 of Table 2) examined the association between IPV and children's externalizing behaviors. The overall model was significant ($F = 11.28$, $df = 10$, $p < .001$), accounting for 5.2% of the variance in externalizing behaviors ($R^2 = .052$). Child's age was found to be significant in reducing externalizing scores by .15 for each additional month of age ($p < .050$, $SD = .061$). For externalizing behavior, when compared to children whose mothers were single, children who other cohabitating with their biological father, scored decreased by .98 ($p < .010$, $SD = .331$). Children whose mothers were married were predicted to have CBCL externalizing

scores that were 1.5 points lower than children whose mothers were single ($p < .001$, $SD = .439$). Mother's education was also significantly associated with externalizing scores such that for every additional level of educational attainment, children's scores were predicted to decrease by .75 ($p < .001$, $SD = .174$). For child's sex, boys' externalizing scores were predicted to be 1.1 points higher than girls' scores ($p < .001$, $SD = .285$). Once again, in contrast to what was hypothesized, there were no differences in externalizing scores for children whose mothers experienced IPV versus those whose mothers did not ($\beta = -.445$, $SD = .347$, $p > .05$).

Table 2. IPV predicting Internalizing and Externalizing Behaviors

	<i>Model 1</i>		<i>Model 2</i>	
	<i>Internalizing (n=2089)</i>		<i>Externalizing (n=2051)</i>	
<i>Covariates</i>	β (SD)	B	β (SD)	B
Child age	-.036 (.032)	-.025	-.145 (.061)	-.053 *
Child is Non-Hispanic				
White	.375 (.240)	.040	-.054 (.453)	-.003
Child is Hispanic	1.562 (.203)	.179 ***	-.486 (.384)	-.030
Child is other race	.495 (.228)	.050 *	-.029 (.437)	-.002
Child sex	.088 (.150)	.013	1.117 (.285)	.085 ***
Household income	.000 (.000)	-.055 *	.000(.000)	-.066 *
Mom's education	-.272 (.092)	-.077 **	-.754 (.174)	-.113 ***
Mom is married to father	-.449 (.232)	-.055 +	-1.504 (.439)	-.097 ***
Mom is cohabiting with father	-.185 (.174)	-.025	-.976 (.331)	-.071 **
<i>Predictor Variable</i>				
IPV	-.220 (.183)	-.026	-.445 (.347)	-.028
<i>F(df)</i>	10.89(10)***		11.28(10)***	
<i>R</i> ²	.050		.052	

Note: * $p \leq .050$; ** $p \leq .010$; *** $p \leq .001$

Maternal Incarceration Predicting Children's Behavior Problems

The second set of regression analyses examined the association between maternal incarceration and child internalizing and externalizing outcomes, which is described in Table 3. For internalizing outcomes (Shown in Model 3 of Table 3), the overall model was significant ($F = 11.85$, $df = 10$, $p < .001$), accounting for 5.1% of the variance in externalizing behaviors ($R^2 = .051$). Findings showed that, children who reported being of some other race were predicted to score .53 points higher than children who were non-Hispanic Black ($p < .050$, $SD = .225$). Children who were Hispanic had scores that were predicted to be 1.6 points higher than those of non-Hispanic Black children ($p < .001$, $SD = .198$). Mother's education was found to be associated with a .28 point decrease for every additional level of educational attainment ($p < .005$, $SD = .090$). For children whose mothers were reported to have experienced incarceration by the time of the Wave 4 interviews, when compared to children whose mothers did not report incarceration, there were no differences in internalizing problem scores ($\beta = -.299$, $SD = .247$, $p > .05$).

For externalizing outcomes, the overall model of association between maternal incarceration and problem behaviors (shown in Model 4 of Table 3) was significant ($F = 11.30$, $df = 10$, $p < .001$), accounting for 5% of the variance in externalizing behaviors ($R^2 = .05$). For children whose mothers were cohabitating with their biological father, when compared to children of single mothers, externalizing scores were predicted to decrease by .68 ($p < .05$, $SD = .326$). Similarly, children whose mothers were married also had significantly lower CBCL scores than children whose mothers were single ($\beta = 1.4$; $p \leq .001$, $SD = .433$). Boys again were shown to

demonstrate an increase in problem behavior when compared to their female counterparts ($\beta = 1.220, p < .001, SD = .279$). Additionally, as mother's education attainment increased, children's externalizing scores were predicted to decrease ($\beta = -.72, p < .001, SD = .171$). Similar to the previous models, there were no differences in externalizing scores for children whose mothers experienced incarceration versus those whose mothers did not ($\beta = -.204, SD = .471, p > .05$).

Table 3. Maternal Incarceration predicting Internalizing and Externalizing Behaviors

	<i>Model 3</i> <i>Internalizing (n=2216)</i>		<i>Model 4</i> <i>Externalizing (n=2171)</i>	
<i>Covariates</i>	β (SD)	B	β (SD)	B
Child age	-.033 (.031)	-.023	-.101 (.059)	-.037
Child is Non-Hispanic				
White	.362 (.232)	.039	.007 (.442)	.000
Child is Hispanic	1.602 (.198)	.183 ***	-.512 (.377)	-.031
Child is other race	.529 (.225)	.052 *	-.149 (.430)	-.008
Child sex	.138 (.146)	.020	1.220 (.279)	.092 ***
Household income	.000 (.000)	-.051 +	.000(.000)	-.067 *
Mom's education	-.281 (.090)	-.079 **	-.720 (.171)	-.108 ***
Mom is married to father	-.379 (.226)	-.046	-1.437 (.433)	-.092 ***
Mom is cohabiting with father	-.115 (.171)	-.016	-.678 (.326)	-.049 *
<i>Predictor Variable</i>				
Maternal incarceration	-.299 (.247)	-.025	-.204 (.471)	-.009
F(df)	11.85(10)***		11.31(10)***	
R ²	.051		.050	

Note: * $p \leq .050$; ** $p \leq .010$; *** $p \leq .001$

IPV and Maternal Incarceration Predicting Children's Behavior Problem

The final set of regression analyses examined the relation between mothers' reports of both IPV and incarceration and internalizing and externalizing outcomes for their children. For internalizing behaviors (shown in Model 5 of Table 4), the overall model examining associations between IPV and maternal incarceration and child internalizing behavior problems was significant ($F = 9.01$, $df = 12$, $p < .001$), accounting for 5.1% of the variance in externalizing behaviors ($R^2 = .051$). Scores were predicted to be lower for children whose mothers were married to their biological fathers versus children of single mothers ($\beta = -.47$, $p < .05$, $SD = .235$). Scores were also found to decrease for children by .28 ($p < .05$, $SD = .093$) as mother's education attainment increased. It was found that children who reported being of some other race scored higher than non-Hispanic Black children ($\beta = .50$, $p < .05$, $SD = .232$), but that being of Hispanic race was associated with higher scores compared with non-Hispanic Blacks ($\beta = 1.57$, $p < .001$, $SD = .206$). Contrary to the current hypothesis, there were no significant differences found for internalizing behavior problems between children whose mother's reported both IPV and incarceration ($\beta = -.005$, $SD = .455$, $p > .05$) and children whose mothers reported IPV only ($\beta = -.270$, $SD = .207$, $p > .05$) or incarceration only ($\beta = -.305$, $SD = .336$, $p > .05$).

The overall model for externalizing behaviors and the combination of IPV and maternal incarceration (Model 6 of Table 4) was found to be significant ($F = 9.16$, $df = 12$, $p < .001$), accounting for 5.2% of the variance in externalizing behaviors ($R^2 = .052$). For externalizing behavior, it was found that children whose mothers were cohabitating or married to a child's biological father scored lower than those whose mothers were single. Cohabitating was associated scores that were .85 points lower than those of children whose mothers were single ($p < .050$, $SD = .335$), and marriage

was associated with lowered scores of 1.4 points compared with single ($p < .001$, $SD = .444$). Child's age and gender were also found to have associations with externalizing behavior as well. For each additional month of age, children's externalizing scores were predicted to decrease by .16 with a significance of $p < .050$ ($SD = .061$). It was found that boys scored 1.12 higher on externalizing behaviors than girls with a significance of $p < .001$ ($SD = .288$). Children, again, showed lowered scores in problem behaviors as mothers' educational attainment increased ($\beta = -.74$, $p < .001$, $SD = .176$). Once again, contrary to our hypothesis, there were no significant differences found for externalizing behavior problems between children whose mother's reported both IPV and incarceration and children whose mothers reported no IPV or incarceration.

Table 4. IPV and Maternal Incarceration predicting Internalizing and Externalizing Behaviors

	<i>Model 5</i> <i>Internalizing (n =2038)</i>		<i>Model 6</i> <i>Externalizing (n= 2002)</i>	
<i>Covariates</i>	β (SD)	B	β (SD)	B
Child age	-.038 (.033)	-.026	-.160 (.061)	-.058 *
Child is Non-Hispanic				
White	.834 (.243)	.041	-.073 (.457)	-.004
Child is Hispanic	1.573 (.206)	.180 ***	-.530 (.388)	-.032
Child is other race	.497 (.232)	.050 *	-.023 (.441)	-.001
Child sex	.067 (.152)	.010	1.120 (.288)	.085 ***
Household income	.000 (.000)	-.051	.000(.000)	-.068 *
Mom's education	-.276 (.093)	-.078 **	-.739 (.176)	-.111 ***
Mom is married to				
father	-.468 (.235)	-.057 *	-1.432 (.444)	-.092 ***
Mom is cohabiting with				
father	-.196 (.177)	-.027	-.849 (.335)	-.062 *
<i>Predictor Variable</i>				
IPV only	-.270 (.207)	-.029	-.545 (.392)	-.031
Incarceration only	-.305 (.336)	-.020	-.372 (.637)	-.013
IPV and Maternal	-.005 (.455)	.000	.814 (.853)	.021
Incarceration				
F(df)	9.01(12)***		9.16(12)***	
R ²	.051		.052	

Note: *p≤.050; **p≤.010; ***p≤.001

Chapter 4

DISCUSSION

The current study presents the results of a series of analyses aimed at examining the association between mothers' reports of IPV and maternal incarceration and children's internalizing and externalizing behaviors at age 5. Based on previous literature, it was hypothesized that children would exhibit higher internalizing and externalizing behaviors if they experienced either IPV or maternal incarceration. It was further hypothesized that problem behaviors would be highest among children who experienced both IPV and incarceration, as these could be considered cumulative risks. Interestingly, none of the hypothesized associations were found for the children in the current sample, with results instead indicating that neither IPV nor maternal incarceration are associated with internalizing or externalizing behaviors at age five. These results conflict with the findings of several other studies that have shown that both IPV and incarceration are associated with children's behavioral problems (Evans et al., 2008; Kernic et al., 2003; Huang et al., 2010; Poehlmann, 2005b; Geller et al., 2009).

There are several possible reasons why the current study failed to find significant associations between IPV, maternal incarceration, and child behavioral outcomes. For example, it is possible that the children in this sample who experienced IPV or maternal incarceration also experienced significant disadvantages preceding IPV or maternal incarceration, and that those associated disadvantages may be more important for determining behavioral outcomes. Demographically, women and their

children in this study are more underprivileged than other populations in many ways (see Table 1 for Descriptive Statistics). Children who participated in the FFCWS were mostly minority children living with single mothers, many of whom had not received a high school degree and who had relatively low household incomes. Previous research has shown that children who experience maternal incarceration and IPV are also more likely to experience a multitude of other high risk factors such as maltreatment, sexual assault, and illness, prenatal exposure to drugs, complications at birth, and lower quality environments (Graham-Bermann et al, 2015; Poehlmann, 2005b). Therefore, it is possible that the additional risk factors that these children are experiencing hold more significance in predicting negative outcomes than IPV or incarceration separately.

The possibility that other disadvantages explain the lack of significant findings in the current study is further supported by results of two other studies that have utilized the Fragile Families and Child Wellbeing data. Turney and Wildeman (2015) found that maternal incarceration had no average effects on child internalizing or externalizing problem behaviors, but that effects varied by mothers' predispositions for experiencing incarceration (e.g., mother's substance abuse, alcohol use, and/or previous incarceration). Therefore, maternal incarceration was most harmful for children of mothers least likely to experience incarceration but less consequential for children of mothers more likely to experience incarceration. Therefore, it may be the case that the current study yielded non-significant results because in this relatively disadvantaged sample, IPV and incarceration posed no additional risk beyond a host of other challenges families faced. Additionally, Wildeman and Turney (2014) found mostly null effects of maternal incarceration on behavioral problems among 9 year

olds in their sample from the Fragile Families and Child Wellbeing Study. Although the children were found to be a disadvantaged group with high levels of reported behavioral problems, the effects of maternal incarceration on the children's behavior problems were consistently null and rarely ever positive or negative after adjusting for demographic selection. This once again suggests that the negative outcomes being experienced by the young children in this sample may be better explained by the environmental hardships and difficulties in their totality.

It is also possible that the severity, frequency, or duration of IPV and incarceration are more important predictors of behavioral problems than just any adverse experience. Unfortunately, an examination of these factors was beyond the scope of the current study, which only measured whether mothers had experienced IPV or incarceration. Based on the measures used, it was not possible to determine the severity, frequency, or duration of the IPV or the amount of time mothers were incarcerated. As it has been found that more severe, frequent, and longer durations of violence lead to increased negative outcomes (Bogat et al., 2003), it is possible the mothers in the current study experienced relatively less extreme episodes of IPV, which may not have a drastic impact on children's behavior. Similarly, the current measure of mothers' incarceration was also lacking a description of duration or frequency. Therefore, although a mother may have been reported as incarcerated, it was not possible to determine whether an incarceration was for a night, a weekend, or an extended amount of time. It is also unknown whether or not the child actually witnessed the arrest and incarceration or whether they were even told about their mother's whereabouts. It is reasonable to assume that children whose mothers are incarcerated multiple times for longer durations may exhibit more significant behavior

problems than children whose mothers experience only one incarceration, particularly if that incarceration was short in duration. With short or unacknowledged incarcerations for mothers, it is possible that, without being explicitly exposed to criminality or arrest, attachment from caregiver remains intact and environmental disruptions are limited and lead to less intense, even nonexistent, effects on problem behaviors.

In terms of IPV, the initial analyses also failed to control for whether children were actually exposed to the violence, which is important because previous research has shown that exposure may be more predictive of child outcomes than just the presence of IPV (Fantuzzo et al., 1991; Grych, 2002). To account for the possibility that direct exposure could be more significant in predicting child's outcomes in association with IPV, additional analyses models were run. Following the three regression analyses previously explained, additional variables were created to include only children who were directly exposed to the violence. This was recorded in waves 3 and 4 through mother interviews. Direct exposure was assumed if mothers stated that violence occurred either in front of the child, or while the child was in the home. This variable of child's direct exposure was then used in the place of the original IPV variable to predict children's behavioral outcomes. However, results of these models also indicated a non-significant relationship between IPV exposure and both internalizing ($F = 11.18, df = 10, p < .005$) and externalizing ($F = 11.73, df = 10, p < .005$) behaviors. Full model results can be found in Appendix B. This suggests that, at least for the current sample, not even direct exposure to IPV predicts increased behavioral problems among five-year-old children.

In terms of incarceration, it is also possible that this may in fact be beneficial to children, particularly if they were previously exposed to criminal behavior or ineffective parenting prior to the incarceration, and if they were subsequently placed with more supportive caregivers. Thus, if the post-incarceration environment is more positive than the original home, maternal incarceration may in fact be linked to decreases in negative behaviors and outcomes. Previous research has shown that it is possible that for some children who experienced high stress prior to incarceration, that incarceration specifically may actually relieve stress, thus resulting in more positive outcomes (Wheaton, 1990). This may be true for children in this sample as well.

Additionally, it is possible that while targeting early childhood, we diminished the findings of our study by only including 5-year-old children. As previously mentioned, Sternberg and colleagues (2006) found that even when younger children were exposed to violence during the development of early childhood capacities, their externalizing and internalizing behaviors were not higher than those of unexposed children. Similarly, Evan and colleagues (2008) found that there were no differences in the results on behavior problems and IPV exposure between children aged 0-5, 6-12, or 13-18 years old. Although studies have noted increases in negative outcomes for children in their early years following maternal incarceration (Gabel & Johnston, 1995; Myers et al., 1999; Cunningham & Baker, 2003), there have been no comparison studies to demonstrate the influence that age may have on the associations between maternal incarceration and child internalizing or externalizing behavior problems. It is possible that behavior problems may not manifest until later ages, when children are more aware of the problems their families experience. Therefore, future research could benefit from looking at a larger age range, or utilizing data pertaining

to older children, as doing so may find significant links between IPV, maternal incarceration, and children's behavior problems.

Contributions to Current Literature

Although the specific aims of the current study yielded non-significant results, there are multiple overarching themes that contribute to the literature on child outcomes and disadvantageous environments and risk factors. Gender and maternal characteristics for children in this sample demonstrated importance by acting as either risk or protective factors for child outcomes. Boys were found to demonstrate higher levels of externalizing behaviors for all analyses, which is in line with previous research (Holt et al., 2008; Evans et al., 2008; Dallaire, 2007a). Additionally, mothers' increased educational attainment was associated with lower behavioral problems, suggesting that parental education may be an important protective factor.

Children who were coded as Hispanic or Other race consistently displayed higher levels of internalizing behavior problems than non-Hispanic black children throughout all analyses. Post hoc analyses were run to examine the association between behavioral outcomes and race to understand this finding more comprehensively. It was found that Hispanic children demonstrated the highest predicted scores in internalizing behaviors across all models when compared not only to Non-Hispanic Black children, but to Non-Hispanic White, and Other race children as well. Hispanic children demonstrated higher internalizing behavior problems when experiencing IPV only ($F = 19.64, df = 2078, p < .001$; $F = 16.42, df = 2078, p < .001$), when experiencing maternal incarceration only ($F = 22.60, df = 2205, p < .001$; $F = 17.21, df = 2205, p < .001$), and when experiencing both IPV exposure and

maternal incarceration ($F = 19.11$, $df = 2025$, $p < .001$; $F = 16.21$, $df = 2025$, $p < .001$) compared to White and Other race children, respectively. This elicited questions on cultural differences and the cultural diversity of the CBCL measure. The CBCL has been translated into 62 different languages (Rescola, 2005), and studies have found support for the equivalence of the CBCL when used with parents of low-income preschool children from African American and Latino backgrounds, with no mean differences between Latino parents completing the CBCL in English and in Spanish (Gross et al., 2006). However, studies have similarly found that Latino American children from low-income families demonstrate higher internalizing problems for children as young as 2 years old (Gross et al., 2006). The researchers hypothesized that these higher internalizing behaviors were possibly due to genetic vulnerability to depression, cultural differences in item meaning, or projection of symptoms such as parent anxiety or depression. Response set biases or different meanings of words between cultures could contribute to higher scores, however, as in the present study, externalizing behaviors are not similarly increased for Hispanic children (Gross et al., 2006). Moreover, it has been found in studies utilizing measures other than the CBCL that Latin American children report higher anxiety than non-Latino White children (Varela, Sanchez-Sosa, Biggs, & Luis, 2009) and that these higher internalizing behaviors may be explained by a collectivistic culture which emphasize self-control, emotional restraint, and compliance with social norms. Since categorizing a large number of children as Hispanic is very broad, further examination should be made to observe internalizing behavior levels in children in more defined categories in order to better understand why these results regularly occur.

Additionally, for children whose mothers were married to their biological father, externalizing scores decreased consistently and internalizing scores also decreased among children whose mothers reported both IPV and incarceration, suggesting that marriage is a factor that may protect children from poor behavioral outcomes. Similarly, lower behavioral problems were also found among children whose parents were cohabiting (versus single mothers), suggesting that even cohabitation may provide a degree of stability that decreases negative behavior. It is also possible that stable relationships are also the ones in which both IPV and incarceration are least likely, as it is reasonable to assume that women would be more willing to marry a partner who is non-violent and who is not involved in criminal activity. Thus, it's possible that marriage acts as a proxy for healthy relationships in the current sample. Previous studies have demonstrated that married women report lower rates of IPV and that cohabiting mothers report the highest rates of IPV (Fox & Benson, 2006). However, other studies have noted that more serious relationships and higher commitment is associated with higher risk for IPV (Wiersma, Cleveland, Herrera, & Fischer, 2010). Therefore more information needs to be gathered on child outcomes, maternal marital status, and IPV prevalence in order to explain the possibility of higher behavioral problems for IPV exposed children of single mothers.

Limitations

Although this study has some noteworthy findings, there are important limitations that need to be addressed. While the overall definition of IPV is an encompassing, broad spectrum of experiences (ranging from physical abuse to emotional, sexual, or financial control and power), this study was limited in that the included data only utilized measures of exposure to physical and sexual IPV. It is

possible that significant links with child behaviors would have been found had a broader measure of IPV been available. Additionally, as with many other IPV focused studies, it is possible that there is under reporting by mothers who may want to protect themselves, their children, or their perpetrator. More so, mothers may additionally under represent the number of children who were directly exposed to IPV either for their own protection, distrust in the interviewee, fear of getting in trouble, or truly not knowing whether or not their child had been able to see or hear the violence. Furthermore, it was not possible to account for the frequency or severity of the IPV that mothers experienced in the current study. The amount of violence that a child has been exposed to has been related to degree of negative outcomes for children, with children who witness more severe violence having more extreme negative outcomes (Bogat et al., 2003, Jouriles et al., 1998). It is possible that higher behavior problems would be seen among children who experienced frequent or particularly severe IPV in their homes.

Likewise, the current measure of maternal incarceration was also limited, particularly in that it lacked information on the frequency, duration, and timing of the incarceration. Thus, we do not know to what extent the child was actually separated from mothers. In addition, there is no information about whether the child actually witnessed the arrest of their mother or whether they know that their mother was ever or currently incarcerated. It is possible that witnessing an arrest, being aware of incarceration, and experiencing long or frequent separations due to incarceration may be associated with greater behavior problems.

Perhaps the primary limitation is that relatively few mothers reported experiencing IPV and/or incarceration in the current sample (with only 12.3%

experiencing IPV, 3.7% experiencing incarceration, and 2.4% experiencing both), which may have limited the ability to detect significant associations between these experiences and child outcomes. We also limited the sample by only including children up to age five. We may have observed larger differences in associations between these two traumatic experiences and behavioral outcomes had we continued to include additional ages of children such as the following wave with an interview when the child was 9.

Future Directions

Future studies should continue to explore the possible cumulative effects of IPV exposure and maternal incarceration. Although this study found no significant increases in internalizing or externalizing behaviors for children by their year 5 assessments, other studies could potentially find other results. Future work may benefit from utilizing a larger sample of children at various ages or a sample that included more children from households that experienced IPV or incarceration, as this would increase the power and the ability to detect significant results. It may be worthwhile to target women who are currently incarcerated, who have experienced IPV, and who have contact with their child and child's current caregiver to create a similar study design. Equally important, future studies must account for the severity, duration, and exposure that children have for both IPV and maternal incarceration. It is possible that severe cases of both violence and crime will yield more significant results and therefore become more predictive than other risk factors being experienced. Furthermore, future studies could gain more information by including a more comprehensive measure of IPV. Including sexual abuse, any emotional or financial abuse, as well as harassment as forms of IPV in addition to the physical

violence and limited sexual coercion that was used in this study could create a more inclusive population of women who are experiencing IPV in all of its forms.

Additionally, children who are exposed to IPV are more likely to be victims of physical and sexual abuse themselves, which may be more predictive of behavioral problems (Graham-Bermann et al., 2012). Therefore, future studies may benefit from including measures of child maltreatment in addition to measures of IPV. Children also experience environmental (crime, community violence), familial (additional family members incarcerated, mental health and illness), and biological risk factors (drug exposure during conception, lack of prenatal care) in addition to exposure to IPV and maternal incarceration (Gewirtz & Edleson, 2007; Myers et al., 2007a). Unfortunately, including measures of all these potential risk factors was beyond the scope of the current study, but attempts to include such variables should be made in future studies.

Final Thoughts

Children from low income, minority, and inner city environments have been found to experience traumatic circumstances (such as IPV and maternal incarceration) that often do not happen in isolation but in addition to a variety of risk factors, such as exposure to crime, drugs, and violence. Traumatic events have been noted as having an influence on multiple developmental domains for many children who experience them. It is important that children who have been exposed to IPV or maternal incarceration are studied in order to create a better understanding of their specific challenges and needs. With women offenders often reporting being mothers and reporting IPV experiences within the year prior to incarceration, their children are a unique, understudied population. Even with a multitude of additional risk factors and

adversities in their environment, children experiencing IPV and maternal incarceration congruently should not be overlooked by continued research.

Although this study did not find any significant outcomes between the associations of IPV or maternal incarceration and child behavioral outcomes for internalizing or externalizing problems, this population of children deserves to further be acknowledged and investigated. Future studies should acknowledge the limitations in this study and design accordingly. Utilizing information to encompass the broad definition of IPV is important to truly reach all the families affected by IPV. Data that can report and control for the severity, duration, and exposure to both IPV and incarceration should be utilized to examine the possible stronger relationships between these two circumstances. And most importantly, a larger sample set with multiple ages included would afford additional information and possible outcomes. In a world of high risk and disadvantage, the influences that these traumatic events have on child outcomes should be understood more comprehensively. As two traumatic events that have not been researched as cumulative risks for children of any age, it is important to continue to gain knowledge on this population for research and services.

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Appendix A
IRB APPROVAL LETTER



DATE: December 2, 2015

TO: Leigh Ellis
FROM: University of Delaware IRB

STUDY TITLE: [840115-1] Fragile Families and Child Wellbeing: Maternal incarceration and intimate partner violence exposure impacts on preschool aged children

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: December 2, 2015

REVIEW CATEGORY: Exemption category # (4)

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office. Please remember to notify us if you make any substantial changes to the project.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.

Appendix B

DIRECT EXPOSURE PREDICTING BEHAVIOR OUTCOMES

Child IPV exposure (IPV reported in front of the child or while the child was in the house) predicting Internalizing and Externalizing Behaviors

	<i>Internalizing (n= 2185)</i>		<i>Externalizing (n= 2146)</i>	
<i>Covariates</i>	β (SD)		β (SD)	
Child age	-.029 (.031)	-.020	-.115 (.059)	-.042 +
Child is Non-Hispanic				
White	.396 (.234)	.043	-.069 (.446)	-.004
Child is Hispanic	1.565 (.198)	.180 ***	-.684 (.379)	-.041
Child is other race	.526 (.222)	.053 *	-.147 (.428)	-.008
Child Sex	.109 (.146)	.016	1.218 (.279)	.092 ***
Household Income	.000 (.000)	-.060 *	.000 (.000)	-.076 **
Mom's Education	-.253 (.090)	-.072 **	-.750 (.171)	-.113 ***
Mom is Married to				
Father	-.348 (.226)	-.043	-1.193 (.432)	-.077 **
Mom is Cohabiting with				
Father	-.152 (.170)	-.021	-.814 (.325)	-.059 *
<i>Predictor Variable</i>				
IPV Exposure	-.348 (.232)	-.032	-.774 (.448)	-.037
F(df)	11.18(10)***		11.73(10)***	
R ²	.049		.052	

Note: *p≤.050; **p≤.010; ***p≤.001