

EXAMINING THE RISK OF OUT-OF-HOME PLACEMENT AMONG CHILD
WELFARE INVOLVED FAMILIES VICTIMIZED BY DOMESTIC VIOLENCE.

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ABSTRACT

IJEOMA J. NWABUZOR: Examining the risk of out-of-home placement among child welfare involved families victimized by domestic violence.
(Under the direction of Mark Testa, M.A., Ph.D.)

Mothers victimized by domestic violence (DV) are burdened by risk factors across several ecological domains that negatively influence their parenting. Therefore, children within families victimized by DV are at higher risk for many negative outcomes, including child maltreatment. Due to the link between DV and child maltreatment, these families are often brought to the attention of child welfare agencies. However there is limited information available on the case outcomes of families victimized by DV. Therefore, the following three papers examine these families' risk of out-of-home placement.

The first paper provides a comprehensive review of research examining the effects of DV on the prevalence of out-of-home placement. The review also examines whether the immediate safety afforded by children's removal from DV situations is worth the potential future risks to their safety, permanence, and other well-being outcomes. A systematic search of the literature resulted in 29 articles that met the study's criteria. Data suggest that DV alone is not related to out-of-home placement; however, these findings are clouded by mixed findings and inconsistent research. Firm conclusions could not be drawn about the permanence, safety, and well-being of foster care children with DV histories, due to inconsistent study findings.

The second paper uses data from the National Survey of Child and Adolescent Well-Being (NSCAW) to longitudinally examine whether children with African American caregivers who reported DV are at greater risk for out-of-home placement compared to children with non-African American caregivers who reported DV. A propensity score analysis was used to control for selection bias. Findings indicate that caseworkers' decision to place a child who has a parent victimized by DV is not influenced by race.

The third paper examines differences in the timing to out-of-home placement between children with caregivers who reported DV and children with caregivers who did not report DV. This study also uses longitudinal data from the NSCAW and balances the data using propensity score analysis methods. Findings support the study hypothesis showing caregivers who reported DV are at greater risk of having a child in out-of-home placement at faster speeds than caregivers who did not report DV.

To my husband, Chibuikem Ogbonnaya; my mother, Rose Nwabuzor-Okwo; my father, Osita Joseph Nwabuzor; and my siblings, Joseph, Oprah, Devine, and Omarion. To the child welfare workers, especially my Aunts Carol, Tedji, and Francisa, who inspire me to continue trying to improve the outcomes of children in foster care.

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COMPARING CASE OUTCOMES FOR FAMILIES VICTIMIZED BY DOMESTIC VIOLENCE: A SYSTEMATIC REVIEW OF THE LITERATURE.

The number of children in foster care and entering foster care has decreased over the years (Child Trends, 2011). Still there are a substantial number living in out-of-home placement settings. During the federal fiscal year that ended September 30, 2011, 662,000 children were served in out-of-home care nationwide (U.S. DHHS, 2011). Currently there are approximately 408,000 children in foster care as of September 30, 2011.

Even though foster care is intended to remove children from unsafe family situations, there is recognition that out-of-home placement can also increase the likelihood of negative outcomes for children, especially children who experience multiple placement changes and children who enter care at an older age and are unable to reestablish permanent connections with their own or other families and “age-out” of foster care.

It is not uncommon for children to experience four or more placement changes during their first 18 months in foster care (e.g., Newton, Litrownik, & Landsverk, 2000). Placement instability has been linked to substance involvement (Aarons et al., 2008), increased levels of psychiatric symptomatology (Hussey & Guo, 2005), academic vulnerability (Massing & Pecora, 2004), delinquency (Jonson-Reid & Barth, 1999), and behavior problems (Newton, Litrownik, & Landsverk, 2000). Similarly, older age at entry

into foster care was related to shelter use and homelessness (Massing & Pecora, 2004; Park, Metraux, & Culhane, 2005), substance use (Massing & Pecora, 2004), heightened risk of delinquency (Jonson-Reid & Barth, 1999), and low educational attainment (Massing & Pecora, 2004).

The poor outcomes associated with children in foster care have led to many initiatives to decrease out-of-home placement rates. For example, the Obama administration recently dedicated \$100,000,000 over a five-year period towards the reduction of the numbers of children in long-term foster care (The White House, 2011). Given the negative impacts of long-term foster care, it is critical to understand factors that put children at risk for out-of-home placement.

One risk factor that has been linked to out-of-home placement is the occurrence (or recurrence) of domestic violence within families. Depending on the type of sample (i.e., national probability sample versus a sample from a geographic region), investigators using CPS populations reported a range of 14% (Khol, Edleson, English, & Barth, 2005) to 60% (Edleson, 1999) of child maltreatment cases with indicated domestic violence as a risk factor. Although Child Protective Services (CPS) handles a large amount of domestic violence cases, caseworkers struggle with how adequately to respond to families experiencing domestic violence. Furthermore, caseworkers are inconsistent when screening for and assessing the seriousness of domestic violence (Postmus & Merritt, 2010; Saunders & Anderson, 2000; Shepard & Raschick, 1999). In some cases, inconsistent response to domestic violence has led to higher proportions of child removal in domestic violence cases than in other cases (English, Edleson, & Herrick, 2005; Hartley, 2004).

Although there exists an emerging body of child welfare literature that examines the case outcomes of families who experience domestic violence, to date, there has been no published reviews conducted that critically assess the scientific rigor and specific results related to this area of knowledge. Because this information is not efficiently integrated in the literature, it may be difficult to conclude whether or not out-of-home placement is more likely when domestic violence is present, and, if so, how we should intervene.

Given the need to better understand the risk characteristics associated with out-of-home placement when domestic violence is present, this article aims to fill the aforementioned gap by providing a comprehensive review of research related to the case outcomes of domestic violence exposed families involved with CPS. Specifically, the purpose of this review is to summarize and synthesize the research on out-of-home placement among children victimized by domestic violence as it relates to research methods; prevalence; and children's safety (e.g., re-abuse risk), permanency (e.g., adoption and reunification), and well-being (e.g., mental health and adjustment) outcomes. By focusing on these aspects of the literature, it is hopeful that researchers, practitioners, and policy makers may more easily determine the gaps in knowledge and interventions for families that are victimized by domestic violence and involved with CPS.

Methods

Inclusion and Exclusion Criteria

In order to identify studies meeting the aim of this review, four inclusion/exclusion criteria were established. First, studies were included only if they had

a sample of CPS-involved families victimized by domestic violence. This included studies that reported on children's biological caregivers' experience with domestic violence or children's experience with domestic violence. Children's domestic violence experience includes either reports of whether the child was (a) a witness of domestic violence or (b) physically injured due to domestic violence. Because the purpose of this study is to assess the likelihood of out-of-home placement as a result of biological caregivers' experiences with domestic violence, excluded were studies in which domestic violence was assessed based on foster or adoptive parents' experiences. Second, studies had to examine the relationship between domestic violence and (a) out-of-home placement, (b) reunification, or (c) adoption. Studies could also investigate the effect of out-of-home placement on the well-being or safety of children who experienced domestic violence. Out-of-home placement types included kinship or non-relative foster care, group home, shelter care, residential treatment center, or correctional facility; however, studies in which it was made clear that the placement arrangement was made without social service involvement were excluded because it could not be determined whether the families in these studies were involved with CPS. Furthermore, studies were excluded if children were described as being in "state custody," but still living with their birth parent(s). Third, all non-English language studies were excluded. Fourth, all studies had to be published in a peer-reviewed journal.

Search Strategy

An extensive review of the extant literature for empirical studies on out-of-home placement and domestic violence was conducted by searching the following academic databases: PsychInfo (1887 –September 2011), PubMed (1957- September 2011), Social

Work Abstracts (1977-September 2011), Sociological Abstracts (1963- September 2011), CINAHL (1982- September 2011), and ISI Web of Knowledge (1955 - September 2011).

First, to assess the existing state of the knowledge, search terms were created based on suggestions from child welfare and domestic violence experts, as well as feedback from library scientists. In addition, prior systematic reviews on topics related to child welfare and domestic violence were examined. As illustrated in the Figure 1.1 example, search terms included keywords related to children, domestic violence, and foster care (see Appendix A for a full listing of search terms by database). Next, titles and abstracts were assessed for all retrieved articles. Following this assessment, a full-text review was conducted only for articles identified as meeting the inclusion criteria; or in cases when the researcher was unable to determine from the title and abstracts whether the article met the inclusion criteria. Lastly, in an effort to conduct the most comprehensive search strategy possible, the reference list of articles identified as meeting the inclusion criteria were also examined to detect articles that may not have been captured in the database search.

Results

As indicated in Figure 2.1, the database search resulted in 724 potentially relevant citations. After removing duplicates, a total of 578 articles were identified. Of these, 26 citations met the inclusion criteria. Three additional articles were captured in the reference list of articles meeting inclusion criteria, resulting in 29 overall articles included in this review.

Table 1.1 and Table 2.1 show the 29 studies that met the inclusion criteria. The review located 24 studies that examined the relationship between out-of-home placement

and domestic violence (see Table 1.1). As Table 2.1 illustrates, five studies examined the association between domestic violence and permanency or well-being outcomes. There were no studies identified that met the inclusion criteria for safety outcomes. When provided, the percentage of domestic violence cases that resulted in out-of-home placements, or looked at from a different perspective, the percentage of out-of-home placement cases with a history of domestic violence was listed (see Table 3.1). Throughout the review, the researcher uses the terms for domestic violence and out-of-home placement presented in each of the articles. Specific operationalizations for out-of-home placement and domestic violence used in each of the studies are provided in the Tables.

Research Methods

Investigators studying out-of-home placement among domestic violence survivors drew their study sample from various points of origins. As indicated in the Tables 1.1 and 2.1, most researchers drew their sample from CPS administrative records of children who (a) underwent an investigation of child maltreatment, or (b) were residing in foster care. Among the 29 studies, ten studies examined outcomes using a nationally representative survey sample (Black, Trocmé, Fallon, & MacLaurin, 2008; Carter, 2010; Carter, 2009a; Carter 2009b; Carter, 2008; Cheng, 2010; Horwitz, Hulburt, Cohen, Zhang, & Landsverk, 2011; Kohl, Edleson, English, & Barth, 2005; Osborn, Delfabbro, & Barber, 2008; Trocome, Knoke, & Blackstock, 2004); however, five of these published articles were derived from the same sample, the National Survey of Child and Adolescent Well-being (NSCAW) CPS sample.

Given that most researchers used administrative records to construct the variables used in their studies, it is possible that case worker reports could be misinterpreted. Therefore methods such as assessing for inter-rater reliability and using multiple types of data collection should be used to assess for construct validity. Doing so allows researchers to investigate how well they may or may not have interpreted their measurement scales. Of the 29 studies reviewed, only four studies attempted to improve construct validity by assessing inter-rater reliability among coders (Coohey, 2007; Griffith et al., 2011; Lavergne, Damnant, Clement, Bourassa, Lessard, & Turcotte, 2011; Rees & Selwyn, 2009). Alternatively, 11 studies used face-to-face interviews with caseworkers, in addition to using administrative records, to improve construct validity (Black et. al, 2008; Carter, 2008; Carter, 2009a; Carter, 2009b; Carter, 2010; Cheng, 2010; Horwitz et al., 2011; Kohl et al., 2005; Osborn, 2008; Shepard & Raschick, 1999; Trocome et al., 2004); however, eight out of the 11 studies were derived from the same sample.

In general, sample sizes were large, ranging from 85 (Johnson-Reid & Bivens, 1999) to 5,567 (Black, et al., 2008) children. Nine studies had samples with fewer than 300 children, and ten articles had samples with more than 500 children. Six studies defined samples on the family, case, or community level (Beeman, Hagemeister, & Edleson, 2001; Black et al., 2008; Coohey, 2007; Hiram, 2009; Shepard & Raschick; Zuravin & DePanfilis, 1997), rather than the child level; therefore, the number of children sampled in these studies was unable to be determined.

Along with varying sample sizes, there were also broad differences in how researchers defined domestic violence and out-of-home placement. The most common

definition of domestic violence and out-of-home placement was based on case worker reports; however, two studies expanded their criteria of domestic violence by gathering sources of evidence from multiple points of reference (Coohey, 2007; Donald, Bradley, Critchley, Day, & Nuccio, 2003). For example, Donald and colleagues (2003) used information from reports on fifth-degree domestic assault, incarceration for battering, order for protection and use of the Women's Coalition Shelter to measure domestic violence. Three studies operationalized domestic violence using caregiver reports and measured domestic violence using standardized instruments (Horwitz et al., 2011; Larrieu, Heller, Smyke, & Zeanah, 2008; Mines, Singer, Humphrey-Wall, & Satayathum, 2008). Both Horwitz et al. (2011) and Mines' et al. (2008) studies used the Conflict Tactic Scale-1 (Straus, 1980) to measure domestic violence. On the other hand, Larrieu and colleagues used the Partner Violence Inventory (PVI; adapted from Straus 1979) to measure domestic violence. Only one study operationalized domestic violence using child's report (Johnson-Reid & Bivens, 1999). Of all the studies, there were only four that included sexual violence and/or emotional/psychological violence in definitions of domestic violence (Griffith et al., 2011; Johnson-Reid & Bivens, 1999; Laverne et al. 2011; Osborn, 2008). All other studies defined domestic violence as physical abuse.

Because the outcomes of children in long-term foster care have been known to differ from the outcomes of children in short-term foster care, some researchers differentiated between samples of children who experienced extended stays in foster care (i.e., children who remained in care following the close of an investigation) and samples of children who experienced short-term stays in protective custody (i.e., children placed on an emergency basis during the case assessment). There were three studies identified

that excluded children in protective custody placements (Cheng, 2010; Martin, Barbee, Antle, & Sar, 2002; Zuravin & DePanfilis, 1997).

Some researchers also made distinctions between types of placement. For example, Donald and colleagues (2003) included a broad range of placement types, such as kinship foster care, nonrelative foster care, group home, shelter care, residential treatment facilities, and correctional facilities. On the other hand, other researchers only examined the outcomes of children placed in either traditional foster care or kinship foster care (Kohl et al., 2005; Raghunandan & Leschied, 2010). One study solely assessed the outcomes of children living in residential treatment facility (Griffith et al., 2011), and excluded all other types of placements. Eleven articles did not define out-of-home placement setting (Beeman et al., 2001; Carter, 2010; Carter, 2008; Coohey, 2007; English et al., 2005; Hilamo, 2009; McBeath et al., 2009; Meyer, McWey, McKendrick, & Henderson, 2010; Mines et al., 2008; Shepard & Raschick, 1999; Zuravin & DePanfilis, 1997).

Prevalence of Domestic Violence within Out-of-home Placement Cases

As indicated in Table 3.1, the overall percentage of domestic violence cases that resulted in out-of-home placement, or out-of-home placement cases with a history of domestic violence ranged from 4.9% (Cheng, 2010) to 86.0% (Rees et al., 2009), with a median percentage of 24.0%. Only four of these studies estimated out-of-home placement using a nationally representative sample of children involved with CPS (Carter, 2009; Cheng, 2010; Kohl et al., 2005; Osborn, 2008).

Percentages of out-of-home placement among domestic violence cases varied depending on whether the data was county, state, or national level. When compared to

studies using a nationally representative sample, studies using state and county level data had the highest estimates of out-of-home placement occurrences among domestic violence cases. Studies using state-level data included estimates of out-of-home placement ranging from 23.0% (Griffith et al., 2011) to 80.7% (English, Edleson, & Herrick, 2005), with a median percentage of 52.4%; and studies using county-level data included estimates ranging from 10.74% (McBeath & Meezan, 2009) to 86.0% (Rees et al., 2009), with a median percentage of 39.65%.

Among the studies that used a nationally representative sample, estimates of out-of-home placement ranged from 4.9% to 25.0%. Carter (2009) found that 25.0% of NSCAW children ages 0-14 in out-of-home care had case reports with indicated domestic violence during Wave 1 of the study. Also using the NSCAW sample, Kohl and colleagues (2005) found that 7% of cases with active domestic violence and 6% of cases with a history of domestic violence were placed in foster care; whereas, 11% of cases with active domestic violence and 5% of cases with a history of domestic violence were placed in kinship care. On the other hand, among a sample of NSCAW children who were in long-term foster care (i.e., LTFC sample), only 4.9% of the sample had reports that indicated caregivers' need for domestic violence services (Cheng, 2010). The final national study (Osborn et al., 2008) reported that 7.42% of Australian children ages 4-18 who were in out-of-home placement due to behavioral issues experienced domestic violence, as documented and confirmed by a caseworker.

There were 16 studies that assessed the likelihood of out-of-home placement among domestic violence survivors, using a comparable sample of non-domestic violence survivors. Of these studies, six reported that domestic violence increased the likelihood of

out-of-home placement (Black et al., 2008; English et al., 2005; Hilamo, 2009; Horwitz et al., 2011; Lavergne et al., 2011; Zuravin et al., 1997;); seven reported no significant difference in out-of-home placement among domestic violence survivors and non-domestic violence survivors (Beeman et al., 2001; Carter, 2008; Carter 2009a; Carter, 2010; Donald et al., 2003; Mines et al., 2008; Meyer et al., 2010); and three reported that domestic violence survivors were significantly less likely to experience out-of-home placement than non-domestic violence survivors (Forrester & Harwin, 2008; Kohl et al., 2005; Trocome et al., 2004).

Three of the six studies with reports of higher out-of-home placement among domestic violence survivors found that domestic violence alone was not the reason for child removal; rather it was the combination of domestic violence and other risk factors that led to out-of-home placement. For example, English and colleagues (2005) found that domestic violence cases indicated for child maltreatment and considered to be high risk after investigation and open for services, were more likely to involve out-of-home placement compared to non-domestic violence indicated cases that were high risk and open for services. Lavergne and colleagues (2011) found that cases with reports of domestic violence exposure and physical abuse child maltreatment type were 4.71 times more likely to be placed in out-of-home care on an emergency basis compared to children solely exposed to domestic violence. In addition, children who were exposed to domestic violence and had reports of neglect as a form of child maltreatment were 4.75 times more likely to be placed on a long-term basis compared to children solely exposed to domestic violence.

Some researchers found that children exposed to domestic violence were less likely to be placed in out-of-home care. Trocome and colleagues (2004) found that cases with reports of domestic violence as the primary form of child maltreatment were less likely to report out-of-home placement compared to cases where domestic violence was not the primary form of child maltreatment. Kohl and colleagues (2005) found that cases with a history of domestic violence were less likely to have reports of out-of-home care placement when compared to active domestic violence cases and non-domestic violence cases. Lastly, Forrester and colleagues (2008) found that domestic violence families were 3.82 times more likely to remain in the home than non-domestic violence families. This study also reports qualitative findings based on content analyses of case files. Their qualitative findings revealed the different challenges case workers experienced when dealing with domestic violence cases. For example, one report had mention of a case worker's decision not to remove a child living in a household with domestic violence, because of fear related to how the perpetrator of the violence would react.

Permanency and Well-being Outcomes of Domestic Violence Survivors Placed in Out-of-home Care

Permanency. Findings related to permanency outcomes of children in out-of-home care who experienced domestic violence varied. Of the five studies that reported this information, the review identified two studies that found no significant relationship between domestic violence and permanency outcomes (Delfabbro et al., 2009; Larrieu et al., 2008). Conversely, two studies were identified that found that children with caregivers who experienced domestic violence were less likely to achieve a state of permanency compared to children with caregivers who did not experience domestic

violence (Cheng, 2010; Osborn et al., 2008). Specifically, Osborne and colleagues (2008) found that foster care children with domestic violence backgrounds had significantly greater placement changes than foster care children without a history of domestic violence. While Cheng (2010) found that exit to reunification was negatively associated with an identified need for domestic violence services. Only one study found a positive relationship between domestic violence and permanency; however, this was only true when examining reunification within a kinship foster care sample (Raghunandan et al, 2010). Researchers who conducted this study found that children in kinship care with a history of domestic violence had significantly shorter lengths of stay in out-of-home placement than children with a history of domestic violence that were not placed in kinship care (i.e., children in traditional foster care).

Well-being. There was only one study that examined the well-being of children with a history of domestic violence living in foster care (Raghunandan et al, 2010). This study found that children with histories of domestic violence who were in kinship care demonstrate significantly higher rates of overall adjustment than children with a history of domestic violence living in a traditional foster care settings. That is to say, children with histories of domestic violence living in foster care had significantly lower rates of physical aggression, verbal aggression, compulsive lying, problems with peers, and problems sleeping and eating when compared to children with histories of domestic violence living in kinship care. However, this study is limited because it does not have a comparison sample of children who do not have a history of domestic violence.

Conclusions and Directions for Future Research

This review identified 29 published, empirical articles that examined the case outcomes of CPS-involved families victimized by domestic violence: 24 articles examined the relationship between out-of-home placement and domestic violence; and 5 articles examined permanency and well-being outcomes among CPS-involved children with domestic violence histories. Overall, the review presented mixed results. Results varied depending on how domestic violence and out-of-home placement were operationalized and measured, and the level of the data (i.e., national versus geographic based data). Although findings were not always consistent, there were some studies with similar results. Studies with both similar and mixed results are discussed further in this section.

The findings in this review suggest that domestic violence alone is not a risk factor for out-of-home placement. Half of the studies that examined the relationship between domestic violence and out-of-home placement found that it was domestic violence combined with other risk factors that led to higher rates of out-of-home placement (e.g., child maltreatment and high risk level case), rather than domestic violence by itself. Although domestic violence alone may not be a significant indicator of out-of-home placement, many CPS-involved families who experience domestic violence also exhibit high levels of cumulative risk characteristics associated with out-of-home placement. This includes such risk factors as low income level (Dosanjh, Lewis, Mathews, & Bhandari, 2008), presence of major depression disorder (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), and drug and alcohol dependence (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004). Consequently, domestic violence may have an indirect effect on out-of-home placement. Furthermore, severe cases of domestic

violence may impact case workers' decisions to place a child in out-of-home care. This conclusion is based on a content analysis conducted by Coohey (2007) who found that removals occurred in cases where the batterer attempted to kill the adult victim, or when there was imminent danger to the child's life or health.

There were three studies identified in this review with findings that suggest families victimized by domestic violence are less at risk for out-of-home placement. However, findings between these studies could not be compared given variations in how researchers defined domestic violence. For example, one study's findings were based on domestic violence defined as the primary form of child maltreatment (Trocome et al., 2004), while another study's findings were based on a history of domestic violence (Khol et al., 2005). Further, qualitative study findings revealed nuances in case worker reports, suggesting children living in domestic violence situations may not have been removed from the home due to case workers' inability to handle such situations (Forrester et al., 2008).

National estimates on the prevalence of out-of-home placement among domestic violence cases were relatively low compared to non-national estimates. Estimates of out-of-home placement varied greatly across states and counties. This variation may be due to differences in state funding, policies, and community practices related to domestic violence. For example, in six States (Arizona, California, Delaware, Florida, Louisiana, and Vermont), a child is considered a witness to domestic violence only if domestic violence is committed in the presence of or perceived by the child. However, in the state of Ohio a child is considered a witness of domestic violence if the violent act is

committed within 30 feet or within the same residential unit occupied by the child, regardless if the child is present or can see the act of violence (U.S. DHHS, 2009).

Of the extant literature, only five studies were identified that assessed the permanency outcomes of foster care children with histories of domestic violence. Permanency studies reported mixed results, with two studies suggesting no significant difference between the permanency status of children who experienced domestic violence and the permanency status of children who did not experience domestic violence; one study suggesting a negative relationship between domestic violence and permanency; and two studies suggesting a positive relationship between domestic violence and permanency achievement. Inconsistent findings may be due to differences in participants' ages, across studies. For example, the two studies with the oldest participants shared similar findings. These studies found that, when compared to children without histories of domestic violence, children living in out-of-home placement with a history of domestic violence were (a) less likely to reunify (Cheng, 2010), and (b) more likely to have greater placement changes (Osborn, 2008). The fact that studies with the oldest participants were less likely to have positive permanency outcomes is not surprising given the considerable amount of child welfare research that has established that older children are less likely to get adopted (Barth, 1997; Courtney & Wong, 1996; Kirton, Beecham, & Ogilvie, 2006; Massinga, & Pecora, 2004; Snowden, Leon, & Sieracki, 2008; Yampolskaya, Armstrong, & Vargo, 2007).

There was only one study identified in the review that assessed the well-being of children with histories of domestic violence living in out-of-homes placement settings (Raghunandan et al., 2000). This study found that overall adjustment was higher for

children placed in kinship care than children placed in traditional foster care. Based on this result, it appears that kinship foster care may be a better placement setting for children who experience domestic violence. However, additional research is needed to assess this possibility given that only one study examined the well-being of children with histories of domestic violence.

Future Research

Evidence supporting the relationship between domestic violence and out-of-home placement is inconclusive. Although there is some evidence that suggest domestic violence affects the rate of out-of-home placement, more robust research is necessary. For example, statistical adjustment methods, such as propensity score methods or instrumental-variables, should be considered to balance or equate groups of participants, and reduce bias created by nonrandom assignment. In addition, risk of subject-specific correlated responses should be assessed. The review found that some researchers did not differentiate between numbers of children within families (e.g., sibling groups). Because out-of-home placement rates may have varied depending on agency or family-level characteristics, rather than the occurrence of domestic violence, it is difficult to eliminate subject interdependence within such studies. Therefore, future research should also include diagnostic procedures to assess, and if necessary, adjust for interdependence between variables. Researchers should also attempt to use terms for domestic violence and out-of-home placement that are consistent with prior research, to allow for comparisons across studies.

The well-being and safety of children who have domestic violence backgrounds and are placed in an out-of-home care is also uncertain. Though it appears that children

who experienced domestic violence and are placed in a kinship care setting are better well-adjusted than children who experience domestic violence and are placed in a traditional foster care setting, the review identified only one study that examined and confirmed this relationship (Raghunandan et al, 2010). Therefore, more research is necessary to conclude the best types of placements for children with domestic violence histories. In addition, researchers should compare the well-being outcomes of CPS-involved children exposed to domestic violence who remain with their biological caregiver to the well-being of domestic violence exposed children who do not remain with their biological caregiver.

This review did not find any studies that examined the safety outcomes of foster care children who experienced domestic violence. Although it may be assumed that children living in violent homes are safer when placed in out-of-home care, the act of being separated from a parent(s) may be more traumatic than, or just as traumatic as, a child's domestic violence experience. Research is warranted to examine the relationship between domestic violence exposed children's perception of safety before and after out-of-home placement.

When children who experience domestic violence are removed from their homes, it is unclear whether they ever reunify with their birth parent(s). Because studies on the permanency outcomes of domestic violence survivors' children are mixed, and seem to vary by participants' ages, more research should be conducted using greater sample sizes with representative samples of foster care children from various age groups. Doing so will allow researchers to draw further conclusions related to the permanency outcomes of children who are victimized by domestic violence.

Few studies used caregiver reports to measure domestic violence. Although child welfare researchers have generally accepted the use of case worker reports or administrative records to measure out-of-home placement, the opposite is true when examining domestic violence. Researchers studying domestic violence within child welfare populations have found that using case worker reports to measure domestic violence, rather than caregiver reports, can lead to an under identification of the level of domestic violence in CPS cases (Kohl, Barth, Hazen, & Lavender, 2005). Therefore, future research should use caregiver reports to assess domestic violence, whenever possible. In addition, researchers should consider measurements that examine other types of domestic violence in addition to physical abuse, such as emotional/psychological abuse and sexual abuse, as well as the severity and chronicity of domestic violence. This review located only four studies that included occurrences of sexual abuse and emotional abuse in their assessment of domestic violence, and zero studies that examined level of domestic violence severity.

Although using administrative data has some advantages, such as large sample size and low cost, administrative data can also result in inaccurate measures of outcomes and provide a limited range of data elements. Thus, when using administrative records more researchers should assess whether coding conducted for variable constructions are consistent and valid. The reviewer found limited studies that accounted for this possibility.

Limitations

Despite the researcher's attempt to bring to light important studies examining the outcomes of children who are involved with child welfare and have experienced domestic

violence, some relevant articles may have been overlooked. In addition, this study excluded articles that examined non-primary caregivers' experiences with domestic violence, and studies in which the child victim was in custody of the state, but still living with their biological parents.

In spite of the limitations, to the best of the researcher's knowledge, this is the first review to critically examine studies relating to the case outcomes of CPS-involved families who have experienced domestic violence. Given the negative effects associated with long-term foster care and the many survivors of domestic violence who are involved with child welfare system, it is imperative that both practitioners and policy makers are aware of domestic violence survivors' child welfare experiences. By summarizing this research and highlighting the gaps in knowledge and need for more sophisticated research, hopefully this study can inform future research agendas as well as the provision of appropriate domestic violence services for child welfare involved families.

Table 1.1: Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
English et al. (2005)	2,000 randomly selected CPS cases from Washington State. Children ranged from ages 0-18 years (mainly between 2-5 years)	Case worker reports	Child placed with an alternative caregiver within 1 year of the index referral.	Mention of domestic violence as an issue by (a) the referent; (b) CPS investigation worker in the investigation file; or (c) risk assessment report conducted by case worker.	Among moderate to high risk cases, children in families where DV was indicated were significantly more likely to be placed out of home than children in families without DV indicated cases.
Donald et al. (2003)	95 children from 73 families in foster care for the first time. Children ranged from ages 0-18 years (Mean age of AI children = 8.9 years; non-AI children = 12.1 years)	Case records supplemented by county social service management information system	Children living out-of-home in foster care (kinship or non-relative), group home, shelter care, residential treatment center, or correctional facility	Report of fifth-degree domestic assault, incarceration for battering, order for protection, and use of the Women's Coalition Shelter	No significant difference in reports of DV between American Indian families compared to Non-Indian ($p > .05$).
Griffith et al. (2011)	566 youth who resided in a residential treatment facility in Nebraska during 2004/2005 (Mean age = 15.21 years)	Data obtained from youth file review. Files were coded by trained researchers and checked for inter-rater reliability.	Youth residing in residential treatment facility	Mention in file that there was a presence of physical or psychological dominance of a family member by any other family members	[Did not compare likelihood of domestic violence. Only provided percentage estimate. See Table 3 for estimate details.]

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Shepard et al. (1999)	74 randomly selected child welfare cases in 1996 in South St. Louis County (consist of cities mainly in Duluth, MN.) [Age of children not provided because data assessed on case-level]	Caseworkers completed questionnaires concerning the selected cases	Case workers report of whether they removed a child for protection because domestic violence was identified (Yes/No)	Case workers' report of whether they believed a significant risk of DV was present and, if so, how would they asses the severity of DV using DV risk factor tool developed by Elliott and Shepard (1995).	[Did not compare likelihood of domestic violence. Only provided percentage estimate. See Table 3 for estimate details.]
Carter (2008)	418 children who had open cases and received CPS between March 1, 1993 and March 1, 1994 (Mean age = 9.77 years)	National Data Archive on Child Abuse and Neglect (1994): Case workers were interviewed and asked questions related to current service delivery and decisions over the past 6 months.	Out-of-home care(Yes/No)	Domestic violence (Yes/No)	There was no significant difference in the out-of-home placement rate of children who experienced DV compared with children who did not experience DV.

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Lavergne et al. (2011)	1,071 randomly selected children ages 0 to 17 (mainly between 6-11 years) whose reported cases were investigated and substantiated by a CPS agency in the Montreal area of Canada between Feb. 1, 2005 and Jan. 31, 2006.	Administrative data generated by electronic client information system and clinical case data collected from CPS files. Files were systematically examined by coders and there was discussion between coders to ensure internal validity.	Child removed from the home and placed in a foster family or residential facility, either on an emergency basis during the assessment (short-term placement) or following a decision about the child's endangerment (long-term placement)	Includes incidents of physical assault, sexual assault, and verbal abuse reported in case reports. Incidents occurring before reference point were not taken into consideration in distinguishing cases of DV from other.	-Children exposed to DV who are also physically abused are 4.71 times more likely to be in short-term placements than children solely exposed to DV ($p < .05$). -DV exposed children who are also neglected are 4.75 times more likely to be placed in long-term care compared to children only exposed to DV ($p < .05$); however they are 6.63 times less likely to be placed in long-term care than children not exposed to DV.
Trocome et al. (2004)	4,402 children ages 0 – 15 years (mainly between 4-7 years) selected from CPS cases with suspected maltreatment opened between October-December 1998 in Canada.	[National dataset] The 1998 Canadian Incidence Study of Reported Child Maltreatment (CIS-1998). Surveyed case workers about cases	Case worker reports of whether child was placed in a (a) formal child welfare placement, (b) informal placement, (c) placement was considered, or (d) no placement required	Case worker reports of DV (Yes/No) as the primary form of maltreatment	Cases with reports of DV as the primary form of child maltreatment were significantly less likely to be placed in out-of-home care.

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Carter (2009a)	1,465 children ages 0-14 (mainly ages of 6-10 years) in out-of-home care during Wave 1 of study	National Survey on Child and Adolescent Well-Being (NSCAW): Caregiver, children, caseworker, and teacher interviews	Placement types included group home/residential facilities, kinship care, foster care, and other out-of-home care arrangements.	Caseworkers report of domestic violence (Yes/No)	[Did not compare likelihood of domestic violence. Only provided percentage estimate. See Table 3 for estimate details.]
Forrester et al. (2008)	185 children from 100 families allocated a social worker. The cases of these families noted issues of parental substance misuse 2 years after the initial referral. (Age of children was not provided because data assessed at family-level)	Case files were selected for families allocated a social worker in the whole of 3 London (UK) local authorities and one District covering half of a fourth authority	Whether or not the child remained with their mother or moved caregivers 2 years after initial referral. Types of movements included moved with Father, kinship placement, foster care, adoptive placement, and other.	DV noted in case file as a parental or social issue in household (yes/no).	DV families were 3.82 more likely to remain at home ($p = 0.0001$). Discussion mentions that when reviewing files was apparent that social workers had challenges when working with DV cases. For example, found that sometimes caseworkers did not remove a child because of fear of how perpetrator would react toward worker

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Johnson-Reid et al. (1999)	85 foster care youth residing in 3 California counties who participated in a one-time presentation on dating violence. Youth were high school aged children (Mainly juniors and seniors) [Specific age of youth not provided]	Needs assessment survey completed by youth	Youth resided in foster care and group home settings.	Youth were asked whether they witnessed violence in their family	[Did not compare likelihood of domestic violence. Only provided percentage estimate. See Table 3 for estimate details.]
Martin et al. (2002)	114 children ages 8 years or younger in Kentucky who were in state custody receiving services from Kentucky Adoptions Opportunities Project. Excluded Native American children. (Mean age of urban sub-sample = 2.25; rural = 5.67)	Case worker reports and court records were reviewed using a protocol developed by evaluation team.	Only included cases where child remained in an out-of-home placement beyond temporary custody hearing. Types of placement outcomes assessed included: foster/adoptive homes, kinship care, and traditional foster care.	Documented history of maternal domestic violence as a factor contributing to repeated involvement with child welfare.	[Did not compare likelihood of domestic violence. Only provided percentage estimate. See Table 3 for estimate details.]

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Zuravin et al. (1997)	1,035 CPS-involved families in the initial investigative phase from a large mid-Atlantic city (Children's age could not be determined because data was assessed on a family-level basis)	Case worker reports	Families who experienced the placement of at least one child during the investigative phase and had one child remaining in care at the close of this phase (excludes temporary or short-term foster care)	Case worker report that mother experience domestic violence	Families that experienced DV were more likely to experience placement than families that did not experience DV.
Kohl et al. (2005)	3, 931 children ages 0-15 years (mainly ages of 6-10 years) in families who underwent a complete investigation for child maltreatment between October 1999 to December 2000.	NSCAW: Face-to-face interviews with caseworker concerning case outcomes.	Caseworker report of out-of-home placement. Out-of-home placement only included foster care or kinship care settings. Excluded group care and other out-of-home care	Caseworker report of (a) history of DV only, (b) active DV or both active and a history of DV, and (c) no DV	<p>-Cases with history of DV were less likely to be placed (OR = 0.54); however active DV and no DV no significant relationship.</p> <p>-Although history DV significantly less likely to be placed, the strongest predictors of OOHP were level of harm (OR = 8.9), substance abuse (OR = 3.6), and cumulative risk count (Medium = 4.0; High OR = 9.8).</p>

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Carter (2009b)	5, 495 CPS-involved children ages 0-14 (mainly ages 6-10) in families who underwent a complete investigation for child maltreatment between October 1999 to December 2000.	NSCAW: Face-to-face interviews with children, caregivers, and CPS workers	Out-of-home placement settings included: foster home, kin care setting, group home/residential treatment program, and “other” out-of-home care arrangements.	Caseworker reports of domestic violence presence (Yes/No)	Logistic model revealed no significant relationship between DV and likelihood of OOHP
McBeath et al. (2009)	243 foster care children ages 1-17 (Mean age = 6.32) randomly assigned to 1 in 9 nonprofit agencies contracted to provide foster care services with the State of Michigan Department of Human Services (in Wayne county (Detroit), Michigan) between May and October 2001.	Data was extracted from case file using a standardized data collection instrument and trained agency staff. Data collection stopped when the court terminated agency supervision of the family, or at 930 days.	Excluded children who re-entered foster care in less than 365 days since their last non-relative out-of-home placement.	Whether case file had information that identified primary caregiver’s DV experience as one of the precipitating formal allegation leading to the child’s placement in foster care. This information was collected 30 days after child was placed in foster care.	[Did not compare likelihood of domestic violence. Only provided percentage estimate. See Table 3 for estimate details.]

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Coohey (2007)	31 cases investigated for exposure to DV or failure to protect from DV [Mention of half of the sample being children under the age of 3 years, but no average age/ age range provided] from an urban county from a state in the Midwest	Data gathered from investigative reports and coded by 2 research assistance. Interrater reliability, using Kappa between two coders was 0.89. A third researcher was used to resolve discrepancies.	Investigator report of removing children from home	Applied Aron and Olson's (1997) definition of DV. If investigator, caregiver, child or other credible source said that the child saw an adult being assaulted; heard screams, crying, degrading language, or objects being thrown or broken; or saw the aftermath of an abusive incident, including blood, bruises, torn clothes, broken glass, a police officer's presence, or an arrest, the child was exposed to DV. Actual of potential harm measures included physical harm and emotional harm.	<p>-Content analyses revealed that 5 of the removals occurred because DV was severe (i.e., batterer threatened to try to kill the adult victim), the mother had violated a no contact order, or there was imminent danger to the child's life or health.</p> <p>-Cases in which removal did not occur were influenced by (a) how the batterer reacted to the investigation and (b) whether an alternate caregiver was involved with the family. In all non-removal cases, the batterer was not in the home when the investigator completed the report.</p>
Mines et al. (2008)	205 cocaine-using women with newborn infants recruited after giving birth at a large urban county hospital [No age provided, just "newborn"]	Maternal medical and demographic data extracted from hospital records	Hospital record showing CPS' decision to remove an infant from maternal custody	Conflict Tactics Scale (CTS) (Straus, 1980) - Mother's report of current or lifetime experience of physical abusive relationship.	Mothers who maintained custody of their child did not significantly differ in their DV experience compared with mothers who did not maintain custody of their infant.

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Meyer et al. (2010)	Randomly selected 60 court cases involving parental appeals of lower court decisions to terminate parent rights in which parental substance use was an issue. [Age not provided because assessed at case-level]	Extracted data from court cases collected using LEXIUS-NEXIUS database	Children removed from home and placed in care of state (Georgia, Florida, Louisiana, and Virginia) CPS	Information in case about the parent having a history of being involved in domestic disputes, as evidenced by testimony regarding police involvement, incarceration, or restraining orders for a previous partner or spouse.	<p>There was no significant difference between the two groups. However, the more additional risk a parent had the more likely they were to have their parental right terminated.</p> <p>Qualitative results indicated that cases where the appealing parent perpetrated DV were more likely to have parental rights terminated than cases where appellant was not perpetrator. All but one of the appealing perpetrators was men.</p>
Carter (2010)	2,215 American Indian/Alaskan Native and White children ages 0-14 (mainly between 6-10 years) involved with CPS and had an allegation of abuse or neglect investigated.	National Survey on Child and Adolescent Well-Being (NSCAW): Caregiver, children, caseworker, and teacher interviews	Out-of-home care (yes/no)	DV was measured based on child welfare worker's assessment using a checklist of risk factors	When controlling for other factors, DV was not a significant predictor of out-of-home placement

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Rees et al. (2009)	130 children in local authority care (UK) for who adoption was recommended in 1991-1996 ranging from ages 3-11 years (Mean age = 5.7 years.)	Researcher collected information from social work records. Interviewers met regularly to compare coding	Children were all recommended for adoption. Placement outcomes described included adoption, long-term foster care or other permanent home, no stable home.	Social work file had information about domestic violence as a parental risk factor in children's home environment	[Did not compare likelihood of domestic violence. Only provided percentage estimate. See Table 3 for estimate details.]
Black et al. (2008)	5,567 substantiated cases from 55 CPS agencies in Canada with children ages 0-15 (mainly ages 4-7 years)	Secondary data collected in the 2003 CIS study. Data collected directly from caseworkers about reports investigated for child maltreatment between October 1, 2003 and December 31, 2003.	Out-of-home placement categorized as: No placement required, placement considered, informal kinship care, child welfare placement.	Examined case files and categorized DV as follow: investigations involving only exposure to DV, investigations involving exposure to DV that co-occurred with at least one other for of maltreatment; and other forms of maltreatment	Binary logistic results indicate that cases with co-occurring DV and other maltreatment types 3.87 more times to be placed than DV only cases.

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Hilamo (2009)	77 sub-regions in Finland (Age of children not provided because measured at community-level)	Community level data collected between 1991 to 2006 and 1997 to 2005 from SOTKANet Indicator Bank, comprehensible municipal level statistical information on welfare and health in Finland.	Proportion of children placed outside the home	Proportion of people who used DV shelters for battered families	The use of shelters for battered families was associated with the variation in the proportion of OOHP in 1997 when controlling for other factors (including proxies for poverty), but was not significantly associated in changes in rate of OOHP (i.e., when trying to explain the increase in OOHP). [i.e., significant differences cross-sectionally but not longitudinally]
Horwitz et al. (2011)	3,129 youth ages 0-14 (mainly ages 6-10) referred to CPS and for whom there was an investigation on of potential maltreatment was completed during the sampling period, between October 1999 to December 2000. Children were not placed out-of-home at the baseline interview.	NSCAW: Caregiver, children, caseworker, and teacher interviews.	Out-of-home placement includes both formal and informal care. Information primarily from caseworkers, with caregiver information used when caseworker's missing	CTS-1 Physical assault scale	Elevated CTS scores increased the likelihood of being placed in OOHP within the 30 month follow-up by 1.02 for children who initially remained in their homes after the child welfare investigation. However, this was not true for children with no prior child welfare involvement.

Table 1.1 (Continued): Studies reporting the association between domestic violence and out-of-home placement cases

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Beeman et al. (2001)	172 families in a large Midwestern city with police reports of incidents of domestic assault and/or child maltreatment between 1992 and 1995. (Age of child not assessed because family-level data)	Police reports were linked to the county CPS data system. CPS assessment workers gathered the data to construct independent variables in the study using a standardized administrative form	CPS report of out-of-home placement (yes/no)	Police report of incident of adult domestic assault offenses	There was no significant difference in the rate of out-of-home placement for families with dual-violence compared with child maltreatment-only cases.

Table 1.2: Studies reporting the association between domestic violence and permanency or well-being outcomes.

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Cheng (2010)	411 children in long-term foster care (LTFC; i.e., children who spent at least 3 years in foster care) (Mean age = 9.6 years)	NSCAW: national sample of children in LTFC between 1999 and 2004. Four waves of interviews with children, caregivers, caseworkers, and teachers.	Placement mode was comprised of 3 statuses: reunification, adoption, and continuation in long-term foster care	Caseworker reports of caregiver needing domestic violence services	The likelihood of exit to reunification was negatively associated with identified need for DV services ($e^b = .05$, $p < .05$). [log-odds]
Osborn (2008)	364 children ages 4-18 (Mean age at entry = 7.48) who experienced 2 or more unplanned placement breakdowns due to behavior within the previous 2 years and referred for out-of-home placement	Data was collected in Australia between November 2003 and August 2005 from case files and face-to-face interviews with case workers	Out-of-home placements included emergency, short-term, or long-term placements	DV as documented in reports and confirmed by caseworker. DV had to be present in household at the time that the children were no placed into care. DV referred to witnessing of physically or psychologically aggressive exchanges between adults in household	Children from backgrounds with DV experienced significantly more placement changes ($M = 11.09$, $SD = 8.44$) than children without history of DV ($M = 8.92$, $SD = 5.26$), $t(356) = 2.89$, $p < .01$

Table 1.2 (Continued): Studies reporting the association between domestic violence and permanency or well-being outcomes.

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Larrieu et al. (2008)	93 mothers of children (n = 140) ages 0-60 months (Mean age = 24.23 months) with child or children in out-of-home care. Mothers participated in a clinical intervention project in Louisiana that assessed families with substantiated abuse or neglect, as determined by CPS.	Face-to-face interviews with mothers	Placement outcomes assessed was reunification versus maternal loss of custody. Reunification defined as return from OOH to biological mother for whom the child was removed. Loss of custody referred to children whose permanent plan was being freed for adoption through termination of parental rights.	DV measured using the Partner Violence Inventory (PVI; adapted from Straus 1979). 26-items instrument with 2 sections. First section assess violent versus nonviolent behaviors and children's exposure to violence; second section asked about the total number of partners who engaged in violence with them from high school to present, most serious injury as a result of partner violence, and effects of violence on children who witnessed violence.	-No significant difference between case outcome (i.e., reunified or loss of custody) and degree of partner violence. -Cumulative risk was the best predictor of reunification suggesting DV alone was less influential in predicting custody outcome.

Table 1.2 (Continued): Studies reporting the association between domestic violence and permanency or well-being outcomes.

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Delfabbro et al. (2009)	418 randomly selected infants ages 0-2 (Mean age at entry = 1.3 years) referred for at least one out-of-home placement between 2000 and 2004 in South Australia (one in six states in Australia).	Administrative data maintained by the South Australia Department for Family and Community Services.	Made distinction between respite (placed with no intention to remain in care) and non-respite (place for child protection purposes) placements.	Mention of DV in case report (Yes/No)	<p>-Aboriginal families were more likely to come into care for DV whereas non-Aboriginal children were more likely to be placed due to parental mental health issues or disabilities in parents.</p> <p>-No significant relationship between DV and final case status (i.e., still in foster care, living with birth parents,, living with relatives, care transferred interstate, adoption, other arrangements, child deceased, and details missing).</p>

Table 1.2 (Continued): Studies reporting the association between domestic violence and permanency or well-being outcomes.

Study	Sample	Data collection method	Out-of-home placement definition	DV definition	Key Findings
Raghunandan et al. (2010)	Convenience sample (foster parent or kin had to consent to be in study) 234 children in kinship or foster care and were exposed to DV (Mean age for kinship sub-sample = 4.84 years; foster care = 7.04 years)	Administrative case records from Children's Aid Society (CAS) of London and Middlesex in Ontario, Canada	Children in need of kinship placement and traditional foster care	Case files showing presence of DV, defined by woman abuse. This was determined by case workers at the time the case was opened.	<p>- Children in kinship care demonstrated significantly more positive overall adjustment relative to children in foster care ($F(1,53) = 6.25, p = .016$).</p> <p>-Children in kinship care significantly more likely to have a stable placement. Specifically participants in kinship arrangements had a mean placement length of 305.19 days (SD = 203.31), whereas participants in foster care had a mean placement of 46.04 days (SD = 34.79).</p> <p>-Children in kinship placement remained in the sample place significantly more relative to children in foster care, $\chi^2 (1,226) = 14.55, p = .001$</p> <p>-Reunification with Kinship Sample: 19 (73.1%) with their biological caregiver and 7 (26.9%) remained in care at the 3-month follow-up period</p>

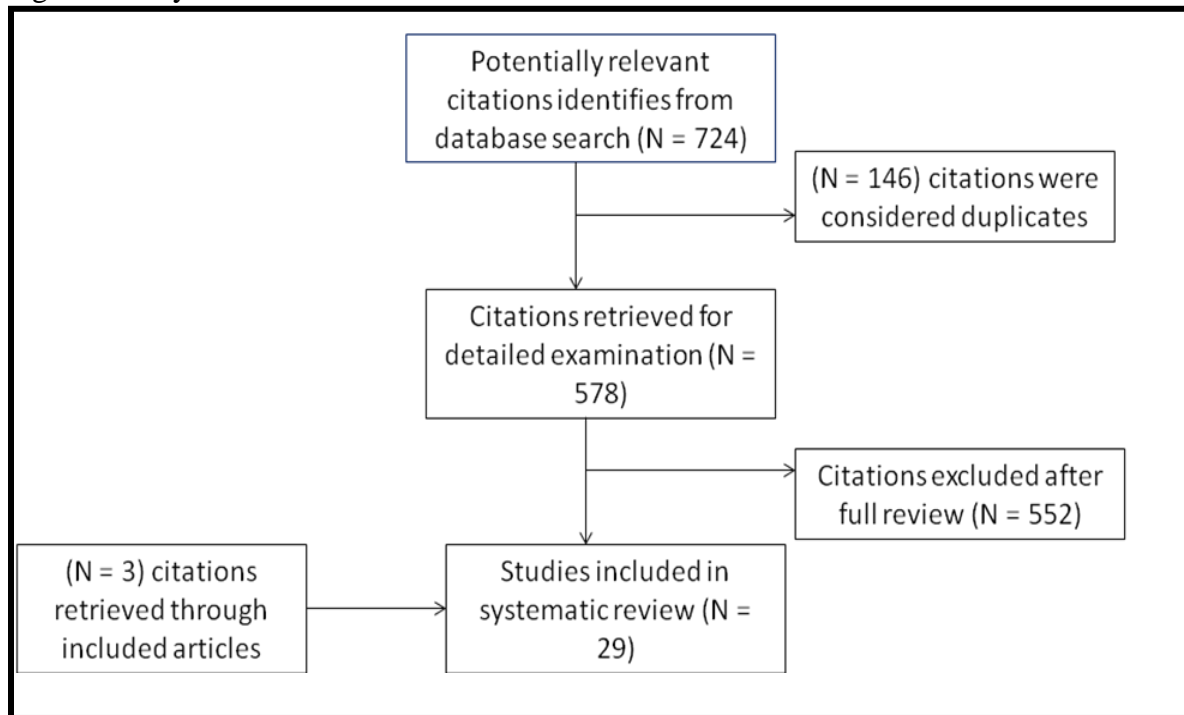
Table 1.3: Studies reporting the percentage of out-of-home placement

Study	Percentage Estimates
English et al. (2005) Donald et al. (2003)	Among moderate to high risk cases, 80.7% of children were in families where DV was indicated 12.33% (n = 9) of families in foster care experienced domestic violence.
Griffith et al. (2011)	23% (n = 124) of youth in residential treatment facilities experienced domestic violence within their family
Shepard et al. (1999) Carter (2009)	Caseworkers reported removing children for their protection in 12.5% (n = 3) of DV cases. 25% of children in out-of-home care experienced DV
Forrester et al. (2008)	41.8% of children with DV reported were placed in out-of-home care.
Johnson-Reid et al. (1999)	60% of youth in foster care reported witnessing DV in home
Martin et al. (2002)	40.5% of mothers with children in foster care in urban community had cases with DV; 73.3% in rural communities.
Kohl et al. (2005)	- 7% of cases with Active DV and 6% of cases with a history of DV were placed in foster care - 11% of cases with Active DV and 5% of cases with a history of DV were placed in kinship care
McBeath et al. (2009)	10.74% of foster care sample came were from households in which DV had been identified.
Coohey (2007)	18.5% of cases with batterers as caregivers that were substantiated resulted in removal of children.
Meyer et al. (2010)	57.1% of DV cases had parental rights terminated.
Rees et al. (2009)	86% of the children in foster care had a birth mother who experienced DV
Cheng (2010)	Of the 749 person-waves data, 4.9% reported that a child in out-of-home placement had a caregiver who needed domestic violence services.
Osborn (2008)	7.42% of foster care sample experienced DV
Larrieu et al. (2008)	80% of mothers without parental custody reported experiencing a high degree of DV in either current or past relationships.
Delfabbro et al. (2009)	52.4% of total foster sample experienced DV - 54.9% in non-respite care; 49.3% in respite care.
Raghunandan et al. (2010)	37.5% of foster care sample had a prior experience with kinship care; 78.4% with traditional foster care

Figure1.1: Search Terms Example, Sociological Abstracts (via CSA)

(abuse* within 3 (wom?n or partner* or spous* or wife or wives)) or(batter* within 3 (wom?n or partner* or spous* or wife or wives)) or(violen* within 3 (wom?n or partner* or spous* or wife or wives or domestic or family or families or dat*)) **AND** (DE=(children or infants or adolescents)) or(child*) or(girl*) or(boy*) or(adolescen*) or(teen*) or(baby) or(babies) or(infant*) or(preschool*) or(pre school*) or(young person*) or(young people) **AND** KW=((relative* within 3 foster*) or(relative* within 3 substitute) or(family within 3 foster*) or(families within 3 foster*) or(family within 3 substitute) or(families within 3 substitute) or(kin within 3 care*) or(kinship within 3 care*) or(kin within 3 caring) or(kinship near caring) or(family based residential treatment) or(foster near care) or(foster near treatment) or(foster near special*) or(foster near therapeutic) or(foster near medical) or(foster-care*) or(DE="foster care") or(substitute near care*) or(foster near family based) or(group-home*) or(group within 3 home*) or(residential treatment center) or(residential group care) or(therapeutic foster care) or ("out of home") or (removal) or (placement))

Figure 1.2: Systematic Review Article Retrieval Chart



RACE, DOMESTIC VIOLENCE, AND OUT-OF-HOME PLACEMENT: ARE AFRICAN AMERICAN CHILDREN WITH A CAREGIVER WHO EXPERIENCED DOMESTIC VIOLENCE AT GREATER RISK FOR OUT-OF-HOME PLACEMENT?

Child welfare researchers have long been interested in understanding the out-of-home placement experiences of African American children. This is because of the evidence that consistently shows a disparity exists in the likelihood of out-of-home placement among African American children relative to the likelihood of out-of-home placement among children from other races/ethnicities (Barth, 2005; Goerge & Lee, 2005; Hill, 2005; Hill, 2006; Stoltzfus, 2005; U.S. DHHS, 2005). Racial disparities in the likelihood of entering out-of-home placement have led to an overrepresentation of African American children in the child welfare system (Wulczyn & Lery, 2007). In hopes of understanding the reasons for racial disparities in the child welfare system, Hill (2006) describes three theories of causation: family risk factors (i.e., response to disproportionate need), community risk factors (i.e., discriminatory practices operating in society), and organizational and systemic risk factors (i.e., discriminatory practices operating in CPS). Evidence in the literature supporting these three risk factors has been inconclusive; therefore, researchers continue to investigate each theory.

Using a family risk factor perspective, researchers have explored the relationship between several parental characteristics and racial disparity. Despite the extant literature on the family risk factors associated with racial disparity, there exist limited information

on the role that race plays in out-of-home placement among families who experience domestic violence. This is surprising considering: (a) domestic violence within families is a known risk factor for out-of-home placement (Black, Trocmé, Fallon, & MacLaurin, 2008; English, Edleson, & Herrick, 2005; Hilamo, 2009; ; Horwitz, Hulburt, Cohen, Zhang, & Landsverk, 2011; Lavergne, Damnant, Clement, Bourassa, Lessard, & Turcotte, 2011; Zuravin & DePanfilis, 1997) and (b) greater rates of domestic violence have been linked to African American women compared to Caucasian women (Bent-Goodley, 2001; Campbell, Sharps, Gary, Campbell, & Lopez, 2002; Taft, Bryant-Davis, Woodward, Tillman, and Torres, 2009).

Although a connection has been made between race and out-of-home placement and race and domestic violence, very few researchers have examined whether case outcomes of child protective services (CPS) involved families victimized by domestic violence vary by race. When conducting a review of the literature for the current study, the researcher found only two studies that investigated the effects of race on out-of-home placement among children victimized by domestic violence. Neither of these studies investigated out-of-home placement among African American families. Instead, the studies focused on the child welfare experiences of Australian (Delfabbro, Borgas, Rogers, Jeffreys, & Wilson, 2009) and American Indian (Donald, Bradley, Critchley, Day, & Nuccio, 2003) families that experienced domestic violence.

Considering the clear gap in knowledge regarding out-of-home placement experiences of African American children victimized by domestic violence, the current study will examine whether children with African American caregivers who reported domestic violence are at greater risk for out-of-home placement compared to children

with non-African American caregivers who reported domestic violence. Furthermore, in an attempt to determine whether African American caregivers victimized by domestic violence are at greater risk for having a child in out-of-home placement due to organizational and systematic risk factors, propensity score analysis will be used to control for selection bias. The following section provides the conceptual model underlying the study design.

Conceptual Model

As shown in Figure 2.1, the present study hypothesizes that, children with African American caregivers who experienced domestic violence are at greater risk for out-of-home placement, all else considered equal, than children with non-African American caregivers who experienced domestic violence. This hypothesis is based on a conceptual model that is derived from prior research which suggests: (a) families with domestic violence share similar characteristics as families that experience out-of-home placement; and (b) African American women are at greater risk for domestic violence than Caucasian women. If this hypothesis is rejected, then it may be inferred that the disproportionate outcome of out-of home placements results from the greater family risk factor of domestic violence (i.e., response to disproportionate need) rather than from community risk factors (i.e., discriminatory practices operating in society) or organizational and systemic risk factors (i.e., discriminatory practices operating in CPS).

Domestic violence and out-of-home placement. Findings from studies examining the effect of domestic violence on out-of-home placement have been mixed. Some researchers reported that domestic violence increased the likelihood of out-of-home placement (Black et al., 2008; English et al., 2005; Hilamo, 2009; Horwitz et al., 2011;

Lavergne et al., 2011; Zuravin et al., 1997). On the other hand, researchers have also found that there was no significant difference in the rate of out-of-home placement between children within families that experienced domestic violence and children within families that did not experience domestic violence (Beeman, Hagemeister, & Edleson, 2001; Carter, 2008; Carter 2009a; Carter, 2010; Donald et al., 2003; Mines, Singer, Humphrey-Wall, & Satayathum, 2008; Meyer, McWey, McKendrick, & Henderson, 2010). Further, children within families victimized by domestic violence were found to be significantly less likely to experience out-of-home placement than children within families that were not victimized by domestic violence (Forrester & Harwin, 2008; Kohl, Edleson, English, & Barth, 2005; Trocome, Knoke, & Blackstock, 2004). Despite the inconsistent findings regarding the effects of domestic violence on out-of-home placement, it appears that domestic violence cases share similar risk characteristics with out-of-home placement cases.

Scholars have concluded that when compared to child welfare involved caregivers who did not report domestic violence, child welfare involved caregivers who did report domestic violence were more likely to display the following risk factors: younger age (Dosanjh, Lewis, Mathews, & Bhandari, 2008; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), lower education level (Dosanjh, Lewis, Mathews, & Bhandari, 2008), lower income level (Dosanjh, Lewis, Mathews, & Bhandari, 2008), presence of major depression disorder (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), drug and alcohol dependence (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), history of prior child welfare reports (Hartley, 2004; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), younger children (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004),

and presence of male intimate partner in household (Beeman, Hagemeister, Edleson, 2001; English, Edleson, & Herrick, 2005; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004). These risk characteristics have also been known to increase risk for out-of-home placement (e.g., Bellamy, 2009; Burns, et al., 2007; Carter, 2009). Thus, the out-of-home placements risks associated with domestic violence appear to be, at the very least, indirectly related to these additional risk factors.

African American women and domestic violence. The fact that some studies have linked domestic violence to an increased risk of out-of-home placement is particularly worrisome for African Americans, because African American women are impacted by domestic violence at higher rates than Caucasian women (Black, et al., 2011; Taft, et al., 2009). This is particularly true for African American women living in poverty. Findings from a recent literature review on African American women's experiences with domestic violence provided evidence that suggested racial differences in the rate of domestic violence vary depending on income (Taft et al., 2009). For example, Cazenave and Straus (1979) found that, when income was taken into account, racial differences in the rate of domestic violence were present only among families that had an income level between \$6,000-\$11,999. Similarly, Hampton and Gelles (1994) found a racial difference in rates of domestic violence only existed among groups of women with an income greater than \$10,000. However, Rennison and Planty (2003) found no significant racial differences in the rates of domestic violence after controlling for income. Thus, one may conclude that income is a stronger predictor of domestic violence than race. However, it is important to keep in mind that African American women have consistently been overrepresented among low income levels compared to non-African

American women (U.S. Census Bureau, 2003). Therefore, racial disparities in domestic violence cases should not be overlooked simply because of income.

In addition to income, employment, network embeddedness, and cohabitation have been identified in the literature as affecting African American women's experiences with domestic violence (Bent-Goodley, 2001). African American women who were either employed (Sullivan & Rumputz, 1994), had a partner with a white-collar status (Cazanave & Straus, 1979), or had a partner with viable employment opportunities (Sampson, 1987) were less likely to experience domestic violence. In addition, although inconsistent, some researchers have found network embeddedness (i.e., the number of children in the home, the number of years living in a neighborhood, and an adult present in addition to the couple) decreases African American's risk of domestic violence (Cazanave & Straus, 1979). Lastly, scholars hypothesize that cohabitating without marriage increases African American women's risk for domestic violence; however this theory has not been empirically supported (Bent-Goodley, 2001).

African American women not only have internal barriers that influence their risk for domestic violence, but also experience external barriers. These external barriers inhibit African American women's behaviors toward seeking help for domestic violence (Bent-Goodley, 2004). Labeling, lack of cultural competence, and systematic inequality are three external barriers identified in the literature as influencing African American women's risk for experiencing domestic violence (Bent-Goodley, 2001; Taft, et al., 2009).

Scholars have argued that African American women do not label themselves as domestic violence victims because they do not want to be associated with the White

feminist movement, because women involved in the movement are stereotyped as “male bashers” (Bent-Goodley, 2004). This idea is similar to the idea of *racial loyalty* which implies that African American women would rather withstand abuse than to further “bash” African American men and be labelled as a betrayer of the race. African American women’s awareness of police brutality and the other forms of social injustices that African American men are subjected to influence their decisions not to report domestic violence, because of fear they will be socially stigmatized by the African American community (Bent-Goodley, 2004; Richie, 1996). Instead, African American women would rather sustain the abuse in order to protect the family, maintain the relationship, and spare the larger community of embarrassment (Bent-Goodley, 2004; Richie, 1996). By sustaining the abuse, African American women are more likely to experience repeated victimization. This is problematic because repeated victimization has been linked to increased likelihood for negative outcomes such as substance use, including alcohol, marijuana, and crack cocaine (Curtis-Boles & Jenkins-Monroe, 2000; Davis, 1997; West, 2002).

In addition to labeling barriers, African American women may be at greater risk for experiencing domestic violence than Caucasian women, because of the lack of culturally relevant domestic violence services that are available in African American communities. This may be especially true for African American women who are involved with the child welfare system. In a qualitative study conducted by Bent-Goodley (2004), African American mothers victimized by domestic violence not only expressed fear that their child would be placed in foster care if they seek help, but also expressed fear based on their belief that the child welfare system would punish them for being “poor, African

American, and abused” (Bent-Goodley, p. 313). Because of such beliefs, African American women are less likely to utilize domestic violence services. In their study, Coley and Beckett (1988) found that African American women did not turn to shelter because they were either unaware of the services or saw the services as a poor fit.

Not only are services not culturally relevant to the needs of African American women victimized by domestic violence, they are often not community-based. Bent-Goodley (2001) refers to this as systematic inequality. African American women victimized by domestic violence may not only lack access to community-based domestic violence services, such as shelters, but also lack important resources within their communities. Such resources include transportation, employment opportunities, health care services, police protection, and legal services (Bent-Goodley, 2004; Hampton, Oliver, & Magarian, 2003; Taft et al., 2009). This lack of formal support may cause African American women to be more dependent on their abusive partner for help, thereby increasing their risk for long-lasting domestic violence (Taft et al., 2009).

Current Study

The current study tests the hypothesis underlying the conceptual model by comparing the risk of out-of-home placement between children of African American and non-African American caregivers who reported domestic violence. This hypothesis is tested while controlling for possible selection bias by balancing the two groups of women on the set of identified risk factors, using propensity score analysis. The rationale for this analysis is guided by the assumptions of the Neyman-Rubin’s counterfactual framework of causality. Using the Neyman-Rubin counterfactual framework, one may assume that by using balanced data, it is possible to test the counterfactual (i.e., what would have

happened to the treated subjects if they did not receive treatment) by examining the difference in mean outcomes between participants who receive treatment and participants who did not receive treatment (Guo and Fraser, 2010). It is important to note that, although in most cases the treatment allows for a manipulable condition (e.g., dosage of medication, participation in an intervention), the current study is unique in that it assumes a nonmanipulable agent, caregivers' race, as the "treatment."

According to Rubin (as cited by Blank, Dabady, and Citro, 2004), nonmanipulable factors cannot be considered as causal factors in a study because they do not allow for an examination of different outcomes for the same person assuming varying types of conditions. Although this is true when strictly keeping with the definition of a counterfactual, the conceptual model presented in the current study suggest that variation of domestic violence experiences is not directly related to race, but rather indirectly related to race via race-based discriminatory practices (e.g., lack of community-based and culturally sensitive services in African American communities). This indirect relationship is examined using propensity score analysis, which allows for an indirect assessment of race, given it considers the manipulation of all possible confounding variables that are related to the outcomes of race-based discriminatory practices toward African American women who experiences domestic violence (Blank, Dabady, and Citro, 2004). Shadish, Cook and Campbell's (2008) recommend that researchers study nonmanipulable causes using whatever means available. Doing so can assist with finding manipulable factors that can be used to target the problem.

To the best of the researcher's knowledge, this is the first study to compare the risk of out-of-home placement between children of African American and non-African American caregivers victimized by domestic violence.

Methods

Design and Analytic Sample

The analysis for this study was conducted using data from the National Survey of Child and Adolescent Well-Being (NSCAW). The NSCAW study sampled participants at two different stages. The first stage involved the selection of primary sampling units (PSUs; i.e., county child welfare agencies); and the second stage involved children and families within the PSUs. The PSU sample consisted of 92 CPS agencies representing a total of 97 counties and 36 states. To be eligible for the study, children and families had to have been referred to child welfare and had an investigation of potential child abuse or neglect completed during the sampling period, between October 1999 and December 2000. The sample included cases that received ongoing services and cases that did not receive services, either because the cases were not substantiated or because it was determined that services were not required. When a family had more than one child involved in an investigation, one of the children were randomly selected to participate. Finally, cases when the child was not the target of the investigation into abuse or neglect (e.g., cases in which other members of the family were the focus of the investigation or the selected child was the alleged abuser rather than the victim) were excluded (NSCAW, 2005). In total, 5,501 children ages birth to 15 years were selected from the sample of PSUs.

The NSCAW used several sources of information to gather data; however, the data used in the current study was limited to information gathered from face-to-face interviews with primary caregivers and CPS caseworkers in charge of the investigation or with access to the case file. Interviews occurred in four waves after the child welfare investigation: 6-months follow-up (Wave 1), 12-months follow-up (Wave 2), 18-months follow-up (Wave 3), and 36-months follow-up (Wave 4).

The analysis in the current study is restricted to 925 (209 African American, 716 non-African American, including Hispanic, White, and “Other” races) female caregivers who reported domestic violence and did not have missing data.¹ Because children of caregivers who reported domestic violence were not in out-of-home placement during the time of the Wave 1 interview, this study also excludes cases with a child who experienced out-of-home placement at the time of the Wave 1 interview, or a child who experienced out-of-home placement prior to the Wave 1 interview but was still living in the biological home during the Wave 1 interview. Therefore, children in the current study were not at risk for out-of-home placement until after the Wave 1 interview.

Measures

Dependent variable: *Time to out-of-home placement.* Two pieces of information were used to derive the outcome variable, time to out-of-home placement. This information included: (a) whether or not a child experienced an out-of-home placement event within the 36 months study window (yes or no) and (b) the out-of-home placement date or, if the child did not experience out-of-home placement, the date equivalent to 36-months after the Wave 1 interview. Children who were placed in out-of-home care after the 36-months study window or who never experienced out-of-home

¹ See Appendix B for Table depicting differences between missing and non-missing samples.

placement were considered as not experiencing the event and were coded as 0 (i.e., censored cases). Conversely, children who experienced out-of-home placement within the 36-months study window were coded as 1. Out-of-home placement types included: kin care setting, home of family friend, foster home, therapeutic foster care, group home, emergency shelter, psychiatric hospital, residential treatment facility, place of detention, transitional living, and “other” out-of-home care arrangements.

Independent Variables. All information regarding caregiver and case characteristics were collected during the Wave 1 interview.

Case characteristics. Caseworkers reported whether or not serious issues related to alcohol and/or drugs or mental health were present. In addition, caseworkers made an assessment as to whether the caregiver had any history of recent arrests or detention in jail or prison, childhood history of abuse or neglect, prior reports to child protective services, or receipt of domestic violence services. Each caseworker also reported on primary maltreatment types by choosing one of the following categories: physical abuse, emotional abuse, neglect- failure to provide, neglect- failure to supervise, sexual abuse, or other type of abuse. Keeping in mind the primary maltreatment type selected, caseworkers rated the severity of harm to the child as either none, mild/moderate, or severe. Additionally, cases were identified by caseworkers as either substantiated, indicated, or neither substantiated nor indicated.

Caregiver demographic characteristics. Information was gathered from caregivers on a range of demographic characteristics including caregiver’s race (African American vs. non-African American), child’s age, caregiver’s age, marital status, live-in intimate partner, household income, residence in poor county, education level, number of

children in household, and employment status. The ages of children were divided into four categories: 0-2 years old, 3-5 years old, 6-10 years old, and 11 years or older.

Caregiver age categories were as follow: under 25 years, 25 -34 years, and 35 or above years. Household income was examined using the following annual income brackets: less than \$10,000, \$10,000- \$19,999, \$20,000- \$29,999, \$30,000- \$39,999, or \$40,000 or greater. Caregivers could report having a range of 1 child to 5 children or more.

Educational categories included (a) no degree; (b) high school diploma/GED; (c) associate/vocational technical degree; (d) bachelor's degree; or (e) other type of degree.

Caregivers' employment status was assessed as either unemployed, part-time employment, or full-time employment. Caregivers were considered as living in a poor county if more than 5% of county families with children lived below the 50% poverty level. This information was extracted from the Census Bureau databases.

Social support. In order to gather information related to both formal and informal supports, caregivers responded to questions on social support adapted from the Duke–University of North Carolina Functional Social Support Scale (FSSQ; Broadhead, Gehlbach, deGruy, & Kaplan, 1998) and the Sarason Social Support Questionnaire-3 (SSQ3; Sarason, Levine, Basham, & Sarason, 1983). The questionnaire included seven items that asked respondents to report the number of people they know that can assist them with the following types of help: (a) household tasks, (b) childcare, (c) caring for them when they are sick, (d) helping with transportation, (e) financial advice, (f) general advice, or (g) to invite them to dinner. Because responses varied with each type of help, to make items comparable, responses for each question were divided into quartiles. A composite score was then created by summing the quartile scores for each item and

dividing this score by the number of questions answered by each individual. Thus, scores ranged from one to four, with one indicating the lowest level of social support and four indicating the highest level of social support.

The FSSQ had a test retest reliability of .66 after two weeks and has been proven to have concurrent validity (NSCAW, 2005). The SSQ3 has an internal reliability ranging from .75 to .97 (NSCAW, 2005).

Domestic violence. The physical assault measure of the Conflict Tactics Scale 1 (CTS-1; Straus, 1979) was used to assess female caregivers' experiences with domestic violence. The instrument was administered via Computer-Assisted Personal Interviewing (CAPI) to all caregivers of children remaining in the home following the maltreatment investigation.

The CTS-1 measures acts of violent behaviors that may have occurred during the women's relationships with their partners. The 9-items instrument assesses physical abuse behaviors such as pushing or shoving a partner or beating up a partner. Caregivers in this sample were classified as having experienced domestic violence if they reported experiencing at least one act of physical violence during the past year² or at any time during their lifetime prior to the last year. Therefore, some caregivers may have experienced domestic violence prior to their CPS involvement or prior to birthing a child.

Using the severe violence CTS-1 subscale, cases of severe domestic violence were also identified. Severe violence behaviors were those identified as posing a greater risk of injury and requiring medical attention. Such behaviors included being choked, beaten up, and threatened with a knife or gun.

² Note: 72.89% experienced domestic violence during the previous year.

CTS-1 has been proven to be a valid and reliable ($\alpha = .74$ to $.85$) measure (Straus, 1979).

Statistical Approach

Bivariate analyses were conducted to examine the relationship between the risk characteristics associated with domestic violence and race. These analyses were used to determine whether selection bias was present within the sample. The researcher used survival analysis (Stata 12.0) to examine the influence of race and other explanatory variables on the timing to out-of-home placement. Study data met the assumptions for the use of Cox Proportional Hazard models, the type of survival analysis used in the current study.³

Selection bias adjustment. To assess which characteristics contributed to selection bias, comparisons were made between the characteristics of African American caregivers who reported domestic violence and non-African American caregivers who reported domestic violence. As depicted in Table 2.1, the two groups were significantly different ($p < .05$) on several characteristics. For example, African American caregivers were significantly less likely to report having a partner living in their household, and more likely to live in a poor county than non-African American caregivers. Because such characteristics have been identified as a significant predictor of out-of-home placement among domestic violence cases, such differences and the potential selection effects associated with caregivers' race must be considered when investigating the effect of race on out-of-home placement. Thus, propensity score weighting was used to account for selection bias by creating a balanced sample of African American caregivers who reported domestic violence with non-African American caregivers who reported domestic

³ For a full explanation of diagnostic testing, refer to Appendix C.

violence. Specifically, the characteristics identified in the study's conceptual model as being related to the race-based discriminatory practices experienced by African American caregivers who reported domestic violence were weighed so that the weighted distribution of the characteristics for this group matched those of the non-African American caregivers who reported domestic violence.

Weights were created based on estimated propensity scores. The propensity scores were estimated using a logistic regression model in which the dichotomous outcome variable was caregivers' race. The predictor variables in this model included the following set of characteristics: caregiver's age, child's age, caregiver's history of abuse, severe domestic violence, prior child maltreatment report, domestic violence service, case substantiation status, substance use, serious mental illness, primary maltreatment type, level of harm, live-in partner, income, prior history of arrest, number of children, employment status, and residing in a poor county. Table 2.2 depicts the results of the full logistic regression model used to predict the propensity scores. Findings from the logistic model parallel those found in the bivariate results, showing several significant differences exist between the two groups. The logistic model demonstrates a good model fit as indicated by the Model chi-square statistic ($\chi^2 = 103.74$, $p < .05$).

After predicting the propensity scores, weights for the average treatment effect (ATE) were calculated using the following formulas: $1/ps$ (where ps = propensity score) for African American caregivers who reported domestic violence, and $1/(1-ps)$ for non-African American caregivers who reported domestic violence. To assess how well the propensity score weighting procedure reduced selection bias, weighted simple regression or weighted simple logistic regression was conducted using each predictor variable and

caregiver's race as the outcome variable. As indicated by the non-significant findings (i.e., $p > .05$) in Table 2.3, propensity score weighting techniques successfully removed imbalance. Therefore, bivariate analyses using the weighted sample revealed no significant differences in measured characteristics between African American caregivers who reported domestic violence and non-African American caregivers who reported domestic violence.

Outcome model.⁴ After balancing the data using propensity score weighting techniques, a survival analysis, specifically Cox Proportional Hazard models, was conducted to examine the influence of race and other caregiver characteristics on timing to out-of-home placement. Both an unadjusted model (i.e., unweighted model) and an adjusted Cox Proportional Hazard model (i.e., weighted model) were examined.⁵ Using survival analysis, the speed of change from entry to time to out-of-home placement was measured by hazard rate, an instantaneous probability measuring rate of change (Guo, 2010). The greater the number of months a child is not placed in out-of-home care, the smaller the hazard rate and the slower the speed to out-of-home placement.

The hazard rate was calculated based on the number of months between the date of the Wave 1 interview and (a) the date of placement or (b) 36-months after entry.

Because each caregiver had a different investigation close date, caregivers and their

⁴ Sensitivity analyses were also conducting to compare the propensity score weighting model with propensity score matching models. Results showed congruence between the models. See Appendix D for Table and description of results.

⁵ Note: Because both multivariate modeling and propensity score weighing attempt to control for observed differences in treatment groups, the researcher determined it was unnecessary to control for explanatory variables in the weighted model (Baser, 2008). Therefore, the weighted model in the current study only examines the bivariate relationship between caregiver's race and timing to out-of-home placement.

children were considered as entering the observational period at different points in time. Therefore, caregivers' children were exposed to the risk of out-of-home placement for varying lengths of time. For example, one caregiver may have been interviewed on February 28, 2001 and had a child placed on October 28, 2001; and another caregiver interviewed on April 28, 2001 and had a child placed on December 28, 2001. Because all caregivers in this study had custody of their children during the Wave 1 interview, and therefore had a child who was not eligible for out-of-home placement until after the Wave 1 interview, the caregiver interviewed on February 28, 2001 had a child who was eligible for out-of-home placement for a longer period of time than the caregiver interviewed on April 28, 2001. Thus, despite being followed for the same period of time (i.e., 36 months), the caregiver with the earlier interview date may have had a child who experienced out-of-home placement at an earlier date simply because her child entered the observational period earlier, and for no other reason. To eliminate such possible bias, a "delayed entry" Cox Proportional Hazard model was estimated. This model allowed for all the estimators to be conditional given no event at entry time.

The following section discusses results for both the weighted and unweighted Cox Proportional Hazard models.

Results

Sample Description

Results for the unweighted sample revealed that of the 925 caregivers, 14.81% had a child placed in out-of-home care within the 36-month study window. As shown in Table 2.1, the majority of participants' ages ranged from 25 to 34 years old; and a majority of their children were 0 to 2 years old. Most of the sample had 2 children and

had an annual income that was either less than \$10,000 or that ranged from \$10,000 to \$19,999. Employment and poverty status mirrored income level with over half the sample reported as living in a poor county and 47.68% reported as unemployed. Nearly all caregivers in the sample had a high school education (42.38%); however, many caregivers also reported that they did not have a high school diploma (33.95%). With respect to substance use, 16.54% of the sample had a case record with reports of active alcohol or drug use. Approximately 20.00% of the sample had serious mental health problems. A little over one-third (30.59%) of the sample had a history of child abuse. Almost half of the sample (46.81%) had a prior report of child maltreatment. Most caregivers' primary maltreatment type was neglect, failure to supervise (28.43%); and most caseworkers reported the abuse type as posing a mild or moderate level of harm to the child (60.97%). The majority of the cases was neither substantiated nor indicated (41.41%); however, many cases were also substantiated (39.03%). Only 12.32% of the sample had a prior history of arrest; and almost 25.00% of the sample lived with a spouse or partner. Over half the sample (68.54%) reported experiencing severe forms of domestic violence, however only 12.86% received domestic violence services. On average, caregivers felt that they had moderate levels of social support ($M = 2.23$).

Survival Analysis

Figure 2.2 displays the Kaplan-Meier survival curve and the smoothed hazard plot for the speed to out-of-home placement for children of African American caregivers who reported domestic violence compared to children of non-African American caregivers who reported domestic violence.⁶ The graphs, which are based on weighted estimates, suggest that a greater proportion of non-African American caregivers' children are in out-

⁶ See Appendix E for unadjusted graphs based on the unweighted sample.

of-home placements at earlier periods than African American caregivers' children during the study window. More specifically, the Kaplan-Meier survival curves show that by the end of the study window about 20.0% of non-African American caregivers who reported domestic violence have children who are placed in out-of-home settings, compared to 15.0% of African American caregivers who reported domestic violence. The hazard plot indicates that the speed to out-of-home placement is not constant over the study period. Specifically, both groups' risk of out-of-home placement begins at approximately 8 months then steadily decreases over time. Although children with non-African American caregivers begin with a higher hazard, the gap between the two groups begins to close and looks similar at 15 months. However, children with African American caregivers speed to out-of-home placement steadily decreases after 15 months while children with non-African American caregivers speed to out-of-home placement picks up again at approximately 20 months. Despite these findings, results from a *test of equality of survival distributions* shows that African American and non-African Americans do not differ to a statistically significant degree on proportions of out-of-home placements ($\chi^2 = 0.47$, $p = 0.49$). This finding is similar to findings presented in the unadjusted Cox Proportional Hazard model.

The results from both the unweighted and weighted Cox Proportional Hazard models are displayed in Table 2.4. The table includes the Beta coefficient, standard error, and hazard ratio for each independent variable in the model. A hazard ratio greater than 1 indicates a greater likelihood of out-of-home placement, and a hazard ratio less than 1 indicates a lower likelihood.

Both Cox proportional hazard models fit the data well, as reflected by the model chi-square ($p < .001$). With regard to the main variable of interest (caregiver's race), similar to the bivariate survival analysis results, both the unweighted and weighted models depict that other things being equal, children of non-African American caregivers who reported domestic violence have the highest hazard (change from entry to out-of-home placement) when compared to children of African American caregivers who reported domestic violence. Although the effect size for both models is fairly similar, these findings are not statistically significant.

Despite not finding support for the study's hypothesis, findings from the unweighted model suggest that other variables may be a better predictor of timing to out-of-home placement. These predictors include: prior report of maltreatment, income, and primary maltreatment type. For example, the unadjusted model shows that other things being equal, the speed to out-of-home placement is 78.0% faster for children with caregivers who have a prior maltreatment report compared to children with caregivers without a prior maltreatment report ($p < .05$). The model also suggests that speed to out-of-home placement is 35.00% slower for children with caregivers who have an annual income greater than \$40,000 compared to caregivers who do not have an annual income greater than \$40,000 ($p < .05$).

Discussion

This study examined whether African American caregivers who reported domestic violence were at greater risk for having a child placed in out-of-home care than non-African American caregivers who reported domestic violence. This relationship was investigated using propensity score weighting methods to control for selection bias. To

the best of the researcher's knowledge, this is the first study to compare CPS-involved African American caregivers who experienced domestic violence to non-African American caregivers who experienced domestic violence on their children's risk for out-of-home placement.

Results for the bivariate analyses conducted prior to propensity score weighting procedures suggests that African American caregivers who reported domestic violence significantly differed from non- African American caregivers who reported domestic violence on the following characteristics: male intimate partner in household, household income, primary type of maltreatment, number of children, and residence in a poor county. Specifically, African American caregivers were more likely to be impoverished (i.e., more likely to have a lower income levels and live in a poor county). This finding is with keeping with prior studies that reported socioeconomic status was a key determinant of domestic violence within the African American community (Bent-Goodly, 2001; Campbell et al., 2002; Taft et al., 2009). However, unlike prior studies, the current study did not find any significant racial differences in the severity of domestic violence or the receipt of domestic violence services. Regardless, given the limited research that is available on the differences between African American caregivers who experience domestic violence and non-African American caregivers who experience domestic violence, especially in a context that involved CPS, findings from this study contribute to this area of knowledge. In addition, these findings continue to support the empirical literature that suggests African American women face unique risk and barriers that impact their domestic violence experiences.

After controlling for the abovementioned differences between the two groups of women, the researcher found that there was no significant difference in the timing to out-of-home placement between children of African American caregivers who reported domestic violence and children of non-African American caregivers who reported domestic violence. Thus, it appears that caseworkers' decision to place a child who has a parent victimized by domestic violence is not influenced by race. This finding refutes the systematic and organizational risk factor hypothesis which argues that African American children are disproportionally represented among cases of out-of-home placement due to discriminatory practices operating in the child welfare system. It is possible that the push toward culturally competent services in child welfare agencies (e.g., McPhatter & Ganaway, 2003) has influenced caseworkers' perceptions of whether or not to remove an African American child from their biological caregiver. Assuming this is the case, child welfare agencies should continue to provide resources and trainings to assist caseworkers with enhancing their cultural competence.

Besides rejecting the study's hypothesis about race effects, the study found that other characteristics may be better predictors for risk of out-of-home placement among families victimized by domestic violence. For example, results from the unadjusted Cox Proportional Hazard model suggest that caregivers who had a prior report of maltreatment and were in lower income brackets were more likely to have a child at risk for out-of-home placement. In addition, caregivers with reports of sexual abuse as the primary maltreatment type were strangely less likely to be at risk for out-of-home placement. The latter finding may be due to the small number of caregivers in each group that had a report of sexual abuse. Therefore additional research is necessary to explore

whether CPS-involved caregivers victimized by domestic violence who have a report of sexual abuse are indeed less likely at risk for having a child in out-of-home placement. Nonetheless, in light of these findings, interventions to help alleviate out-of-home placement among domestic violence survivors should consider targeting caregivers who exhibit these risk characteristics. Doing so may decrease risk for out-of-home placement within this population.

Study findings also revealed that a disproportional rate of caregivers report severe domestic violence relative to receipt of domestic violence services. Specifically, 68.54% of caregivers who experienced domestic violence reported experiencing severe forms of domestic violence; however, only 12.86% of these caregivers received services for domestic violence. This finding is not surprising considering past research findings which suggest CPS workers are inconsistent in their assessments for domestic violence. For example, Kohl and her colleagues (2005) found that child welfare workers indicated active domestic violence as present in only 12% of families investigated for maltreatment; however 31% of caregivers reported experiences of active domestic violence. Additionally, Shepard and Raschick (1999) found that caseworkers who identified cases of domestic violence primarily focused on addressing victims' immediate safety issues, rather than referring women and children to specialized services. Thus, caseworkers may need additional training related to screening and identifying families who experience domestic violence. These training interventions should also include information about developing plans to help address the long-term safety and service needs of families victimized by domestic violence.

Finally, it is important to be mindful that although the current study's findings suggest racial disparity is not present among out-of-home placement cases involving families victimized by domestic violence, racial disparity may occur at varying points of the child welfare investigation. For example, researchers have also found that African American children are disproportionately represented at the reporting phase of the investigation (Hill, 2006; Sedlack & Schultz, 2005) and among cases of long-term foster care (Testa, 2005). Therefore, future research should examine this possibility by investigating whether (a) African American families are at greater risk of being brought to the attention of the child welfare system due to domestic violence and (b) African American children who experience domestic violence remain in foster care for longer periods of time compared to children from other racial/ethnic backgrounds who experience domestic violence.

Limitations

The current study makes a significant contribution to the child welfare and domestic violence literature. However, the study is not without its limitations. First, although propensity score weighting procedures were used in an attempt to control for selection bias by balancing differences between African American caregivers who reported domestic violence with non-African American caregivers who reported domestic violence, the analysis was limited to the information available in the NSCAW study. Therefore, additional factors that were not measured in this study may have contributed to selection bias. Second, study findings were limited to information on individuals without missing data. Thus, it is possible that the risk of out-of-home placement was not precisely measured. This is especially problematic considering African American women

have been identified as being less likely to seek help for domestic violence and to report domestic violence. Fourth, the analysis did not include information on other forms of domestic violence (i.e., psychological and sexual violence) and different levels of domestic violence (i.e., mild and severe domestic violence). Further, the analysis does not distinguish between violence that occurred (or did not occur) at times during families' child welfare involvement, and whether or not case workers were aware of the domestic violent situation. Such factors may or may not influence out-of-home placement decisions. Therefore, it is recommended that future research assess the relationship between out-of-home placement and (a) different forms and levels of domestic violence and (b) case workers' awareness of domestic violence. Lastly, a competing logistic regression model was not conducted to specify the propensity scores. Therefore, it is possible that the logistic model used to predict the propensity scores is not the best representation of the true propensity scores (Guo and Fraser, 2010). However, every effort was made to ensure that the appropriate conditioning variables were selected. These variables were based on theoretical and empirical evidence, as described in the conceptual model presented in the study.

Conclusions

Racial disparity continues to be a popular topic in the field of child welfare. In order to prevent racial disparity, it is important to understand the root of the problem. The current study provides evidence that racial disparity related to systematic and organizational risk factors is not present among CPS-involved families victimized by domestic violence. Hopefully findings from this study will inform out-of-home

placement intervention and prevention efforts, and help in the development of future research agendas.

Table 2.1: Unweighted Sample Description by DV-Survivor Caregivers' Race

	African American DV-Survivors (n = 209)	Other Race/Ethnicity DV-Survivor (n = 716)	Total (N = 925)	P-value
Outcome: Out-of-home placement	14.83%	14.80%	14.81%	0.99
Covariate				
Case status				0.30
Neither	44.02%	40.64%	41.41%	
Substantiated	34.45%	40.36%	39.03%	
Indicated	21.53%	18.99%	19.57%	
Active substance use	17.22%	16.34%	16.54%	0.76
Caregiver age				0.75
Under 25 years	29.67%	27.09%	27.68%	
25 to 34 years	43.06%	43.99%	43.78%	
35 or above years	27.27%	28.91%	28.54%	
Child age				0.77
0-2 years	34.35%	33.52%	33.73%	
3-5 years	14.35%	17.18%	16.54%	
6-10 years	29.67%	29.75%	29.73%	
11+ years	21.53%	19.55%	20.00%	
History child abuse	28.23%	31.28%	30.59%	0.40
Live with spouse/partner	8.61%	28.63%	24.11%	0.000
Prior reports	45.93%	47.07%	46.81%	0.77
Social Support	M = 2.14	M = 2.25	M = 2.23	0.08
DV services received	12.44%	12.99%	12.86%	0.84
Severe DV	73.68%	67.04%	68.54%	0.07
Serious mental health problems	18.66%	20.25%	19.89%	0.61
Prior history of arrest	15.31%	11.45%	12.32%	0.14
Level of harm to child				0.996
None	29.67%	29.33%	29.41%	
Mild or Moderate	60.77%	61.03%	60.97%	
Severe	9.57%	9.64%	9.62%	
Income				0.000
< \$10,000	43.06%	26.40%	30.16%	
\$10,000 - \$19,999	30.14%	31.42%	31.14%	
\$20,000 - \$29,999	13.40%	18.99%	17.73%	
\$30,000 - \$39,999	4.78%	10.06%	8.86%	
> \$40,000	8.61%	13.13%	12.11%	

Table 2.1 (Continued): Unweighted Sample Description by DV-Survivor Caregivers' Race

	African American DV-Survivors (n = 209)	Other Race/Ethnicity DV-Survivor (n = 716)	Total (N = 925)	P-value
Child abuse type				0.001
Physical abuse	20.10%	24.72%	23.68%	
Emotional Abuse	2.87%	9.64%	8.11%	
Neglect- Failure to provide	24.40%	17.60%	19.14%	
Neglect- Failure to supervise	33.01%	27.09%	28.43%	
Sexual Abuse	9.57%	13.97%	12.97%	
Other	10.05%	6.98%	7.68%	
Caregiver education				0.34
No degree	39.71%	32.26%	33.95%	
H.S./GED	39.71%	43.16%	42.38%	
Asso./Voc. Tech	16.27%	18.72%	18.16%	
Bachelor's	1.91%	2.09%	2.05%	
Other	2.39%	3.77%	3.46%	
Number of children				0.01
1 child	25.36%	27.93%	27.35%	
2 children	26.32%	33.52%	31.89%	
3 children	23.44%	22.35%	22.59%	
4 children	12.44%	10.06%	10.59%	
>= 5 children	12.44%	6.15%	7.57%	
Poor county	61.72%	54.05%	55.72%	0.049
Caregiver employment status				0.57
Unemployed	48.80%	47.35%	47.68%	
Part-time	15.79%	13.69%	14.16%	
Full-time	35.41%	38.97%	38.16%	

χ^2 tests were conducted on the categorical variables and a *t*-test was conducted on the social support variable.

Table 2.2. Logistic regression predicting propensity score of caregivers' race

Total subjects (n)	925		
McFadden's pseudo R ²	0.1049		
Likelihood ratio chi-square (p-value)	103.74 (<.001)		
Variables	B	Odds ratio	95% confident interval
Logistic intercept	0.30***		
Case status			
Neither	Reference		
Substantiated	-0.08*	0.59	(0.38, 0.91)
Indicated	-0.02	0.88	(0.54, 1.42)
Active substance use	-0.02	0.88	(0.54, 1.43)
Caregiver age			
<25 years	Reference		
25-34 years	-0.005	0.96	(0.58, 1.57)
>35 years	-0.007	0.92	(0.51, 1.63)
Child age			
0-2 years	Reference		
3-5 years	-0.15	0.87	(0.50, 1.53)
6-10 years	0.03	1.19	(0.71, 1.99)
11+ years	0.06	1.45	(0.80, 2.64)
History child abuse	-0.03	0.82	(0.55, 1.21)
Live with spouse/partner	-0.15***	0.28	(0.16, 0.48)
Prior reports	-0.04	0.80	(0.55, 1.15)
Social Support	-0.02	0.90	(0.70, 1.15)
DV services received	-0.0003	1.02	(0.61, 1.71)
Severe DV	0.01	1.05	(0.72, 1.54)
Serious mental health problems	-0.03	0.84	(0.54, 1.32)
Prior history of arrest	0.04	1.29	(0.78, 2.14)
Level of harm to child			
None	Reference		
Mild or Moderate	0.04	1.34	(0.88, 2.05)
Severe	0.07	1.54	(0.77, 3.07)
Income			
< \$10,000	Reference		
\$10,000 - \$19,000	-0.09*	0.59	(0.39, 0.90)
\$20,000 - \$29,999	-0.13**	0.46	(0.27, 0.79)
\$30,000 - \$39,999	-0.16**	0.35	(0.16, 0.75)
> \$40,000	-0.12*	0.48	(0.25, 0.94)

Table 2.2 (Continued). Logistic regression predicting propensity score of caregivers' race

Variables	B	Odds ratio	95% confident interval
Child abuse type			
Physical abuse	Reference		(0.15, 0.99)
Emotional Abuse	-0.08	0.39	(1.07, 3.07)
Failure to provide	0.11*	1.81	(0.89, 2.30)
Failure to supervise	0.06	1.43	(0.46, 1.66)
Sexual Abuse	-0.02	0.88	(0.89, 3.33)
Other	0.10	1.72	
Caregiver education			
None	Reference		
H.S./GED	-0.03	0.85	(0.57, 1.25)
Asso./Voc. Tech	-0.01	0.96	(0.57, 1.62)
Bachelor's	0.03	1.21	(0.34, 4.30)
Other	-0.06	0.65	(0.22, 1.91)
Number of children			
1 child	Reference		
2 children	0.01	1.03	(0.66, 1.63)
3 children	0.05	1.37	(0.85, 2.23)
4 children	0.08	1.79	(0.98, 3.26)
>= 5 children	0.18**	2.73	(1.42, 5.22)
Poor county	0.02	1.14	(0.81, 1.61)
Caregiver employment status			
Unemployed	Reference		
Part-time	0.06	1.46	(0.89, 2.40)
Full-time	0.04	1.31	(0.87, 1.97)

* p<.05, **p<0.01, ***p<0.001.

Table 2.3: Imbalance Check

	P-value of Regression Coefficient of Treatment (Caregiver's Race)
Case status	
Neither	0.980
Substantiated	0.962
Indicated	0.981
Active substance use	0.625
Caregiver age	
Under 25 years	0.846
25 to 34 years	0.820
35 or above years	0.961
Child age	
0-2 years	0.701
3-5 years	0.536
6-10 years	0.293
11+ years	0.978
History child abuse	0.662
Live with	0.450
spouse/partner	
Prior reports	0.746
Social Support	0.977
DV services received	0.673
Severe DV	0.413
Serious mental	0.953
health problems	
Prior history of arrest	0.846
Level of harm to	
child	0.689
None	0.560
Mild or Moderate	0.773
Severe	
Income	
< \$10,000	0.772
\$10,000 - \$19,999	0.788
\$20,000 - \$29,999	0.467
\$30,000 - \$39,999	0.922
> \$40,000	0.981
Child abuse type	
Physical abuse	0.616
Emotional Abuse	0.336
Neglect- Failure to	0.400
provide	0.617
Neglect- Failure to	0.889
supervise	0.952
Sexual Abuse	
Other	

NOTE: The balance check used regression for a continuous dependent variable and logistic regression for a dichotomous dependent variable.

*p<.05, **p<.01, ***p<.001, two-tailed.

Table 2.3 (Continued): Imbalance Check

	P-value of Regression Coefficient of Treatment (Caregiver's Race)
Caregiver education	
No degree	0.777
H.S./GED	0.941
Asso./Voc. Tech	0.952
Bachelor's	0.979
Other	0.364
Number of children	
1 child	0.804
2 children	0.910
3 children	0.947
4 children	0.873
>= 5 children	0.694
Poor county	0.977
Caregiver employment status	0.715
Unemployed	0.969
Part-time	0.752
Full-time	

NOTE: The balance check used regression for a continuous dependent variable and logistic regression for a dichotomous dependent variable.

*p<.05, **p<.01, ***p<.001, two-tailed.

Table 2.4. Results of Cox Proportional Hazard models predicting timing to out-of-home placement

(a) Weighted Model			
	B	S.E	Hazard Ratio
African American caregiver	-0.16	0.23	0.85
(b) Unadjusted Model			
	B	S.E	Hazard Ratio
African American caregiver	-0.17	0.22	0.84
Case status			
Neither	Reference		
Substantiated	0.06	0.23	1.06
Indicated	0.06	0.25	1.07
Active substance use	0.17	0.22	1.18
Caregiver age			
<25 years	Reference		
25-34 years	-0.22	0.25	0.80
>35 years	0.02	0.30	0.98
Child age			
0-2 years	Reference		
3-5 years	0.42	0.26	1.52
6-10 years	-0.11	0.28	0.90
11+ years	0.006	0.33	0.99
History child abuse	0.35	0.19	1.42
Live with spouse/partner	0.21	0.24	1.23
Prior reports	0.58	0.20	1.78**
Social Support	-0.07	0.13	0.93
DV services received	-0.10	0.27	0.90
Severe DV	0.35	0.21	1.42
Serious mental health problems	-0.08	0.22	0.92
Prior history of arrest	0.09	0.24	1.09
Level of harm to child			
None	Reference		
Mild or Moderate	0.05	0.22	1.06
Severe	-0.17	0.41	0.84
Income			
< \$10,000	Reference		
\$10,000 - \$19,999	-0.26	0.21	0.77
\$20,000 - \$29,999	-0.62	0.32	0.54
\$30,000 - \$39,999	-0.55	0.40	0.58
> \$40,000	-1.06	0.46	0.35**

Table 2.4 (Continued). Results of Cox Proportional Hazard models predicting timing to out-of-home placement

	B	S.E.	Hazard Ratio
Child abuse type			
Physical abuse	Reference		
Emotional Abuse	-0.12	0.38	0.89
Failure to provide	-0.27	0.27	0.76
Failure to supervise	0.05	0.23	1.06
Sexual Abuse	-1.07	0.43	0.34*
Other	-0.18	0.39	0.84
Caregiver education			
No degree	Reference		
H.S./GED	-0.30	0.20	0.74
Asso./Voc. Tech	-0.31	0.30	0.73
Bachelor's	-0.81	1.03	0.45
Other	0.14	0.44	1.15
Number of children			
1 child	Reference		
2 children	-0.45	0.25	0.64
3 children	0.01	0.24	1.01
4 children	0.17	0.30	1.19
>= 5 children	-0.09	0.36	0.91
Poor county	.012	0.19	1.12
Caregiver employment status			
Unemployed	Reference		
Part-time	-0.06	0.26	0.94
Full-time	-0.29	0.22	0.75

* p<.05, **p<0.01, ***p<0.001.

Figure 2.1. Study Conceptual Model

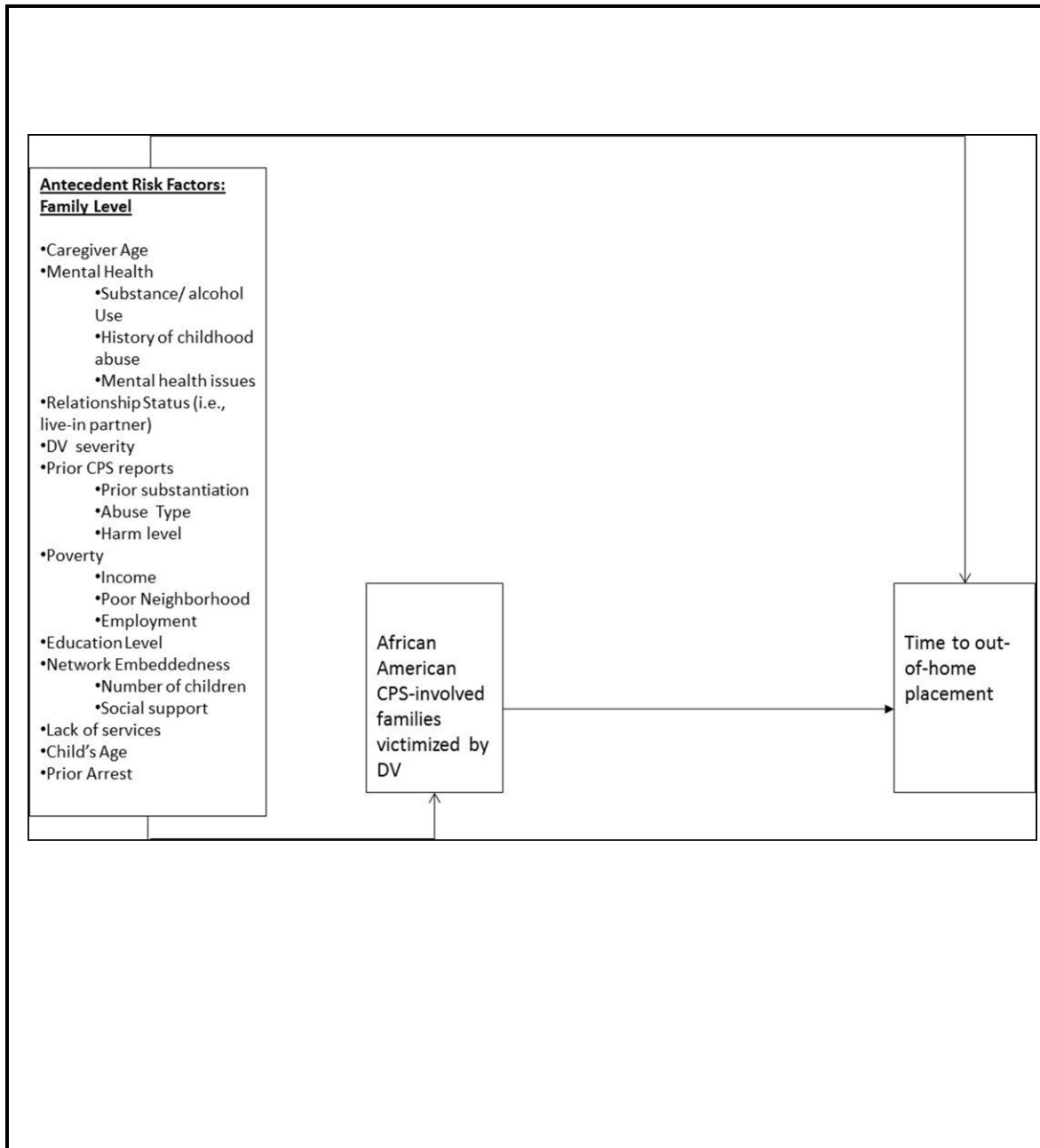
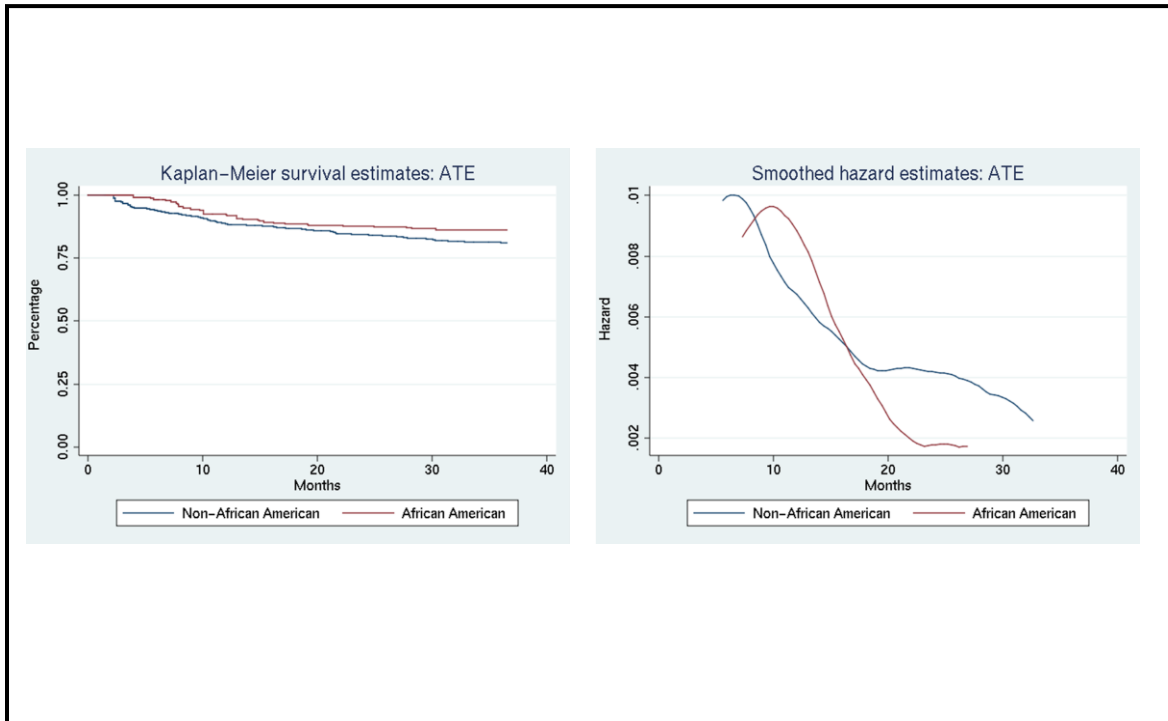


Figure 2.2: Kaplan-Meier survival Cure and Hazard Plot: ATE Model



IMPACT OF DOMESTIC VIOLENCE ON THE RISK OF OUT-OF-HOME PLACEMENT: A PROPENSITY SCORE ANALYSIS.

Domestic violence is a risk factor for child maltreatment (Kernic et al., 2003; Laviolette & Barnett, 2000; Straus 1992). Therefore, as many as 10 million U.S. children who witness domestic violence, each year, are at risk for being abused by a parent (Edleson, 1999a; Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997; Straus, 1992). Some even argue that witnessing domestic violence is a form of child maltreatment in and of itself. Given the connection between domestic violence and child maltreatment, families victimized by domestic violence are often brought to the attention of child protective services (CPS). Of the 23 reports identified using CPS populations to study domestic violence (Beeman, Hagemester, Edleson, 2001; Black, Trocme, Fallo & MacLaurin, 2008; Connelly, Hazen, Coben, Kelleher, Barth & Landsverk, 2006; Dosanjh, Lewis, Mathews, & Bhandari, 2008; Edleson, 1999b; English, Edleson, & Herrick, 2005; Findlater & Kelly, 1999; Hartley, 2004; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004; Kelleher, Hazen, Coben, Wang, McGeehan, Kohl, & Gardner, 2008; Khol, Edleson, English, & Barth, 2005; Jones, Gross, & Becker, 2002; Lee, Lingfoot, Edleson, 2008; National Council of Juvenile and Family Court Judges, 1998; Shepard & Raschick, 1999; Whitney & Davis, 1999), the current study's researcher found a median percentage of 33.5% of families had cases of child maltreatment that indicated domestic violence as a risk factor. Although it is clear that CPS caseworkers

come in contact with several families victimized by domestic violence, it appears they sometimes struggle with how to adequately respond to these families' needs.

CPS agencies have attempted to address the needs of children exposed to domestic violence. Banks et al. (2008) evaluated the outcomes of five child welfare agencies that received funding to implement principles and recommendations in the Greenbook, a book published to help improve domestic violence related policy and practice for child welfare agencies. In their evaluation, they examined whether system change occurred. System change was measured using caseworkers' perceptions and substantiated cases of child maltreatment at three time points: beginning of demonstration initiative (2001; n=616 cases), end of planning period (2003; n=642 cases), and end of implementation period (2005; n=562 cases). The researchers overall found that, by the end of the implementation period, caseworkers reported that their agencies were more likely to train staff about domestic violence ($p < .05$), have guidelines about reporting domestic violence ($p < .05$), work closely with domestic violence service providers to address co-occurrence issues ($p < .05$), and have policy that clearly states criteria under which children can remain with the non-abusing parents who experienced domestic violence ($p < .001$). However, the majority of caseworkers did not perceive that their screening and assessment for domestic violence changed after the Greenbook implementation. This finding suggests that despite having systems level change as a result of domestic violence training and policies, change may not be occurring at the caseworker level. This becomes evident when examining studies that report on the case outcomes of CPS-involved families victimized by domestic violence.

Some researchers have found that domestic violence does not influence caseworkers' decisions to place a child (Beeman, Hagemeister, & Edleson, 2001; Carter, 2008; Carter 2009a; Carter, 2010; Donald et al., 2003; Mines, Singer, Humphrey-Wall, & Satayathum, 2008; Meyer, McWey, McKendrick, & Henderson, 2010) while other researchers report that case workers are either more likely (Black et al., 2008; English et al., 2005; Hilamo, 2009; Horwitz et al., 2011; Lavergne et al., 2011; Zuravin et al., 1997) or less likely (Forrester & Harwin, 2008; Kohl, Edleson, English, & Barth, 2005; Trocome, Knoke, & Blackstock, 2004) to place children within families victimized by domestic violence compared to children within families that are not victimized by domestic violence. Such mixed findings present doubt as to whether children within families victimized by domestic violence are in need of specialized services to prevent out-of-home placement. Therefore, additional research which incorporates rigorous methods should be used to examine the relationship between out-of-home placement and domestic violence.

Prior studies that have investigated the relationship between out-of-home placement and domestic violence have primarily done so using cross-sectional data. Although such correlational research is valuable, research is now needed to understand the rate at which the risk of out-of-home placement changes across time. Understanding this rate of change can help determine (a) the speed at which children in families victimized by domestic violence are placed in out-of-home care, and (b) the appropriate time at which out-of-home placement interventions could be most useful for families victimized by domestic violence. The researcher found only one study that assessed the risk of out-of-home placement over time comparing the relationship between different

levels of domestic violence and out-of-home placement (Horwitz, Hurlburt, Cohen, Zhang, & Landsverk, 2011). This study found that caregivers with higher levels of domestic violence (as measured by the first version of the Conflict Tactics Scale) were more likely to have a child in out-of-home placement than caregivers with lower levels of domestic violence. However, rather than investigating the rate of change at which out-of-home placement occurred across time, the researchers only examined whether out-of-home placement occurred during a 30-month follow-up period (yes or no). Thus, there is a lack of information that is available regarding the longitudinal outcomes of CPS-involved families that experience domestic violence.

In addition, research is needed that controls for possible selection bias when comparing CPS-involved families victimized by domestic violence to CPS-involved families not victimized by domestic violence. This type of research is necessary because families victimized by domestic violence have unique risk characteristics. For example, scholars have concluded that when compared to child welfare involved caregivers who did not report domestic violence, child welfare involved caregivers who did report domestic violence were more likely to display the following risk factors: younger age (Dosanjh, Lewis, Mathews, & Bhandari, 2008; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), lower social support (Kelleher, Hazen, Coben, Wang, McGeehan, Kohl, Gardner, 2008), lower education level (Dosanjh, Lewis, Mathews, & Bhandari, 2008), lower income level (Dosanjh, Lewis, Mathews, & Bhandari, 2008), presence of major depression disorder (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), drug and alcohol dependence (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), history of prior child welfare reports (Hartley, 2004; Hazen, Connelly, Kelleher, Landsverk, &

Barth, 2004), younger children (Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004), greater likelihood to using psychological aggression toward child (Keller et. al, 2008); and presence of male intimate partner in household (Beeman, Hagemeister, Edleson, 2001; English, Edleson, & Herrick, 2005; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004). These differences between families that experience domestic violence and families that do not experience domestic violence make it difficult to determine whether caregivers who report domestic violence are at greater risk of having a child in out-of-home placement due to (a) their antecedent risk factors or (b) possible bias within caseworkers' decision making among domestic violence cases. Therefore, it is important to conduct research that helps to distinguish between such possible selection bias.

Although random assignment is the best approach to control for selection biases, it is obviously impossible (or unethical if it were possible) to assign families to conditions that involve different levels of domestic violence. New advancements in statistical analysis, however, now make it possible to approximate the advantages of a randomized experiment by balancing different groups on their observable characteristics. By using statistical methods to control for observable sources of selection bias, researchers can begin to explore possible causes for out-of-home placement among children within families victimized by domestic violence. Of course, there is less confidence in the internal validity of these causal inferences compared to random assignment because only randomization balances the groups on both observed and unobserved characteristics.

The current study will add to the literature on the case outcomes of families victimized by domestic violence by examining differences in the timing to out-of-home placement between children with caregivers who reported domestic violence and children

with caregivers who did not report domestic violence. This study will use a data balancing method, known as propensity score weighting, to control for selection bias between the two groups of caregivers. It is hypothesized that children with caregivers who reported domestic violence will be at greater risk for out-of-home placement than children with caregivers who did not report domestic violence. If this hypothesis is rejected, then it may be inferred that the disproportionate outcome of out-of-home placements results from the greater family risk factor of domestic violence (i.e., response to disproportionate need) rather than bias decisions made by caseworkers. To the best of the researcher's knowledge, this is the first study to longitudinally examine the risk of out-of-home placement among families victimized by domestic violence, and to do so using propensity score analysis.

Methods

Data for the current study was taken from the National Survey of Child and Adolescent Well-Being (NSCAW). The NSCAW consist of a national probability sample of 5,501 children ages birth to 15 from families that had a completed CPS investigation of potential child abuse or neglect between October 1999 and December 2000. These children were selected from 92 Primary Sampling Units (PSUs), across 97 counties and 36 states.

The NSCAW data was gathered using information from face-to-face interviews with children, their caregivers, CPS caseworkers, and other stakeholders who were familiar with the children. Data was collected across four waves after the child welfare investigation: 6-months follow-up (Wave 1), 12-months follow-up (Wave 2), 18-months follow-up (Wave 3), and 36-months follow-up (Wave 4).

The current study focuses on the risk of out-of-home placement among families victimized by domestic violence and families not victimized by domestic violence; therefore, the NSCAW sample utilized in the current study was 1,965 children with female caregivers who had a self-report of domestic violence (900 caregivers with domestic violence and 1,065 caregivers without domestic violence). This sample was limited to caregivers without any missing data.⁷ Furthermore, because all caregivers with self-reports on domestic violence had their children in custody during the Wave 1 interview, the sample excludes children who experienced out-of-home placement prior to or during the Wave 1 interview.

Measures

Nineteen variables collected at the time of the Wave 1 interview were used to develop propensity scores. The selection of these variables was based on the empirical evidence (previously mentioned in the “Introduction” section of this paper) which suggest the items are correlates of domestic violence. These variables are described in the following sections.

Dependent variable. The dependent variable in this study was time to out-of-home placement. This variable was derived using caseworker reports on whether or not a child was placed in out-of-home care within the 36-month study window (yes or no); and the date out-of-home placement occurred or, if the child did not experience an out-of-home placement, the date equivalent to 36-months after the Wave 1 interview. Children who did not experience out-of-home placement during the time of the study were considered censored, and coded as 0 (i.e., not experiencing the event). Time to out-of-home placement was the only variable for which information was used across all 4

⁷ See Appendix F for Table depicting differences between missing and non-missing samples.

waves; all other information used in the current study was based on reports from the Wave 1 interview.

Domestic violence. Domestic violence was measured using the Conflict Tactic Scale 1 (CTS; Straus, 1979) physical assault subscale. This subscale consists of 9 items that measures physical abuse behaviors between intimate partners, such as shoving a partner, beating up a partner, or choking a partner. Caregivers in the sample were considered as experiencing domestic violence if they reported at least one act of the physical abuse during the past year or anytime during their lifetime prior to the last year. Thus, domestic violence may have occurred during a time prior to caregivers' CPS involvement, or prior to becoming a parent.

Social Support. A scale was also used to assess the level of caregivers' social support. Both formal and informal social support information was gathered using the Duke-University of North Carolina Functional Social Support Scale (FSSQ; Broadhead, Gehlbach, deGruy, & Kaplan, 1998) and the Sarason Social Support Questionnaire- 3 (Sarason, Levine, Basham, & Sarason, 1983). Items on the scale consisted of 7 questions on the number of people caregivers know who can assist them with the following types of help: (a) household tasks, (b) childcare, (c) caring for them when they are sick, (d) helping with transportation, (e) financial advice, (f) general advice, or (g) to invite them to dinner. Because caregivers varied in their responses, a composite score was created by dividing scores for each response into quartiles. These scores were then summed and divided based on the number of questions answered by each caregiver. Thus, scores could range from one to four, with one indicating the lowest level of social support and four indicating the highest level.

Caregiver and case characteristics. All information on caregiver case characteristics was reported by caseworkers. This consisted of reports of whether or not caregivers had a serious mental illness; active alcohol and/or drug use; history of recent arrest or detention in jail or prison; prior substantiated case with CPS; prior reports to CPS; and childhood history of abuse or neglect. In addition, caseworkers reported on the primary type of maltreatment identified during the investigation. Caseworkers could classify abuse as physical abuse, emotional abuse, neglect- failure to provide, neglect- failure to supervise, sexual abuse, or other type of abuse. Caseworkers rated the level of the severity of harm to the child for each case as either none, mild/moderate, or severe. Additionally, cases were identified by caseworkers as either substantiated, indicated, or neither substantiated nor indicated.

Caregivers provided reports on their demographic characteristics. This included information regarding race, child's age, live-in intimate partner, household income, education level, number of children in household, and employment status. Caregivers were identified as living in a poor county if more than 5% of the county families with children lived below the 50% poverty level. This was determined based on the Census Bureau databases.

Analytic Techniques

Bivariate analyses were conducted to examine the relationship between the risk characteristics associated with domestic violence. These analyses were used to determine whether selection bias was present within the sample. The researcher used survival analysis to examine the influence of domestic violence and other explanatory variables on

the timing to out-of-home placement. Study data met the assumptions for the type of survival analysis used in the current study.⁸

Propensity score weighting.⁹ Bivariate analyses (i.e., chi-square and t-test) were conducted to explore the relationship between caregivers who reported domestic violence and caregivers who did not report domestic violence. Results from bivariate analyses assisted with determining whether it was necessary to control for selection bias using propensity score weighting methods. The researcher found that the two groups significantly differed ($p < .05$) on several characteristics (see Table 3.1). When compared to caregivers who did not report domestic violence, caregivers who reported domestic violence were more likely to have a history of abuse, serious mental health problems, and prior history of arrest ($p < .05$). Thus, differing outcomes may reflect either the effects caused by domestic violence or caregivers' experiences prior to domestic violence. Given this potential selection bias, propensity score weighting was used to balance the two groups of caregivers on their characteristics. Specifically, the characteristics of caregivers who reported domestic violence were weighed so that the weighted distribution of the characteristic for this group matched those of caregivers who did not report domestic violence.

Weights were created based on estimated propensity scores. The propensity scores were estimated using a logistic regression model in which the dichotomous outcome variable was domestic violence (yes or no). Table 3.2 depicts the results of the full logistic regression model used to predict the propensity scores. Similar to the

⁸ For a full explanation of diagnostic testing, refer to Appendix G.

⁹ Sensitivity analyses were also conducting to compare the propensity score weighting model with propensity score matching models. Results showed congruence between the models. See Appendix H for Table and description of results.

bivariate results, findings from the logistic model show that when compared to caregivers who did not report domestic violence, caregivers who reported domestic violence were more likely to have a history of abuse and less likely to live with a partner. On the other hand, the logistic results were different from the bivariate results in that it also suggests that caregivers who reported domestic violence were more likely to have reports of physical abuse and a full-time job. The logistic model demonstrates a good model fit as indicated by the Model chi-square statistic ($\chi^2 = 79.91$, $p < .05$).

After using the logistic model to predict the propensity scores, weights for the average treatment effect (ATE) were calculated using the following formulas: $1/ps$ (where ps = propensity score) for caregivers who reported domestic violence, and $1/(1-ps)$ for caregivers who did not report domestic violence. To assess whether the propensity score weighting procedure successfully reduced selection bias, weighted simple regression or weighted simple logistic regression was conducted using each predictor variable and domestic violence as the outcome variable. As indicated by the non-significant findings (i.e., $p > .05$) in Table 3.3, propensity score weighting techniques removed imbalance. Therefore, post-weighting bivariate analyses revealed no significant differences between characteristics of caregivers who reported domestic violence and caregivers who did not report domestic violence.

Survival analysis. Survival analysis (Cox Regression) was used to examine whether caregivers who reported domestic violence are at greater risk for having a child in out-of-home placement than caregiver who did not report domestic violence. Both an

unadjusted model and an adjusted Cox Proportional Hazard model, which used the weighted sample, were examined.¹⁰

Survival analysis measures the risk of out-of-home placement using a hazard rate, an instantaneous probability measuring rate of change (Guo, 2010). The hazard rate in this study was based on the speed of change from entry into the study to time to out-of-home placement. A hazard ratio greater than 1 indicated a child had a greater likelihood of experiencing out-of-home placement, and a hazard less than 1 indicated a lower likelihood.

Because the Wave 1 interview date varied depending on the close of the investigation, and because children were not eligible for out-of-home placement until after the Wave 1 interview, caregivers and their children entered the observational period at different points in time. Thus, caregivers' children were exposed to the risk of out-of-home placement for varying lengths in time. To adjust for this difference, and to eliminate potential bias, a "delayed entry" Cox Regression model was estimated. This Cox Regression model allowed for estimators to be conditional given no event at entry time.

The following section discusses results for both the weighted and unweighted Cox Proportional Hazard models.

Results

Sample Description

¹⁰ Note: Because both multivariate modeling and propensity score weighing attempt to control for observed differences in treatment groups, the researcher determined it unnecessary to control for explanatory variables in the weighted model (Baser, 2008). Therefore, the weighted model in the current study only examines the bivariate relationship between caregiver's race and timing to out-of-home placement.

The unweighted data reveals that of the 1,965 caregivers, 12.21% had a child placed in out-of-home care within the 36-month study window. As shown in Table 3.1, 23.10% of the sample is African American, 14.35% Hispanic, 55.88% White, and 6.67% other. With regard to age, the majority of participants were between 25 to 34 years old (43.87%); and their children were mostly between 0 to 2 years old (35.37%). Most caregivers reported that they had 1 child (27.48%) or 2 (29.87%) children. Over half the sample was living in a poor county and 49.87% were unemployed. Perhaps as a result of the unemployment rate, most caregivers had an annual income of either less than \$10,000 (29.21%) or an income that ranged from \$10,000 to \$19,999 (30.59%). A little less than half the sample had a high school education (43.51%); whereas 33.44% did not have a high school diploma. Caseworkers identified active substance use in 15.88% of the sample, and 17.66% of the sample had serious mental health problems. Almost half of the sample (43.51%) had a prior report of child maltreatment; however, only 22.04 % had a report of prior substantiation. Approximately one-third of the sample had a history of child abuse. Most caregivers had an investigation for neglect- failure to supervise (26.87%), which most caseworkers reported as posing a mild or moderate level of harm to the child (57.96%). The majority of these cases were neither substantiated nor indicated (43.97%). However, there were also many cases that were substantiated (37.81%). A small percentage of the sample had a prior history of arrest (10.79%); and about 28.30% of the sample lived with a spouse or partner. On average, caregivers reported feeling they had moderate levels of social support ($M = 2.25$).

Survival Analysis

Weighted bivariate survival analysis shows that caregivers who reported domestic violence are at greater risk for having a child in out-of-home placement compared to caregivers who did not report domestic violence. As indicated in the Kaplan-Meier survival curve and the smoothed hazard plot (see Figure 3.1), a greater proportion of caregivers who reported domestic violence had children in out-of-home placement at earlier periods than caregivers who did not report domestic violence.¹¹ Findings from the Kaplan-Meier survival curve suggest that by the end of the study window about 15.0% of caregivers who reported domestic violence have children who are placed in out-of-home settings, compared to 10.0% of caregivers who did not report domestic violence. However, the speed to out-of-home placement is not constant over the study period, as shown by the hazard plot. The hazard plot suggests both groups' risk of out-of-home placement begins at approximately 10 months then steadily decreases over time. The hazard rate for children with caregivers who reported domestic violence was consistently higher across the entire 36 months study window; however, the gap between the hazard rate for children with caregivers who reported domestic violence and children with caregivers who did not report domestic violence begins to close at approximately 18 months. Despite the closing gap, the hazard rate for children with caregivers who did not report domestic violence seems to continuously decline after 18 months, while the hazard rate of children with caregivers who did report domestic violence picks up speed again at approximately 22 months. These findings are supported by results from a *test of equality of survival distributions* which shows caregivers who reported domestic violence and caregivers who did not report domestic violence are significantly different on proportions

¹¹ See Appendix I for unadjusted graphs.

of their children's out-of-home placements ($\chi^2 = 6.44$, $p = 0.01$). This finding is similar to findings presented in the unweighted Cox Proportional Hazard model.

The results from both the unweighted and weighted Cox Proportional Hazard models are displayed in Table 3.4. Cox Regression results were similar for both models, and support the study's hypothesis. Specifically, findings for both the unadjusted and adjusted models reveal, other things being equal, caregivers who reported domestic violence were more likely to have a child in out-of-home placement than caregivers who did not report domestic violence. The weighted model suggest the speed for out-of-home placement is 39.9% faster for children with caregivers who reported domestic violence compared to children with caregivers who did not report domestic violence; while the unweighted model suggest that children with caregivers who reported domestic violence enter out-of-home placement 44.5% faster than children with caregivers who did not report domestic violence.

In addition, findings from the unweighted model revealed that caregivers with an annual income of less than \$10,000 had children that entered out-of-home placement at faster speeds than children with caregivers who had an annual income greater than \$10,000. Finally, children with caregivers who had prior CPS reports entered out-of-home placement 47.1% faster than children who did not have a caregiver with a prior CPS report.

Discussion

This study compared the timing to out-of-home placement between children with caregivers who reported domestic violence and children with caregivers who did not report domestic violence. The relationship was investigated using propensity score

weighting methods to control for selection bias. To the best of the researcher's knowledge, this is the first study to longitudinally examine the risk of out-of-home placement among families victimized by domestic violence, and to do so using propensity score analysis.

Findings from bivariate analyses, prior to controlling for selection bias, confirmed previous reports that CPS-involved caregivers who report domestic violence are significantly different from caregivers who do not report domestic violence. The researcher found that caregivers who reported domestic violence were less likely to report living with a partner and more likely to have a history of abuse, prior substantiation, serious mental health problems, prior history of arrest, higher levels of harm to child, and greater reports of emotional abuse than caregivers who did not report domestic violence.

Findings support the study hypothesis showing that caregivers who reported domestic violence are at greater risk of having a child in out-of-home placement at faster speeds than caregivers who did not report domestic violence. Based on results from the smoother hazard survival plot, it appears that this difference is consistent across the entire 36-months study window. This suggests that children with caregivers who are victimized by domestic violence are at a continuous risk for out-of-home placement. Therefore, crisis intervention services should be offered to families victimized by domestic violence throughout the entire time they are involved with CPS. These interventions should include services that are directly targeted towards problems associated with domestic violence (e.g., mental health issues and high levels of harm to child), as well as safety strategies aimed at reducing domestic violence.

Because the relationship between out-of-home placement and domestic violence was significant, even after controlling for selection bias, it appears caseworkers may be biased toward removal in their placement decisions when handling domestic violence cases. Given studies show that placement into foster care for children at the margin of removal are at greater risk of adverse outcomes later in life compared to similar children who remain home (Doyle, 2011), it is important for caseworkers to receive on-going training on domestic violence and alternative responses to foster home placement. In addition to training, child welfare agencies should retain domestic violence specialists for case consultation and support to caregivers who experience domestic violence. Such support to caregivers may include assistance in helping clients understand domestic violence and its impact; helping with referrals to other services such as domestic violence shelters; providing direct advocacy support to clients; and supporting clients during court hearings (Rosewater, 2008). Collaborative efforts between child welfare agencies and domestic violence specialist have proven successful (Aron & Olson, 1997; Packard, Jones, & Nahrstedt, 2006; Postmus & Ortega, 2005). Aron and Olson (1997) found that although such methods as training and adopting new questions and techniques are low-cost, the most effective way to integrate child welfare and domestic violence services is through hiring full-time domestic violence specialist to consult with CPS caseworkers and model best practice approaches.

Additional research is needed to understand why caseworkers are more likely to place children within families victimized by domestic violence than children within families not victimized by domestic violence. It may be that workers perceive that removal is necessary to protect the child in the domestic violence situation rather than

consider alternative responses for protecting the child in the home. However, the combination of exposure to domestic violence and child removal may be an even more traumatic experience for the child. Therefore, in order to learn more about the experiences of children victimized by domestic violence and to understand whether caseworkers are, in fact, making appropriate placement decisions when handling domestic violence cases, researchers should also consider examining the long-term outcomes of children victimized by domestic violence after they enter foster care.

Future research should consider examining possible moderating effects between domestic violence and out-of-home placement. Doing so may help in understanding whether there are specific groups of children victimized from domestic violence who may benefit more from intervention services. For example, the unadjusted model shows that caregivers with lower incomes are at greater risk for having a child in out-of-home placement. Therefore, it is possible that the relationship between out-of-home placement and domestic violence may vary depending on income. Thus, while on-going crisis intervention may be beneficial for all families who experience domestic violence, this type of intervention may prove most useful to victims within specific income brackets.

In addition, when examining the relationship between domestic violence and out-of-home placement, researchers should consider examining possible mediating relationships. Such research can help in the development of new or improved intervention services for CPS-involved families that experience domestic violence. Using findings from the current study as an example, although the researcher found that children within families victimized by domestic violence are at greater risk of out-of-home placement, it may be that families in the study that received interventions such as

domestic violence or family preservation services were less likely to experience out-of-home placement.

Limitations

Although the current study adds to the existing literature on out-of-home placement and domestic violence, it is not without limitations. First, this study is limited to caregivers who had custody of their children during the first wave of data collection. Therefore, it is likely that caregivers who experienced the most extreme forms of domestic violence are excluded from this study. This is problematic because this population is probably at greatest risk for out-of-home placement. Second, while an attempt was made to control for possible selection bias between caregivers who reported domestic violence and caregivers who did not report domestic violence, the study is limited to the data available in the NSCAW. Thus, there may be some hidden selection bias that was not accounted for when creating propensity scores. Third, the analysis did not include information on other forms of domestic violence (i.e., psychological and sexual violence) and different severity levels of domestic violence. In addition, the analysis does not distinguish between violence that occurred (or did not occur) at times during families' child welfare involvement, and whether or not caseworkers' reports had indicated domestic violence. Such factors may or may not influence placement decisions. Therefore, the researcher recommends that future research investigate the relationship between out-of-home placement and (a) different forms and levels of domestic violence and (b) caseworkers' knowledge of domestic violence occurrence within the CPS involved families' household. Finally, this study did not test a competing logistic regression model to specify the propensity scores. Thus, the propensity scores used may

not be the best representation of the true propensity scores (Guo and Fraser, 2010).

However, every effort was made to select variables that are identified in the empirical literature as predictors of domestic violence among CPS-involved families.

Conclusion

There is an emerging body of literature on the relationship between out-of-home placement and domestic violence. However, results from prior studies have been mixed. The current study supports findings that suggest domestic violence increases the risk of out-of-home placement. More importantly, by controlling for selection bias, findings from the study suggest that children with caregivers who report domestic violence are at greater risk of out-of-home placement due to possible caseworker bias toward removal when making placement decisions in domestic violence situations. Hopefully, findings from this study will inform current practice and policy recommendations for dealing with domestic violence within a CPS population; and help in the development of future research agendas.

Table 3.1: Unweighted sample description by domestic violence exposure

	Domestic Violence (n = 900)	No Domestic Violence (n = 1,065)	Total (N = 1,965)	P-value
Case status				0.14
Neither	41.56%	46.01%	43.97%	
Substantiated	39.22%	36.62%	37.81%	
Indicated	19.22%	17.37%	18.22%	
Active substance use	16.44%	15.40%	15.88%	0.53
Caregiver age				0.70
Under 25 years	28.11%	29.67%	28.96%	
25 to 34 years	44.00%	43.76%	43.87%	
35 or above years	27.89%	26.57%	27.18%	
Child age				0.65
0-2 years	34.11%	36.43%	35.37%	
3-5 years	16.44%	15.87%	16.13%	
6-10 years	29.67%	29.67%	29.67%	
11+ years	19.78%	18.03%	18.83%	
History child abuse	30.56%	22.16%	26.01%	0.000
Live with spouse/partner	24.00%	31.92%	28.30%	0.000
Prior reports	45.33%	41.97%	43.51%	0.13
Social Support	M = 2.23	M = 2.27	M = 2.25	0.16
Prior substantiation	24.22%	20.19%	22.04%	0.03
Caregiver race				0.84
African American	22.44%	23.66%	23.10%	
Hispanic	14.00%	14.65%	14.35%	
Other	6.56%	6.76%	6.67%	
White	57.00%	54.93%	55.88%	
Serious mental health problems	19.56%	16.06%	17.66%	0.04
Prior history of arrest	12.33%	9.48%	10.79%	0.04
Level of harm to child				0.048
None	29.89%	35.12%	32.72%	
Mild or Moderate	60.44%	55.87%	57.96%	
Severe	9.67%	9.01%	9.31%	
Income				0.58
< \$10,000	30.11%	28.45%	29.21%	
\$10,000 - \$19,999	30.89%	30.33%	30.59%	
\$20,000 - \$29,999	17.67%	20.47%	19.19%	
\$30,000 - \$39,999	9.00%	9.30%	9.16%	
> \$40,000	12.33%	11.46%	11.86%	
Child abuse type				0.002
Physical abuse	24.11%	25.73%	24.99%	
Emotional Abuse	7.89%	4.60%	6.11%	
Neglect- Failure to provide	18.56%	24.13%	21.58%	
Neglect- Failure to supervise	28.56%	25.45%	26.87%	
Sexual Abuse	13.11%	13.33%	13.23%	
Other	7.78%	6.76%	7.23%	

Table 3.1 (Continued): Unweighted sample description by domestic violence exposure

	Domestic Violence (n = 900)	No Domestic Violence (n = 1,065)	Total (N = 1,965)	P-value
Caregiver education				0.71
No degree	33.78%	33.15%	33.44%	
H.S./GED	42.44%	44.41%	43.51%	
Asso./Voc. Tech	18.22%	16.15%	17.10%	
Bachelor's	2.11%	2.35%	2.24%	
Other	3.44%	3.94%	3.72%	
Number of children				0.30
1 child	27.44%	27.51%	27.48%	
2 children	32.11%	27.98%	29.87%	
3 children	22.11%	24.79%	23.56%	
4 children	10.78%	11.92%	11.40%	
>= 5 children	7.56%	7.79%	7.68%	
Poor county	55.22%	57.46%	56.44%	0.32
Caregiver employment status	47.44%	51.92%	49.87%	0.049
Unemployed	14.22%	15.02%	14.66%	
Part-time	38.33%	33.05%	35.47%	
Full-time				

χ^2 tests were conducted on the categorical variables and a *t*-test was conducted on the age and social support, variables.

Table 3.2. Logistic regression predicting propensity score of caregivers' domestic violence

Total subjects (n)	1,965
McFadden's pseudo R ²	0.0295
Likelihood ratio chi-square (p-value)	79.91 (<.001)

Variables	B	Odds ratio	95% confident interval
Logistic intercept	0.41***		
Case status			
Neither	Reference		
Substantiated	-0.01	0.98	(0.77, 1.25)
Indicated	0.01	1.04	(0.79, 1.37)
Active substance use	-0.004	0.98	(0.75, 1.29)
Caregiver age			
<25 years	Reference		
25-34 years	0.01	1.05	(0.81, 1.37)
>35 years	0.005	1.02	(0.75, 1.39)
Child age			
0-2 years	Reference		
3-5 years	0.03	1.14	(0.86, 1.52)
6-10 years	0.01	1.05	(0.80, 1.39)
11+ years	0.04	1.18	(0.85, 1.63)
History child abuse	0.10**	1.49	(1.19, 1.87)
Live with spouse/partner	-0.10***	0.66	(0.52, 0.82)
Prior reports	-0.01	0.96	(0.75, 1.22)
Social Support	-0.02	0.93	(0.81, 1.05)
Prior substantiation	0.03	1.16	(0.87, 1.53)
Caregiver race			
African American	Reference		
Hispanic	0.01	1.04	(0.76, 1.42)
Other	0.01	1.06	(0.70, 1.59)
White	0.03	1.15	(0.91, 1.46)
Serious mental health problems	0.004	1.02	(0.78, 1.32)
Prior history of arrest	0.03	1.13	(0.82, 1.54)
Level of harm to child			
None	Reference		
Mild or Moderate	0.04	1.21	(0.96, 1.52)
Severe	0.04	1.18	(0.80, 1.72)
Income			
< \$10,000	Reference		
\$10,000 - \$19,000	-0.01	0.98	(0.76, 1.25)
\$20,000 - \$29,999	-0.04	0.84	(0.63, 1.13)
\$30,000 - \$39,999	0.01	1.05	(0.73, 1.53)
> \$40,000	0.04	1.18	(0.82, 1.68)

Table 3.2 (Continued). Logistic regression predicting propensity score of caregivers' domestic violence

Variables	B	Odds ratio	95% confident interval
Child abuse type			
Physical abuse	Reference		
Emotional Abuse	0.13**	1.75	(1.15, 2.65)
Failure to provide	-0.04	0.83	(0.63, 1.10)
Failure to supervise	0.03	1.15	(0.89, 1.49)
Sexual Abuse	0.003	1.01	(0.74, 1.40)
Other	0.04	1.19	(0.80, 1.75)
Caregiver education			
None	Reference		
H.S./GED	-0.02	0.90	(0.72, 1.13)
Asso./Voc. Tech	0.004	1.02	(0.76, 1.36)
Bachelor's	-0.04	0.84	(0.43, 1.62)
Other	-0.05	0.82	(0.49, 1.37)
Number of children			
1 child	Reference		
2 children	0.04	1.16	(0.91, 1.48)
3 children	-0.04	0.86	(0.66, 1.12)
4 children	-0.03	0.89	(0.64, 1.25)
>= 5 children	-0.02	0.93	(0.63, 1.38)
Poor county	-0.01	0.94	(0.78, 1.14)
Caregiver employment status			
Unemployed	Reference		
Part-time	0.02	1.07	(0.81, 1.41)
Full-time	0.07*	1.32	(1.06, 1.65)

* p<.05, **p<0.01, ***p<0.001.

Table 3.3: Imbalance Check

	P-value of Regression Coefficient of Treatment (DV)
Case status	
Neither	0.938
Substantiated	0.949
Indicated	0.985
Active substance use	0.996
Caregiver age	
Under 25 years	0.943
25 to 34 years	0.999
35 or above years	0.941
Child age	
0-2 years	0.983
3-5 years	0.954
6-10 years	0.951
11+ years	0.993
History child abuse	0.994
Live with spouse/partner	0.893
Prior reports	0.950
Social Support	0.996
Prior substantiation	0.989
Caregiver race	
African American	0.968
Hispanic	0.957
Other	0.986
White	0.994
Serious mental health problems	0.949
Prior history of arrest	0.994
Level of harm to child	
None	0.941
Mild or Moderate	0.913
Severe	0.952
Income	
< \$10,000	0.930
\$10,000 - \$19,999	0.970
\$20,000 - \$29,999	0.992
\$30,000 - \$39,999	0.968
> \$40,000	0.952
Child abuse type	
Physical abuse	0.847
Emotional Abuse	0.904
Neglect- Failure to provide	0.849
Neglect- Failure to supervise	0.995
Sexual Abuse	0.928
Other	0.999

Table 3.3 (Continued): Imbalance Check

	P-value of Regression Coefficient of Treatment (DV)
Caregiver education	
No degree	0.994
H.S./GED	0.980
Asso./Voc. Tech	0.987
Bachelor's	0.945
Other	0.970
Number of children	
1 child	0.980
2 children	0.946
3 children	0.956
4 children	0.962
>= 5 children	0.997
Poor county	0.839
Caregiver employment status	
Unemployed	0.941
Part-time	0.950
Full-time	0.970

NOTE: The balance check used regression for a continuous dependent variable and logistic regression for a dichotomous dependent variable.

Table 3.4. Results of Cox Proportional Hazard models predicting timing to out-of-home placement

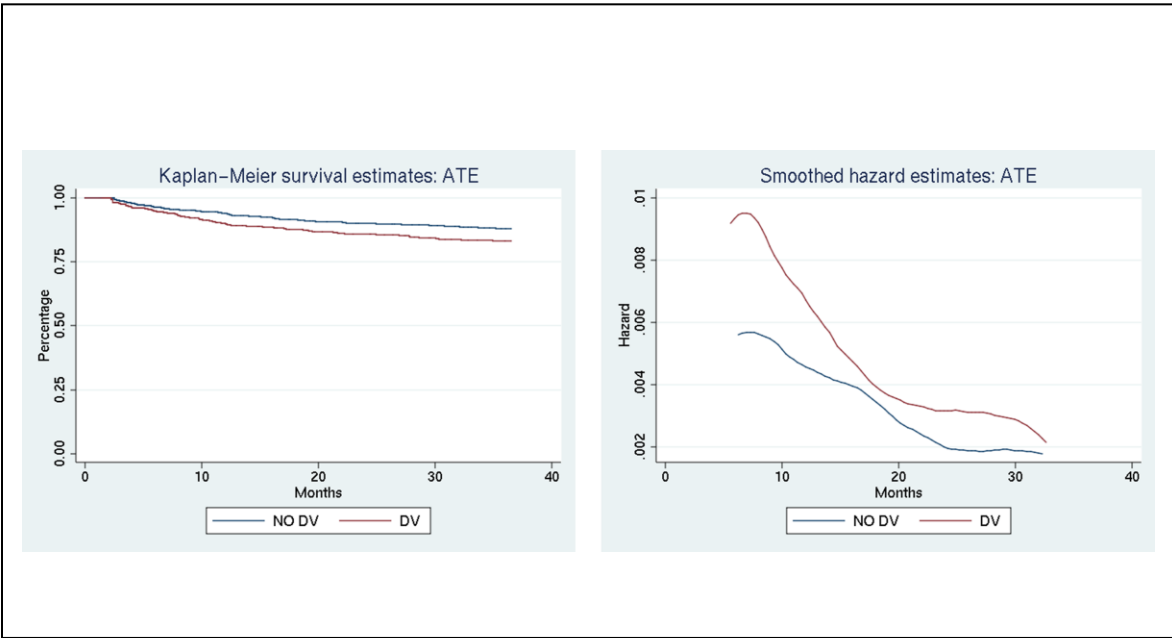
(a) Weighted Model			
	B	S.E	Hazard Ratio
Domestic violence	0.34*	0.18	1.40
(b) Unadjusted Model			
	B	S.E	Hazard Ratio
Domestic violence	0.37**	0.19	1.44
Case status			
Neither	Reference		
Substantiated	0.12	0.19	1.13
Indicated	0.09	0.21	1.09
Active substance use	-0.03	0.17	0.97
Caregiver age			
<25 years	Reference		
25-34 years	-0.23	0.15	0.79
>35 years	-0.16	0.19	0.86
Child age			
0-2 years	Reference		
3-5 years	0.15	0.23	1.16
6-10 years	-0.07	0.19	0.93
11+ years	0.24	0.30	1.28
History child abuse	0.20	0.18	1.23
Live with spouse/partner	-0.13	0.16	0.88
Prior reports	0.39*	0.26	1.47
Social Support	-0.15	0.08	0.86
Prior substantiation	0.29	0.23	1.34
Caregiver race			
African American	Reference		
Hispanic	-0.06	0.21	0.94
Other	-0.53	0.21	0.59
White	0.02	0.16	0.98
Serious mental health problems	0.14	0.19	1.15
Prior history of arrest	0.17	0.22	1.19
Level of harm to child			
None	Reference		
Mild or Moderate	0.32	0.24	1.38
Severe	-0.01	0.30	0.99
Income			
< \$10,000	Reference		
\$10,000 - \$19,999	-0.32*	0.12	0.73
\$20,000 - \$29,999	-0.50*	0.13	0.60
\$30,000 - \$39,999	-0.60*	0.17	0.54
> \$40,000	-0.77*	0.15	0.46

Table 3.4 (Continued). Results of Cox Proportional Hazard models predicting timing to out-of-home placement

	B	S.E.	Hazard Ratio
Child abuse type			
Physical abuse	Reference		
Emotional Abuse	0.006	0.29	1.01
Failure to provide	0.22	0.23	1.24
Failure to supervise	0.008	0.19	1.01
Sexual Abuse	-0.60	0.16	0.55
Other	-0.09	0.26	0.91
Caregiver education			
No degree	Reference		
H.S./GED	-0.12	0.13	0.89
Asso./Voc. Tech	-0.09	0.19	0.91
Bachelor's	-1.13	0.33	0.32
Other	-0.17	0.32	0.84
Number of children			
1 child	Reference		
2 children	-0.23	0.14	0.80
3 children	-0.08	0.17	0.92
4 children	0.05	0.24	1.05
>= 5 children	-0.21	0.22	0.81
Poor county	-0.0004	0.14	1.00
Caregiver employment status			
Unemployed	Reference		
Part-time	0.0002	0.19	1.00
Full-time	-0.02	0.16	0.98

* p<.05, **p<0.01, ***p<0.001.

Figure 3.1: Kaplan-Meier survival Cure and Hazard Plot: ATE Model



Appendix A

Search Terms by Database

Social Service Abstracts via CSA

(abuse* within 3 (wom?n or partner* or spous* or wife or wives)) or(batter* within 3 (wom?n or partner* or spous* or wife or wives)) or(violen* within 3 (wom?n or partner* or spous* or wife or wives or domestic or family or families or dat*))

AND

(DE=(children or infants or adolescents)) or(child*) or(girl*) or(boy*) or(adolescen*) or(teen*) or(baby) or(babies) or(infant*) or(preschool*) or(pre school*) or(young person*) or(young people)

AND

KW=((relative* within 3 foster*) or(relative* within 3 substitute) or(family within 3 foster*) or(families within 3 foster*) or(family within 3 substitute) or(families within 3 substitute) or(kin within 3 care*) or(kinship within 3 care*) or(kin within 3 caring) or(kinship near caring) or(family based residential treatment) or(foster near care) or(foster near treatment) or(foster near special*) or(foster near therapeutic) or(foster near medical) or(foster-care*) or(DE="foster care") or(substitute near care*) or(foster near family based) or(group-home*) or(group within 3 home*) or(residential treatment center) or(residential group care) or(therapeutic foster care) or ("out of home") or (removal) or (placement))

PsychInfo via EBSCO

1. (batter* n3 wom?n) OR (batter* n3 partner*) OR (batter* n3 spous*) or (batter* n3 wife) OR (batter* n3 wives)
2. (abuse* n3 wom?n) OR (abuse* n3 partner*) OR (abuse* n3 spouse*) OR (abuse* n3 wife) OR (abuse* n3 wives)
3. (violen* n3 woman?) OR (violen* n3 partner*) OR (violen* n3 spous*) OR (violen* n3 wife) OR (violen* n3 wives) OR (violen* n3 domestic) OR (violen* n3 family) OR (violen* n3 families) OR (violen* n3 dat*)
4. S1 or S2 or S3
5. (girl*) or(boy*) or(adolescen*) or(teen*) or(baby) or(babies) or(infant*) or(preschool*) or(pre school*) or(young person*) or(young people) or (child*)
6. TI relative* n3 foster* OR AB relative* n3 foster* OR KW relative* n3 foster*
7. TI relative* n3 substitute OR AB relative* n3 substitute OR KW relative* n3 substitute

8. TI family n3 foster* OR AB family n3 foster* OR KW family n3 foster*
9. TI families n3 foster* OR AB families n3 foster* OR KW families n3 foster*
10. TI family n3 substitute OR AB family n3 substitute OR KW family n3 substitute
11. TI families n3 substitute OR AB family n3 substitute OR KW family n3 substitute
12. TI kin n3 care* OR AB kin n3 care* OR KW kin n3 care*
13. TI kinship n3 care* OR AB kinship n3 care* OR KW kinship n3 care*
14. TI kin n3 caring OR AB kin n3 caring OR KW kin n3 caring
15. TI kinship n3 caring OR AB kinship n3 caring OR KW kinship n3 caring
16. TI "family based residential treatment" OR AB "family based residential treatment" OR KW "family based residential treatment"
17. TI foster n3 care OR AB foster n3 care OR KW foster n3 care
18. TI foster n3 treatment OR AB foster n3 treatment OR KW foster n3 treatment
19. TI foster n3 special* OR AB foster n3 special* OR KW foster n3 special*
20. TI foster n3 therapeutic OR AB foster n3 therapeutic OR KW foster n3 therapeutic
21. TI foster n3 medical OR AB foster n3 medical OR KW foster n3 medical
22. MM "Foster Care" OR MJ "foster care"
23. TI foster-care* OR AB foster-care* OR KW foster-care*
24. TI substitute n3 care* OR AB substitute n3 care* OR KW substitute n3 care*
25. TI foster n3 family based OR AB foster n3 family based OR KW foster n3 family based
26. TI group n3 home OR AB group n3 home OR KW group n3 home
27. MM "Group Homes" OR MJ group homes
28. TI group-home* OR AB group-home* OR KW group-home*
29. TI residential treatment center OR AB residential treatment center OR KW residential treatment center
30. TI residential group care OR AB residential group care OR KW residential group care
31. TI therapeutic foster care OR AB therapeutic foster care OR KW therapeutic foster care
32. TI out of home or AB out of home or KW out of home
33. TI removal or AB removal OR KW removal
34. TI placement OR AB placement OR KW placement
35. S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34
36. S4 and S5 and S35

PubMed via Medline

1. Batter* women [tw] or Batter* partner* [tw] or Batter* spous*[tw] or Batter* wife [tw] or Batter* wives [tw] or Spouse Abuse* [tw] or partner* Abuse* [tw] or wife Abuse* [tw] or Domestic Violence [mesh:noexp] or domestic violen*[tw] or Partner* violen* [tw] or family violen* [tw] or families violen* [tw] or Dating violence [tw]
2. (("Adolescent"[Mesh]) OR "Infant"[Mesh]) OR "Child"[Mesh] OR (girl* [tw]) or(boy* [tw]) or(adolescen* [tw]) or(teen* [tw]) or(baby [tw]) or(babies [tw])

- or(infant* [tw]) or(preschool* [tw]) or(pre school* [tw]) or(young person* [tw])
or(young people [tw])
3. "Foster Home Care"[Mesh] or foster[tw] or kinship[tw] or group home [tw] or therapeutic foster care [tw] or substitute care [tw] or residential treatment center [tw] or residential group care [tw] or therapeutic foster care [tw] or "out of home" [tw] or removal [tw] or placement [tw]
 4. #1 AND #2 and #3

Social Work Abstracts via EBSCO

1. (batter* n3 wom?n) OR (batter* n3 partner*) OR (batter* n3 spous*) or (batter* n3 wife) OR (batter* n3 wives)
2. (abuse* n3 wom?n) OR (abuse* n3 partner*) OR (abuse* n3 spouse*) OR (abuse* n3 wife) OR (abuse* n3 wives)
3. (violen* n3 woman?) OR (violen* n3 partner*) OR (violen* n3 spous*) OR (violen* n3 wife) OR (violen* n3 wives) OR (violen* n3 domestic) OR (violen* n3 family) OR (violen* n3 families) OR (violen* n3 dat*)
4. S1 or S2 or S3
5. (girl*) or(boy*) or(adolescen*) or(teen*) or(baby) or(babies) or(infant*) or(preschool*) or(pre school*) or(young person*) or(young people) or (child*)
6. TI relative* n3 foster* OR AB relative* n3 foster*
7. TI relative* n3 substitute OR AB relative* n3 substitute
8. TI family n3 foster* OR AB family n3 foster*
9. TI families n3 foster* OR AB families n3 foster*
10. TI family n3 substitute OR AB family n3 substitute
11. TI families n3 substitute OR AB family n3 substitute
12. TI kin n3 care* OR AB kin n3 care*
13. TI kinship n3 care* OR AB kinship n3 care*
14. TI kin n3 caring OR AB kin n3 caring
15. TI kinship n3 caring OR AB kinship n3 caring
16. TI "family based residential treatment" OR AB "family based residential treatment"
17. TI foster n3 care OR AB foster n3 care
18. TI foster n3 treatment OR AB foster n3 treatment
19. TI foster n3 special* OR AB foster n3 special*
20. TI foster n3 therapeutic OR AB foster n3 therapeutic
21. TI foster n3 medical OR AB foster n3 medical
22. (((ZU "foster care")) or ((ZU "foster children")) or ((ZU "foster families")) or (ZU "foster family care") or (ZU "foster-care"))
23. TI foster-care* OR AB foster-care*
24. TI substitute n3 care* OR AB substitute n3 care*
25. TI foster n3 family based OR AB foster n3 family based
26. TI group n3 home OR AB group n3 home
27. (ZU "group homes")
28. TI group-home* OR AB group-home*
29. TI residential treatment center OR AB residential treatment center
30. TI residential group care OR AB residential group care

31. TI therapeutic foster care OR AB therapeutic foster care
32. TI out of home or AB out of home
33. TI removal or AB removal
34. TI placement OR AB placement
35. S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34
36. S4 and S5 and S35

Sociological Abstracts via CSA

(abuse* within 3 (wom?n or partner* or spous* or wife or wives)) or(batter* within 3 (wom?n or partner* or spous* or wife or wives)) or(violen* within 3 (wom?n or partner* or spous* or wife or wives or domestic or family or families or dat*))

AND

(DE=(children or infants or adolescents)) or(child*) or(girl*) or(boy*) or(adolescen*) or(teen*) or(baby) or(babies) or(infant*) or(preschool*) or(pre school*) or(young person*) or(young people)

AND

KW=((relative* within 3 foster*) or(relative* within 3 substitute) or(family within 3 foster*) or(families within 3 foster*) or(family within 3 substitute) or(families within 3 substitute) or(kin within 3 care*) or(kinship within 3 care*) or(kin within 3 caring) or(kinship near caring) or(family based residential treatment) or(foster near care) or(foster near treatment) or(foster near special*) or(foster near therapeutic) or(foster near medical) or(foster-care*) or(DE="foster care") or(substitute near care*) or(foster near family based) or(group-home*) or(group within 3 home*) or(residential treatment center) or(residential group care) or(therapeutic foster care) or ("out of home") or (removal) or (placement))

CINAHL via EbSCO

1. (batter* n3 wom?n) OR (batter* n3 partner*) OR (batter* n3 spous*) or (batter* n3 wife) OR (batter* n3 wives)
2. (abuse* n3 wom?n) OR (abuse* n3 partner*) OR (abuse* n3 spouse*) OR (abuse* n3 wife) OR (abuse* n3 wives)
3. (violen* n3 woman?) OR (violen* n3 partner*) OR (violen* n3 spous*) OR (violen* n3 wife) OR (violen* n3 wives) OR (violen* n3 domestic) OR (violen* n3 family) OR (violen* n3 families) OR (violen* n3 dat*)
4. S1 or S2 or S3
5. (girl*) or(boy*) or(adolescen*) or(teen*) or(baby) or(babies) or(infant*) or(preschool*) or(pre school*) or(young person*) or(young people) or (child*)

6. TI relative* n3 foster* OR AB relative* n3 foster*
7. TI relative* n3 substitute OR AB relative* n3 substitute
8. TI family n3 foster* OR AB family n3 foster*
9. TI families n3 foster* OR AB families n3 foster*
10. TI family n3 substitute OR AB family n3 substitute
11. TI families n3 substitute OR AB family n3 substitute
12. TI kin n3 care* OR AB kin n3 care*
13. TI kinship n3 care* OR AB kinship n3 care*
14. TI kin n3 caring OR AB kin n3 caring
15. TI kinship n3 caring OR AB kinship n3 caring
16. TI foster n3 care OR AB foster n3 care
17. TI foster n3 treatment OR AB foster n3 treatment
18. TI foster n3 special* OR AB foster n3 special*
19. TI foster n3 therapeutic OR AB foster n3 therapeutic
20. TI foster n3 medical OR AB foster n3 medical
21. (MM "Foster Home Care") OR (MM "Child, Foster")
22. TI foster-care* OR AB foster-care*
23. TI substitute n3 care* OR AB substitute n3 care*
24. TI foster n3 family based OR AB foster n3 family based
25. TI group n3 home OR AB group n3 home
26. TI group-home* OR AB group-home*
27. TI residential treatment center OR AB residential treatment center
28. TI residential group care OR AB residential group care
29. TI therapeutic foster care OR AB therapeutic foster care
30. TI out of home or AB out of home
31. TI removal or AB removal
32. TI placement OR AB placement
33. S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32
- 34. S4 and S5 and S33**

ISI Web of Knowledge

1. (TS = battered women) AND Language=(English) AND Document Types=(Article)
2. (TS= (spouse abuse)) AND Language=(English) AND Document Types=(Article)
3. (TS= (domestic violence)) AND Language=(English) AND Document Types=(Article)
4. (TS= (abuse* near wom*n)) AND Language=(English) AND Document Types=(Article)
5. (TS= (abuse* near partner*)) AND Language=(English) AND Document Types=(Article)
6. (TS= (abuse* near spous*)) AND Language=(English) AND Document Types=(Article)
7. (TS= (partner* near violen*)) AND Language=(English) AND Document Types=(Article)

8. (TS= (spous* near violen*)) AND Language=(English) AND Document Types=(Article)
9. (TS= (dat* near violen*)) AND Language=(English) AND Document Types=(Article)
10. #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3 OR #2 OR #1
11. (TS= ((girl*) or(boy*) or(adolescen*) or(teen*) or(baby) or(babies) or(infant*) or(preschool*) or(pre school*) or(young person*) or(young people))) AND Language=(English) AND Document Types=(Article)
12. (TS= (relative* near foster*)) AND Language=(English) AND Document Types=(Article)
13. (TS = (relative* near substitute)) AND Language=(English) AND Document Types=(Article)
14. (TS= (family near foster*)) AND Language=(English) AND Document Types=(Article)
15. (TS= (families near foster*)) AND Language=(English) AND Document Types=(Article)
16. (TS= (family near substitute)) AND Language=(English) AND Document Types=(Article)
17. (TS= (families near substitute)) AND Language=(English) AND Document Types=(Article)
18. (TS= (kin near care*)) AND Language=(English) AND Document Types=(Article)
19. (TS= (kinship near care*)) AND Language=(English) AND Document Types=(Article)
20. (TS= (kin near caring)) AND Language=(English) AND Document Types=(Article)
21. (TS= (kinship near caring)) AND Language=(English) AND Document Types=(Article)
22. (TS= ("family based residential treatment")) AND Language=(English) AND Document Types=(Article)
23. (TS= (foster near care)) AND Language=(English) AND Document Types=(Article)
24. (TS= (foster near treatment)) AND Language=(English) AND Document Types=(Article)
25. (TS= (foster near special*)) AND Language=(English) AND Document Types=(Article)
26. (TS= (foster near therapeutic)) AND Language=(English) AND Document Types=(Article)
27. (TS= (foster near medical)) AND Language=(English) AND Document Types=(Article)
28. (TS= (foster-care*)) AND Language=(English) AND Document Types=(Article)
29. (TS= (substitute near care*)) AND Language=(English) AND Document Types=(Article)
30. (TS= (foster near "family based")) AND Language=(English) AND Document Types=(Article)

31. (TS= (group near home)) AND Language=(English) AND Document
Types=(Article)
32. (TS= (group-home*)) AND Language=(English) AND Document
Types=(Article)
33. (TS= (residential treatment center)) AND Language=(English) AND Document
Types=(Article)
34. (TS= (residential group care)) AND Language=(English) AND Document
Types=(Article)
35. (TS= (therapeutic foster care)) AND Language=(English) AND Document
Types=(Article)
36. (TS= ((“out of home”) or (removal) or (placement)))) AND Language=(English)
AND Document Types=(Article)
37. #36 OR #35 OR #34 OR #33 OR #32 OR #31 OR #30 OR #29 OR #28 OR #27
OR #26 OR #25 OR #24 OR #23 OR #22 OR #21 OR #20 OR #19 OR #18 OR
#17 OR #16 OR #15 OR #14 OR #13 OR #12
38. #37 AND #11 AND #10

Appendix B
Chapter 2 Unweighted Sample Description by Missing

	Missing	Not Missing	P-value
Covariate			
Case status			0.00
Neither	33.37%		
Substantiated	49.53%	41.36%	
Indicated	17.10%	38.98%	
		19.65%	
Active substance use	30.23%	16.63%	0.00
Caregiver age			0.00
Under 25 years	17.36%	27.65%	
25 to 34 years	33.18%	43.74%	
35 or above years	49.46%	28.62%	
Child age			0.06
0-2 years	36.82%	33.69%	
3-5 years	14.84%	16.63%	
6-10 years	26.61%	29.70%	
11+ years	21.73%	19.98%	
History child abuse	31.69%	30.67%	0.56
Live with spouse/partner	35.66%	24.08%	0.00
Prior reports	52.86%	46.76%	0.001
Social Support	M = 2.25	M = 2.23	0.36
DV services received	8.39%	12.85%	0.00
Severe DV	17.90%	68.57%	0.00
Serious mental health problems	26.54%	19.87%	0.00
Prior history of arrest	20.44%	12.42%	0.00
Level of harm to child			
None			
Mild or Moderate			
Severe			
Income			0.00
< \$10,000	20.59%	30.13%	
\$10,000 - \$19,999	26.84%	31.10%	
\$20,000 - \$29,999	17.76%	17.82%	
\$30,000 - \$39,999	11.93%	8.86%	
> \$40,000	22.88%	12.10%	

Chapter 2 Unweighted Sample Description by Missing (Continued)

	Missing (<i>n</i>)	Not Missing	P-value
Child abuse type			0.00
Physical abuse	22.89%	23.65%	
Emotional Abuse	5.92%	8.10%	
Neglect- Failure to provide	23.62%	19.22%	
Neglect- Failure to supervise	25.42%	28.40%	
Sexual Abuse	11.63%	12.96%	
Other	10.53%	7.67%	
Caregiver education			0.00
No degree	26.05%	33.91%	
H.S./GED	44.90%	42.44%	
Asso./Voc. Tech	18.32%	18.14%	
Bachelor's	4.98%	2.05%	
Other	5.75%	3.46%	
Number of children			0.00
1 child	29.29%	27.32%	
2 children	25.14%	31.97%	
3 children	20.50%	22.57%	
4 children	11.65%	10.58%	
>= 5 children	13.42%	7.56%	
Poor county	57.01%	55.72%	0.47
Caregiver employment status			0.80
Unemployed	47.23%	47.62%	
Part-time	13.63%	14.25%	
Full-time	39.14%	38.12%	

χ^2 tests were conducted on the categorical variables and a *t*-test was conducted on the social support variable.

Appendix C

Chapter 2 Diagnostic Assessments

Because the main purpose of the current study is to assess the change rate of being placed in out-of-home placement for children of caregivers who reported domestic violence, Cox proportional hazard models were used to conduct outcome analyses. However, prior to conducting outcome analyses, a preliminary examination of the data was conducted to determine whether the study data met the assumptions for the use of Cox proportional hazard model.

The first step of the preliminary analysis involved examining whether problems of multicollinearity existed among the independent variables. Results indicated a risk of multicollinearity between the following characteristics: (a) caregiver's age and child's age and (b) caregiver's marital status and intimate partner living in household. Both sets of characteristics had a Pearson correlation coefficient greater than the cut-off of 5.0. However, the only set of characteristics with a variance inflation factor (VIF) that signified the analysis is threatened by multicollinearity (i.e., $VIF > 10$) was caregiver's marital status and intimate partner living in household. A closer look at these variables revealed 2.27% ($n = 21$) of caregivers reported being married, but did not live with their partners. Because people who are married tend to live together, the validity of the marital status variable was a concern. Therefore, the decision was made to only include the live-in partner variable in the outcome analyses.

The second step of the preliminary analysis involved investigating the risk of autocorrelation for children nested within county child welfare agencies (i.e., PSUs). A one-way ANOVA with random effects was used to obtain measures of between group

and within group variance. This assessment involved calculating the intra-class correlation coefficient (ICC), which was used to identify the proportion of variance in out-of-home placement that was due to differences in counties (Raudenbush & Byrk, 2002). Results of the one-way ANOVA indicated that ICC for out-of-home placement 0.0314, meaning 3.14% of the variance was between counties. This ICC estimate is not above the standard threshold of 0.25.

The last step of the preliminary analysis involved cross-validating the ANOVA finding using an additional assessment strategy used by prior research as an alternative approach to assess ICC (Allison, 1995; Guo & Wells, 2003). Specifically, a Cox proportional hazard model was estimated for time to out-of-home placement, where the time to out-of-home placement of a randomly selected omitted case for each county was used as a predictor. The Cox model contained all main effect study covariates, as well as the additional predictor of time to out-of-home placement for the omitted cases, to assess if there was residual autocorrelation once the effects of the other covariates had been removed. Results revealed no significant coefficient ($p > .05$), confirming the one-way ANOVA results and suggesting there is no need to adjust the Cox proportional hazard models to addresses autocorrelation.

Appendix D

Chapter 2 Sensitivity Analysis

A sensitivity analysis was conducted by comparing a propensity score matching technique known as greedy matching to findings from the propensity score weighting procedures. Sensitivity analysis attempts to examine selection bias due to unobserved measures (i.e., hidden selection). By comparing these two models, the researcher was able to gauge convergence and divergence across models, allowing for a conclusion on how sensitive the estimated treatment effect is when tested under different models meeting different assumptions (Guo & Fraser, 2010).

Rather than using propensity scores to reweight the sample, greedy matching techniques use the propensity scores to match participants from each group (i.e., African American caregivers and non-African American caregivers) who share a similar propensity score. Therefore, when using greedy matching techniques, cases may be excluded due to incomplete or inaccurate matching; thereby decreasing sample size. In this study, five different greedy matching schemes were used in order to assess which technique best served as a comparison model for sensitivity analysis. These schemes included nearest neighbor within caliper using three different calipers which defined the range of widths for the common support region when matching (caliper sizes of 0.25, 0.1 and 0.05), and two Mahalanobis metric matching schemes (one with and one without the propensity score). As indicated in Appendix D, Table 3, all five matching schemes successfully removed the significant differences between groups. Further, all matching schemes indicated differences in the survivor functions in the same way: that is, non-African American caregivers who reported domestic violence had a higher hazard for

out-of-home placement than African American caregivers who reported domestic violence, and that these group differences are not significantly different ($p > .05$).

Appendix D, Table 2.2: Sensitivity Analyses

Scheme	Matching Covariate Distributions Did Not Overlap Sufficiently: Covariates Significant After Matching $p < .05$	90 th Percentile of Survivor Function in Days (Kaplan-Meier Estimation)		P Value Testing Group Differences (Wilcoxon)
		African American	Non-African American	
Original Sample of All (n = 925)	county poor, crglive, child5, child2, income4, income1, abuse3, abuse2, live with partner,	445	328	0.7265
Nearest 1-1 (N=405) (.25SD)		445	645	0.4684
Near 1-2 (402) (.1 SD)		405	645	0.3951
Near 1-4 (400) (.05 SD)		405	645	0.3958
Mahalanobis 1-1 (n = 330) M w/o		485	332	0.1202
Mahalanobis 1-2 (n = 330) M w/		574	332	0.0832
Propensity Score Weights Predicted by Logistic Regression Model (ATE)				0.4931
Propensity Score Weights Predicted by Logistic Regression Model (ATT)				0.3023

Appendix E

Chapter 2 Survival Curve Figures

Figure 1, Appendix D: Kaplan-Meier survival Curve and Hazard Plot: Unadjusted Model

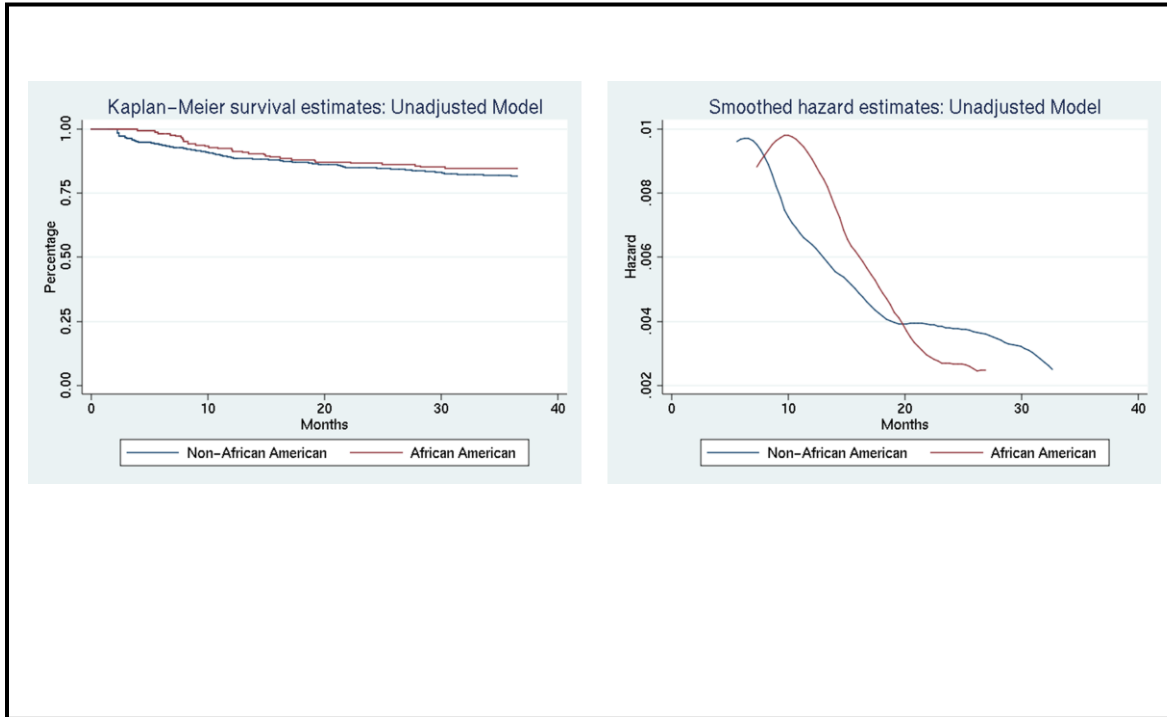
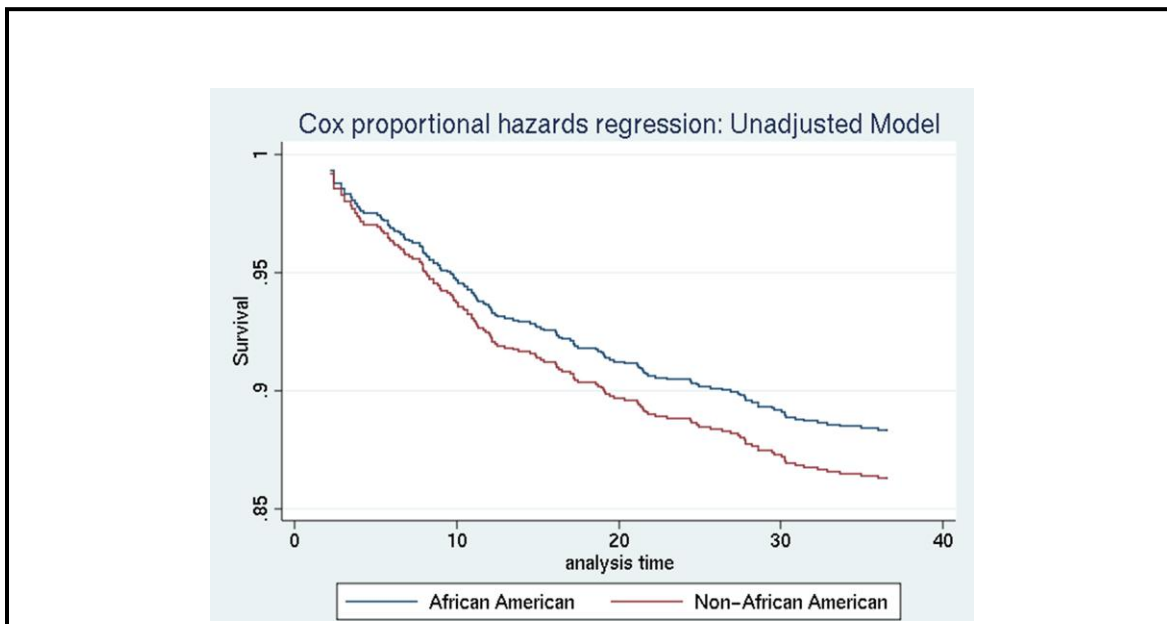


Figure 2, Appendix D: Model-Predictor Survival Curve: Unadjusted Model



Appendix F

Chapter 3 Unweighted Sample Description by Missing

	Missing	Not Missing	P-value
Covariate			
Case status			
Neither	29.05	43.92	0.00
Substantiated	53.82	37.82	
Indicated	17.13	18.25	
Active substance use	35.88	15.96	0.00
Caregiver age			0.00
Under 25 years	13.58	28.98	
25 to 34 years	30.02	43.82	
35 or above years	56.40	27.20	
Child age			0.00
0-2 years	36.80	35.38	
3-5 years	14.58	16.17	
6-10 years	25.73	29.64	
11+ years	22.90	18.81	
History child abuse	36.41	26.03	0.00
Live with spouse/partner	36.76	28.27	0.00
Prior reports	57.10	43.47	0.00
Social Support	M = 2.24	M = 2.25	0.51
Prior substantiation	71.56	22.01	0.00
Caregiver race			0.00
African American	31.31	23.08	
Hispanic	14.27	14.39	
Other	7.02	6.66	
White	47.41	55.87	
Serious mental health problems	30.55	17.64	0.00
Prior history of arrest	24.74	10.83	0.00
Level of harm to child			0.00
None	21.55	32.69	
Mild or Moderate	56.18	58.01	
Severe	22.27	9.30	
Income			0.00
< \$10,000	17.89	29.23	
\$10,000 - \$19,999	25.73	30.55	
\$20,000 - \$29,999	16.83	19.22	
\$30,000 - \$39,999	12.80	9.15	
> \$40,000	26.75	11.85	

Chapter 3 Unweighted Sample Description by Missing (Continued)

	Missing (<i>n</i>)	Not Missing	P-value
Child abuse type			0.00
Physical abuse	21.78	24.96	
Emotional Abuse	6.47	6.10	
Neglect- Failure to provide	23.58	21.61	
Neglect- Failure to supervise	25.38	26.89	
Sexual Abuse	11.01	13.22	
Other	11.79	7.22	
Caregiver education			0.00
No degree	23.97	33.45	
H.S./GED	45.02	43.52	
Asso./Voc. Tech	18.96	17.08	
Bachelor's	5.75	2.24	
Other	6.29	3.71	
Number of children			0.00
1 child	29.77	27.50	
2 children	24.28	29.89	
3 children	19.35	23.54	
4 children	11.52	11.39	
>= 5 children	15.08	7.68	
Poor county	56.99	56.43	0.69
Caregiver employment status			0.00
Unemployed	45.88	49.82	
Part-time	13.17	14.74	
Full-time	40.96	35.43	

χ^2 tests were conducted on the categorical variables and a *t*-test was conducted on the social support variable.

Appendix G

Chapter 3 Diagnostic Assessments

Prior to conducting analyses, the data was examined to determine whether (a) problems of multicollinearity existed among the independent variables, and (b) there was a risk of autocorrelation present for children nested within county child welfare agencies (i.e., PSUs). Results revealed problems of multicollinearity were present between caregiver's marital status and intimate partner living in household (i.e., the variance inflation factor score for these two variables were greater than 10; and the correlation was greater than .50). A closer look at these variables revealed 8.10% ($n = 49$) of caregivers reported being married, but did not report living with their partners. Because people who are married tend to live together, the validity of the marital status variable was a concern. Therefore, the decision was made to only include the live-in partner variable in outcome analyses.

Autocorrelation was assessed using a one-way ANOVA with random effects to calculate the intra-class correlation (ICC). Findings from the one-way ANOVA revealed an ICC estimate below the 0.25 cut-off ($ICC = 1.58$). This finding was cross-validated with results from a Cox proportional hazard model estimated for time to out-of-home placement, using the time to out-of-home placement of a randomly selected omitted case for each county (as recommended by Allison, 1995). The Cox model contained all main effect study covariates, as well as the additional predictor of time to out-of-home placement for the omitted cases, to assess if there was residual autocorrelation once the effects of the other covariates had been removed. Results revealed no significant coefficient ($p > .05$), confirming the one-way ANOVA. Therefore, there was no need to

adjust the outcome model to addresses autocorrelation; and study data met the assumptions required for the study's analyses.

Appendix H

Chapter 3 Sensitivity Analysis

A sensitivity analysis was conducted by comparing a propensity score matching technique known as greedy matching to findings from the propensity score weighting procedures. Sensitivity analysis attempts to examine selection bias due to unobserved measures (i.e., hidden selection). By comparing these two models, the researcher was able to gauge convergence and divergence across models, allowing for a conclusion on how sensitive the estimated treatment effect is when tested under different models meeting different assumptions (Guo & Fraser, 2010).

Rather than using propensity scores to reweight the sample, greedy matching techniques use the propensity scores to match participants from each group (i.e., caregivers who reported domestic violence and caregivers who did not report domestic violence) who share a similar propensity score. Therefore, when using greedy matching techniques, cases may be excluded due to incomplete or inaccurate matching; thereby decreasing sample size.

In this study, five different greedy matching schemes were used in order to assess which technique best served as a comparison model for sensitivity analysis. These schemes included nearest neighbor within caliper using three different calipers which defined the range of widths for the common support region when matching (caliper sizes of 0.25, 0.1 and 0.05), and two Mahalanobis metric matching schemes (one with and one without the propensity score). As indicated in Appendix H, Table 2, all five matching schemes successfully removed the significant differences between groups. Further, all matching schemes indicated differences in the survivor functions in the same way: that is,

caregivers who reported domestic violence had a higher hazard for out-of-home placement than caregivers who did not report domestic violence, and that these group differences are significantly different ($p < .05$).

Appendix H, Table 2

Scheme	Matching Covariate Distributions Did Not Overlap Sufficiently: Covariates Significant After Matching $p < .05$	90 th Percentile of Survivor Function in Days (Kaplan-Meier Estimation)		P Value Testing Group Differences (Wilcoxon)
		DV	No DV	
Original Sample of All (n = 1,965)	Harm0, harm1, emotional abuse, neglect_provide, crgliveprtnr, arrest, mental, histabuse, priorsubst,	337	859	0.0010
Nearest 1-1 (N=1614) (.25SD)		362	622	0.0244
Near 1-2 (n = 1608) (.1 SD)		372	594	0.0570
Near 1-2 (n = 1,600) (.05 SD)		366	594	0.0563
Mahalanobis 1-1 (n = 1,112) M w/o	prior substantiation, mental, prior report, hist abuse, drug, arrest, substan0, substan2, employ0, employ1, harm0, Employ0, employ1, crgpriorrpt, arrest, mental, crgpriorsubst, crghistabse, drug/alcohol, harm0, substan0, substan2, crgage1,	333	885	0.0079
Mahalanobis 1-2 (n = 1,112) M w/		328	885	0.0380
Propensity Score Weighting (ATE) (n = 1967)				0.0112
Propensity Score Weighting (ATT) (n = 1967)				0.0236

Appendix I

Chapter 3 Survival Curve Figures

Figure 1, Appendix I: Kaplan-Meier survival Cure and Hazard Plot: Unadjusted Model

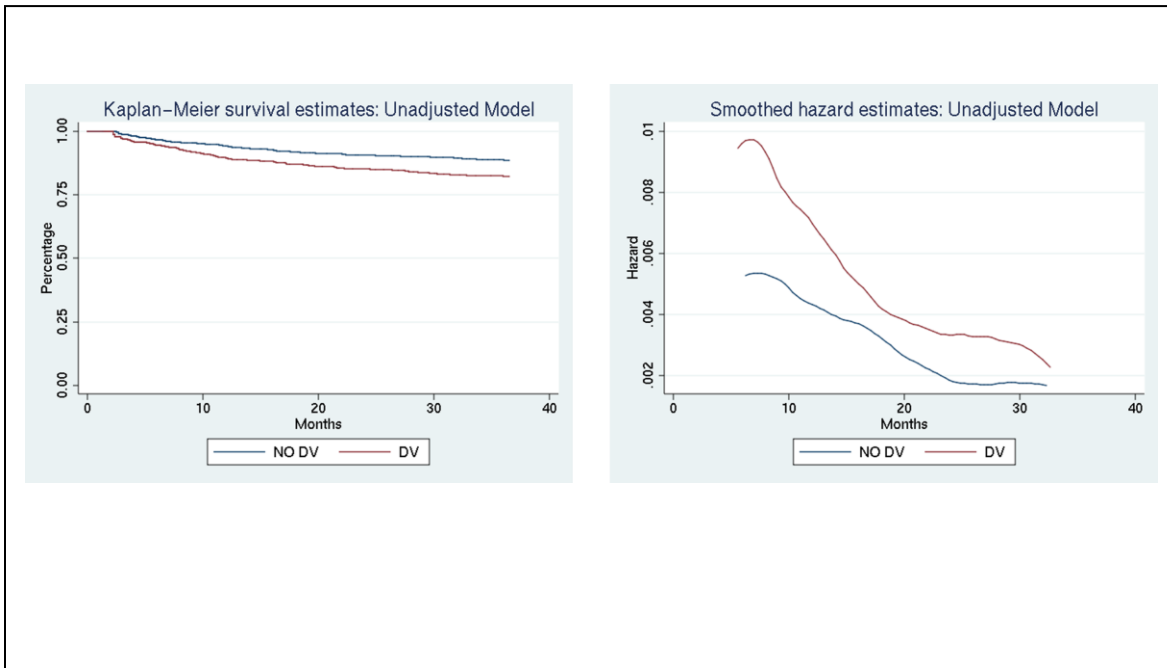
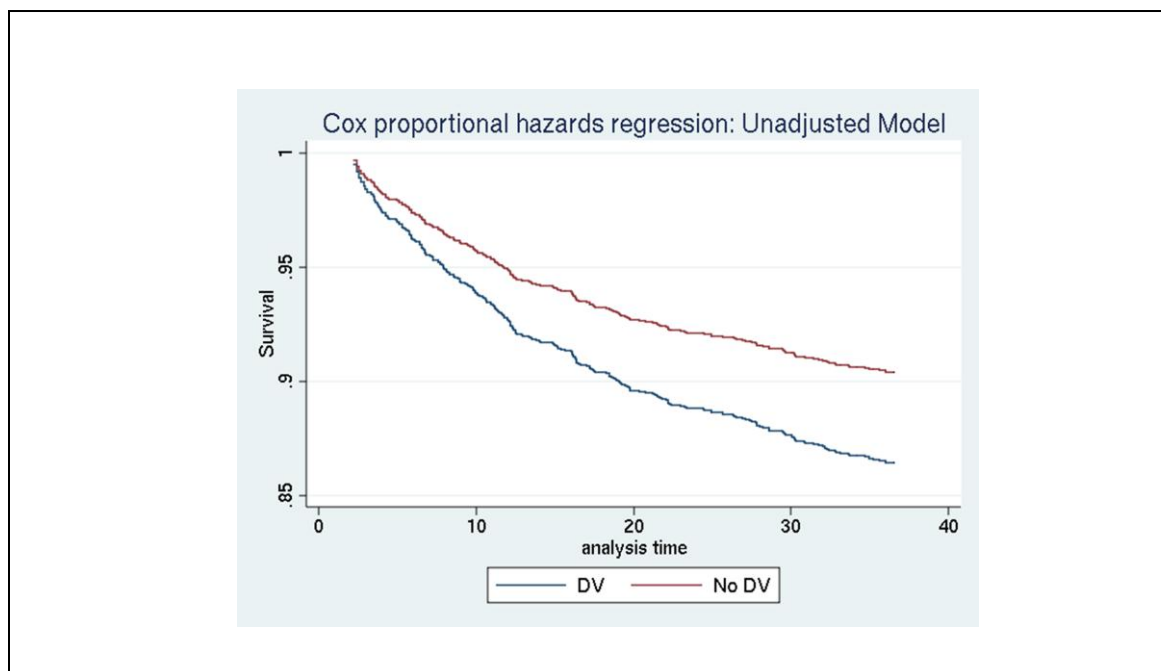


Figure 2, Appendix I: Model-predicted Survival Cure: Unadjusted



References

- Aarons, G.A., Hazen, A.L., Leslie, L.K., Hough, R.L., Monn, A.R., Connelly, C.D., . . . Brown, S.A. (2008). Substance involvement among young in child welfare: The role of common and unique risk factors. *American Journal of Orthopsychiatry*, 78(3), 340-349. [doi:10.1037/a0014215](https://doi.org/10.1037/a0014215)
- Aron, L.Y., & Olson, K.K. (1997). Efforts by child welfare agencies to address domestic violence. *Public Welfare*, 4-13.
- Allison, P. D., (1995). *Survival Analysis Using the SAS System: A Practical Guide*. Cary, NC: SAS Institute Inc.
- Banks, D., Hazen, A.L., Coben, J.H., Wang, K., & Griffith, J.D. (2009). Collaboration between child welfare agencies and domestic violence service providers: Relationship with child welfare policies and practices for addressing domestic violence. *Children and Youth Services Review*, 31, 497-505. [doi:10.1016/j.childyouth.2008.10.005](https://doi.org/10.1016/j.childyouth.2008.10.005)
- Barth, R. P. (1997). Effects of age and race on the odds of adoption versus remaining in long-term out-of-home care. *Child Welfare: Journal of Policy, Practice, and Program*, 76(2), 285-308. Retrieved from https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1997-07901-001&site=ehost-live&scope=site
- Barth, R.P. (2005). Child welfare and race: Models of disproportionality. In D.M. Derezotes, J. Poertner, & M.F. Testa (Eds.). *Race matters in child welfare: The overrepresentation of African American children in the system* (pp. 25-45). Washington, DC: Child Welfare League of America.
- Barth, R.P. & Blackwell, D.L. (1998). Death rates among California's foster care and former care populations. *Children and Youth Services Review*, 20, 577-604. [doi:10.1016/S0190-7409\(98\)00027-9](https://doi.org/10.1016/S0190-7409(98)00027-9)
- Baser, O. (2008). Propensity score matching with multi-level categories: An application. Retrieved from <http://www.ispor.org/news/articles/mar08/psm.asp>
- Beeman, S. K., Hagemeister, A. K., & Edleson, J. L. (2001). Case assessment and service receipt in families experiencing both child maltreatment and woman battering.

- Journal of Interpersonal Violence*, 16(5), 437-458.
doi:10.1177/088626001016005004
- Bellamy, J. L. (2009). A national study of male involvement among families in contact with the child welfare system. *Child Maltreatment*, 14, 255–262. doi: <http://dx.doi.org/10.1177/1077559508326288>
- Bent-Goodley, T.B. (2001). Eradicating domestic violence in the African American community: A literature review and action agenda. *Trauma, Violence, and Abuse*, 2, 316-330. doi: <http://dx.doi.org/10.1177/1524838001002004003>
- Bent-Goodley (2004). Perceptions of domestic violence: A dialogue with African American women. *Health and Social Work*, 29(4), 307-316. Retrieved from <http://www.naswpress.org/publications/journals/hsw.html>
- Black, T., Trocmé, N., Fallon, B., & MacLaurin, B. (2008). The Canadian child welfare system response to exposure to domestic violence investigations. *Child Abuse & Neglect*, 32(3), 393-404. doi:10.1016/j.chiabu.2007.10.002
- Black, M.C., Basile, K.C., Breiding, M.J., Smith, S.G., Walters, M.L., Merrick, M.T., . . . Stevens, M.R. (2011). The national intimate partner and sexual violence survey (NISVS): 2010 summary report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/ViolencePrevention/pdf/NISVS_Report2010-a.pdf
- Blank RM, Dabady M, Citro CF (eds). *Measuring Racial Discrimination*. Washington, DC: National Academies Press, 2004.
- Buehler, C., Orme, J.G., Post, J., Patterson, D.A. (2000). The long-term correlates of family foster care. *Children and Youth Services Review*, 22(8), 595-625.
[doi:10.1016/S0190-7409\(00\)00108-0](http://dx.doi.org/10.1016/S0190-7409(00)00108-0)
- Burns, B. J., Mustillo, S. A., Farmer, E. M. Z., Kolko, D. J., McCrae, J., & Libby, A. M., & Webb, M. B. (2007). Caregivers depression, mental health service use, and child outcomes. *Child welfare and child well-being: New perspectives from the National Survey of Child Well-Being* (pp. 351-379). New York: Oxford University Press.
- Campbell, D.W., Sharps, P.W., Gary, F., Campbell, J.C., & Lopez, L.M. (2002). Intimate partner violence in African American women. *Online Journal of Issues in Nursing*, 7(1), Manuscript 4.

- Carter, V. B. (2009a). Comparison of american Indian/Alaskan natives to non-indians in out-of-home care. *Families in Society*, 90(3), 301-308. doi:10.1606/1044-3894.3895
- Carter, V. B. (2009b). Prediction of placement into out-of-home care for american Indian/Alaskan natives compared to non-indians. *Children and Youth Services Review*, 31(8), 840-846. doi:10.1016/j.childyouth.2009.03.006
- Carter, V. B. (2010). Factors predicting placement of urban american Indian/Alaskan natives into out-of-home care. *Children and Youth Services Review*, 32(5), 657-663. doi:10.1016/j.childyouth.2009.12.013
- Carter, V. B., & Myers, M. (2008). Examination of substantiated lack of supervision and its impact on out-of-home placement: A national sample. *Journal of Public Child Welfare*, 2(1), 51-70. doi:10.1080/15548730802237320
- Cazenave, N.A., & Straus, M.A., (1979). Race, class, network embeddedness, and family violence: A search for potent support systems. *Comparative Family Studies*, 10, 282-300.
- Cheng, T. C. (2010). Factors associated with reunification: A longitudinal analysis of long-term foster care. *Children and Youth Services Review*, doi:10.1016/j.childyouth.2010.04.023
- Child Trends. *Foster Care*. Retrieve March 22, 2012 from U.S. Department of Health and Human Services (2005). *Child Maltreatment, 2003*. Washington, DC: U.S. Government Printing Office. Retrieved March 4, 2010, from <http://www.acf.hhs.gov/programs/cb/pubs/cm03/chaptersix.htm#foster>.
- Coley, S. M., & Beckett, J. O. (1988). Black battered women: A review of empirical literature. *Journal of Counseling and Development*, 66, 266-270.
- Connelly, C.D., Hazen, A.L., Coben, J.H., Kelleher, K.J., Barth, R.P., & Landsverk, J.A. (2006). Persistence of intimate partner violence among families referred to child welfare. *Journal of Interpersonal Violence*, 21, 774-797. [doi:10.1177/0886260506287316](https://doi.org/10.1177/0886260506287316)
- Coohey, C. (2007). What criteria do child protective services investigators use to substantiate exposure to domestic violence? *Child Welfare: Journal of Policy, Practice, and Program*, 86(4), 93-122. Retrieved from

https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2007-15243-005&site=ehost-live&scope=site

Courtney, M. & Skyles, A. (2003). Racial disproportionality in the child welfare system. *Children and Youth Services Review*, 25, 355-358 doi: [http://dx.doi.org/10.1016/S0190-7409\(03\)00025-2](http://dx.doi.org/10.1016/S0190-7409(03)00025-2)

Courtney, M. E., & Wong, Y. I. (1996). Comparing the timing of exits from substitute care. *Children and Youth Services Review*, 18(4-5), 307-334. doi:10.1016/0190-7409(96)00008-4

Curtis-Boles, H., & Jenkins-Monroe, V. (2000). Substance abuse in African American women. *Journal of Black Psychology*, 26, 450-469. doi: <http://dx.doi.org/10.1177/0095798400026004007>

Davis, R. E. (1997). Trauma and addiction experiences of African American women. *Western Journal of Nursing Research*, 19, 442-465. doi: <http://dx.doi.org/10.1177/019394599701900403>

Delfabbro, P., Borgas, M., Rogers, N., Jeffreys, H., & Wilson, R. (2009). The social and family backgrounds of infants in south australian out-of-home care 2000-2005: Predictors of subsequent abuse notifications. *Children and Youth Services Review*, 31(2), 219-226. doi:10.1016/j.childyouth.2008.07.023

Donald, K. L., Bradley, L. K., Critchley, R., Day, P., & Nuccio, K. E. (2003). Comparison between american indian and non-indian out-of-home placements. *Families in Society*, 84(2), 267-274. Retrieved from https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=10515273&site=ehost-live&scope=site

Dosanjh, S., Lewis, G., Mathews, D., & Bhandari, M. (2008). Child protection involvement and victims of intimate partner violence: Is there a bias? *Violence Against Women*, 14, 833-843. doi:10.1177/1077801208320247

Doyle, J. J. (2011, in press). Causal effects of foster care: An instrumental-variables approach. *Children and Youth Services Review*.

Duke - UNC Functional Social Support Questionnaire (1988). Broadhead W. E., Gehbach S. H., De Gruy F. V., Kaplan B. H., Wilkin D., Hallam, L., & Doggett

- M. A. (1993). Measures of need and outcome for primary health care (pp. 122-126). New York, NY: Oxford University Press.
- Edleson, J.L. (1999a). Children's witnessing of adult domestic violence. *Journal of Interpersonal Violence*, 14 (8), 839-870. [doi:10.1177/088626099014008004](https://doi.org/10.1177/088626099014008004)
- Edleson, J.L. (1999b). The overlap between child maltreatment and woman battering. *Violence Against Women*, 5 (2), 134-154. [doi:10.1177/107780129952003](https://doi.org/10.1177/107780129952003)
- English, D. J., Edleson, J. L., & Herrick, M. E. (2005). Domestic violence in one state's child protective caseload: A study of differential case dispositions and outcomes. *Children and Youth Services Review*, 27(11), 1183-1201. doi:10.1016/j.childyouth.2005.04.004
- Fantuzzo, J., Boruch, R., Beriama, A., Atkins, M., & Marcus, S. (1997). Domestic violence and children: Prevalence and risk in five major U.S. cities. *American Academy of Child and Adolescent Psychiatry*, 36 (1), 116-122. Retrieved from <http://www.jaacap.com/>
- Findlater, J. and Kelly, S. (1999). Michigan's domestic violence and child welfare collaboration. In J. L. Edleson & S. Schechter (Eds.), *In the best interests of women and children: Child welfare and domestic violence services working together* (pp. 167 to 174). Thousand Oaks, CA.
- Forrester, D., & Harwin, J. (2008). Parental substance misuse and child welfare: Outcomes for children two years after referral. *British Journal of Social Work*, 38(8), 1518-1535. doi:10.1093/bjsw/bcm051
- Freedman, D. A., & Berk, R. A. (2008). Weighting regression by propensity scores. *Evaluation Review*, 32, 392-409. doi: <https://dx.doi.org/10.1177/0193841X08317586>
- Griffith, A. K., Ingram, S. D., Barth, R. P., Trout, A. L., Hurley, K. D., Thompson, R. W., et al. (2009). The family characteristics of youth entering a residential care program. *Residential Treatment for Children & Youth*, 26(2), 135-150. doi:10.1080/08865710902914283
- Guo, S. (2010). Survival analysis. New York, NY: Oxford University Press.
- Guo, S. & Fraser, M.W. (2010). Propensity Score Analysis: Statistical Methods and

Applications. Thousand Oaks, CA: Sage Publications.

- Guo, S. & Well, K. (2003). Research on timing of foster care outcomes: One methodological problem and approaches to its solution. *The Social Service Review*, 77(1), 1-24. [doi:10.1086/345702](https://doi.org/10.1086/345702)
- Hampton, R.L. & Gelles, R.J. (1994). Violence toward Black women in a nationally representative sample of Black families. *Journal of Comparative Family Studies*, 23(1), 105-119.
- Hampton, R., Oliver, W., & Magarian, L. (2003). Domestic violence in the African American community: An analysis of social and structural factors. *Violence Against Women*, 9, 533-557. doi: <http://dx.doi.org/10.1177/1077801202250450>
- Hartley, C.C. (2004). Severe domestic violence and child maltreatment: Considering child physical abuse, neglect, and failure to protect. *Children and Youth Services*, 26, 373-392. [doi:10.1016/j.childyouth.2004.01.005](https://doi.org/10.1016/j.childyouth.2004.01.005)
- Hazen, A.L., Connelly, C.D., Kelleher, K., Landsverk, J., & Barth, R.P. (2004). Intimate partner violence among female caregivers of children reported for child maltreatment. *Child Abuse and Neglect*, 28, 301-319. [doi:10.1016/j.chiabu.2003.09.016](https://doi.org/10.1016/j.chiabu.2003.09.016)
- Hill, R.B. (2005). The role of race in foster care placements. In D.M. Derezotes, J. Poertner, & M.F. Testa (Eds.). *Race matters in child welfare: The overrepresentation of African American children in the system* (pp. 187-200). Washington, DC: Child Welfare League of America.
- Hill, R.B. (2006). *Synthesis of Research on Disproportionality in Child Welfare: An Update*. Retrieved March 4, 2010, from http://www.racemattersconsortium.org/docs/BobHillPaper_FINAL.pdf.
- Hiilamo, H. (2009). What could explain the dramatic rise in out-of-home placement in finland in the 1990s and early 2000s? *Children and Youth Services Review*, 31(2), 177-184. doi:10.1016/j.childyouth.2008.07.022
- Horwitz, S. M., Hurlburt, M. S., Cohen, S. D., Zhang, J., & Landsverk, J. (2011). Predictors of placement for children who initially remained in their homes after an investigation for abuse or neglect. *Child Abuse & Neglect*, 35(3), 188-198. doi:10.1016/j.chiabu.2010.12.002

- Hussey, D.L., & Guo, S. (2005). Characteristics and trajectories of treatment foster care youth. *Child Welfare*, 84(4), 485-506. Retrieved from <http://www.cwla.org/articles/cwjabstracts.htm>
- Jones L. P., Gross E., Becker I (2002). The characteristics of domestic violence victims in a child protective service caseload. *Families in Society*, 83(4), 405–415.
- Jonson-Reid, M., & Bivens, L. (1999). Foster youth and dating violence. *Journal of Interpersonal Violence*, 14(12), 1249-1262. doi:10.1177/088626099014012002
- Jonson-Reid, M. & Barth, R.P. (2000). From maltreatment report to juvenile incarceration: The role of child welfare services. *Child Abuse and Neglect*, 24(4), 505-520. [doi:10.1016/S0145-2134\(00\)00107-1](https://doi.org/10.1016/S0145-2134(00)00107-1)
- Kelleher, K.J., Hazen, A.L., Coben, J.H., Wang, Y., McGeehan, J., Kohl, P.L., & Gardner, W.P. (2008). Self-reported disciplinary practices among women in the child welfare system: Association with domestic violence victimization. *Child Abuse and Neglect*, 32, 811-818. [doi:10.1016/j.chiabu.2007.12.004](https://doi.org/10.1016/j.chiabu.2007.12.004)
- Kernic, M.A., Wolf, M.E., Holt, V.L., McKnight, B., Huebner, C.E., Rivara, F.P. (2003). Behavioral problems among children whose mothers are abused by an intimate partner. *Child Abuse & Neglect*, 27, 1231-1246. doi: <http://dx.doi.org/10.1016/j.chiabu.2002.12.001>
- Kirton, D., Beecham, J., & Ogilvie, K. (2006). Adoption by foster carers: A profile of interest and outcomes. *Child & Family Social Work*, 11(2), 139-146. doi:10.1111/j.1365-2206.2006.00400.x
- Kohl, P. L., Edleson, J. L., English, D. J., & Barth, R. P. (2005). Domestic violence and pathways into child welfare services: Findings from the national survey of child and adolescent well-being. *Children and Youth Services Review*, 27(11), 1167-1182. doi:10.1016/j.childyouth.2005.04.003
- Kohl, P.L., Barth, R.P., Hazen, A.L., & Landsverk, J.A. (2005). Child welfare as a gateway to domestic violence services. *Children and Youth Services Review*, 27, 1203-1221. [doi:10.1016/j.childyouth.2005.04.005](https://doi.org/10.1016/j.childyouth.2005.04.005)
- Larrieu, J. A., Heller, S. S., Smyke, A. T., & Zeanah, C. H. (2008). Predictors of permanent loss of custody for mothers of infants and toddlers in foster care. *Infant Mental Health Journal*, 29(1), 48-60. doi:10.1002/imhj.20165

- Lavergne, C., Damant, D., Clément, M., Bourassa, C., Lessard, G., & Turcotte, P. (2011). Key decisions in child protection services in cases of domestic violence: Maintaining services and out-of-home placement. *Child & Family Social Work, 16*(3), 353-363. doi:10.1111/j.1365-2206.2010.00750.x
- LaViolette, A.D. & Barnett, O.W. (2000). *It could happen to anyone: Why battered women stay* (2nd Ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Lee, H.Y., Lightfoot, E., & Edleson, J.L. (2008). Differences among battered mothers in their involvement with child protection services: Could the perpetrator's biological relationship to the child have an impact. *Children and Youth Services Review, 30*, 1189-1197. doi:10.1016/j.childyouth.2008.03.004
- Litrownik, A. J., Newton, R., Mitchell, B. E., & Richardson, K. K. (2003). Long-term follow-up of young children placed in foster care: Subsequent placements and exposure to family violence. *Journal of Family Violence, 18*(1), 19-28. doi:10.1023/A:1021449330344
- Martin, M. H., Barbee, A. P., Antle, B. F., & Sar, B. (2002). Expedited permanency planning: Evaluations of the kentucky adoptions opportunities project. *Child Welfare: Journal of Policy, Practice, and Program, 81*(2), 203-224. Retrieved from https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2002-06357-004&site=ehost-live&scope=site
- Massinga, R. & Pecora, P.J. (2004). Providing better opportunities for older children in the child welfare system. *The Future of the Children, 14*(1), 151-173. doi:10.2307/1602759
- McBeath, B., & Meezan, W. (2009). Interorganizational disparities in foster care service provision. *Children and Youth Services Review, 31*(5), 513-525. doi:10.1016/j.childyouth.2008.10.007
- McPhatter, A. R., & Ganaway, T. L. (2003). Beyond the rhetoric: Strategies for implementing culturally effective practice with children, families, and communities. *Child Welfare League of America, 82*, 103-124.
- Meyer, A. S., McWey, L. M., McKendrick, W., & Henderson, T. L. (2010). Substance using parents, foster care, and termination of parental rights: The importance of risk factors for legal outcomes. *Children and Youth Services Review, 32*(5), 639-649. doi:10.1016/j.childyouth.2009.12.011

- Minnes, S., Singer, L. T., Humphrey-Wall, R., & Satayathum, S. (2008). Psychosocial and behavioral factors related to the post-partum placements of infants born to cocaine-using women. *Child Abuse & Neglect*, 32(3), 353-366. doi:10.1016/j.chiabu.2007.12.002
- National Council of Juvenile and Family Court Judges (1999). *Effective intervention in domestic violence & child maltreatment cases: Guidelines for policy and practice*. National Council of Juvenile and Family Court Judges: Reno, NV.
- National Survey of Child and Adolescent Well-being (NSCAW; 2005). CPS sample component: Wave 1 data analysis report. Retrieved February 2, 2011, from http://www.acf.hhs.gov/programs/opre/abuse_neglect/nscaw/reports/cps_sample/cps_report_revised_090105.pdf
- Newton, R.R., Litrownik, A.J., & Landsverk, J.A. (2000). Children and youth in foster care: Disentangling the relationship between problem behaviors and number of placements. *Child Abuse and Neglect*, 24(10), 1363-1374. doi:10.1016/S0145-2134(00)00189-7
- Osborn, A. L., Delfabbro, P., & Barber, J. G. (2008). The psychosocial functioning and family background of children experiencing significant placement instability in australian out-of-home care. *Children and Youth Services Review*, 30(8), 847-860. doi:10.1016/j.childyouth.2007.12.012
- Packard, T., Jones, L., Nahrstedt, K. (2006). Using the image exchange to exchange interdisciplinary team building in child welfare. *Child and Adolescent Social Work Journal*, 23(1), 86-106.
- Park, J.M., Metraux, S., & Culhane, D.P. (2005). Childhood out-of-home placement and dynamics of public shelter utilization among young homeless adults. *Children and Youth Services Review*, 27, 533-546. doi:10.1016/j.childyouth.2004.10.001
- Postmus, J.L., & Ortega, D. (2005). Serving two masters: When domestic violence and child abuse overlap. *Families in Society: The Journal of Contemporary Social Services*, 86(4), 483-490.
- Postmus, J.L. & Merritt, D.H. (2010). When child abuse overlaps with domestic violence: The factors that influence child protection workers' beliefs. *Children and Youth Services Review*, 32, 309-317. doi:10.1016/j.childyouth.2009.09.011

- Ragunandan, S., & Leschied, A. (2010). The effectiveness of kinship services with children exposed to partner violence: Exploring a dual victim treatment approach. *Families in Society*, 91(1), 52-59. Retrieved from https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2010-17928-009&site=ehost-live&scope=site
- Raudenbush, S.W., & Bryk, A.S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods, Second Edition*. Thousand Oaks, CA: Sage Publications Ltd.
- Rees, C. A., & Selwyn, J. (2009). Non-infant adoption from care: Lessons for safeguarding children. *Child: Care, Health and Development*, 35(4), 561-567. doi:10.1111/j.1365-2214.2009.00978.x
- Rennison, C., & Planty, M. (2003). Nonlethal intimate partner violence: Examining race, gender, and income patterns. *Violence and Victims*, 18, 433-443. doi: <http://dx.doi.org/10.1891/vivi.2003.18.4.433>
- Richie, B. (1996). *Compelled to crime: The gender entrapment of battered Black women*. New York, NY : Routledge.
- Rosewater, A. (2008). Building capacity in child welfare systems: Domestic violence specialized positions. Retrieved from: <http://www.vaw.umn.edu/documents/buildingcapacitychildwelfare/buildingcapacitychildwelfarepdf.pdf>
- Sampson, R.J. (1987). Urban Black violence: The effects of male joblessness and family disruption. *American Journal of Sociology*, 93, 348-382. doi: <http://dx.doi.org/10.1086/228748>
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology*, 44, 127-139.
- Saunders, D.G. & Anderson, D. (2000). Evaluation of a domestic violence training for child protection workers and supervisors: Initial results. *Children and Youth Services Review*, 22(5), 372-395. doi:10.1016/S0190-7409(00)00086-4
- Sedlak, A.J. & Schultz, D. (2005a). Race differences in risk of maltreatment in the general population. In D.M. Derezotes, J. Poertner, & M.F. Testa (Eds.). *Race*

- matters in child welfare: The overrepresentation of African American children in the system* (pp. 47-61). Washington, DC: Child Welfare League of America.
- Shepard, M., & Raschick, M. (1999). How child welfare workers assess and intervene around issues of domestic violence. *Child Maltreatment*, 4(2), 148. Retrieved from https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=1833652&site=ehost-live&scope=site
- Snowden, J., Leon, S., & Sieracki, J. (2008). Predictors of children in foster care being adopted: A classification tree analysis. *Children and Youth Services Review*, 30(11), 1318-1327. doi:10.1016/j.childyouth.2008.03.014
- Stoltzfus, E. (2005). *Race/ethnicity and child welfare*. Washington, DC: Congressional Research Services. Retrieved March 4, 2010, from <http://www.cwla.org/programs/culture/memo050825race.pdf>.
- Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage & the Family*, 41(1), 75-88. doi:10.2307/351733
- Straus, M.A. (1992). *Children as witnesses to marital violence: A risk factor for lifelong problems among nationally representative sample of American men and women*. Paper presented at the Ross Roundtable on Children and Violence, Washington, DC.
- Sullivan, C.M., & Rumpitz, M.H. (1994). Adjustment and needs of African-American women who utilized a domestic violence shelter. *Violence and Victims*, 9, 275-286.
- Taft, C., Bryant-Davis, T., Woodward, H., Tillman, S., & Torres, S. (2009). Intimate partner violence against African American women: An examination of the socio-cultural context. *Aggression & Violent Behavior*, 14(1), 50-58. doi: <http://dx.doi.org/10.1016/j.avb.2008.10.001>
- Testa, M.F. (2005). The changing significance of race and kinship for achieving permanence for foster children. In D.M. Derezotes, J. Poertner, & M.F. Testa (Eds.). *Race matters in child welfare: The overrepresentation of African American children in the system* (pp. 231-241). Washington, DC: Child Welfare League of America.

- Trocme, N., Knoke, D., & Blackstock, C. (2004). Pathways to the overrepresentation of aboriginal children in canada's child welfare system. *Social Service Review*, 78(4), 577-600. Retrieved from CSA Social Services Abstracts database.
- U.S. Children's Bureau (2003). *Children of Color in the Child Welfare System: Perspectives from the Child Welfare Community*. Retrieved December 5, 2007, from <http://www.childwelfare.gov/pubs/otherpubs/children/findings.cfm>
- U.S. Department of Health and Human Services (2011). *Trends in Foster Care and Adoption, FY 2002- FY 2010*. Washington, DC: U.S. Government Printing Office. Retrieved March 22, 2012 from http://www.acf.hhs.gov/programs/cb/stats_research/afcars/trends_june2011.pdf
- U.S. Department of Health and Human Services (2009). *Child Witness to Domestic Violence: Summary of State Laws*. Washington, DC: U.S. Government Printing Office. Retrieved March 22, 2012 from http://www.childwelfare.gov/systemwide/laws_policies/statutes/witnessdv.cfm
- U.S. Department of Health and Human Services (2005). *Child Maltreatment, 2003*. Washington, DC: U.S. Government Printing Office. Retrieved March 4, 2010, from <http://www.acf.hhs.gov/programs/cb/pubs/cm03/chaptersix.htm#foster>.
- The White House* (2011, April 29). [Official Web Site of the White House and President Barack Obama]. Retrieved September 29, 2011 from <http://www.whitehouse.gov/the-press-office/2011/04/29/presidential-proclamation-national-foster-care-month>
- West, C.M. (2002). Battered, black, and blue: An overview of violence in the lives of Black women. *Women & Therapy*, 25, 5-27. doi: http://dx.doi.org/10.1300/J015v25n03_02
- Whitney, P. & Davis, L. (1999). Child abuse and domestic violence: Can practice be integrated in a public setting? *Child Maltreatment*, 4(2), 158 to 166.
- Wulczyn, F. W., & Lery, B. (2007). Racial disparity in foster care admissions. Chicago: Chapin Hall Center for Children at the University of Chicago.
- Yampolskaya, S., Armstrong, M. I., & Vargo, A. C. (2007). Factors associated with exiting and reentry into out-of-home care under community-based care in florida. *Children and Youth Services Review*, 29(10), 1352-1367. doi:10.1016/j.childyouth.2007.05.010

Yoshihama, M., & Mills, L. G. (2003). When is the personal professional in public child welfare practice? the influence of intimate partner and child abuse histories on workers in domestic violence cases. *Child Abuse & Neglect*, 27(3), 319-336.
doi:10.1016/S0145-2134(03)00009-7

Zuravin, S. J., & DePanfilis, D. (1997). Factors affecting foster care placement of children receiving child protective services. *Social Work Research*, 21(1), 34-42.
Retrieved from
https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=1998-11107-003&site=ehost-live&scope=site