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Pathways from Caregiver Problematic Substance Use to Child Harm: A Secondary Data Analysis of the National Survey of Child and Adolescent Well-Being II

Kristen D. Seay
Washington University in St. Louis

WASHINGTON UNIVERSITY IN ST. LOUIS

Brown School of Social Work

Dissertation Examination Committee:
Patricia L. Kohl, Chair
Kathleen K. Bucholz
Renee M. Cunningham-Williams
F. Brett Drake
Carrie Pettus-Davis
Edward L. Spitznagel Jr.

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by

Kristen Diana Seay

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Abstract of the Dissertation

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Patricia L. Kohl, Chair

Caregiver problematic substance use is a prevalent problem within the child protective services (CPS) system that is associated with negative outcomes for children. Utilizing path analysis models, this dissertation deepens our understanding of the direct and indirect (mediating and moderating) pathways from caregiver problematic substance use to indicators of child harm in two CPS populations: all families investigated for maltreatment (Aim 1) and a sub-group of families in which the children remained in the home after the investigation (Aim 2). Data for these analyses came from the National Survey of Child and Adolescent Well-Being II (NSCAW II), a landmark, longitudinal national probability study of families investigated for child maltreatment. Caregiver problematic substance use was measured in two ways. In Aim 1, caregiver problematic substance use was measured by caseworker-identified problematic drug or alcohol use. In Aim 2, caregiver problematic substance use was measured by caregiver self-report of problematic drug or alcohol use available only in this sub-group. Using the child welfare goals of safety, permanency, and well-being, child harm was operationalized as CPS referrals for services and subsequent reports of maltreatment (safety), having children removed from the home (permanency), and child levels of depression, trauma, internalizing behaviors, or

externalizing behaviors (well-being). Mediators included in the models are parental monitoring, harsh discipline, emotional maltreatment, and exposure to violence. Moderators included in the models are caregiver depression, domestic violence, and criminal involvement. Among other findings, this dissertation indicates that emotional maltreatment and caregiver depression are strong pathways through which caregiver problematic substance use is associated with child harm. Bivariate analyses also indicate a need to strengthen training around caregiver problematic substance use for CPS caseworkers. By utilizing the CPS goals of safety, permanency, and well-being, the results of this dissertation have direct implications for national child welfare policies and inform how caregiver problematic substance use is addressed in CPS agencies. Emotional maltreatment and caregiver depression are risk factors that should be targeted in interventions aimed at promoting the safety, permanency, and well-being of children when caregiver problematic substance use is present.

I. Introduction

Based on annual averages from 2002 to 2007, data from the National Survey on Drug Use and Health (NSDUH) indicate that over 8.3 million children, or 11.9% of all American children, under the age of 18 lived with at least one parent in the past year who was dependent on or abused alcohol and/or illegal drugs (Substance Abuse and Mental Health Services Administration [SAMHSA], 2009). The majority of these children lived with a parent dependent on or abusing alcohol rather than illegal drugs (SAMHSA, 2009). Data reported retrospectively by community samples of adults indicate that at some point before they turn 18, approximately 25.6% of all American children live in a household with a parent who abuses alcohol or illegal drugs (Felitti et al., 1998).

Among child welfare-involved families, caregiver problematic substance use[1] is a pressing problem associated with negative consequences. Although caregiver problematic substance use is not identified as a cause of child maltreatment in every family where it is present, problematic substance use is considered to be one factor contributing to maltreatment in one- to two- thirds of all child welfare cases and is highly prevalent in families where the children are removed from the home (Semidei, Radel, & Nolan, 2001). In both child welfare and community samples, caregiver problematic substance use has been associated with a number of detrimental outcomes for children including lower academic achievement, truancy, attempting suicide, witnessing violence, a higher risk of teenage pregnancy, eating disorders, and a higher use of drugs or alcohol as a teenager and adult (Chandy, Blum & Resnick, 1996; Hill, Tessner, & McDermott, 2011; Seay & Kohl, 2013). Children from families where problematic substance use is present are more likely to be placed in foster care, have longer stays in foster care, and are more likely to

[1] See Key Concepts and Definitions section for definition of problematic use.

leave the foster care system through adoption than children from families where problematic use is not present (Semidei et al., 2001; Vanderploeg et al., 2007).

The economic costs of both caregiver problematic substance use and child maltreatment are high in the United States. The Office of National Drug Control Policy (2004) estimates the annual economic cost of drug abuse to be 181 billion dollars and the annual economic cost of alcohol abuse to be 185 billion dollars resulting in a total of 366 billion dollars per year. These estimates include the cost of health care, crime, and loss of productivity due to disability, death, and withdrawal from the workforce. The estimated average lifetime cost of nonfatal child maltreatment, including childhood health care costs, adult medical costs, productivity losses, child welfare costs, criminal justice costs, and special education costs, is $210,012 per victim (Fang, Brown, Florence, & Mercy, 2012). The average lifetime cost of fatal child maltreatment, including medical costs and productivity losses, is estimated to be $1,272,900 per child death (Fang et al., 2012). Although it is uncertain exactly how much of these costs can be attributed to caregiver problematic substance use, economic costs attributed to both problematic use and child maltreatment further highlight the importance of caregiver problematic substance use. Prevalent in the United States among families engaged in the child welfare system and negatively impacting the well-being of children and families, caregiver problematic substance use is an important social problem pertinent to the field of social work.

A. Key Concepts and Definitions

Throughout this dissertation, the terms “problematic substance use” will indicate that a caregiver is using drugs or alcohol to a degree that it is creating problems in the life of the individual. Problematic substance use is an encompassing term which covers lower levels of use that create problems in the life of the individual and use which meets diagnostic criteria for

substance abuse or substance dependence. The term drug abuse or alcohol abuse refers to the diagnostic criteria presented in the Diagnostic and Statistical Manual of Mental Disorders IV-TR (DSM-IV-TR; American Psychiatric Association [APA], 2000). The DSM-IV-TR criteria for substance abuse are (APA, 2000, p. 199):

A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:
    1) recurrent substance use resulting in a failure to fulfill major role obligations at work school, or home
    2) recurrent substance use in situations in which it is physically hazardous
    3) recurrent substance-related legal problems
    4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance
B. The symptoms have never met the criteria for Substance Dependence for this class of substance.

In the DSM-IV-TR, the criteria for substance dependence are (APA, 2000, p. 197):

> A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:
>
> 1) tolerance, as defined by either of the following:
>   a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect

b) markedly diminished effect with continued use of the same amount of the substance

2) withdrawal, as manifested by either of the following:
    a) the characteristic withdrawal syndrome for the substance
    b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms
3) the substance is often taken in larger amounts or over a longer period than was intended
4) there is a persistent desire or unsuccessful efforts to cut down or control substance use
5) a great deal of time is spent in activities necessary to obtain the substance, or recover from its effects
6) important social, occupational, or recreational activities are given up or reduced because of substance use
7) the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance

The terms drug dependence and alcohol dependence will always refer to the diagnostic criteria presented in the DSM-IV-TR for each of these disorders (APA, 2000). Drug dependence and alcohol dependence indicate that an individual has a high level of reliance on either drugs or alcohol.

Over the course of this dissertation, the Diagnostic and Statistical Manual of Mental Disorders V (DSM-5; American Psychiatric Association, 2013) was released. Rather than

separating the substance-related addictive disorders into substance abuse or dependence as in DSM-IV-TR, the DSM-5 combines abuse and dependence into a single substance use disorder. Although not an exact fit, substance use disorder is a crude proxy for a diagnosis of abuse or dependence in DSM-IV-TR. The authors of the reviewed studies have used different terminology (e.g., substance abuse rather than problematic substance use). Terminology from the original study will be retained in discussing the outcomes of these studies. Due to its recent release, the reviewed studies are not referring to DSM-5 criteria for substance use disorders.

The term "caregivers" refers to the primary caregivers (e.g., biological/step/foster/adoptive parents, custodial grandparents, legal guardians providing long-term care) of a child. In the United States, the legal definitions determining criminal statutes for child abuse and child neglect vary from state to state. Federal legislation entitled the Child Abuse Prevention and Treatment Act (CAPTA, 2010) defines child abuse and neglect as:

> Any recent act or failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm (US DHHS, 2012, p. ix).

Child abuse encompasses several types of maltreatment including physical abuse, sexual abuse, and emotional abuse. Child neglect is defined as the "failure of a parent or other person with responsibility for the child to provide needed food, clothing, shelter, medical care, or supervision to the degree that the child's health, safety, and well-being are threatened with harm" (US DHHS, 2011, p. 3).

B. Prevalence

In 2012, over 1.8 million reports of child maltreatment were assessed by child protective services (CPS) (US DHHS, 2012). Though it has been estimated that up to 80% of child welfare

families are affected by caregiver problematic substance use, other studies have found that less than 10% of caregivers involved with CPS meet criteria for drug or alcohol dependence (Jaudes, Ekwo, & Van Voorhis, 1995; Jones, 2004; NDACAN, 2005). These vast differences in prevalence estimates are related to the methodological issues involved in measuring problematic substance use among caregivers involved with CPS. These issues include variation across studies in the level of CPS involvement of the sample, multiple definitions of problematic use, which caregivers in the home were assessed, and the methods of data collection. Of the ten studies reporting primary data collection of prevalence rates for the presence of caregiver problematic substance use in the child welfare system, only three of these provide national estimates (NDACAN, 2005; Sedlak et al., 2010; US DHHS, 1997). Based on data from the National Survey of Child and Adolescent Well-Being I (NSCAW I; NDACAN, 2005), the Fourth National Incidence Study of Child Abuse and Neglect (NIS-4; Sedlak et al., 2010), and the 1994 National Study of Protective, Prevention, and Reunification Services Delivered to Children and Their Families (US DHHS, 1997), the national prevalence of caregiver problematic substance use among families where maltreatment is reported is between 8 and 26.5 percent based on CPS worker or the report of community professionals (e.g., law enforcement, medical professionals) who identified child maltreatment (only in NIS-4).

In NSCAW I using caseworker report, 8% of families had one or more caregivers engaged in active alcohol abuse at the time of the investigation and 9% of families had one or more caregivers engaged in active drug abuse at the time of the investigation (NDACAN, 2005). However, the use of new measures to assess for caregiver problematic substance use in NSCAW II compared to NSCAW I will provide a stronger estimate of the prevalence of caregiver problematic use in the CPS population.

C. Dissertation Outline Summary

Analysis reported herein utilizes data from the National Survey of Child and Adolescent Well-Being II (NSCAW II), a landmark, longitudinal national probability study of families investigated for child maltreatment. Two separate groups of analyses were conducted in order to examine the relationship from caregiver problematic substance use to children experiencing harm in two important populations: all families reported to CPS (Aim 1) and families in which the child remains in the home following a CPS investigation (Aim 2). Although research on caregiver problematic substance use has frequently examined families in which children are placed in foster care (Famularo, Kinscherff, & Fenton, 1992; US DHHS, 1999; Vanderploeg et al., 2007), more research is needed to examine problematic substance use in all families reported to CPS and in families in which the children remain in the home. With separate analyses, the dissertation examined data only available for families in which the child remained in the home following the baseline investigation—the majority of CPS-involved children (87%; Dolan, Smith, Casanueva, & Ringeisen, 2011)—which was not available when children were placed in out-of-home care at baseline. Caregiver problematic substance use was measured in two ways. In Aim 1, caregiver problematic substance use was measured by caseworker-identified problematic use of drug and/or alcohol. In Aim 2, caregiver problematic substance use was measured with caregiver self-report measures of problematic use (AUDIT, DAST-20) available only in this sub-group. Using the child welfare goals of safety, permanency, and well-being (Webb & Harden, 2003), child harm was operationalized as CPS referrals for services and subsequent reports of maltreatment (safety), having children removed from the home (permanency), and children experiencing depression, trauma, internalizing behaviors, or externalizing behaviors (well-being).

D. Study Aims and Hypotheses

Through secondary data analysis of a national probability sample of families investigated by CPS for child maltreatment, this dissertation aims to:

Aim 1: Examine direct and indirect pathways from caseworker-identified problematic substance use by a caregiver to indicators of child harm (safety, permanency, well-being) at baseline and at 18-month follow-up (n = 5872).

H1: Caregiver problematic substance use at baseline will be positively associated with increased levels of child harm at baseline.

H2: Caregiver and child factors (i.e., parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) will mediate the relationship from caregiver problematic substance use at baseline to child harm at baseline.

H3: Caregiver problematic substance use at baseline will be positively associated with increased levels of child harm at 18-month follow-up.

H4: Caregiver and child factors will mediate the relationship from caregiver problematic substance use at baseline to child harm at 18-month follow-up.

Aim 2: Examine direct and indirect pathways from self-reported levels of problematic substance use by a caregiver to indicators of child harm (safety, permanency, well-being) at baseline and at 18-month follow-up in a sub-group of investigated families where the child remained in the home after the investigation (n = 3512).

H5: As self-reported levels of caregiver problematic use of alcohol and/or drugs at baseline increase, the level of child harm at baseline will also increase.

H6: Caregiver and child factors will mediate (i.e., parental monitoring, harsh discipline, emotional maltreatment, exposure to violence)[2] and moderate (i.e., caregiver depression, domestic violence, criminal involvement) the pathway from caregiver problematic substance use at baseline to child harm at baseline.

H7: As self-reported levels of the problematic use of alcohol and/or drugs by a caregiver at baseline increase, the level of child harm at 18-month follow-up will also increase.

H8: Caregiver and child factors will mediate (i.e., parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) and moderate (i.e., caregiver depression, domestic violence, criminal involvement) the pathway from caregiver problematic substance use at baseline to child harm at 18-month follow-up.

[2] Mediators and moderators were selected based on theory and the empirical literature. The theoretical basis is discussed in chapter 2. The empirical literature is discussed in chapter 3.

II. Theories of the Relationship from Problematic Substance Use to Child Harm

In order to understand how caregiver problematic substance use leads to child maltreatment and, thus, harm to children, it is critical to examine the theoretical relationships which have been proposed by researchers in social work and other fields. These perspectives can be divided into theories explaining the relationship from problematic substance use to aggression and other theories explaining the relationship from problematic substance use to maltreatment. More theories have been proposed to explain the relationship from problematic alcohol use to aggression than from problematic alcohol use to neglect or sexual abuse or from problematic drug use to any type of maltreatment. Although the theories explaining the relationship from problematic alcohol use to aggression are older, they currently remain the leading theories used to explain the relationship from problematic alcohol use to violence towards children (Walsh, MacMillan, & Jamieson, 2003; Widom & Hiller-Sturmhofel, 2001). The following review of theory in the field provides a theoretical basis for the proposed dissertation.

A. Problematic Substance Use and the Perpetration of Physical and Emotional Aggression

Scholars from many disciplines have provided theoretical explanations for the relationship from problematic alcohol use to the perpetration of physical violence against others including disinhibition theory (Pernanen, 1976), the cognitive disorganization hypothesis (Pernanen, 1976), the anxiolysis-disinhibition model (Ito, Miller, & Pollock, 1996), and the deviance disavowal hypothesis (Coleman & Strauss, 1983). These theories have been applied to the relationship from problematic alcohol use to child maltreatment without adaptation (Walsh et al., 2003; Widom & Hiller-Sturmhofel, 2001). Of these theories only the cognitive disorganization hypothesis provides a theoretical foundation for this dissertation. Criticisms of disinhibition theory (Chermack & Giancola, 1997; Graham, 1980; Shuntich & Taylor, 1972) and the deviance

disavowal hypothesis (Peralta et al., 2011; Quigley & Leonard, 2006) make them untestable or inapplicable to this population. Although empirical support is present for the anxiolysis-disinhibition model, this model is most applicable when large quantities of alcohol are consumed (Ito, Miller, & Pollock, 1996). When examining the cognitive disorganization hypothesis it is important to consider how the role of problematic substance use varies when committing an aggressive act, either physically or emotionally, against one's child compared to committing an aggressive or a violent act toward an adult stranger or partner.

Cognitive Disorganization Hypothesis

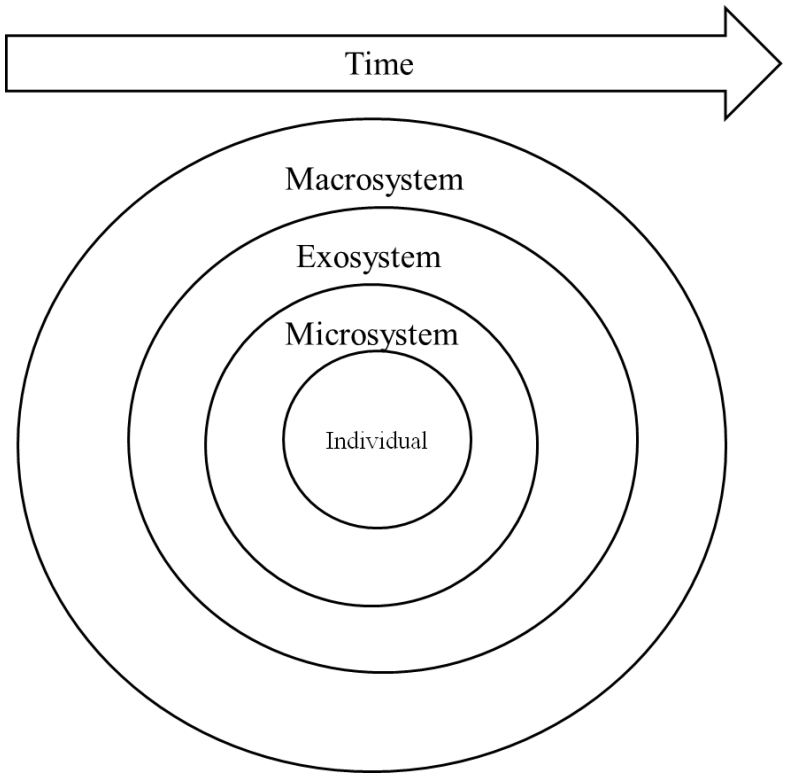
Originally theorized to explain the relationship from problematic alcohol use to aggression, the cognitive disorganization hypothesis proposes that alcohol reduces the number of cues one can notice and respond to which may result in the incorrect perception of others' actions and statements as more provocative (Pernanen, 1976). Applying the cognitive disorganization hypothesis to violence towards children, Miller Maguin, and Downs (1997) propose that problematic alcohol use results in the caregiver noticing only the most prominent social cues and missing all others. This impaired detection increases the perceived severity of threats encountered, decreases concern for the consequences of aggression thus increasing the likelihood of exhibiting violent behavior towards the child. Recent conceptualizations of the cognitive disorganization hypothesis can be seen in preliminary work on the Alcohol Myopia Model (Giancola, Duke, & Ritz, 2011). Like the cognitive disorganization hypothesis, this model proposes that alcohol results in a narrowing of attentional capacity so that individuals under the influence of alcohol can only focus on salient and provocative stimuli rather than stimuli which would inhibit violent behavior.

In the proposed dissertation, the cognitive disorganization hypothesis can be applied to explain that problematic substance use may reduce the number of stimuli the caregiver can receive resulting in decreased parental monitoring. If the caregiver's problematic substance use results in the incorrect perception of the child or others this may lead to harsh discipline or emotional maltreatment towards the child or to involvement in violence with other adults explaining possible links with exposure to violence in the home, domestic violence as a perpetrator, and some acts leading to criminal involvement. In summary, problematic substance use decreases a caregiver's awareness of external stimuli which decreases his or her ability to provide adequate care to the child. This may occur only temporarily or this may persist over long periods of time. This decreased awareness may lead to violent behavior in some individuals.

Ecological Transactional Model

Based on the bioecological systems theory (Bronfenbrenner & Evans, 2000), Cicchetti's Ecological Transaction Model (Cicchetti & Valentino, 2006) provides a conceptual base for the way the selected variables are thought to interact in this dissertation. The Ecological Transactional Model (Figure 1) proposes that there are multiple layers of influence impacting the outcomes and

Figure 1: Ecological Transactional Model



behaviors of an individual. Between each level (individual, microsystem, exosystem, macrosystem) there are also reciprocal interactions taking place. The time element indicates that the pattern of risk factors may change over time with some vulnerability factors enduring, some vulnerability factors being transient, some protective factors enduring, and some protective factors being transient. This theory influences the way the variables are thought to interact and the choice to examine outcomes at two different time points to reflect that outcomes may change over time. Individual level factors, or factors within the individual associated with perpetrating maltreatment, reflected in the dissertation include caregiver problematic substance use and caregiver depression. Microsystem factors, or family level factors, reflected in the analyses include the presence of domestic violence, exposure to violence, the number of children in the home, prior CPS history on the family, parental monitoring, harsh discipline, and emotional maltreatment. Exosystem factors, or community characteristics that contribute to maltreatment, may be related to the criminal involvement of the caregiver and whether or not the family lives in poverty. However, these variables may also reflect the individual or family-level characteristics. Macrosystem factors, or cultural beliefs and values that contribute to and influence child maltreatment, are not examined in this dissertation. The element of time is incorporated into the dissertation by controlling for a prior history of CPS involvement and examining data at both baseline and 18-month follow-up.

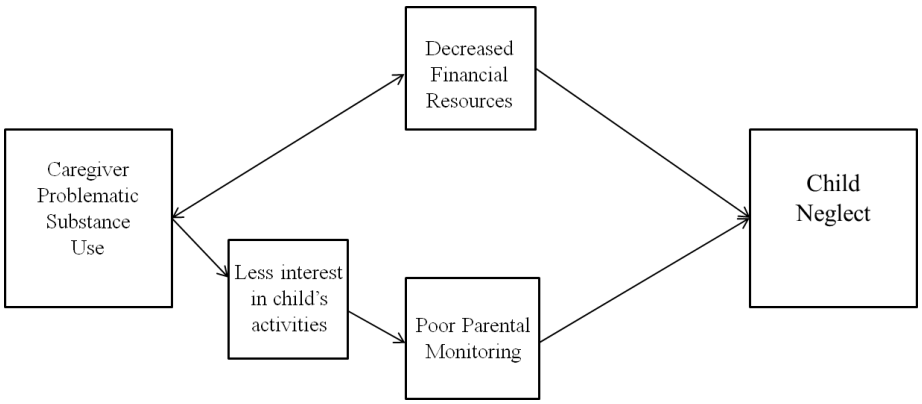
B. Problematic Substance Use and Other Types of Maltreatment

Problematic Substance Use and Neglect

Due to a lack of empirically based theories examining the relationship from caregiver problematic substance use and child neglect, a theoretical relationship supported by the empirical literature is proposed (Figure 2). Child neglect is defined as the "failure of a parent or other

person with responsibility for the child to provide needed food, clothing, shelter, medical care, or supervision to the degree that the child's health, safety, and well-being are threatened with harm" (US DHHS, 2011, p. 3). Problematic substance use may lead to many different forms of child neglect through similar pathways. Caregiver problematic substance use has been associated with decreased levels of interest in the child's activities (Suchman & Luthar, 2000) and poor parental monitoring (Fals-Stewart, Kelley, Fincham, Golden, & Logsdon, 2004). It is proposed that one pathway from caregiver problematic substance use to child neglect is through decreased interest in the child's activities leading to poor monitoring of the child's location and activities. These decreased levels of parental monitoring can lead to child neglect in the form of inadequate supervision. Both problematic alcohol and drug use place a financial burden on families, many of whom already have limited financial resources. The second proposed relationship from caregiver problematic substance use to child neglect is through decreases in household financial resources due to problematic use. The cost of paying for drugs or alcohol decreases available money to pay for food, clothing, housing, and transportation necessary to get children to medical and dental appointments. Therefore, a bidirectional arrow is drawn between caregiver problematic substance use and decreased household financial resources (Figure 2). Although it is based upon the empirical literature, evaluation of the proposed model is needed to test the proposed model.

Figure 2: Proposed Relationship Between Problematic Substance Use and Neglect



Problem Behavior Theory

Jessor and Jessor (1977) defined problem behavior as "behavior that is socially defined as a problem, a source of concern, or as undesirable by the norms of conventional society and the institutions of adult authority, and its occurrence usually elicits some kind of social control response" (p. 33). Problem behavior theory is a theory proposed to explain why individuals engaged in one negative behavior are often engaged in additional negative behaviors. Jessor and Jessor's (1977) problem behavior theory states that problematic behaviors of adolescence are associated with one another because there is a latent variable of "unconventionality" present in these adolescents (Donovan & Jessor, 1985, p. 891). Although the theory was developed to explain the relationship between numerous problem behaviors of adolescence and their relationship to a latent construct (Jessor & Jessor, 1977) and is most frequently still applied in that context (Chun & Mobley, 2010), problem behavior theory has been applied to adults. Wilson and Widom (2009) used problem behavior theory to examine the relationship between problem behaviors in young adulthood as a mediator in the relationship between child abuse and neglect and problematic drug use in middle adulthood.

An adaptation to the model, allowing for its application to young and middle age adults, provides a possible theoretical orientation for the relationship from caregiver problematic substance use to child maltreatment. Based on Jessor and Jessor's (1977) theory, a caregiver's problematic substance use and his or her maltreatment of his or her children may be associated because they may both stem from a latent construct of unconventionality or deviance from societal norms within the parent. In this proposed relationship, the cause of both caregiver problematic substance use and the caregiver's maltreatment of his or her children would be the same latent construct. There could also be a direct bi-directional relationship between caregiver

problematic substance use and child maltreatment in which caregiver problematic substance use increases the likelihood of child maltreatment and maltreating one's child increases the likelihood of problematic use. Additional research beyond this dissertation is needed to test this model. Jessor and Jessor's theory provides a theoretical orientation for why numerous problem behaviors seen in this dissertation (domestic involvement, criminal involvement, depression, exposure to violence) have been associated with the problematic use of substances.

C. Conclusions

The relationship from caregiver problematic substance use to child maltreatment is complex and multi-faceted. The discussed theories provide a basic theoretical foundation for the proposed dissertation because, to date, there are no published theories that provide specific support for each of the proposed relationships in this dissertation. Current theory on child maltreatment does not provide insight into the mediating and moderating relationship from caregiver problematic substance use to child harm, which is the central focus of this dissertation analysis and will fill an important void in the literature. Therefore, variables selected for these analyses are based on a review of the literature as well as theoretical perspectives. Future theories must provide explanations able to untangle the complicated relationships from problematic substance use to child maltreatment which are present in the field.

III. Literature Review

A. Impact on Family

Child Abuse and Neglect

Research indicates caregiver problematic substance use is associated with child abuse and neglect (Appleyard, Berlin, Rosanbalm, & Dodge, 2011; Jaudes et al., 1995; Smith, Johnson, Pears, Fisher, & DeGarmo, 2007; Williams, Tonmyr, Jack, Fallon, & MacMillan, 2011). The level of evidence for the relationship from caregiver problematic substance use to child maltreatment varies greatly by the type of child maltreatment. A moderate level of evidence for an association between caregiver problematic substance use and child neglect is present in both community and child welfare samples (Brown, Cohen, Johnson, & Salzinger, 1998; Chaffin, Kelleher, & Hollenberg, 1996; Kelleher, Chaffin, Hollenberg, & Fischer, 1994; Lee, 2013; Ondersma, 2002; Staton-Tindall, Sprang, Clark, Walker, & Craig, 2013). Numerous studies indicate that the caregivers engaged in problematic substance use report higher levels of severe physical discipline likely to indicate child physical abuse (Ammerman, Kolko, Kirisci, Blackson, & Dawes, 1999; Cohen, Hien, & Batchelder, 2008; Hien & Honeyman, 2000; Miller, Maguin, & Downs, 1997). Both cross-sectional (Walsh, MacMillen, & Jamieson, 2003; Kelleher et al., 1994) and longitudinal (Chaffin et al., 1996) community samples indicate that caregiver problematic substance use is associated with child physical abuse. Recent evidence indicates there is a relationship between caregiver problematic substance use and children experiencing verbal abuse and also to children being exposed to violence (Conners-Burrow, Johnson, & Whiteside-Mansel, 2009; Miller et al., 1997; Ondersma, Delaney-Black, Covington, Nordstrom, & Sokol, 2006; Sprang, Clark, & Staton-Tindall, 2010; Tajima, 2000). Both verbal abuse and exposure to violence are considered forms of emotional abuse. Finally, both maternal and

paternal problematic substance use have been associated with child sexual abuse. In a sample of adolescents in residential therapeutic treatment for the problematic substance use and mental health disorders, self-report by the adolescents of sexual abuse was correlated with both male and female adolescents' report of parental drug use (Hawke, Jainchill, & De Leon, 2000). Walsh et al. (2003) found that adults who reported that a parent had a history of problematic substance use were 2.7 times as likely to report experiencing childhood sexual abuse. These odds increased to 6.6 times when both parents engaged in the problematic substance use. Both studies are limited by their use of adults retrospectively reporting on events occurring during their childhoods for both caregiver problematic substance use and sexual abuse. An analysis by Famularo et al. (1992) with a sample of juvenile court cases where children were placed in foster care due to child maltreatment found a significant correlation between caregiver cocaine abuse and child sexual abuse. These studies indicate problematic substance use by either caregiver has been associated with child sexual abuse in a limited number of studies. Due to the problematic substance use, a caregiver may have difficulty providing necessary supervision or designating an appropriate individual to provide this for the child. Problematic substance use puts a caregiver at an increased risk of poorly monitoring children (Chassin, Curran, Hussong, & Colder, 1996). Without appropriate parental supervision a child may be sexually abused by an inappropriate caretaker, a family member, or an individual outside the family. In summary, research strongly suggests a relationship between caregiver problematic substance use and children experiencing child maltreatment, including neglect, physical abuse, emotional abuse, and sexual abuse.

Research examining the relationship from caregiver problematic substance use to children experiencing maltreatment suggests that children of parents with known histories of problematic substance use are two to four times more likely to experience child maltreatment (i.e., neglect,

physical abuse, sexual abuse) than children of parents with no known history of the problematic substance use (Brown et al., 1998; Chaffin et al., 1996; Walsh et al., 2003). This relationship may be due to deficits in the parenting skills of caregivers engaged in problematic substance use including the use of harsh and ineffective discipline techniques (Das Eiden, Peterson, & Coleman, 1999; Fals-Stewart et al., 2004) and decreased parental monitoring and involvement (Fals-Stewart et al., 2004; Suchman & Luthar, 2000). However, some research has not found self-reported parenting deficits in discipline (Suchman & Luthar, 2000). More research is needed to determine the mechanisms through which caregiver problematic substance use leads to negative outcomes for children.

Parental Monitoring

Caregiver problematic substance use has been associated with decreased levels of parental monitoring and involvement. Fals-Stewart et al. (2004) found that fathers engaged in problematic drug use had the lowest levels of parental monitoring, followed by fathers engaged in problematic alcohol use, and fathers who did not engaged in problematic substance use had the highest levels of parental monitoring (p. 322). Mothers in methadone treatment self-reported lower levels of involvement and interest in their children's activities compared to a control group not engaged in problematic substance use (Suchman & Luthar, 2000) even after controlling for socioeconomic status and the mother's perceptions of her child's problematic behaviors. Poor monitoring and low levels of interest or involvement in children's activities are problematic caregiver behaviors. Poor parental monitoring may allow for the future victimization of the child by another individual or neglect of the child by the caregiver (Widom & Hiller-Sturmhofel, 2001). Similarly, low levels of interest in the child's activities may indicate future concerns for caregiver neglect.

Poor parental monitoring may serve as one pathway from caregiver problematic substance use to child neglect and abuse through decreased interest in the child's activities leading to poor monitoring of the child's location and activities. These decreased levels of parental monitoring can lead to child neglect in the form of inadequate supervision. There is also evidence of a specific relationship between a non-perpetrating mother's problematic substance use and the sexual abuse of her child. Without appropriate parental supervision a child may be sexually abused by an inappropriate caretaker, a family member, or an individual outside the family. Having a mother who engages in problematic alcohol use increases the chances that a girl will be sexually abused by a non-family member (Fleming, Mullen, & Bammer, 1997). Problematic alcohol use may prevent a mother from having the ability to focus on the needs of her child and provide adequate protection for the child (Leifer, Kilbane, & Kalick, 2004). Brown et al. (1998) found that children of mothers with self-reported sociopathy, a term used by Brown et al. indicating a caregiver had "alcohol problems, drug problems, or problems with the police" (p. 1068), had 6.27 times the odds of experiencing sexual abuse compared to children whose mothers did not have these behaviors. However, the incorporation of problematic substance use and problems with the police into one variable complicates this relationship. A mother who is involved with the police is also unable to provide appropriate parental supervision due to involvement in illegal activities and spending time in jail. She may also be exposing her child to possible offenders through her association with deviant peers.

Harsh Discipline

Research indicates that caregivers who engaged in problematic substance use are more likely to use harsh or ineffective discipline techniques. Numerous measures have been utilized to examine the self-reported use of harsh or ineffective discipline techiniques by caregivers. Three

studies have found a significant relationship between caregiver problematic substance use and higher scores on the Chid Abuse Potential Inventory (CAPI; Milner, 1994). In a study of 176 urban, low-income, predominantly African American (70.8%) mothers (Cohen et al., 2008), caregiver problematic substance use was significantly related to physical abuse potential based on scores on the CAPI. Using a community sample of intact mother-father families (n = 290), Ammerman et al. (1999) similarly found that maternal and paternal lifetime histories of problematic substance use were associated with higher CAPI scores indicating a higher potential for physical abuse. With a total sample of 170 women, Miller, Smyth, and Mudar (1999) also found that mothers with a current or past history of engaging in problematic alcohol or drug use were more likely to report higher CAPI scores than mothers who had never engaged in problematic substance use.

Although caregiver problematic substance use has consistently been associated with self-reported higher CAPI scores, findings have not been as consistent with the relationship between caregiver problematic substance use and self-report on the Parental Punitiveness Scale (PPS; Blane, Miller, & Leonard, 1988) or for the Physical Assault subscale of the Parent Child Conflict Tactics Scales (CTS-PC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). Although caregiver problematic substance use was significantly related to CAPI scores in the previously discussed Cohen et al. (2008) study, problematic substance use was not significantly associated with scores on the PPS (Blane et al., 1988) or the Physical Assault subscale of the CTS-PC (Straus et al., 1998). Miller et al. (1999) found that mothers with a current or past history of engaging in problematic alcohol or drug use were more likely to report moderate physical violence (a modification of the CTS-PC physical assault scale) and severe physical violence on the Parental Punitiveness Scale in addition to higher CAPI scores than mothers who had never

engaged in problematic substance use. However, it is unclear if problematic substance use is directly related to the physical violence or if this is a spurious relationship where both problematic use and physical violence are related to a third variable. Although both the Cohen et al. (2008) and Miller et al. (1999) studies utilized the CTS-PC, the modification of the Physical Assault subscale by Miller et al. may indicate why Cohen et al. did not find a significant relationship and Miller et al. did. In addition to these studies, Hien and Honeyman (2000) compared a clinical sample of mothers engaged in problematic drug use (n = 87) to a control group of mothers recruited from an OB/GYN clinic (n = 75) at the same hospital and found that the mothers engaged in problematic drug use reported more severe levels of physical punishment (e.g., hitting child with a fist) on the PPS (Blane et al., 1988) than mothers in the control group.

Other studies have also examined the relationship from caregiver problematic substance use to the self-reported use of harsh or ineffective discipline while utilizing measures other than the CAPI, PPS, and CTS-PC. Das Eiden et al. (1999) compared a sample of mothers who used cocaine and alcohol or other drugs during pregnancy or postnatally with a sample of women who did not use cocaine during pregnancy or postnatally but may have used other drugs or alcohol. Utilizing a self-report measure of parenting behaviors developed for the study, they found that cocaine-using mothers were more likely to self-report the use of ineffective discipline techniques with their children including ignoring inappropriate behaviors or yelling in response to misbehavior. Fals-Stewart et al. (2004) compared the parenting behaviors of fathers engaged in problematic drug use and fathers engaged in problematic alcohol use to fathers who did not engage in problematic substance use. Using the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) to measure the number of "disciplinary 'mistakes' in response to children's misbehavior," they found that fathers engaged in problematic drug use self-reported the highest

levels of negative discipline responses to their children, followed by fathers engaged in problematic alcohol use, and fathers who did not engage in problematic substance use reported the lowest rates (p. 322). Finally, Suchman and Luthar's (2000) comparison of mothers in methadone treatment to a control group of mothers not engaged in problematic substance use found no difference in their self-reported use of appropriate discipline on the Limit Setting subscale of the Parent—Child Relationship Inventory (Gerard, 1994) after controlling for socio-economic status and the mothers' report of her child's problematic behaviors. However, the authors did not discuss the possibility that the mother's attendance at treatment may result in her spending less time at home disciplining her children.

While some research has found an association between caregiver problematic substance use and the use of harsh and ineffective discipline, the role of socioeconomic status and other variables associated with parenting must be examined in order to determine if caregiver problematic substance use predicts ineffective discipline even after controlling for these variables. Although the use of ineffective discipline is not maltreatment, it may indicate the potential for future maltreatment. As discipline attempts do not result in the desired child behaviors, caregivers may move toward more abusive forms of discipline.

Emotional Maltreatment

Definitions and criteria for emotional maltreatment vary greatly based on state policies and legal definitions. According to data from Child Maltreatment 2012 (US DHHS, 2012), only 8.5% of all substantiated maltreatment was psychological maltreatment in 2012. Psychological maltreatment is defined as the "repeated pattern of damaging interactions between parent(s) and child" that "occurs when a person conveys to a child that he or she is worthless, flawed, unloved, unwanted, endangered, or only of value in meeting another's needs" (Kairys & Johnson, 2002, p.

e68). Although psychological maltreatment is easy to identify, it is difficult to substantiate due to state by state CPS mandates on necessary levels of evidence. This results in some children experiencing emotional maltreatment which has long term consequences for well-being but does not meet the high evidentiary standards for child maltreatment. Behaviors demonstrating emotional maltreatment vary greatly by state but typically include verbal abuse, name calling, and rejection. Associations have been found between caregiver problematic substance use and verbal abuse. Using a nationally representative sample of families from the National Family Violence Resurvey, Tajima (2000) found that problematic alcohol use by a parent increased the odds of being verbally abused by 34%. The Psychological Aggression subscale of the CTS-PC (Straus et al., 1998) has been utilized by researchers to examine the relationship from caregiver problematic substance use to self-reported emotional maltreatment. In a Cohen et al. (2008) sample of urban, low-income, predominantly African American mothers, problematic substance use was not significantly associated with emotional maltreatment based on self-report on the Psychological Aggression subscale of the CTS-PC (Straus et al., 1998). However, Miller et al. (1999) found that found mothers with a current or past history of engaging in problematic alcohol or drug use were more likely to report verbal aggression on a modified version of the CTS-PC Psychological Aggression subscale than mothers who had never engaged in problematic substance use. Again, the modification of the subscale by Miller et al. (1999) makes it difficult to make direct comparisons between the two studies. These studies some indicate evidence for a relationship between caregiver problematic substance use and emotional maltreatment of the child. However, this relationship warrants further exploration which will be conducted in the proposed dissertation.

Exposure to Violence

Caregiver problematic substance use has also been associated with children's exposure to violence including exposure to intimate partner violence (Staton-Tindall et al., 2013). Exposure to violence describes two types of experiences: direct victimization and witnessing violence (Finkelhor, Turner, Ormrod, & Hamby, 2009). Both types of exposure during childhood place children at greater risk for adverse proximal and distal outcomes related to traumatic stress. Children who directly experience violence through abuse or other situations have a greater likelihood of experiencing traumatic symptomology during childhood or adolescence (Boney-McCoy & Finkelhor, 1995; Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009). Witnessing intimate partner violence has also been associated with negative developmental outcomes for children (Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003) and an increased likelihood of internalizing and externalizing behaviors in adolescence for children who have been maltreated (Moylan, Herrenkohl, Sousa, Tajima, Herrenkohl, & Russo, 2010).

Recent research indicates that children of caregivers engaged in problematic substance use may be at an increased risk for exposure to violence. Children's exposure to violence has been found to increase based on the level of the problematic drug use experienced by the mother in the past 30 days (Conners-Burrow, Johnson, & Whiteside-Mansell, 2009). In a sample of 407 African American mothers and their 6 to 7 year old children, problematic alcohol use by a caregiver, the child's observation of drug use in the home, and the child's observation of drug deals were all significantly correlated with the child's exposure to violence (Ondersma et al., 2006). Reviewing a random sample of case records for 1127 families with open child welfare cases in an unnamed Southern state, Sprang et al. (2010) found significant correlations between caregiver drug use (methamphetamine and other drugs) and the child's exposure to traumatic events. Their results indicate that children of caregivers who use drugs, particularly those who

use methamphetamines, are more likely to witness intimate partner violence, experience child endangerment, and experience child physical abuse than children in families with no record of problematic substance use. Using data from the NSCAW II, the author's examination of the impact of caregiver problematic substance use on children's exposure to violence as measured by the Violence Exposure Scale (VEX-R; Fox & Leavitt, 1995) indicated an increased risk of witnessing mild and severe violence in the home for children whose primary caregiver engaged in the problematic use of alcohol or drugs but no significant relationship between direct victimization in the home by mild or severe violence and caregiver problematic substance use (Seay & Kohl, 2013). The proposed dissertation will further advance this work by examining exposure to violence as a mediator in the relationship between caregiver problematic substance use and child harm.

Caregiver Depression

Present in nearly one quarter of caregivers investigated for child maltreatment (US DHHS, 2005), caregiver depression has been associated with an increased risk for numerous negative developmental outcomes including child depression and internalizing and externalizing behaviors in children and adolescents (Downey & Coyne, 1990; Hughes, Roman, Hart, & Ensor, 2013; Kim-Cohen, Moffitt, Taylor, Pawlby, & Caspi, 2005; Kujawa et al., 2014; Lyons-Ruth, Wolfe, & Lyubchik, 2000; Weissman et al., 2006; Zuckerman & Beardslee, 1987). Both maternal depression and maternal problematic substance use have been strongly associated with child maltreatment (Chaffin et al., 1996). Paternal depression has also been associated with a higher likelihood of negative parenting practices (Davis, Davis, Freed, & Clark, 2011). Caregiver depression and caregiver problematic substance use have each been separately related to children's mental health outcomes. In the author's analysis of co-morbid maternal problematic

substance use and depression in the NSCAW I sample, child internalizing and externalizing behaviors were highest for mothers with comorbid substance dependence and depression at baseline but mothers with substance dependence only had children with the highest levels of internalizing and externalizing behaviors by 18- and 36-month follow-up (Seay & Kohl, Under Review). These results indicated that comorbid maternal substance dependence and depression were related to negative outcomes but substance dependence alone produced the worst outcomes in self-reported parenting behavior and child outcomes.

Criminal Involvement

According to data from the NSCAW I, 12.5 percent of children reported to CPS have at least one parent who was recently arrested (Phillips, Burns, Wagner, & Barth, 2004). Criminal involvement of a caregiver has been associated with both caregiver problematic substance use and negative behavioral outcomes for children. In NSCAW I, approximately 40 percent of children age two and older who had a parent that was recently arrested met criteria for an emotional or behavioral problem (Phillips et al., 2004). In this same study, 42.3% of parents with a recent arrest also had a risk factor of problematic substance use also present indicating a high degree of co-morbidity in these conditions (Phillips et al., 2004). The incarceration of a parent has been found to be a strong risk factor for negative developmental outcomes in both male and female children including internalizing and externalizing behaviors, adolescent delinquency, and adolescent substance use (Geller, Garfinkel, Cooper, & Mincy, 2009; Midgley & Lo, 2013; Murray & Murray, 2010) with some research indicating a stronger negative relationship for female children (Midgley & Lo, 2013). Due to a stronger relationship between maternal incarceration and adulthood convictions of the child, maternal incarceration may be an even stronger risk factor for negative adult outcomes than paternal incarceration (Murray & Murray,

2010). The criminal involvement of a caregiver, both through arrests and incarceration, has been found to be associated with caregiver problematic substance use and negative developmental outcomes for children.

Poverty

Poverty is prevalent among child welfare families and is often co-morbid with caregiver problematic substance use and other risk factors for negative child outcomes. Families living in poverty are overrepresented in the child welfare system because more risk factors are present in their lives (Jonson-Reid, Drake, & Kohl, 2009). Using data from a longitudinal study of families in Missouri (n = 7313 children), Jonson-Reid et al. (2009) compared the risk factors for maltreatment and outcomes of poor children with investigated reports of child maltreatment, poor children with no maltreatment reports, and non-poor children (i.e., not receiving Aid to Families with Dependent Children) with reports of child maltreatment. The authors found that poor children with investigated reports of child maltreatment had more parental risk factors than poor children with no maltreatment reports, and non-poor children with maltreatment reports. One of these parental risk factors, parental substance abuse was determined by administrative records indicating the Department of Mental Health or Medicaid reimbursed for substance abuse services or if documentation about substance abuse was recorded in the CPS record. Poor children with investigated reports of child maltreatment had the highest prevalence of parental substance abuse (13.3%) which was significantly ($p < .0001$) higher than both poor children never reported for maltreatment (2.9%) and non-poor children with maltreatment reports (2.6%) (Jonson-Reid et al., 2009). These findings indicate that poverty is an important variable to consider when examining the relationship from caregiver problematic substance use to child maltreatment.

B. Impact on Child Safety

Referral for Services

Research suggests that the case decision to refer a family for services is a better indicator of concerns for child safety that the case outcome (e.g., substantiated vs. unsubstantiated) (Kohl, Jonson-Reid, & Drake, 2009). The term 'child welfare services' encompasses a wide range of services provided to families after they are reported to CPS for maltreatment or other concerns. Families reported to CPS differ greatly in their level of involvement. Many reports, with percentages varying by state, are screened out and are not assessed for maltreatment. Of the screened in cases, some will receive in-home services. Using data from the NSCAW I, Berger, Slack, Waldfogel, and Bruch (2010) found that the CPS investigative caseworker's perception that the primary or secondary caregiver was actively involved in drug or alcohol abuse at the time of the investigation was associated with whether the family received services from CPS.

Case Outcomes

Although CPS substantiation of child maltreatment [a case decision in which evidence and level of harm from maltreatment meet state guidelines (DePanfilis & Salus, 2003)] is often equated with child maltreatment and child harm (Scannapieco & Connell-Carrick, 2007), evidence indicates that substantiation does not differentiate cases where children experience harm from cases in which this has not occurred and does not accurately predict re-reports to CPS, future substantiated reports to CPS, subsequent foster care placements, or negative behavioral or developmental outcomes in children (Drake, Jonson-Reid, Way, & Chung, 2003; English, Marshall, Coghlan, Brummel, & Orme, 2002; Hussey et al., 2005; Kohl et al., 2009). However, case substantiation is frequently used as an indicator of child safety in the literature

and research indicates there is a relationship between caregiver problematic substance use and case outcomes.

During an assessment or investigation, the CPS investigator's perception of caregiver problematic substance use is a critical factor in the decision making process and case outcomes (Berger et al., 2010; Sun, Shillington, Hohman, & Jones, 2001; Wekerle, Wall, Leung, & Trocme, 2007). Berger et al. (2010) found that the CPS investigative caseworker's perception of active drug or alcohol abuse at the time of the investigation was associated with the caseworker's perception of the level of risk and harm that the child experienced and whether or not the maltreatment was substantiated. Using data from the 1998 Canadian Incidence Study of Reported Child Maltreatment, Wekerle et al. (2007) found the caseworker's perception that a caregiver was involved in substance abuse in the last six months to be a better indicator of maltreatment substantiation than criminal activity, mental health issues, physical health issues, and a lack of social support. In a large sample of CPS referrals, Sun et al. (2001) also found that if a CPS caseworker indicated in the file that a caregiver had engaged in problematic substance use then the odds of substantiation increased by 96 percent. These studies highlight the important role that caseworker perception has in the relationship between caregiver problematic substance use and case outcomes for the family.

C. Impact on Child Permanency

Out-of-Home Placements

Caregiver problematic substance use has been associated with numerous negative outcomes regarding foster care placements. First, caregiver problematic substance use has been associated with an increased likelihood of removing children from the home (De Bortoli, Coles, & Dolan, 2013; Tonmyr, Williams, Jack, & MacMillan, 2011). Children of caregivers engaged in

problematic substance use enter foster care at a younger age, an average of 5 years old at the time the case was opened compared to 7 years old for other children in the US DHHS study (1999) and an average of 6.05 years compared to 10.44 years in the Vanderploeg et al. (2007) study. Once in the foster care system, they remain in foster care longer than children whose caregivers did not have an identified problem with substances (US DHHS, 1999; Vanderploeg et al., 2007). In US DHHS (1999), children from families engaged in problematic substance use remained in foster care an average of six months longer with a median time period of 11 months compared to five months for children in foster care whose caregivers did not have identified problematic substance use. In Vanderploeg et al. (2007), children with a parent engaged in problematic alcohol or drug use stayed in foster care a median of 13.6 months compared to 10.9 month in a matched sample of children with parents not engaged in problematic substance use. These longer stays in foster care may be reflective of the length of time necessary for a caregiver to complete substance abuse treatment (Vanderploeg et al., 2007).

Among children removed from the home, associations have been found between caregiver problematic substance use and the child's experiences in foster care. In a study by Vanderploeg et al. (2007), children removed from the home because of caregiver problematic alcohol or drug use are more likely to be placed with a relative than children removed for other reasons. Vanderploeg et al. (2007) also found that children removed because of caregiver problematic substance use experience rates of reunification similar to children removed for other reasons and those children who are not reunified with their parents have higher adoption rates than children removed for other reasons. In a sample of newborns removed from the home, Frame (2002) found that substance exposure was not related to reunification rates after controlling for demographics, other child health conditions, variables related to the removal and subsequent

referrals. Examining a sample of 1911 women engaged in problematic substance use with a child in foster care, children were found to spend shorter periods in foster care and to be reunified quicker if their mothers entered substance abuse treatment more quickly, received treatment longer, or completed at least one episode of treatment (Green, Rockhill, & Furrer, 2007). Research with NSCAW I found that CPS investigator's perception of caregiver drug or alcohol abuse at the time of the investigation was associated with whether or not the child was removed from the home and whether or not CPS filed a court petition to terminate parental rights (Berger et al., 2010).

D. Impact on Child Well-Being

Child Trauma

Experiencing child maltreatment places children at risk of trauma-related disorders. Children who directly experience violence through abuse or other situations have a greater likelihood of experiencing traumatic symptomology during childhood or adolescence (Boney-McCoy & Finkelhor, 1995; Fowler et al., 2009). Experiencing abuse or violence in childhood may also increase the likelihood of subsequently experiencing PTSD in adulthood (Brewin, Andrews, & Valentine, 2000; Hetzel & McCanne, 2005; Kulkarni, Graham-Bermann, Rauch, & Seng, 2011; Widom, 1999). The relationship between witnessing violence as a child and subsequently experiencing PTSD is less straight forward (Kulkarni et al., 2011; Feerick & Haugaard, 1999; Fowler et al., 2009). The majority of the literature on children witnessing violence focuses on witnessing intimate partner violence (IPV). With child physical abuse estimated to co-occur in 45-70% of the families in which IPV is occurring, disentangling the relationship between direct victimization and witnessing violence and the impact each has on developing PTSD is complicated (Edleson, 1999; Holt, Buckley, & Whelan, 2008). While Feerick and Haugaard

(1999) found that women who witnessed IPV in childhood were more likely to report adult symptoms of PTSD even after controlling for childhood experiences of abuse, Kulkarni et al. (2011) found that witnessing domestic violence in childhood only predicted adult PTSD among women who also experienced childhood abuse. However, a meta-analysis completed by Fowler et al. (2009) that included samples of male and female children and adolescents found that PTSD symptoms were equally predicted by experiencing violence, witnessing violence, or hearing about community violence. While many studies focus on children witnessing IPV, emerging research reveals that witnessing community violence is also traumatic and harmful to child development. Findings from the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) demonstrated that a child's lifetime prevalence of exposure to community violence or IPV was associated with internalizing and externalizing behaviors in both male and female children and adolescents (Lewis et al., 2010; Litrownik, Newton, Hunter, English, & Everson, 2003).

Child Internalizing and Externalizing Behaviors

Male and female children of caregivers engaged in problematic substance use are at a higher risk for internalizing and externalizing behaviors (Staton-Tindall et al., 2013) and are more likely to display higher levels of aggression (Osborne & Berger, 2009). In a sample of children who had been exposed to violence, maternal problematic alcohol use was associated with higher total scores on the Child Behavior Checklist (CBCL; Risser, Messinger, Fry, Davidson, & Schewe, 2013). In addition to caregiver problematic substance use, witnessing intimate partner violence, caregiver depression, and the criminal involvement of a caregiver have all been associated with an increased likelihood of children developing emotional and behavioral problems in the form of internalizing and externalizing behaviors (Geller et al., 2009; Kim-Cohen et al., 2005; Lyons-

Ruth et al., 2000; Moylan et al., 2010; Murray & Murray, 2010; Weissman et al., 2006). Internalizing and externalizing behaviors, as measured by the CBCL (Achenbach, 1991; Achenbach, 1992), are highly prevalent among children involved in the child welfare system. In an NSCAW I sample of children two and older who remained in the home following the child's family being reported to CPS, 20.23 percent of children met the clinical criteria for internalizing behavior at baseline and another 11.44 percent were in the borderline range (Seay & Kohl, Under Review). In the same sample, 29.44 percent of children met the clinical criteria for externalizing behavior at baseline and another 10.82 percent were in the borderline range (Seay & Kohl, Under Review). These findings indicate that emotional and behavioral problems are highly prevalent among children whose families are reported to CPS.

E. NSCAW and NSCAW II Prior Studies

Prior research studies have utilized data on problematic substance use from NSCAW I to advance knowledge regarding the relationship between caseworker-identified problematic use and case outcomes (Berger et al., 2010), the role of substance abuse in child maltreatment substantiation within race (Cheng & Lo, 2013), and the role of caregiver problematic substance use in subpopulations of the child welfare system including American Indian and Alaskan Native families (Carter, 2010), and families where a caregiver has a history of involvement with the criminal justice system (Miller, 2014; Miller, Orellana, Johnson, Krase, & Anderson-Nathe, 2013; Phillips & Detlaff, 2009; Phillips, Leathers, & Erkanli, 2009). Examining the relationship between caseworker-identified problematic substance use and case outcomes, Berger et al. (2010) found that cases with caseworker-identified problematic substance use, as opposed to parent self-report, had poorer case outcomes including higher levels of caseworker-reported risk and harm to the child and more frequent substantiation of child maltreatment and removal of the

child from the home. Other studies have examined the role caregiver problematic substance use plays in specific populations involved with CPS. In a within group examination of the role of caregiver risk factors on child maltreatment substantiation, Cheng and Lo (2013) found that caregiver problematic alcohol and drug use had a differing impact on substantiation for African Americans, Hispanics, and Whites. Caregiver alcohol dependence reduced the likelihood of substantiation among African Americans. For Hispanics, caregiver drug use raised the likelihood of substantiation. For Whites, caregiver problematic substance use did not impact substantiation. Examining risk factors for the out-of-home placement of urban American Indian and Alaskan Native children, Carter (2010) found that urban American Indian and Alaskan Native children placed in out-of-home care were more likely to come from homes where caregiver problematic substance use or mental health problems were present than White children. Prior research has also examined the prevalence of problematic substance use among caregivers who have previously been arrested and among those on probation (Phillips & Detlaff, 2009; Phillips, Leathers, & Erkanli, 2009). Recent studies conducted by Miller and colleagues with NSCAW I have found maternal problematic substance use is associated with both maternal criminal justice involvement and internalizing and externalizing behaviors in children (Miller, 2014; Miller et al., 2013).

Due to the recent release of the NSCAW II data, only two published studies have explored caregiver problematic substance use in the NSCAW II beyond prevalence rates reported in the baseline reports (Ringeisen, Casanueva, Smith, & Dolan, 2011). The first article, published by this author (Seay & Kohl, 2013), examines the impact of caregiver problematic substance use on children's exposure to violence in the home. Logistic regression analyses indicate an increased risk of witnessing mild and severe violence in the home for children whose primary caregiver

was engaged in problematic alcohol or drug use. The second article examined the assessment of caregiver service needs in cases where caregiver problematic use was accurately identified (Chuang, Wells, Bellettiere, & Cross, 2013). The authors found that the utilization of standardized substance use assessments by agencies was not associated with caseworkers identifying the service needs of caregivers. Due to the inclusion of new measures, the Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) and Drug Abuse Screening Test (DAST-20; Skinner, 1982), not present in NSCAW I, an examination of caregiver problematic substance use in NSCAW II will provide important knowledge not obtained in NSCAW I analyses. The utilization of new measures of problematic substance use in NSCAW II will allow for an examination of AUDIT and DAST-20 scores and their relationship with child harm outcomes which was not possible in NSCAW I.

F. Summary of the Literature

National prevalence estimates indicate that the prevalence of caregiver problematic substance use among families where maltreatment is reported is between 8 and 26.5 percent (NDACAN, 2005; Sedlak et al., 2010; US DHHS, 1997). However, improvements in the measurement of caregiver problematic substance use in NSCAW II compared to NSCAW I will provide a stronger estimate of the prevalence of problematic substance use in the CPS population. Research indicates that there is a relationship between caregiver problematic substance use and children experiencing child maltreatment (Jaudes et al., 1995; Smith, Johnson, Pears, Fisher, & DeGarmo, 2007; Williams, Tonmyr, Jack, Fallon, & MacMillan, 2011) and a relationship between caregiver problematic substance use and negative outcomes for children including CPS involvement (Berger et al., 2010; Sun et al., 2001; Wekerle et al., 2007), out-of-home placements (US DHHS, 1999; Vanderploeg et al., 2007), child trauma (Boney-McCoy & Finkelhor, 1995;

Fowler et al., 2009), and child emotional and behavioral problems (Osborne & Berger, 2009). There is also a relationship between caregiver problematic substance use and poor parenting including decreased level of parental monitoring (Fals-Stewart et al., 2004) and involvement (Suchman & Luthar, 2000), and increased levels of harsh and ineffective discipline (Ammerman et al., 1999; Blane et al., 1998; Cohen et al., 2008; Fals-Stewart et al., 2004; Miller et al., 1999) and between caregiver problematic substance use and exposure to violence (Conners-Burrow et al., 2009). This dissertation proposes to examine the role of mediating variables (i.e., parental monitoring, harsh discipline, emotional maltreatment, and exposure to violence) in the relationship from caregiver problematic substance use to child harm in a national probability sample of child investigated for child maltreatment. The literature also supports a relationship between caregiver depression, domestic violence, and caregiver criminal involvement with negative outcomes for children (Geller et al., 2009; Kim-Cohen et al., 2005; Lyons-Ruth et al., 2000; Murray & Murray, 2010; Weissman et al., 2006; Wolfe et al., 2003). This dissertation proposes to also examine the role of moderating variables (i.e., caregiver depression, domestic violence, and caregiver criminal involvement) in the relationship from caregiver problematic substance use to child harm. Accompanied by conceptual and analytic frame models (Figs. 3 & 4), these relationships are presented next.

G. Conceptual Framework

Established by the 1997 Adoption and Safe Families Act, the safety, permanency, and well-being of children are the ultimate goals of the public child welfare system (Webb & Harden, 2003). These constructs define the structure of the child harm indicators for the proposed study (Figs. 3 & 4). Building upon this framework, research indicates that there is a negative relationship from caregiver problematic substance use to outcomes for children (H1,H3,H5,H7)

(Chandy et al., 1996; Kohl et al., Under Review; Semidei et al., 2001). However, it is unclear if this is a direct or indirect relationship, particularly among child welfare families who frequently experience multiple stressors. Conceptualized as mediating variables, the caregiver and child factors of parental monitoring, harsh discipline, emotional maltreatment, and exposure to violence are known to impact childhood experiences (H2,H4,H6,H8) (Olson et al., 2011; Tebes et al., 2011; Yates, 2007). It is hypothesized that the relationship from caregiver problematic substance use to child harm is through the caregiver and child factors of parental monitoring, harsh discipline, emotional maltreatment, and exposure to violence. Conceptualized as moderators, the caregiver factors of caregiver

Figure 3: Conceptual and Analytic Framework for Hypothesis 1-4

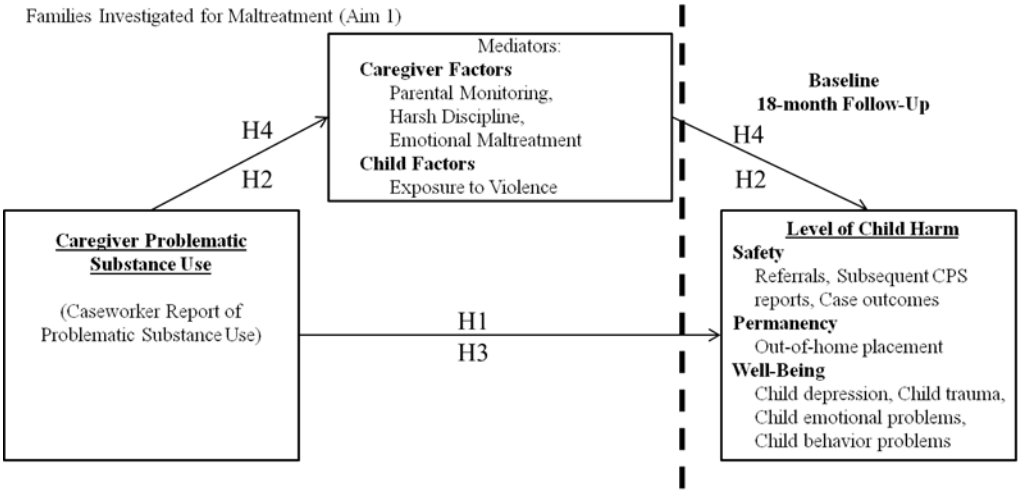
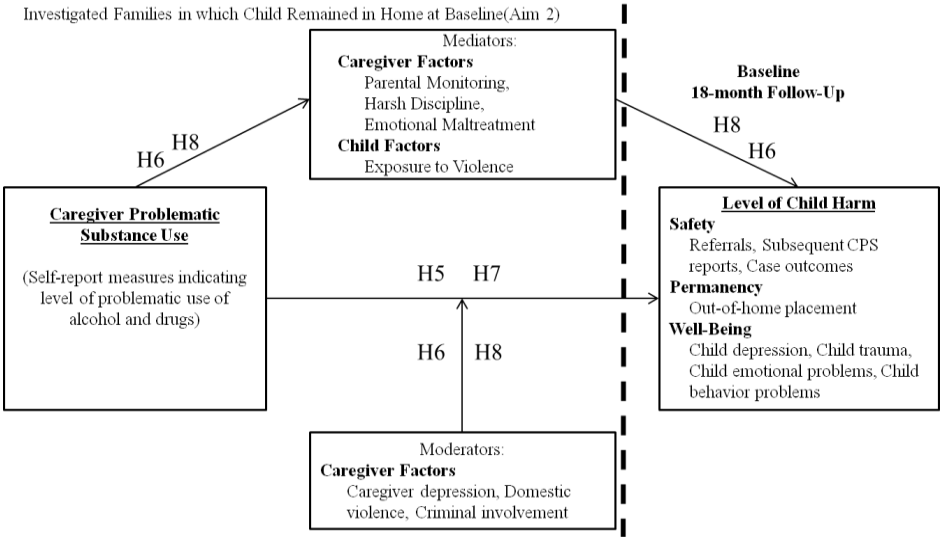


Figure 4: Conceptual and Analytic Framework for Hypotheses 5-8



depression and criminal involvement have been found to increase child harm (H6, H8) (Moylan et al., 2010; Murray & Murray, 2010; Seay & Kohl, Under Review). When examining the relationship from caregiver problematic substance use to child harm, it is expected that child harm will vary based on the presence or absence of caregiver depression and criminal involvement of the caregiver.

IV. Methods

A. Description of NSCAW II

Overview

The NSCAW II is the second in a series of national studies collecting data from families reported to CPS for child maltreatment. The total sample consists of a national probability sample of 5872 children (0 to 17.5 years at time of sampling) and their families, who were investigated for child maltreatment between February 2008 and April 2009. Baseline data on these families were collected between April 2008 and December 2009. Released in the summer of 2012, the second wave of data (18 month follow-up) allow for the examination of longitudinal indicators of child harm. Follow-up data were collected between October 1, 2009 and January 8, 2011 for all children participating in the baseline study regardless of age at follow-up. In NSCAW II, data were collected from interviews with children, caregivers, CPS caseworkers, and teachers (see Appendices 1-3 for measures table). Data collected from children, caregivers, and CPS caseworkers has been utilized in this dissertation. Only one child per family was included in the NSCAW II. Therefore, children were not nested within caregivers.

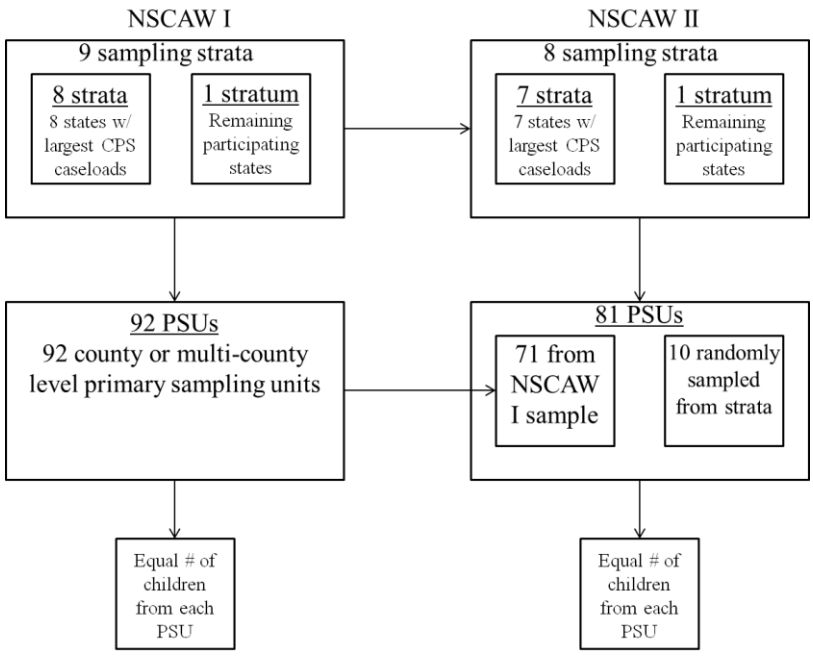
The total sample contained both families where the children remained in the home and families where the children were removed from the home following the index, or baseline, investigation. Primary caregiver interviews were conducted only in families where the children remained in the home at baseline making it possible to use self-reported variables in this sub-group including self-reported indicators of caregiver problematic substance use, emotional maltreatment, harsh discipline, caregiver depression, domestic violence, and criminal involvement. In order to utilize the caregiver-reported variables, two sets of analyses were

conducted. With separate analyses, the dissertation examined data only available for families in which the child remained in the home following the baseline investigation–the majority of CPS-involved children (87%; Dolan, Smith, Casanueva, & Ringeisen, 2011)–which is not available when children were placed in out-of-home care at baseline. For Aim 1, the samples for each hypothesis contain the entire sample: both families where the children remained in the home and families where the children were removed from the home following the investigation. For Aim 2, the samples for each hypothesis contain only families in which the children remained in the home after the baseline investigation.

Sampling Strategy

In order to understand the sampling strategy of NSCAW II, it is important to understand the sampling process in NSCAW I (NDACAN, 2007). A two-stage stratified sampling design was utilized for both NSCAW I and NSCAW II (see Figure 5). The first stage involved dividing the United States into nine sampling strata (NDACAN, 2007). In NSCAW I, eight of the nine strata correspond to the eight states with the largest child welfare caseloads in the nation. The ninth stratum contains the remaining 38 states and the District of Columbia. Four states were

Figure 5: Sampling Strategy



excluded from the study because CPS caseworkers were required to make contact with the family to discuss the study before the NSCAW research team. The second stage involved forming primary sampling units (PSUs) at the county level within the strata and randomly selecting the ones which were included in the study. PSUs were formed for all counties in the United States which investigate at least 60 to 67 cases of maltreatment per year. The random selection of PSUs involved using a probability-proportionate-to-size (PPS) procedure which gave a higher likelihood of selection to areas with larger caseloads. From the nine strata, 100 PSUs were randomly selected. Seven of the 100 PSUs were determined to be very small so they were combined with adjacent counties in order to make one PSU for the study. Six of these initial 100 PSUs refused and were replaced by PSUs of approximately the same size. Eight of the 100 PSUs were determined to be ineligible for the study because they were in states in which the local child protection agency had to make the first contact with the family before the NSCAW I team could contact the family. This resulted in a total of 92 PSUs containing 97 counties in the NSCAW I sample. The same number of children was chosen from each of the 92 PSUs. The sample design required oversampling of infants in order to make sure there would be enough children to follow through permanency planning, oversampling of children who were sexually abused in order to allow for analysis of this type of abuse alone, and oversampling of children whose case was receiving ongoing services following the investigation so that there would be enough power to examine this process.

In NSCAW II, there are eight sampling strata rather than nine (NDACAN, 2011). In the time frame between the NSCAW I data collection and NSCAW II data collection, one of the eight states with the largest child welfare caseloads in the nation had a policy change requiring CPS workers to make the first contact. This state had to be excluded from NSCAW II resulting in

eight strata with seven strata corresponding to the largest child welfare caseloads in the nation and the eighth stratum containing the remaining eligible states. For NSCAW II, the same counties that participated in NSCAW I were asked to participate in the study. Seventy six percent of these counties participated in NSCAW II (NDACAN, 2011). Eight states were excluded from the NSCAW II study because state law required a CPS worker to make the first contact with the family rather than the NSCAW II study team. Affecting 9 PSUs, this was the most common reason that counties included in NSCAW I did not participate in NSCAW II (NDACAN, 2011). NSCAW II contains 81 PSUs of which 71 were in the NSCAW I sample. A complex weighting strategy accounting for stratification, clustering, weighting, and oversampling of some subgroups was developed by the original study team to create a national probability sample.

Selection of Dataset

The NSCAW II dataset was selected for this dissertation over other datasets for several reasons. First, NSCAW II contains a wealth of information not available in most child welfare datasets, including many indicators of child harm and child well-being. Second, the dataset includes caregiver self-report data on problematic substance use. NSCAW II contains a large sample of children, necessary for path analysis, and it is a longitudinal sample with which it is possible to make national estimates. Finally, NSCAW II contains recently collected data.

B. Operational definitions of the Child Harm Dependent Variables

Utilizing the child welfare goals of safety, permanency, and well-being (Webb & Harden, 2003), child harm has been defined in this study as deficits in the areas of safety, permanency, or child well-being (see Appendix 1 for measures table). Child harm has been operationalized as CPS referrals for services as a result of the baseline investigation or between the baseline

interview and the 18-month follow-up and subsequent reports of maltreatment between baseline and 18-month follow-up (safety), having children removed from the home at baseline or follow-up (permanency), and children experiencing depression, trauma, internalizing behaviors, or externalizing behaviors (well-being).

Indicators of Child Safety

Indicators of child safety in this analysis are whether or not the family was referred for CPS services, subsequent CPS reports, and the outcome of the CPS investigation.

CPS services. The variable CPS services serves as a dichotomous dependent variable in all eight hypotheses (H1-H8). The CPS service variables used in this dissertation are different at baseline and wave 2. At baseline, the CPS service variable is a dichotomous variable, indicating whether or not any services were referred, provided, or arranged for the family following the baseline investigation (H1, H2, H5, H6). At both wave 1 and wave 2, CPS workers responded to a wide variety of questions indicating if services were referred for, provided to, and/or arranged for in the past 12 months. This set of variables was not used at wave 1 because the timeframe of past 12 months at baseline introduces the possibility that the services were the result of a prior case and not related to the current concerns in the home. At wave 2, the set of services questions were divided into five categories: any services, services to caregiver, services to child, concrete services, and child welfare services (H3, H4, H7, H8). Responses for all CPS services variable will either be Yes (the CPS worker referred for, provided to, and/or arranged for services for the family) or NO (the CPS worker did not refer for, provide to, or arrange for services for the family).

Subsequent CPS reports. The variable subsequent CPS reports will serve as a dichotomous dependent variable in H3, H4, H7, and H8. The variable is based on CPS worker report of

whether or not reports have been made to CPS for child maltreatment on this child between the baseline report of child maltreatment when the family was recruited into the study and the follow-up time period. Responses for the variable will be either Yes (one or more new reports have been made since baseline) or No (no new reports have been made since baseline). This variable is not available for H1, H2, H5, and H6 because each of these research questions is examining only dependent variables available at baseline.

Case outcome. Case outcome (i.e., categories of substantiation) serves as a dichotomous categorical dependent variable in all eight hypotheses. Case outcome has been operationalized as CPS worker's report of the outcome of the baseline CPS investigation (H1, H2, H5, H6) or subsequent investigations occurring between baseline and the 18-month follow-up (H3, H4, H7, H8). Although research indicates that case outcome is not a strong indicator of child safety in CPS (Drake et al., 2003; English et al., 2002; Hussey et al., 2005; Kohl et al., 2009), case outcome is frequently used in the literature as an indicator of harm to children. In order to compare the results from this research to other studies, case outcome will be examined as a dependent variable. Consistent with Drake's (1996) Harm/Evidence Model, case outcomes was operationalized into two categories based on level of harm for the risk categories and level of evidence for substantiation/indication: higher harm/evidence (i.e., case was coded as substantiated, indicated, high risk, or medium risk by the caseworker) and lower harm/evidence (i.e., case was coded as not substantiated, not indicated, unfounded, ruled out, or low risk by the caseworker). For case outcomes at 18-month follow-up, cases are coded as higher harm/evidence if one or more investigation since the baseline was coded in this way.

Indicator of Child Permanency—Out-of-home placement

The variable out-of-home placement serves as dichotomous dependent variable in H1, H2, H3, H4, H7, and H8. Out-of-home placement has been operationalized as CPS worker report of whether or not the child was placed outside the home following the baseline investigation (H1, H2) or whether or not the child was ever placed outside the home at any time between the baseline and the follow-up interview (H3, H4, H7, H8). This variable is not available for H5 and H6 because these questions are examining baseline outcomes for children who remained in the home at baseline. Therefore, no children in these samples will be in an out-of-home placement at baseline. Responses for the variable will be either Yes (child was placed outside the home) or No (child was not placed outside the home).

Indicators of Child Well-Being

Three mental health scales were used to examine child well-being: the Children's Depression Inventory (Kovacs, 1992), Trauma Symptom Checklist (Briere, 1996b), Child Behavior Checklist (Achenbach, 1991; Achenbach, 2000).

Child depression. In children seven and older (n = 1887 for Aim 1, n = 1351 for Aim 2), child depression serves as a continuous dependent variable in all eight hypotheses. Child depression was measured in child interviews with the Children's Depression Inventory (Kovacs, 1992). The measure contains 27 questions on depression symptoms, each with a 3-point scale (0 = absence of symptom, 1 = mild symptom, 2 = definite symptom). Raw scores were used to create a total depression score which was then converted to a standardized T-score with a range of 0 to 100 (Kovacs, 1992). Hypotheses 1, 2, 5, and 6 examine child self-report of depressive symptoms at the baseline interview. Hypotheses 3, 4, 7, and 8 examine child self-report of depressive symptoms at the follow-up interview. In the NSCAW sample, internal consistency of

the Children's Depression Inventory is good, averaging .81 for children 7 to 12 years old and .87 for children 13 to 15 years old (NDACAN, 2011).

Child trauma. In children eight and older (n = 1652 for Aim 1, n = 1116 for Aim 2), child trauma was used as a continuous dependent variable in all eight hypotheses. Child trauma is measured by child self-report on the PTSD section of the Trauma Symptom Checklist for Children (Briere, 1996b) which was adapted for NSCAW II to include some questions from the Intrusive Experiences and Dissociation section of the Trauma Symptom Checklist for Adults (Briere, 1996a). Continuous T-scores, ranging from 0 to 100 with higher scores indicating a higher likelihood of PTSD, will be utilized for the analysis. Hypotheses 1, 2, 5, and 6 examine T-scores based on self-report at the baseline interview. Hypotheses 3, 4, 7, and 8 examine T-scores based on self-report at the follow-up interview. In a sample of 12 year old children at risk for child maltreatment who were not part of the NSCAW (Everson et al., 2008) internal consistency of the Trauma Symptom Checklist for Children was high ($\alpha = .94$).

Child internalizing behaviors. In children 18 months and older (n = 3264 for Aim 1, n = 2437 for Aim 2), child internalizing behaviors serves as a continuous dependent variable in all eight hypotheses. Child internalizing behaviors were measured with the current caregiver's report of internalizing behaviors on two age-appropriate versions of the Child Behavior Checklist (Achenbach, 1991; Achenbach, 1992). Questions assessing for internalizing behaviors on the CBCL assess for symptoms of anxiety or depression including crying a lot, being too dependent, nervous gestures or behavior, and unnecessary panic. The continuous T-score (range 0 to 100) was utilized, with higher scores indicating a stronger likelihood of having an internalizing disorder. Hypotheses 1, 2, 5, and 6 used caregiver report on the Child Behavior Checklist at the baseline interview. Hypotheses 3, 4, 7, and 8 used caregiver report on the Child

Behavior Checklist at the follow-up interview. In NSCAW I, internal consistency of the internalizing subscale of the Child Behavior Checklist was good, averaging .80 for children 2 to 3 years old and .90 for children 4 and older (NDACAN, 2005).

Caregiver self-report of child internalizing disorders at wave 2 could potentially be impacted if a different caregiver was reporting behaviors at wave 2 compared to wave 1. Comparing scores on the internalizing behaviors subscale by whether or not there was a change in the caregiver reporting from wave 1 to wave 2, a t-test indicated that there was a statistically different change in scores ($F = 5.64$, $p = 0.02$). Therefore, a change in caregiver (dichotomous, yes/no) was controlled for in the wave 2 internalizing disorders models.

Child externalizing behaviors. In children 18 months and older ($n = 3264$ for Aim 1, $n = 2437$ for Aim 2), child externalizing behaviors serve as a continuous dependent variable in all eight hypotheses. Child externalizing behaviors were measured by the current caregiver's report of externalizing behaviors on the Child Behavior Checklist (Achenbach, 1991; Achenbach, 2000). Questions assessing for externalizing behaviors on the CBCL assess for symptoms of acting out or problems with anger including defiance, destroying property, and injuring self or others. Comparable to the operationalization of child internalizing behaviors, the continuous T-score (range 0 to 100) was utilized, with higher scores indicating a stronger likelihood of having an externalizing disorder. Hypotheses 1, 2, 5, and 6 use caregiver report on the Child Behavior Checklist at the baseline interview. Hypotheses 3, 4, 7, and 8 use caregiver report on the Child Behavior Checklist at the follow-up interview. In NSCAW I, internal consistency of the externalizing subscale of the Child Behavior Checklist was also good, averaging .91 for children 2 to 3 years old and .92 for children 4 and older (NDACAN, 2005).

Caregiver self-report of externalizing behaviors at wave 2 could potentially be impacted if a different caregiver was reporting behaviors at wave 2 compared to wave 1. Comparing scores on the externalizing subscale by whether or not there was a change in the caregiver reporting from wave 1 to wave, a t-test indicated that there was not a statistically different change in scores ($F = 0.71$, $p = 0.40$). Therefore, a change in caregiver was not controlled for in the wave 2 externalizing behaviors models.

C. Operational definitions of the Independent Variables

Caseworker Report of Problematic Drug Use

Caseworker report was utilized to examine the presence of problematic drug use, not including alcohol, in the entire sample (Aim 1) because self-report measures were not available when children were placed in out-of-home care (See Appendix 2 for measures table). Collected during the baseline interview, the variable caseworker report of problematic drug use served as a dichotomous independent variable in H1, H2, H3, and H4. This variable is available for the total sample, both children who remained in the home following the baseline investigation and those where the child was removed from the home. The risk assessment in NSCAW II is a series of questions developed for the NSCAW II study but based on risk assessments forms and checklists used in Michigan, New York, Washington, Illinois, and Colorado. The risk assessment assists workers in examining the level of risk to the child in a given case and gathers information about the presence of prior abuse or neglect, caregiver problematic substance use, domestic violence, caregiver mental health, poor parenting skills, excessive discipline, and other risk factors. Caseworker report of problematic drug use is assessed with an item in the risk assessment section of the CPS worker interview collected during the baseline interview. In response to the question “At the time of the investigation was there active drug abuse by the primary caregiver?”

the CPS worker responded either Yes or No. Caseworkers were interviewed at their agencies and were able to refer to their notes, documentation, and case records during the interview. Caseworkers were experienced professionals with an average of over 7 years (M = 7.1, median = 5.0) of experience in child welfare and almost 47% having either a bachelor's degree in Social Work or a master's degree (Dolan et al., 2011). Although further detail is not provided by NDACAN (2010) on how caseworkers determined that problematic use was present, data available on the caseworkers indicates most were experienced child welfare professionals. Information included in CPS records may include findings from drug or alcohol testing, documented interviews where the caregiver self-reported the problematic alcohol or drug use, and alcohol or drug assessments ordered by the court.

Caseworker Report of Problematic Alcohol Use

Collected during the baseline interview and also available for the total sample (Aim 1), the variable caseworker-reported problematic alcohol use served as a dichotomous independent variable in H1, H2, H3, and H4. It is the response to an item in the risk assessment section of the CPS worker interview collected during the baseline interview. In response to the question "At the time of the investigation was there active alcohol abuse by the primary caregiver?" the CPS worker responded either Yes or No.

Caregiver Self-Report of Problematic Drug Use

Self-report of caregiver problematic substance use was measured differently in NSCAW II compared to NSCAW I based on feedback from analysts and completed studies. In NSCAW I, the Composite International Diagnostic Interview-Short Form (CIDI-SF; Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998), a structured interview designed to screen for common psychiatric diagnoses like substance dependence using diagnostic criteria established in the

fourth edition of the Diagnostic and Statistical Manual of Mental Disorders, was used to determine who met clinical criteria for substance dependence or not. Questions assessing for substance abuse were not administered. This dichotomous examination of alcohol dependence and drug dependence did not detect all individuals whose problematic substance use was impacting their parenting. In NSCAW II, the utilization of the AUDIT (Saunders et al., 1993) and DAST-20 (Skinner, 1982) allow for an examination of the level of caregiver problematic substance use and its relationship with child harm outcomes which was not possible in NSCAW I. Caregiver self-report of the problematic use of drugs is available for families in which the children remained in the home at baseline (Aim 2—H5, H6, H7, H8). Collected from the caregiver during the baseline interview, using Audio Computer-Assisted Self-Interview (ACASI) technology, caregiver self-report of the problematic drug use was assessed with the 20 question Drug Abuse Screening Test (DAST-20; Skinner, 1982). Level of problematic drug use served as a continuous independent variable in H5, H6, H7, and H8. Total scores on the DAST-20 can range from 0 to 20 with higher scores indicating higher levels of drug related problems in the past 12 months (Skinner, 1982). Utilizing the DAST-20 scores continuously in this analysis provided the strongest power to test the path models. However, DAST-20 scores can be analyzed dichotomously with scores of 6 or higher identifying individuals engaged in the problematic drug use in the past 12 months (McCann, Simpson, Ries, & Roy-Byrne, 2000; Skinner, 1982; Staley & El-Guebaly, 1990).

Internal consistency for the DAST has been found to be high ranging from .92 to .94 across studies (McCann et al., 2000; Skinner, 1982; Yudko, Lozhkina, & Fouts, 2007). In the initial report by Skinner (1982), internal consistency was .92 on the DAST and .95 on the DAST-20 with a sample of 223 adults (72% male, 28% female) seeking help for an addiction. In a review

of ten studies examining the psychometric properties of the DAST, Yudko et al. (2007) found coefficient α for the DAST-20 to range from .74 to .95. With a group of 45 patients receiving psychiatric care, Cocco and Carey (1998) found the test-retest reliability of the DAST-20 to be .78. The second administration of the DAST-20 ranged in time from 7 to 43 days after the first administration.

Caregiver Self-Report of Problematic Alcohol Use

Caregiver self-report of problematic alcohol use is only available for families in which the children remained in the home at baseline (Aim 2—H5, H6, H7, H8). Collected from the caregiver, using ACASI technology, during the baseline interview, level of problematic alcohol use in the past year was assessed with the 10 question Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993). Level of problematic alcohol use served as a continuous independent variable in H5, H6, H7, and H8. Total scores on the AUDIT can range from 0 to 40 with higher scores indicating higher levels of problematic alcohol use (Saunders et al., 1993).

Assessed in a number of different studies, the AUDIT consistently demonstrates a high level of internal consistency. In the initial report of Saunders et al. (1993), the AUDIT items were found to be highly correlated (Cronbach alpha=.88) when tested in the United States. In a reliability generalization study containing 17 empirical articles with a wide range of populations, Shields and Caruso (2003) found that the median internal consistency reliability of AUDIT scores was .81 with a range of .59 to .91. This same study, comparing reported coefficient alphas across studies conducted prior to 2001, found a high level of internal consistency across the studies. In an analysis of 18 studies conducted between 2002 and 2005, Reinert and Allen (2007) found a median internal consistency reliability of .83 with a range of .75 to .97 for the AUDIT. These findings, consistent with those of Shields and Caruso, confirm a high level of

internal consistency for the AUDIT. The test-retest reliability of the AUDIT has been found to be high for both continuous and dichotomous scoring methods indicating that scores on the AUDIT are generally stable over time. Assessing for test-retest reliability, Lennings (1999) found the AUDIT to have strong agreement (r = .92) over a two week period with 25 students with continuous scoring. Daeppen, Yersin, Landry, Pecoud, and Decrey (2000) found substantial agreement (r = .81) over a six week period with primary care patients when using continuous scoring.

D. Operational Definitions of the Mediating Variables

Caregiver Factors

Emotional maltreatment. Baseline report of emotional maltreatment served as a continuous variable mediating the relationship from caregiver problematic substance use to child harm in H2, H4, H6, and H8. Using ACASI technology, caregiver self-report of emotional maltreatment and child report of emotional maltreatment by a caregiver were obtained with the Psychological Aggression Subscale of the Parent-Child Conflict Tactics Scale (CTS-PC; Straus et al., 1998). Scores on the Psychological Aggression Subscale of the CTS-PC are continuous with higher scores indicating a higher degree of psychological aggression in the last 12 months. The Psychological Aggression subscale of the CTS-PC also has low internal consistency reliability (α = .60) (Straus et al., 1998). This limitation is acknowledged by the developers of the measure. Caregiver self-report of emotional maltreatment was only available when children remained in the home following the baseline investigation. Caregiver self-report was used exclusively when children remained in the home following the baseline report (H6, H8). For H2 and H4, caregiver self-report was used when available. When caregiver self-report was not available, youth report of caregiver emotional maltreatment was used for children 11 and older. In the in-

home sample for children 11 and older, both caregiver self-report of emotional maltreatment and youth report of emotional maltreatment were present. A significant correlation was found between these two measures (corr = 0.18, p = .013).

Harsh discipline. Harsh discipline served as a continuous variable mediating the relationship between caregiver problematic substance use and child harm in H2, H4, H6, and H8 (n = 5872 for Aim 1, n = 3512 for Aim 2). Two measures assessed for the presence of harsh discipline by the caregiver at baseline. Using ACASI technology, the caregiver self-report of harsh discipline and the child report of harsh discipline by a caregiver were obtained with the harsh discipline subscale of the Parent—Child Conflict Tactics Scale (CTS-PC; Straus et al., 1998). Scores on the Physical Assault Subscale of the CTS-PC are continuous with higher scores indicating a higher degree of physical assault in the last 12 months. Although widely used in the field, the CTS-PC has low internal consistency reliability ($\alpha = .55$ for the Physical Assault subscale) (Straus et al., 1998). This limitation is acknowledged by the developers of the measure. Caregiver self-report was used exclusively when children remained in the home following the baseline report (H6, H8). For H2 and H4, caregiver self-report was used when available. When caregiver self-report was not available, youth report of caregiver harsh discipline was used for children 11 and older. In the in-home sample for children 11 and older, both caregiver self-report of harsh discipline and youth report of harsh discipline were present. Although not statistically significant, the correlation between these two measures was approaching significance (corr = 0.17, p = .090).

Parental monitoring. In children 10 and older (n = 1253 for Aim 1, n = 845 for Aim 2), parental monitoring is a continuous variable mediating the relationship from caregiver problematic substance use to child harm in H2, H4, H6, and H8 (see Appendix 2 for measures

table). The level of parental monitoring was measured at baseline with the child's responses on the Parental monitoring subscale of the Supervision-Child Scale from the Fast Track Project which indicates the extent to which the caregiver monitors the child's activities and arranges supervision for the child with higher scores indicating a higher level of parental monitoring (Ammerman et al., 1999; Conduct Problems Prevention Research Group, 1995). In boys ages 10 to 12 in intact mother-father families, internal consistency was low ($\alpha = .66$) (Ammerman et al., 1999).

Child Factor

Exposure to violence. The level of violence that a child is exposed to was hypothesized to serve as a mediating variable in the relationship between caregiver problematic substance use and child harm in H2, H4, H6, and H8 (n = 2368 for Aim 1, n = 1832 for Aim 2). In children eight and older, exposure to violence was measured, using ACASI technology, at baseline with the child's responses on the Violence Exposure Scale (VEX-R; Fox & Leavitt, 1995). The VEX-R measures children's exposure to violent and criminal acts in the home through the use of questions with cartoon illustrations. Children are asked questions about acts committed by adults toward another person in a home they had lived in. In the NSCAW II study, the cartoon illustrations and example questions (e.g., How many times have you watched TV?) were only used with children ages 8 to 10 (NDACAN, 2010). Children 11 to 18 were asked the questions which assess for violence exposure but they were not shown cartoon illustrations or asked the simple example questions in order to make the measure developmentally appropriate for older children. Scores on the VEX-R are a continuous count of the number of times that a child reports witnessing or experiencing violence.

In a sample of minority preschoolers (Shahinfar, Fox, & Leavitt, 2000), the VEX-R was found to have moderate to good levels of inter-item reliability for children's reports of exposure to violence (Cronbach's $\alpha = .80 – .86$). Internal consistency in the NSCAW sample is high for the total sample (Cronbach's $\alpha = .96$) and for the subscales (Cronbach's $\alpha = .86 – .92$) (NDACAN, 2010). Shahinfar et al. (2000) found modest correlations between children's distress symptoms and scores on the VEX-R for witnessing mild violence ($r = .29$, $p < .05$), experiencing mild violence ($r = .22$, $p < .05$), and witnessing severe violence ($r = .25$, $p < .05$).

E. Operational Definitions of the Moderator Variables

Caregiver Depression

Caregiver depression was hypothesized to serve as a moderator in the relationship from caregiver problematic substance use to child harm in H6 and H8 (see Appendix 2 for measures table). In the sample of children who remained in the home following the baseline investigation (Aim 2), caregiver depression in the past 12 months was measured at baseline with caregiver self-report on the module for depression in the Composite International Diagnostic Interview Short-Form (CIDI-SF; Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998). The CIDI-SF is a structured interview designed to screen for common psychiatric diagnoses, including depression, using diagnostic criteria established in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders. The variable has been dichotomized into caregivers meeting the diagnostic criteria for depression and those who do not meet the diagnostic criteria for depression based on the CIDI-SF interview (Kessler et al., 1998).

Criminal Involvement of a Caregiver

Caregiver criminal involvement was also hypothesized to serve as a moderator in the relationship from caregiver problematic substance use to child harm in H6 and H8. Information

collected from caregivers, using ACASI technology, about their involvement in criminal activity was used to create a categorical variable. Initially, criminal involvement of a caregiver was to be examined as a multinomial categorical variable with the categories No criminal involvement (i.e., no probation or prison), Probation only (i.e., no prison ever), and Prison (i.e., stated he or she has been in prison 1 or more times). These categories were collapsed to two categories based on low cell sizes: No criminal involvement and One or more convictions. Individuals with arrest records who did not report a prior conviction would be in the no criminal involvement category.

Domestic Violence

Domestic violence was hypothesized to serve as a moderator in the relationship from the problematic use of substances to child harm in H6 and H8. Domestic violence was measured with caregiver self-report, utilizing ACASI technology, on the Conflict Tactics Scale (CTS2)—Physical Assault Subscale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The variable is a continuous indicator of the number violent acts toward the primary caregiver by a partner in the past 12 months.

F. Operational Definitions of the Control Variables

Child Demographics

The child demographics of age, gender, race/ethnicity, number of children in the home, and poverty were examined as controls variables in all analyses (see Appendix 3 for measures table). In bivariate analyses, number of children in the home was highly associated with poverty (Wald $\chi^2 = 39.28$, $p < .0001$) and prior reports on the family (Wald $\chi^2 = 8.94$, $p = .0038$). Child race/ethnicity was significantly associated with poverty (Wald $\chi^2 = 8.23$, $p = .0001$) and number of children in the household (Wald $\chi^2 = 3.00$, $p = .0364$). To prevent multicollinearity, child race/ethnicity and number of children in the home were dropped from the models rather than

poverty due to their significant relationship and conceptual overlap with poverty. Poverty was the variable retained due to its theoretical and empirically-based relationship with child well-being. The control variables utilized in the models were child age, child gender, and poverty. Child age is a continuous variable of the age of the child at the baseline interview ranging from 0 to 17.5 years. Child gender is a dichotomous (male or female) control variable. Poverty is operationalized as a dichotomous variable with families either being at or beneath the poverty line or above the poverty line based on family income and number of adults and children in the household.

CPS History

A CPS history control variable was included in the analysis: prior reports on the family to CPS. Prior reports to CPS is a dichotomous control variable reported by the CPS worker with responses indicating whether or not there is a known prior CPS report on the family.

G. Permission to Use Data/Human Subjects Approval

The author is currently on the license for the NSCAW II data which allows her access to the restricted release version of the NSCAW II dataset. The author also has obtained approval from the Washington University in St. Louis Institutional Review Board (IRB ID #: 201110278) to conduct analyses with NSCAW II.

H. Statistical Analyses

The applicant used SAS version 9.2 for data management, Stata/SE 10.0 for weighted univariate and bivariate analyses, and Mplus version 7 for path analyses. All analyses (including descriptives) provide national estimates through the inclusion of weighting, stratification, and clustering variables to account for the complex sampling design of NSCAW II. Using procedures discussed by MacKinnon (2008), path analysis mediation and moderation modeling

was used to examine the direct and indirect pathways from caregiver problematic substance use to child harm indicated by safety, permanency, and well-being outcomes (H1-H8). Path analysis allows for the concurrent analyses of multiple independent variables and multiple mediating and moderating variables.

Univariate Analyses

Univariate analyses were conducted in order to obtain a description of the total sample (Aim 1) and subsample (Aim 2) for the study. Due to the use of age appropriate measures, sub-groups based on age (e.g., sub-group of children 10 and older for parental monitoring) were utilized as necessary. The prevalence of the problematic use of drugs and alcohol were examined for the total sample (Aim 1) and the mean and median levels of problematic drug and alcohol use were examined in caregivers whose children remained in the home following the baseline investigation (Aim 2). Child demographics (child age, child gender, poverty) and CPS history (prior CPS reports) were examined in both the total sample and the subsample of families in which the child remained in the home following the baseline investigation. The prevalence of each dependent variable was examined in both the total sample (Aim 1) and the subsample (Aim 2) if the variable was available in both groups. The mean and median scores for each mediator variable (parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) were examined in both the total sample (Aim 1) and the subsample (Aim 2). Hypothesized to serve as moderator variables, the prevalence of caregiver depression and criminal involvement of a caregiver was examined in families in which the child remained in the home following the baseline investigation. The mean and median scores for the moderating variable domestic violence were calculated in the subsample (Aim 2).

Bivariate Analyses

Bivariate analyses examined the association of each independent variable with each dependent variable. Due to the use of age appropriate measures for children, each analysis contains a different sample size to account for the age range for which the data was available on the child-reported dependent variables (see Appendices 1-3 for measures tables).

Total Sample (Aim 1). In order to examine the bivariate relationships between the categorical independent variables for Aim 1 (Caseworker Report of Problematic Drug Use, Caseworker Report of Problematic Alcohol Use) and the 11 categorical dependent variables, 22 chi-squares were run to look separately at the relationships of the two categorical independent variables with each of the 11 categorical dependent variables. Sixteen t-tests were run to look at the two categorical independent variables with the eight continuous dependent variables.

Subsample of Cases Where the Child Remained in the Home (Aim 2). In order to examine the bivariate relationships between the continuous independent variables for Aim 2 (Level of problematic drug use, level of problematic alcohol use) and the ten dichotomous categorical dependent variables, 20 t-tests were run to look separately at the relationships of the two continuous independent variables with each of the ten dichotomous categorical dependent variables. Each t-test examined if there was a statistically significant difference in the means of the independent variable, either level of problem drug use or level of problematic alcohol use, between the two categories of the dependent variable.

Correlations were run to determine if there were statistically significant associations between each independent variable (level of problematic drug use or level of problematic alcohol use) with the continuous dependent variables at waves 1 and 2.

Path Analysis Mediation and Moderation Models

Path analysis mediation and moderation models were run to examine the direct relationships from caregiver problematic substance use to multiple indicators of child harm as well as the role of mediating and moderating variables in these relationships. Path analysis is a type of covariance structure analysis which examines the accuracy of a model by comparing a predicted covariance matrix of the variables to an observed covariance matrix of the variables (MacKinnon, 2008). In covariance structure analysis, there are two types of models: structural models and measurement models (MacKinnon, 2008). Structural models examine the relationship between different constructs in the model. Measurement models examine the relationship between each variable in the model and unobserved, or latent, constructs. In measurement models, two or more observed variables are used to measure a latent, or unobserved, construct. Each observed variable can be separated from the piece of the variable which is not related to the latent construct, known as the variable error. In manifest variable models each observed variable is used to measure one latent construct and it is believed that the observed variable perfectly measures the latent construct. Path analysis involves the analysis of a structural model (i.e., the relationship between the different variables in the model) containing only manifest variables (i.e., each variable in the model is measuring one latent construct). In complex models, like those in this dissertation, where more than one independent or dependent variable is used, matrices are specified in order to organize the information. These matrices can then be used to estimate the mediation effects of the model and their standard errors (MacKinnon, 2008).

Analysis Type and Estimators

In the path analysis models, the type of analysis utilized was the complex analysis (i.e., type=complex) to account for the complex survey data. The maximum likelihood with robust

standard errors estimator (MLR) was utilized when all endogenous variables were continuous. This is the estimator recommended by Mplus for models with all continuous dependent variables when stratification, clustering, and weighting must be taken into account. The weighted least square estimator with mean- and variance-adjusted estimator (WLSMV) was utilized when the model included one or more categorical endogenous variables. The WLSMV estimator is again recommended for use with stratified, clustered, and weighted data. Global model fit will be assessed with the Chi-Square Test of Model Fit, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA) (Hu & Bentler, 1999). When the MLR estimator is utilized for models with all continuous dependent variables, the Standardized Root Mean Square Residual (SRMR) has been reported. When the estimator WLSMV is utilized for models with categorical dependent variables, the Weighted Root Mean Square Residual (WRMR) has been reported.

Fit Indices

To indicate strong model fit on the Chi-Square Test of Model Fit, the chi-square should be non-significant. The Chi-Square Test of Model Fit is biased in larger samples and more likely to be significant despite a strong model fit to the data (Kline, 2010). However, chi-square values that are non-significant with large samples indicate a very strong fit to the data. For this reason, the Chi-Square Test of Model Fit was examined in these models. Other fit indices have been created to compensate for the bias of the Chi-Square Test of Model Fit in large samples and have been reported. Respectively, indicators of strong model fit on the CFI, TLI, RMSEA, SRMR, and WRMR are $\geq .90$, $\geq .90$, $< .05$ and non-significant, $< .05$, and < 1.00 (Hu & Bentler, 1999; Kline, 2010).

Wave 1 Models

For Aim 1, a path analysis mediation model (MacKinnon, 2008) examined the direct (H1) and indirect pathways (H2) from caseworker-identified problematic use of alcohol or drugs at baseline to baseline indicators of child harm (Fig. 3). The seven DVs were CPS services, case outcomes, out-of-home placement, child depression, child trauma, child internalizing behaviors, and child externalizing behaviors. Four mediators (parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) and all control variables will be included in the model.

For Aim 2, a path analysis mediation and moderation model (MacKinnon, 2008) examined the direct (H5) and indirect pathways (H6) from caregiver self-reported levels of problematic drug or alcohol use at baseline to baseline indicators of child harm (Fig. 4). The six DVs were CPS services, case outcomes, child depression, child trauma, child internalizing behaviors, and child externalizing behaviors (Fig. 4). Four mediators (parental monitoring, harsh discipline, emotional maltreatment, exposure to violence), three moderators (caregiver depression, criminal involvement, domestic violence), and all control variables were included in the models.

Wave 1 to 2 Models

For Aim 1, a path analysis mediation model (MacKinnon, 2008) examined the direct (H3) and indirect pathways (H4) from caseworker report of problematic drug use or caseworker report of problematic alcohol use at baseline to indicators of child harm at 18-month follow-up. The eight DVs were CPS services, subsequent CPS reports, case outcomes, out-of-home placement, child depression, child trauma, child internalizing behaviors, and child externalizing behaviors (Fig. 3). Four mediators (parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) and all control variables were included in the model.

For Aim 2, a path analysis mediation and moderation model (MacKinnon, 2008) examined the direct (H7) and indirect pathways (H8) from caregiver-reported level of problematic drug use or caregiver-reported level of problematic alcohol use at baseline to indicators of child harm at 18-month follow-up (Fig. 4). The eight DVs were CPS services, subsequent CPS reports, case outcomes, out-of-home placement, child depression, child trauma, child internalizing behaviors, and child externalizing behaviors. Four mediators (parental monitoring, harsh discipline, emotional maltreatment, exposure to violence), two moderators (caregiver depression, criminal involvement), and all control variables were included in the model.

Examination of the Weights

An examination of the wave 1 and wave 2 weights was conducted to determine if extreme variability was present in the weights. For the total sample at wave 1, weights ranged from 2.60 to 7610.27 with a median of 96.41. For the total sample at wave 2, weights ranged from 0 to 8829.86 with a median of 80.75. Due to the wide range of weights, the author contacted the National Data Archive on Child Abuse and Neglect (NDACAN) at Cornell University to obtain consultation on the utilization of weights for this analysis. The author assisted NDACAN in an examination of high weights and their distribution by PSU and domain for each combination of dependent variable by mediator, accounting for age. This series of analyses indicated that the high weights were distributing equally across the subsets. Since there was no concentration of high weights, the author was told that weighting could be utilized and weight trimming was not necessary for this analysis.

Analysis Method

Using a best practice approach (Kline, 2010), a random 50 percent sample was utilized for the analyses (i.e., split-half approach). All models were run on the randomly sampled half

dataset that was created. This method allows the utilization of a systematic model building approach in which prior models are used to inform the development of nested models that include the previously significant paths plus an additional path. The split-half approach allows a confirmation of the model to be run on the remaining half of the dataset.

Analyses were run in sets. An example of a set is one problematic substance use (e.g. self-reported problematic alcohol use) by eight dependent variables (e.g. child depression) by the wave where the dependent variable was measured (e.g. wave 1). This results in 64 model sets (e.g., self-reported problematic alcohol use to child internalizing behaviors at wave 1).

Utilizing the model building approach for the model set (e.g., self-reported problematic alcohol use to child internalizing behaviors at wave 1), the first step was to test the direct relationship from the problematic substance use variable to the dependent variable. Next, four single mediator models were run for each set. In each single mediator model, the direct relationship from the single independent to the single dependent variable and the indirect relationship through one of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) was tested. Parallel mediator models are models in which all of the mediators are mediating separate paths between the independent and dependent variables rather than two or more mediators sequentially separating the independent and dependent variables. If more than one of the single mediator models was significant, then double parallel mediator models were run for each combination of two significant mediators. If three or more mediators were significant in the single mediator models, triple parallel mediator models were run for each combination of three significant mediators. The fit indices of the mediator models were compared to determine which model(s) provide the strongest fit with the data.

Moderating variables are only available for families in which the children remained in the home following the baseline report (Aim 2). For each significant direct pathway and each significant single mediator model in the Aim 2 analyses, a moderation analysis was run to examine potential moderating relationships between the hypothesized moderators (caregiver criminal involvement, domestic violence, and caregiver depression) in the direct pathway or the indirect, or mediated, pathway. For example, if there was a significant direct relationship from caregiver self-reported problematic alcohol use to child trauma at wave 1 then three moderation models would be run to examine the possible interaction of each moderator with caregiver self-reported problematic alcohol use and its impact on child trauma at wave 1. If there was a significant indirect relationship between caregiver self-reported problematic alcohol use and its impact on child trauma at wave 1 through emotional maltreatment then three moderation models would be run to examine the possible interaction of each moderator with emotional maltreatment and its impact on child trauma at wave 1.

To develop the final models for each of the 64 model sets incorporating direct, mediating, and moderating pathways, fit statistics were compared in models with significant indirect pathways to determine which models best fit the data.

With the complex number of possible pathways proposed in these hypotheses (640 or more separate models), the model building approach allows for various pathways to be systematically examined as they were initially hypothesized. However, there is a risk that the examination of prior models could bias the development of subsequent models. This risk is addressed in two ways. First, the model building approach is only examining the hypothesized relationships of the variables. For example, new variables from the larger NSCAW II dataset are not being tested for association. Second, by utilizing the split sample approach, the model fit and relationships in the

final models can be tested on the second, untouched, half of the NSCAW II dataset to confirm that the proposed models represent the relationships present in the data.

V. Results

A. Univariate Analyses

Univariate analyses were conducted at both baseline (Table 1) and wave 2 (Table 2) with the

Table 1: Univariate Statistics at Wave 1

Variable	Total Sample Weighted Mean (*SD*), Median or Percentage	Total Sample Unweighted Frequency	In-Home Sample Mean (*SD*), Median or Percentage	In-Home Sample Unweighted Frequency
Demographics				
Child Age	7.40 years (*SD* = .22), 7.00	2929	7.31 years (*SD* = .23), 7.00	2006
Child Gender				
Male	51.02%	1502	50.63%	1037
Female	48.98%	1427	49.37%	969
Number of Children in Household				
1-2	53.13%	1616	53.45%	1155
3+	46.87%	1313	46.55%	851
Poverty				
At or below poverty threshold	57.80%	1338	60.52%	1130
Above poverty threshold	42.20%	1312	39.48%	714
Prior Reports				
No	43.16%	1120	45.27%	846
Yes	56.84%	1546	54.73%	950
Independent Variables				
AUDIT	—		1.50 (*SD* = .11), 1.00	1969
DAST-20	—		0.90 (*SD* = .08), 0.00	1835
Caseworker Rep. Prob. Alcohol Use				
No	96.36%	2147	—	
Yes	3.64%	228	—	
Caseworker Rep. Prob. Drug Use				
No	91.06%	1744	—	
Yes	8.94%	687	—	
Dependent Variables				
Child Internalizing Behavior	52.05 (*SD* = .53), 52.00	1785	51.89 (*SD* = .55), 51.00	1294
Child Externalizing Behavior	53.25 (*SD* = .53), 54.00	1786	53.17 (*SD* = .56), 54.00	1295
Child Depression	50.30 (*SD* = .63), 48.00	1037	50.42 (*SD* = .63), 49.00	663
Child Trauma	50.20 (*SD* = .66), 49.00	945	50.13 (*SD* = .60), 49.00	574
Child OOH Wave 1				
No	87.32%	1794	—	
Yes	12.68%	1135	—	
CPS Services Wave 1				
No	40.20%	552	42.81%	474
Yes	59.80%	1959	57.19%	1273
Case Outcome				
Lower Harm/Evidence	73.47%	935	77.25%	834
Higher Harm/Evidence	26.53%	1596	22.75%	914
Mediating Variables				
Caregiver Report Emo. Maltreat.	11.60 (*SD* = .61), 5.00	2003	11.60 (*SD* = .61), 5.00	2003
Child Report Emo. Maltreat.	11.09 (*SD* =)2.00	504	—	
Caregiver Report Harsh Discipline	4.53 (*SD* = .34), 1.00	2003	4.53 (*SD* = .34), 1.00	2003
Child Report Harsh Discipline	6.77 (*SD* = .), 0.00	506	—	
Parental Monitoring	4.35 (*SD* = .05), 4.60	600	4.34 (*SD* = .05), 4.50	439
Exposure to Violence	5.45 (*SD* = .23), 4.00	774	5.43 (*SD* = .26), 4.00	569
Moderating Variables				
Caregiver Criminal Involvement				
No Convictions	—		83.58%	1622
One or More Convictions	—		16.42%	333
Frequency of Domestic Violence	—		3.76 (*SD* = .61), 0.00	1972
Caregiver Depression				
No	—		76.35%	1512
Yes	—		23.65%	484

Note. *SD* = standard deviation.

first half of the split sample. At wave 1, the in-home sample has a slightly higher percentage of families living at or below the poverty threshold (60.52%) compared to the total sample (57.80%). Child internalizing behaviors were slightly higher in the total sample (mean=52.05, SD=.53) compared to the in-home sample (mean=51.89, SD=.55). As would be expected, the percentage of lower harm/evidence cases was higher among families where children remained in the home (77.25%) compared to the total sample (73.47%). This is likely due to higher harm/evidence among cases where children were removed from the home, a portion of the total sample.

Table 2: Univariate Statistics at Wave 2

Variable	Total Sample Weighted Mean (*SD*), Median or Percentage	Unweighted Frequency	In-Home Sample Weighted Mean (*SD*), Median or Percentage	Unweighted Frequency
Dependent Variables				
Child Internalizing Behavior	51.34 (*SD* = .46), 50.00	2634	51.27 (*SD* = .49), 50.00	1652
Child Externalizing Behavior	52.60 (*SD* = .48), 51.00	2634	52.58 (*SD* = .48), 51.00	1652
Child Depression	48.36 (*SD* = .51), 46.00	827	48.39 (*SD* = .56), 46.00	835
Child Trauma	49.12 (*SD* = .66), 47.00	747	48.91 (*SD* = .67), 47.00	769
Child OOH				
No	95.57%	2530	96.96%	1853
Yes	4.43%	389	3.04%	146
Any Services				
No	77.17%	1513	81.14%	1354
Yes	22.83%	1416	18.86%	652
Caregiver Services				
No	83.43%	1737	86.06%	1455
Yes	16.57%	1048	13.94%	517
Child Services				
No	84.38%	2057	87.65%	1651
Yes	15.62%	872	12.35%	355
Concrete Services				
No	79.00%	1553	83.02%	1389
Yes	21.00%	1376	16.98%	617
Child Welfare Services				
No	81.97%	1693	84.91%	1422
Yes	18.03%	1100	15.09%	552
Subsequent Reports				
No	92.75%	2622	92.94%	1796
Yes	7.25%	270	7.06%	185
Case Outcome				
Lower Harm/Evidence	96.65%	2735	96.83%	1866
Higher Harm/Evidence	3.35%	140	3.17%	96

Note. *SD* = standard deviation.

At wave 2, child internalizing behaviors were still slightly higher in the total sample (mean=51.34, SD=.46) compared to the in-home sample (mean=51.27, SD=.49). At wave 2, service rates remain higher in the total sample than in the in-home. Rates of having one or more reports between baseline and wave 2, were very similar in both the total (7.25%) and in-home samples (7.06%).

B. Bivariate Analyses

Bivariate test statistics for each problematic substance use variable by all dependent variables

Table 3: Bivariate Statistics (Weighted)

	Total Sample		In-Home Sample	
Dependent Variables	Caseworker Report of Problematic Alcohol Use	Caseworker Report of Problematic Drug Use	AUDIT Score	DAST-20 Score
Child Internalizing Behavior Wave 1	F = 1.91, p = 0.17 n=1404	F = 3.95, p = 0.05 n=1430	corr = 0.11, p = 0.008 n=1268	corr = 0.08, p = 0.063 n=1186
Child Internalizing Behavior Wave 2	F = 0.74, p = 0.39 n=2137	F = 1.03, p = 0.31 n=2183	corr = 0.10, p = 0.060 n=1623	corr = 0.10, p = 0.033 n=1513
Child Externalizing Behavior Wave 1	F = 2.23, p = 0.14 n=1405	F = 2.62, p = 0.11 n=1431	corr = 0.09, p = 0.017 n=1269	corr = 0.02, p = 0.605 n=1186
Child Externalizing Behavior Wave 2	F = 0.26, p = 0.62 n=2136	F = 0.05, p = 0.82 n=2182	corr = 0.09, p = 0.011 n=1623	corr = 0.04, p = 0.373 n=1513
Child Depression Wave 1		F = 0.38, p = 0.54 n=743	corr = 0.01, p = 0.903 n=650	corr = 0.01, p = 0.903 n=608
Child Depression Wave 2	F = 0.13, p = 0.72 n=886	F = 0.59, p = 0.44 n=900	corr = 0.02, p = 0.675 n=615	corr = 0.14, p = 0.042 n=568
Child Trauma Wave 1		F = 1.06, p = 0.31 n=656	corr = 0.08, p = 0.135 n=561	corr = 0.02, p = 0.652 n=523
Child Trauma Wave 2	F = 0.12, p = 0.73 n=819	F = 2.23, p = 0.14 n=831		
Child OOH Wave 1	χ^2 = 16.05, p < 0.001 n=2375	χ^2 = 27.55, p < 0.001 n=2431	—	—
Child OOH Wave 2	χ^2 = 6.44, p = 0.013 n=2369	χ^2 = 11.62, p = 0.001 n=2425	F = 0.03, p = 0.86 n=1968	F = 1.33, p = 0.25 n=1847
CPS Services Wave 1	χ^2 = 7.73, p = 0.007 n=2337	χ^2 = 29.19, p < 0.001 n=2389	F = 2.47, p = 0.12 n=1721	F = 0.20, p = 0.66 n=1606
Any Services Wave 2	χ^2 = 14.94, p < 0.001 n=2375	χ^2 = 32.07, p < 0.001 n=2431	F = 0.05, p = 0.83 n=1975	F = 3.91, p = 0.05 n=1854
Caregiver Services Wave 2	χ^2 = 12.67, p < 0.001 n=2271	χ^2 = 27.99, p < 0.001 n=2319	F = 0.02, p = 0.90 n=1941	F = 6.14, p = 0.02 n=1823
Child Services Wave 2	χ^2 = 6.22, p = 0.015 n=2375	χ^2 = 15.83, p < 0.001 n=2431	F = 0.03, p = 0.86 n=1975	F = 1.02, p = 0.32 n=1854
Concrete Services Wave 2	χ^2 = 11.40, p = 0.001 n=2375	χ^2 = 28.86, p < 0.001 n=2431	F = 0.01, p = 0.91 n=1975	F = 3.52, p = 0.06 n=1854
Child Welfare Services Wave 2	χ^2 = 10.34, p = 0.002 n=2276	χ^2 = 23.25, p < 0.001 n=2326	F = 0.02, p = 0.88 n=1943	F = 4.25, p = 0.04 n=1825
Subsequent Reports Wave 2	χ^2 = 1.08, p = 0.303 n=2348	χ^2 = 1.84, p = 0.180 n=2402	F = 0.54, p = 0.47 n=1950	F = 0.26, p = 0.61 n=1830
Case Outcome Wave 1	χ^2 = 18.00, p = 0.001 n=2351	χ^2 = 32.45, p < 0.001 n=2408	F = 0.24, p = 0.63 n=1722	F = 3.38, p = 0.07 n=1607
Case Outcome Wave 2	χ^2 = 0.42, p = 0.659 n=2326	χ^2 = 1.06, p = 0.351 n=2379	F = 0.52, p = 0.47 n=1931	F = 0.96, p = 0.33 n=1814

Note. *SD* = standard deviation. Chi-squares reported are adjusted Wald chi-squares.

at both waves are presented in Table 3. In the total sample, caseworker report of problematic alcohol use was associated with a child being OOH at baseline and wave 2, baseline services, wave 2 services, and case outcomes at wave 1. In the total sample, caseworker report of problematic drug use was associated with a child being OOH at baseline, baseline services, wave 2 services, and case outcomes at wave 1. In the in-home sample, self-report of problematic alcohol use was associated with child internalizing behaviors at wave 1 and child externalizing behaviors at waves 1 and 2. In the in-home sample, self-report of problematic drug use was associated with child internalizing behaviors at wave 2, child depression at wave 2, and some wave 2 service variables. At the bivariate level, the caseworker report of problematic alcohol or drug use is not associated with any of the child well-being indicators (internalizing behaviors, externalizing behaviors, child depression, and child trauma). However, it is strongly associated with most of the safety and permanency indicators reflecting CPS services and case decisions.

Comparison of Caseworker and Self-Report on Problematic Substance Use

An analysis was conducted to compare the caseworker report of problematic alcohol and drug use to caregiver self-report of problematic alcohol and drug use. A t-test ($F = 15.74$, $p = .0002$) comparing the mean self-reported AUDIT scores for the primary caregiver by whether or not the case worker reported primary caregiver problematic alcohol use indicated that there were higher mean AUDIT scores in caregivers that caseworkers identified (mean = 4.44, SD = 0.74) compared to caregivers that caseworkers did not identify (mean = 1.45, SD = 0.08). A t-test comparing the mean DAST-20 by whether or not the caseworker reported problematic drug use found higher mean scores on the DAST-20, mean = 2.30 (SD = 0.26) vs. mean = 0.76 (SD = 0.05), when caseworkers reported problematic drug use ($F = 34.97$, $p < .0001$).

Next, continuous scores on the AUDIT and DAST-20 were dichotomized by clinical cut-points to examine the caseworker detection levels of caregivers with self-reported problematic substance use. Using a cut-point of 5 or greater for women and 8 or greater for men as a threshold for problematic use on the AUDIT, caseworkers accurately detected that 17.65% of the caregivers with self-reported problematic alcohol use were engaged in problematic alcohol use. Caseworkers reported that 82.35% of caregivers with self-reported problematic alcohol use, based on AUDIT scores, did not have a problem with alcohol. Of the caregivers who scored sub-threshold on the AUDIT, caseworkers reported that only 2.30% of these individuals were engaged in problematic alcohol use. Of the cases where caseworkers did not report caregiver problematic alcohol use, 92.57% of these caregivers did not self-report problematic alcohol use indicating that caseworker perception that problematic alcohol use was not occurring was pretty accurate. However, if a caseworker reported caregiver problematic alcohol use, the finding was less certain with some of these caregivers not self-reporting problematic alcohol use (57.75%) and some of them indicating they were engaged in problematic alcohol use (42.25%).

Using a cut-point of 6 or greater for both women and men on the DAST-20, caseworkers accurately detected that 37.59% of the caregivers who self-reported problematic drug use were engaging in problematic drug use. However, they did not detect problematic drug use in 62.41% of the caregivers who self-reported problematic drug use. Only 7.53% of the caregivers who did not self-report problematic drug use were identified as engaging in problematic drug use by caseworkers. Consistent with problematic alcohol use, when caseworkers did not report problematic drug use, caregivers rarely self-reported problematic drug use (1.98%). However, caseworker report of problematic drug use did not align well with caregiver self-report of

problematic drug use. Of the 591 cases where a caseworker reported problematic drug use, 13.01% of these caregivers self-report problematic drug use.

Examination of Secondary Caregiver Presence

In 27.02% of the sample, a secondary caregiver was present in the home. The author considered the possibility of including a dichotomous variable indicating whether or not a secondary caregiver was present in the home at baseline into the model. The secondary caregiver variable was significantly associated with the control variable poverty ($\chi^2 = 6.77$, $p = .01$) but not at an extremely high level. It was not associated with any of the other control variables. The author examined the bivariate relationship between the presence of a secondary caregiver and each of the safety, permanency, and well-being dependent variables at wave 1 and wave 2 to determine if there was a need to control for the variable in the models. Presence of a secondary caregiver was only significantly related to out-of-home placement at baseline ($\chi^2 = 6.91$, $p = .01$) and case outcomes at wave 2 ($\chi^2 = 4.53$, $p = .01$). For these models only, the dichotomous caregiver presence variable was included as a control variable.

C. Path Analysis Models for Caseworker Report of Problematic Use of Substances

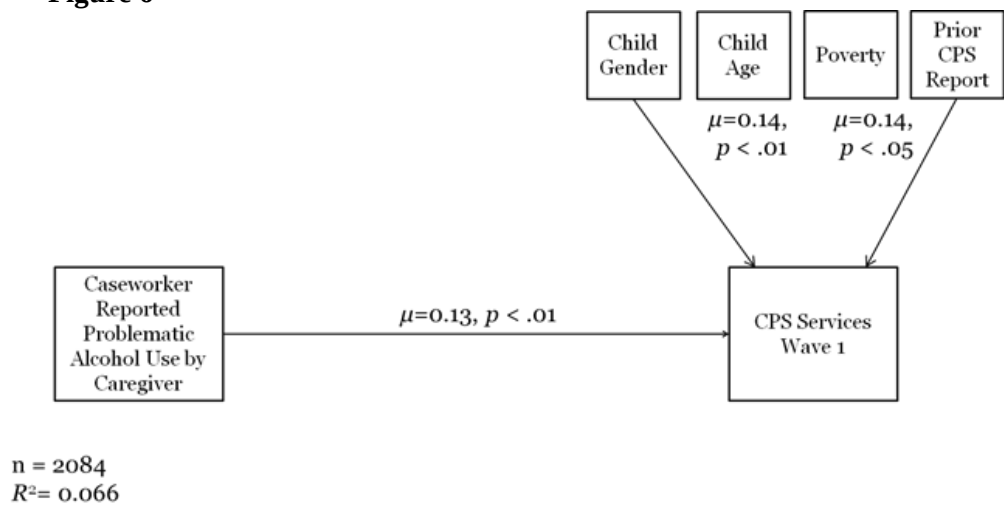
A spreadsheet of the completed path analyses is available in Appendix 4 and can be used as a reference when examining the final models.

Referrals for Services at Wave 1

First, direct pathways from each type of caseworker reported problematic substance use (alcohol and drug) to a service referral at wave 1 were tested. Controlling for child age, child gender, and household poverty, there were significant direct relationships from both problematic alcohol use ($\mu = 0.13$, $p < .01$) and problematic drug use ($\mu = 0.25$, $p < .001$) to increases in baseline service referral.

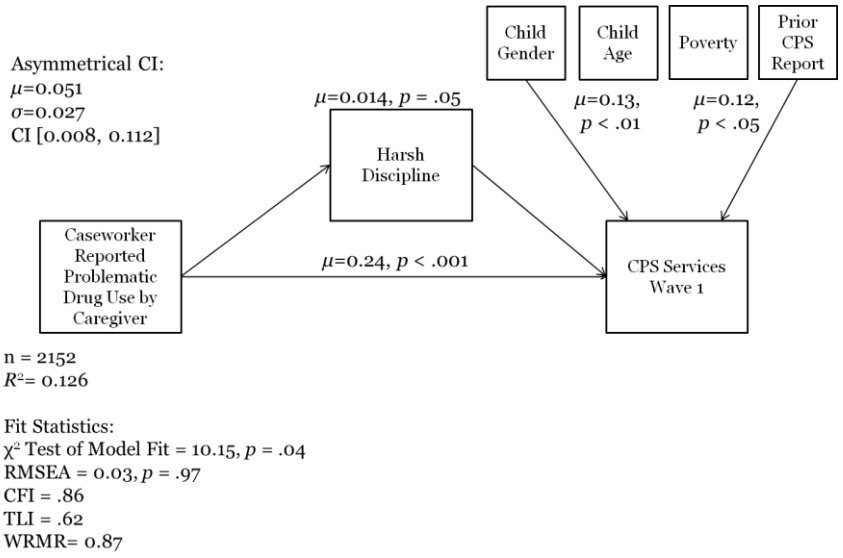
Single mediator models examined indirect pathways through the four hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for both problematic alcohol use and problematic drug use to a service referral at baseline. Emotional maltreatment, parental monitoring, and exposure to violence did not mediate the relationship from caregiver problematic alcohol use or caregiver problematic drug use to baseline service referral. Harsh discipline partially mediated the relationship from problematic drug use to baseline service referral with a direct relationship also remaining from problematic drug use to baseline service referral (Figure 7). Harsh discipline did not mediate the relationship from problematic alcohol use to baseline service referral. See Appendix 5 for indirect parameter estimates and model fit statistics. The final model for problematic alcohol use to a service referral at baseline is a direct model (Figure 6). The model indicates that caseworker report of problematic alcohol use is directly associated with CPS services at baseline. The direct model was just identified. Therefore, fit indices are not produced. The final model for problematic drug use to a service referral at baseline is a partial mediation model through harsh discipline (Figure 7). The model indicates that caseworker report of problematic drug use is directly associated with CPS services at baseline. However, caseworker report of problematic drug use was

Figure 6



negatively associated with harsh discipline. Higher reports of harsh discipline were in turn negatively associated with receiving services at baseline. The final model, the strongest one produced in these analyses, has adequate fit with the RMSEA and WRMR fit indices but poor fit with the χ^2 test of model fit, CFI, and TLI.

Figure 7



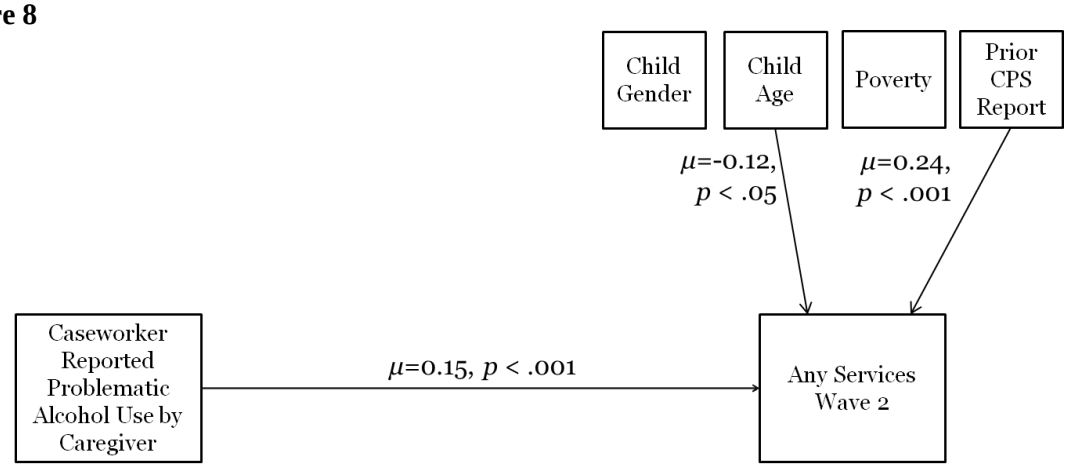
Referrals for Services at Wave 2

To examine the direct pathways from caseworker reported problematic substance use to each type of service referral at wave 2, direct models were run that regressed each type of service referral (any services, services to caregiver, services to child, concrete services, or child welfare services) on each type of problematic substance use (alcohol or drug) while controlling for child age, child gender, household poverty, and presence of prior reports on family. There were significant direct relationships from problematic alcohol use to an increase in the likelihood of any services ($\mu = 0.15$, $p < .001$), services to child ($\mu = 0.07$, $p < .05$), services to caregiver ($\mu = 0.15$, $p < .001$), concrete services ($\mu = 0.13$, $p < .01$), and child welfare services ($\mu = 0.12$, $p < .01$). There were also significant direct relationships from problematic drug use to increase in the likelihood of any services ($\mu = 0.21$, $p < .001$), services to child ($\mu = 0.12$, $p < .01$), services to

caregiver (μ = 0.19, p < .001), concrete services (μ = 0.21, p < .001), and child welfare services (μ = 0.16, p < .001).

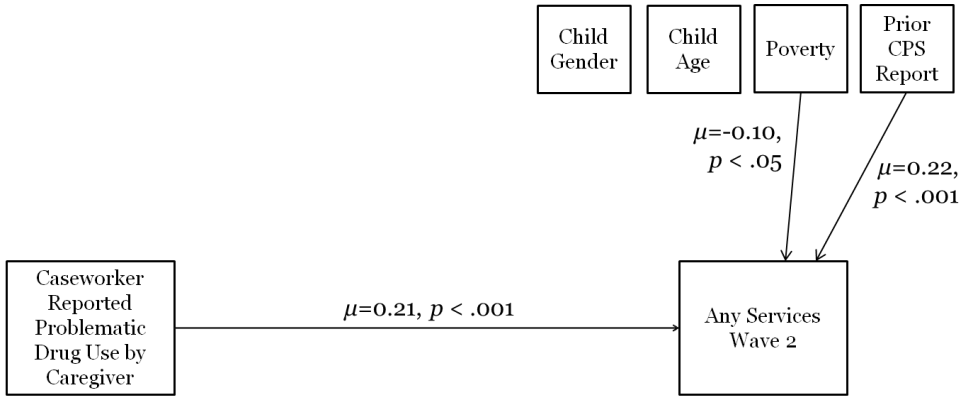
Single mediator models were run with each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for all combinations of problematic substance use by type of service referral at wave 2. None of the hypothesized mediators were significant mediators in the relationship from caseworker reported problematic alcohol or drug use to any of the service referral variables at wave 2. See Appendices 6-10 for indirect parameter estimates and model fit statistics. The final models for both problematic alcohol use and problematic drug use to any services, caregiver services, child services, concrete services, and child welfare services at wave 2 were direct models (Figure 8-17). In each of these models, caseworker report of problematic alcohol or drug use is directly associated with services at wave 2. The direct models were just identified. Therefore, fit indices are not produced for these models.

Figure 8



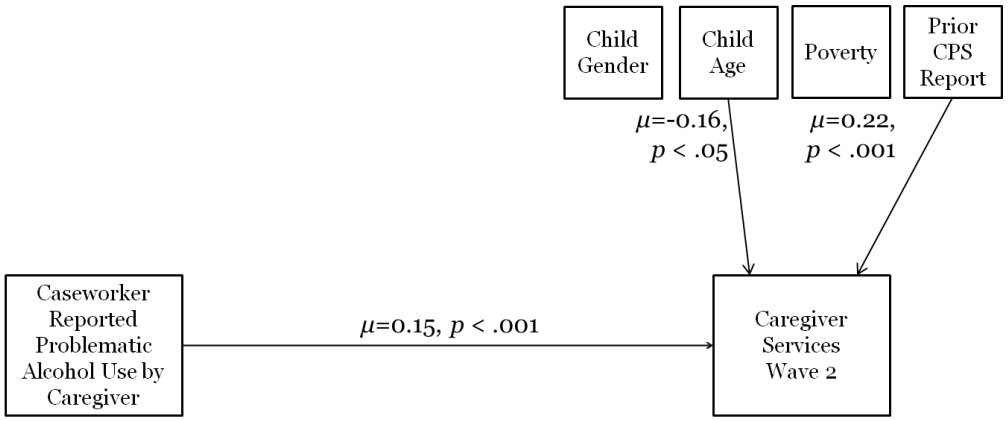
n = 2118
R^2= 0.099

Figure 9



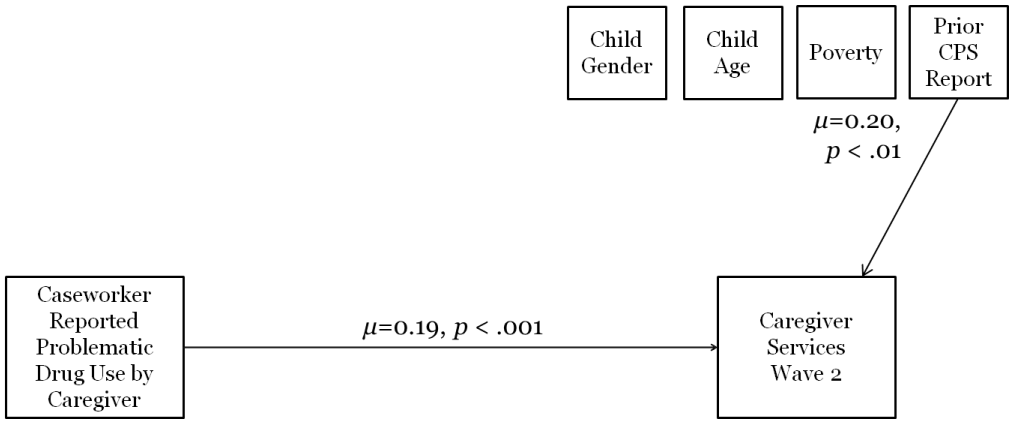
n = 2169
R^2= 0.116

Figure 10



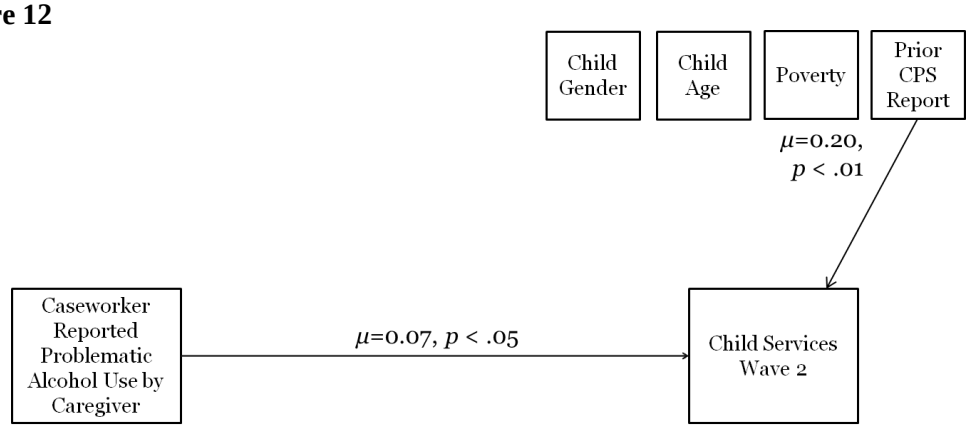
n = 2036
R^2= 0.099

Figure 11



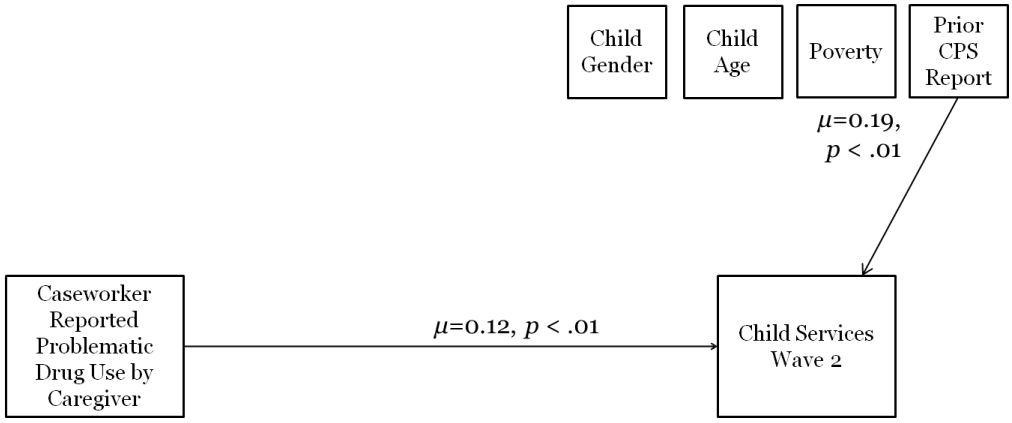
n = 2080
R^2= 0.107

Figure 12



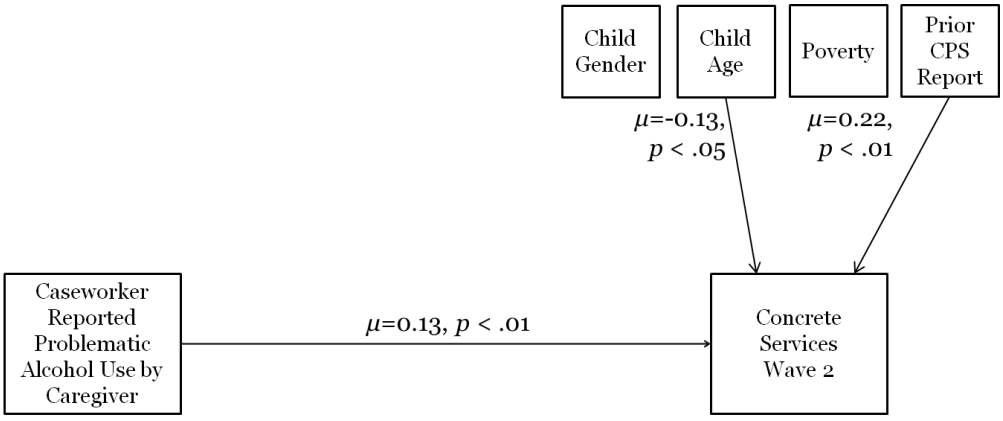
n = 2118
R^2= 0.056

Figure 13



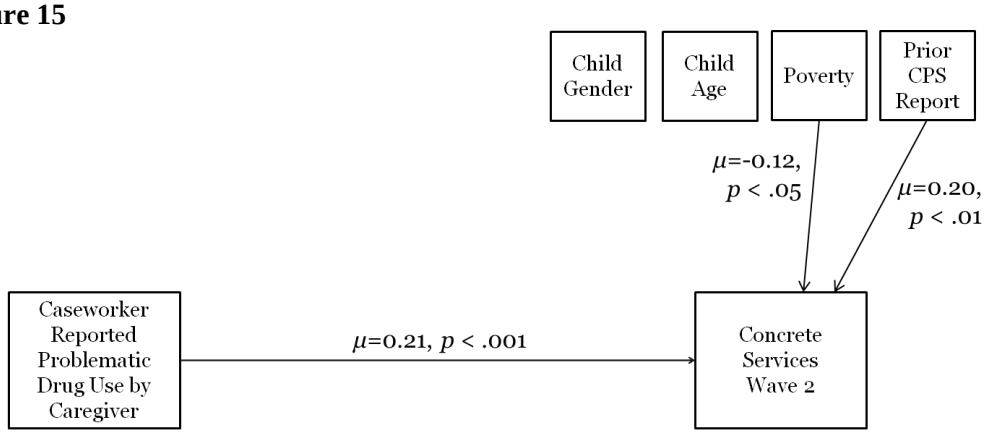
n = 2169
R^2= 0.065

Figure 14



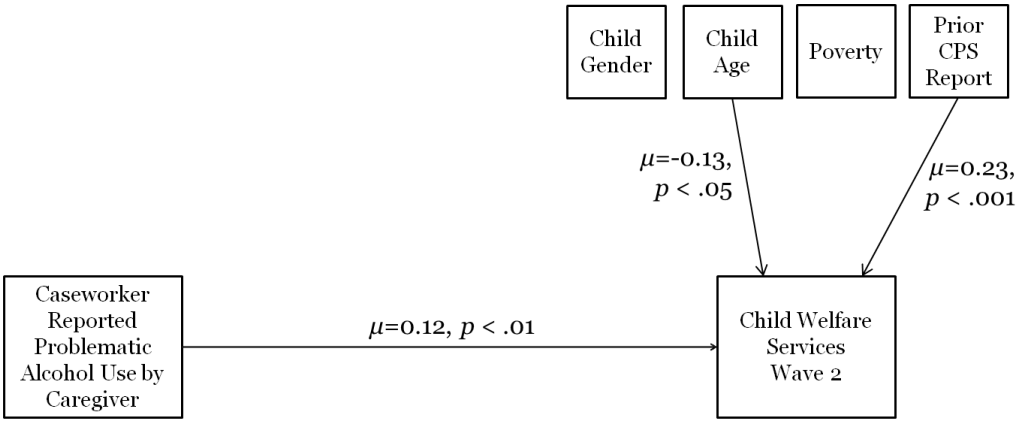
n = 2118
R^2= 0.083

Figure 15



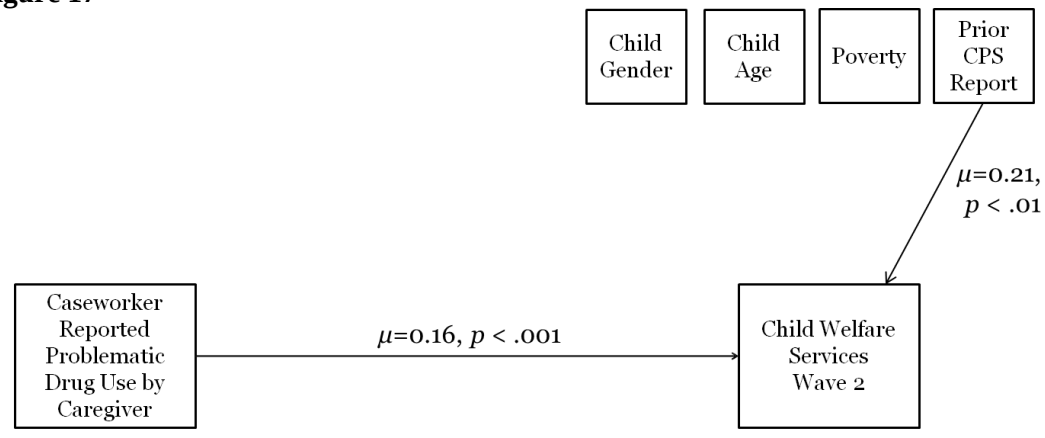
n = 2169
R^2= 0.107

Figure 16



n = 2039
R^2= 0.089

Figure 17



n = 2085
R^2= 0.096

Subsequent CPS Reports by Wave 2

After including the control variables in the model, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to subsequent CPS reports.

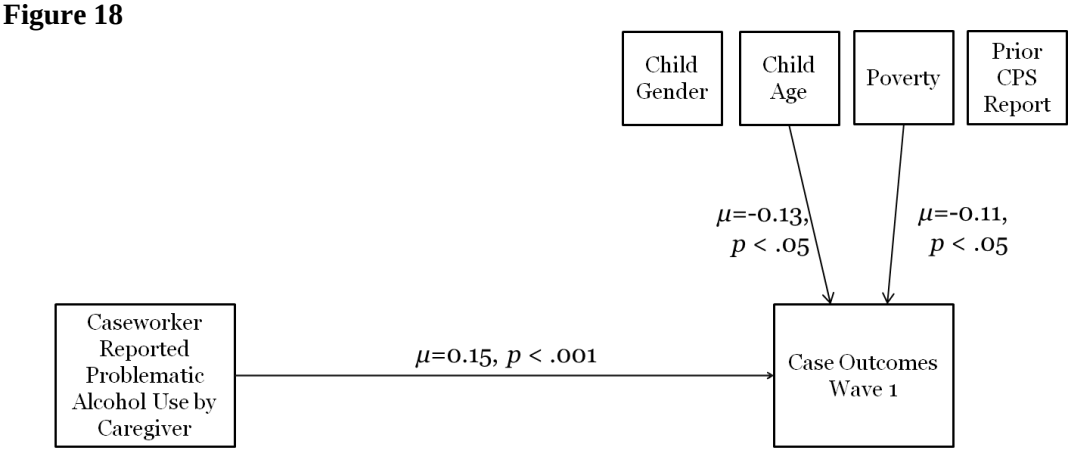
Single mediator models indicated that none of the hypothesized mediators were significant mediators from caseworker reported problematic alcohol or drug use to subsequent CPS reports. See Appendix 11 for indirect parameter estimates and model fit statistics. There are no final models reported because there were no direct or indirect relationships from the independent to dependent variable.

Case Outcomes at Wave 1

There were significant direct relationships from problematic alcohol use ($\mu = 0.15$, $p < .001$) and problematic drug use ($\mu = 0.31$, $p < .001$) to higher harm/evidence in the case outcome at wave 1.

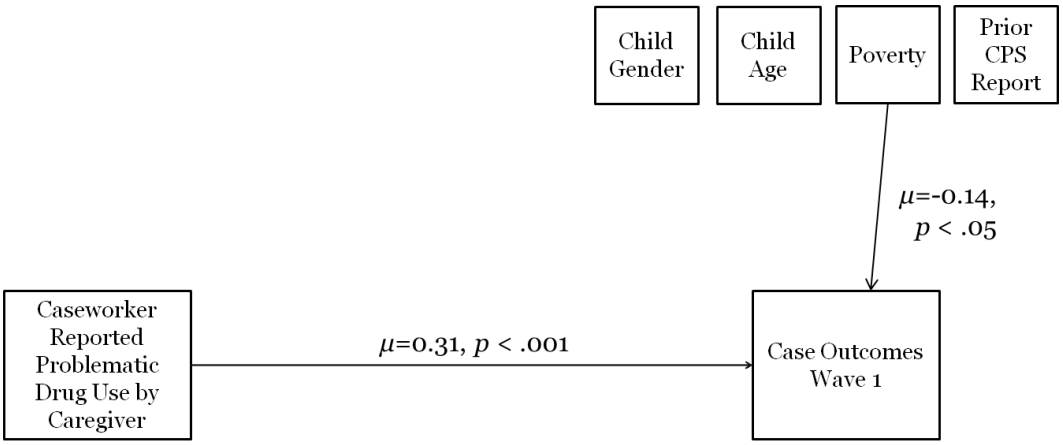
Single mediator models were run with each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for problematic alcohol and drug use to case outcomes at wave 1. None of the hypothesized mediators were significant mediators in the relationship. See Appendix 12 for indirect parameter estimates and model fit statistics. The final models for both problematic alcohol use and problematic drug use to case outcomes at wave 1 were direct models (Figure 18-19). In both models, caseworker report of problematic alcohol or drug use is directly associated with a case outcome of higher harm/evidence (i.e., case was coded as substantiated, indicated, high risk, or medium risk by the caseworker) at wave 1. The direct models were just identified. Therefore, fit indices are not produced for these models.

Figure 18



n = 2098
R^2= 0.061

Figure 19



n = 2150
R^2= 0.130

Case Outcomes at Wave 2

After including the control variables in the model, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to case outcomes at wave 2.

Single mediator models indicated that none of the hypothesized mediators were significant mediators from caseworker reported problematic alcohol or drug use to case outcomes at wave 2. See Appendix 12 for indirect parameter estimates and model fit statistics. There are no final

models reported because there were no direct or indirect relationships between the independent and dependent variable.

Out-of-Home Placement at Wave 1

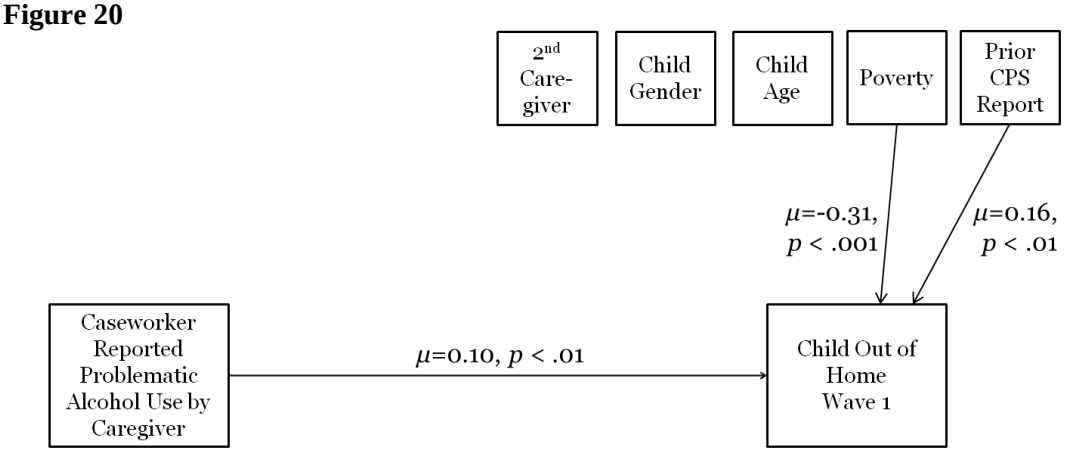
There were significant direct relationships from caseworker reported problematic alcohol use (μ=0.11, $p < .01$) and problematic drug use (μ=0.28, $p < .001$) to being placed out-of-home (OOH) at wave 1.

Single mediator models indicated that none of the hypothesized mediators were significant mediators from caseworker reported problematic alcohol use to OOH placements at wave 1. Harsh discipline was a significant partial mediator in the relationship from caseworker reported problematic drug use to OOH placements at wave 1. Partial mediation indicates that there was still a direct relationship present from caseworker reported problematic drug use to OOH placements. Emotional maltreatment, parental monitoring and exposure to violence were not significant mediators in the relationship from problematic drug use to OOH placements. See Appendix 13 for indirect parameter estimates and model fit statistics. The final models for problematic alcohol use and problematic drug use to OOH placement at baseline were direct models (Figure 20-21). In both models, caseworker report of problematic alcohol or drug use is directly associated with a child being placed out of the home at wave 1. The direct models were just identified. Therefore, fit indices are not produced for these models. See Appendix 13 for indirect parameter estimates and model fit statistics.

Out-of-Home Placement at Wave 2

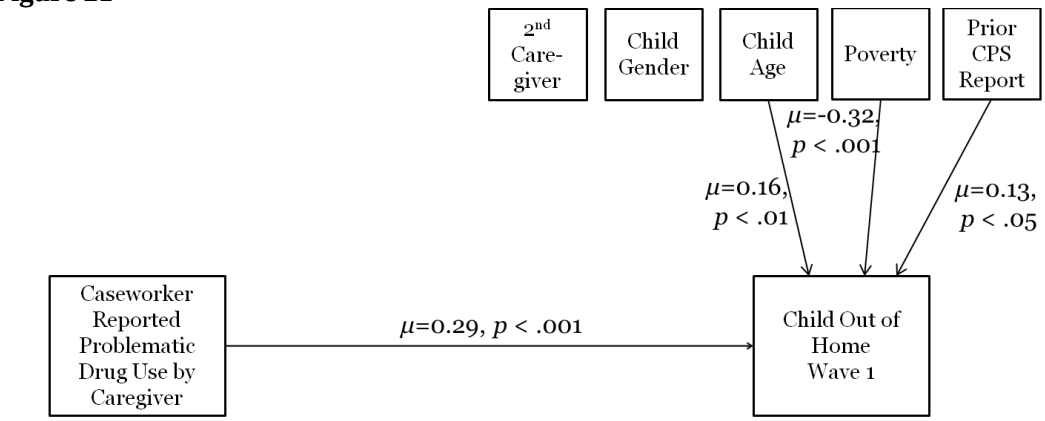
There were significant direct relationships from caseworker reported problematic alcohol use (μ=0.08, $p < .05$) and problematic drug use (μ=0.12, $p < .05$) to being placed OOH at wave 2.

Figure 20



n = 2118
R^2= 0.169

Figure 21

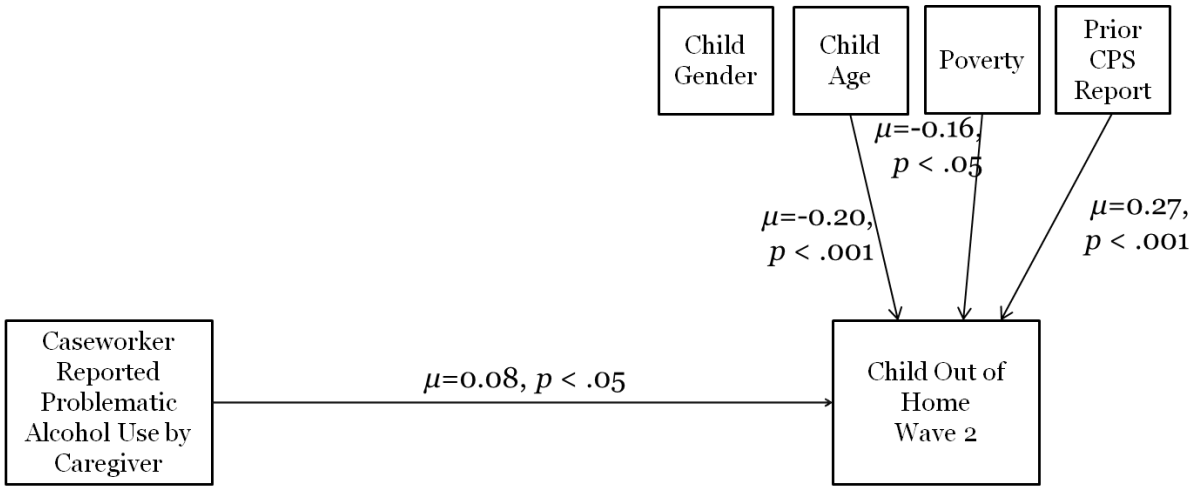


n = 2169
R^2= 0.245

Single mediator models indicated that none of the hypothesized mediators were significant mediators from caseworker reported problematic alcohol use to OOH placements at wave 2. Harsh discipline was a significant partial mediator in the relationship from caseworker reported problematic drug use to OOH placements at wave 2. There was still a direct relationship present from caseworker reported problematic drug use to OOH placements. Emotional maltreatment, parental monitoring and exposure to violence were not significant mediators in the relationship from problematic drug use to OOH placements. See Appendix 13 for indirect parameter

estimates and model fit statistics. For problematic alcohol use to OOH placement at wave 2, the final model is a direct model for which fit indices were not produced (Figure 22). The model indicates that caseworker report of problematic alcohol use is directly

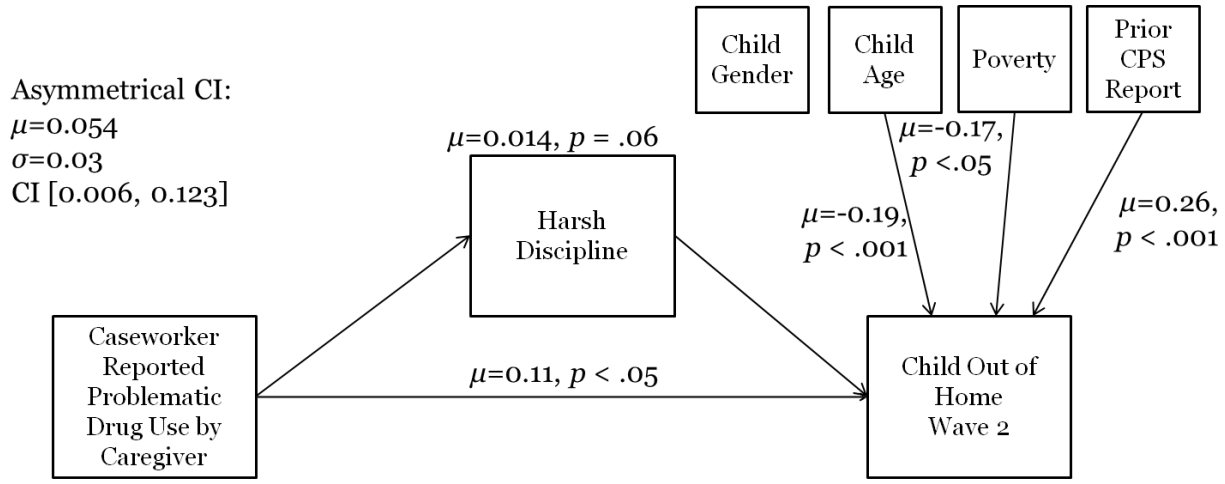
Figure 22



n = 2112
R^2= 0.129

associated with a child being placed out of the home at wave 2. The final model for problematic drug use to OOH placement at wave 2 was a single mediator model with harsh discipline partially mediating the relationship from problematic drug use to OOH placement at baseline (Figure 23). The model indicates that caseworker report of problematic drug use is directly associated with a child being placed out of the home at wave 2. However, caseworker report of problematic drug use was negatively associated with harsh discipline. Higher reports of harsh discipline were in turn negatively associated with receiving services at baseline. The RMSEA and WRMR fit indices indicated that the model fit the data well. However, the χ^2 test of model fit, CFI, and TLI fit indices did not indicate a strong fit. See Appendix 13 for indirect parameter estimates and model fit statistics.

Figure 23



n = 2167
R^2= 0.163

Fit Statistics:
χ^2 Test of Model Fit = 10.15, p = .04
RMSEA = 0.03, p = .97
CFI = .87
TLI = .65
WRMR= 0.87

Child Depression at Wave 1

After including the control variables in the model, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to child depression at wave 1.

Single mediator models were run with each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for problematic alcohol and drug use to child depression at wave 1. None of the hypothesized mediators was a significant mediator in the relationship. See Appendix 14 for indirect parameter estimates and model fit statistics.

Child Depression at Wave 2

Consistent with models of child depression at wave 1, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to child depression at wave 2 when the control variables were included in the model.

Single mediator models with each of the hypothesized mediators indicated that none of the four hypothesized mediators significantly mediated the relationship. See Appendix 14 for indirect parameter estimates and model fit statistics.

Child Trauma at Wave 1

After including the control variables in the model, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to child trauma at wave 1.

Single mediator models were run with each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for problematic alcohol and drug use to child trauma at wave 1. None of the hypothesized mediators was a significant mediator in the relationship. See Appendix 15 for indirect parameter estimates and model fit statistics.

Child Trauma at Wave 2

Consistent with the wave 1 child trauma models, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to child trauma at wave 2.

Single mediator models indicated that none of the hypothesized mediators were significant mediators from caseworker reported problematic alcohol or drug use to child trauma at wave 2. See Appendix 15 for indirect parameter estimates and model fit statistics.

Child Internalizing Behaviors at Wave 1

After including the control variables in the model, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to child internalizing behaviors at wave 1.

Single mediator models were run with each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for problematic alcohol and drug use to child internalizing behaviors at wave 1. None of the hypothesized mediators was a significant mediator in the relationship. See Appendix 16 for indirect parameter estimates and model fit statistics.

Child Internalizing Behaviors at Wave 2

Consistent with the child internalizing behaviors at wave 1 models, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to child internalizing behaviors at wave 2.

Single mediator models indicated that none of the hypothesized mediators were significant mediators from caseworker reported problematic alcohol or drug use to child internalizing behaviors at wave 2. See Appendix 16 for indirect parameter estimates and model fit statistics.

Child Externalizing Behaviors at Wave 1

When the control variables were included in the model, there were no significant direct pathways from caseworker reported problematic alcohol or drug use to child externalizing behaviors at wave 1.

Single mediator models were run with each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for problematic alcohol and drug use to child externalizing behaviors at wave 1. None of the hypothesized

mediators was a significant mediator in the relationship. See Appendix 17 for indirect parameter estimates and model fit statistics.

Child Externalizing Behaviors at Wave 2

As seen in the models for child externalizing behaviors at wave 1, there was no significant direct pathway from caseworker reported problematic alcohol or drug use to child externalizing behaviors at wave 2.

The single mediator models indicated that none of the hypothesized mediators mediate the relationship from caseworker reported problematic alcohol or drug use to child externalizing behaviors at wave 2. See Appendix 17 for indirect parameter estimates and model fit statistics.

D. Path Analysis Models for Caregiver Self-Report of Problematic Use of Substances Referrals Services at Wave 1

First, direct pathways from each type of self-reported problematic substance use (alcohol and drug) to a service referral at wave 1 while controlling for child age, child gender, household poverty, and presence of prior reports on family were tested. For both the alcohol and drug models, there was no significant direct relationship from the problematic substance use to a service referral at wave 1 when the control variables were included in the model.

Single mediator models examining each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for all combinations of problematic substance use by baseline service referral were conducted next. Emotional maltreatment, parental monitoring, and exposure to violence did not mediate the relationship from caregiver problematic alcohol use or caregiver problematic drug use to baseline service referral. However, harsh discipline fully mediated both the relationship from problematic

drug use to baseline service referral and the relationship from problematic alcohol use to baseline service referral. See Appendix 18 for indirect parameter estimates and model fit statistics.

For each significant pathway, both direct and mediated, moderation was tested with each of the three hypothesized moderators (caregiver criminal involvement, domestic violence, and caregiver depression). When assessing for a moderating relationship, an interaction term (e.g., emotional maltreatment*depression) is created with the moderating variable and the variable involved in the direct or mediating pathway. When testing a moderating pathway, it is necessary to include the moderating variable as a mediator in the analysis to control for its individual impact on the relationship separate from the interaction term. If the interaction term (but not the moderating variable as a mediator) is a significant pathway then moderation alone is occurring. If the moderating variable put in as a mediator is a significant pathway then the hypothesized moderator may be functioning as a mediator and should be examined as a mediator separate from the interaction term.

For the direct pathway from caregiver self-reported problematic alcohol use to referral for services at baseline, caregiver depression both moderated the relationship and served as a significant mediator in the relationship from problematic alcohol use to referral for services at baseline (Figure 24). The model indicates that increased problematic alcohol use was associated with meeting criteria for depression. Meeting criteria for depression was associated with baseline services. The significant moderation indicated that problematic alcohol use levels were similar in both the groups that received services and the group that did not receive services when there was no caregiver depression. When there was caregiver depression, there were higher levels of problematic alcohol use in the group without baseline services compared to the group with baseline services. See Appendix 19 for indirect parameter estimates and model fit statistics.

Domestic violence also moderated the direct relationship from problematic alcohol use to referral for services at baseline. Criminal involvement did not moderate the direct pathway. Consistent with the direct model from problematic alcohol use to referral for services at baseline, major depression served as a mediator and moderator in the relationship from problematic alcohol use to referral for services at baseline when included in the model mediated by harsh discipline. Criminal involvement and domestic violence were not moderators in the indirect relationship through harsh discipline.

For the direct pathway from caregiver self-reported problematic drug use to referral for services at baseline, caregiver depression served as a significant mediator in the relationship but did not moderate the relationship (Figure 25). The model indicates that the path from self-reported problematic drug use to baseline services is through caregiver depression such that higher problematic drug use is related to the presence of caregiver depression which is associated with baseline services. See Appendix 20 for indirect parameter estimates and model fit statistics. For this reason, caregiver depression was then tested separately as single mediator model. Caregiver depression was a significant fully mediating pathway in the single mediator model. Criminal involvement and domestic violence did not moderate the direct pathway from problematic drug use to referral for services at baseline. Again, major depression served as a mediator and moderator in the relationship from problematic drug use to referral for services at baseline when included in the model mediated by harsh discipline. Criminal involvement and domestic violence were not moderators in the indirect relationship through harsh discipline.

For problematic alcohol use to baseline services, the final model is a mediation and moderation model with caregiver depression both serving as mediator and a moderator in the direct path from problematic alcohol use to baseline services model (Figure 24). All fit indices

for this model are strong and indicate that the model fits the data very well. The final model for problematic drug use to baseline services is a single mediator model with caregiver depression fully mediating the relationship from problematic drug use to baseline services (Figure 25). Again, all fit indices indicate that the model is a very strong fit with the data.

Figure 24

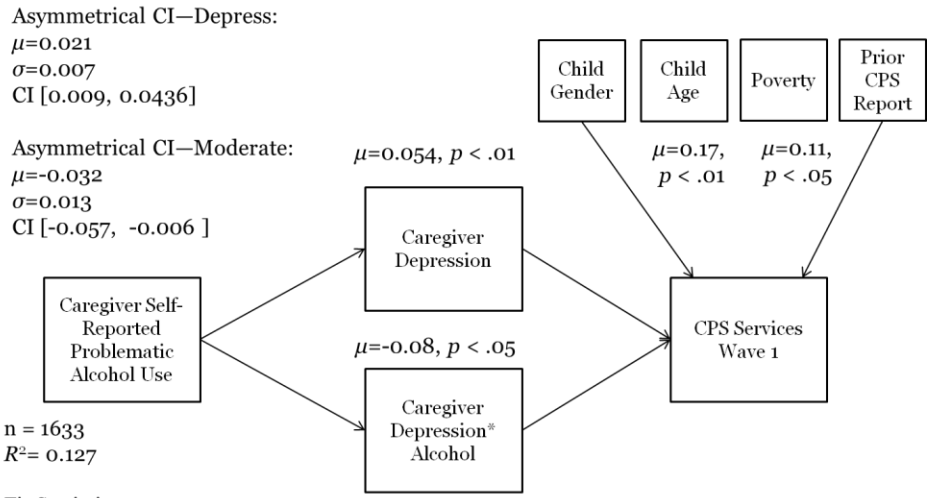
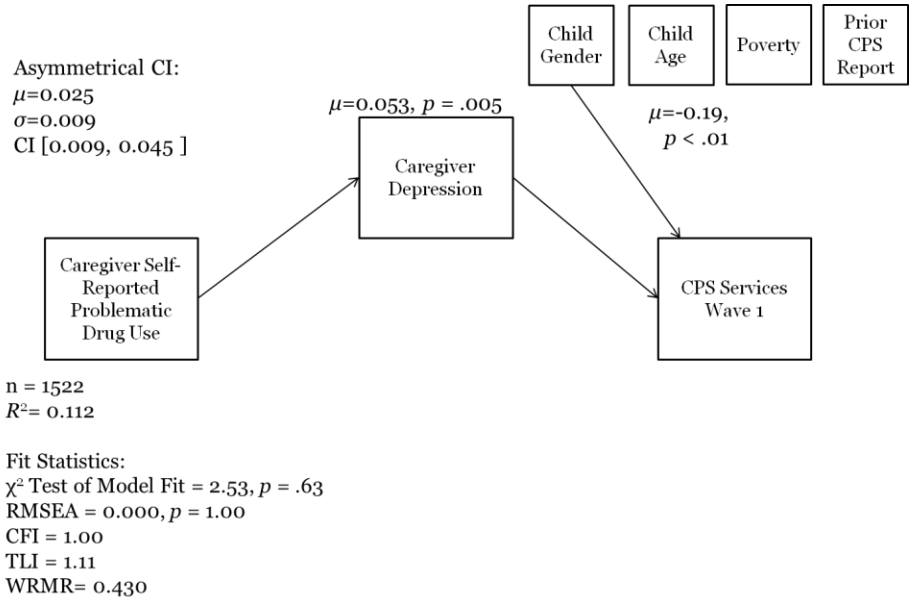


Figure 25



Referrals for Services at Wave 2

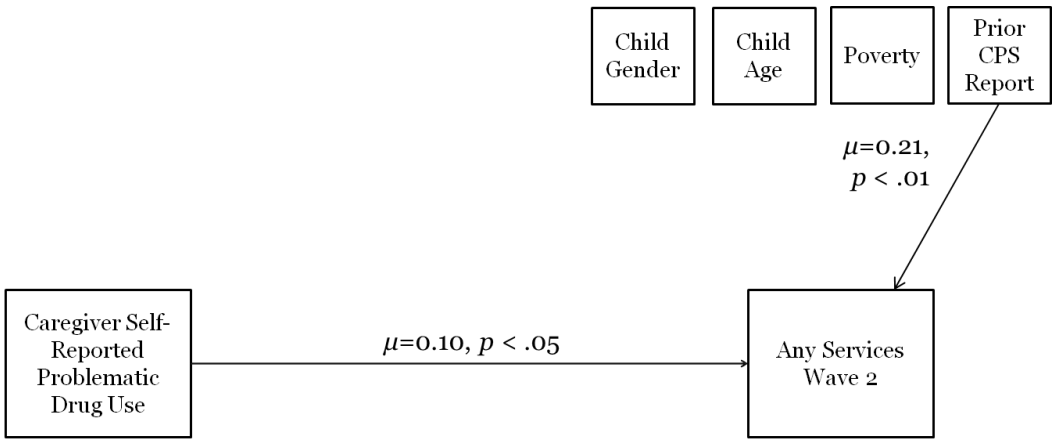
To examine the direct pathways from problematic substance use to each type of service referral at wave 2, direct models were run that regressed each type of service referral (any services, services to caregiver, services to child, concrete services, or child welfare services) on each type of problematic substance use (alcohol or drug) while controlling for child age, child gender, household poverty, and presence of prior reports on family. For both the alcohol and drug models, there were no significant direct relationships from the problematic substance use to services to child when the control variables were included in the model. There were no direct relationships from problematic alcohol use to any services, services to caregiver, concrete services, or child welfare services. There were direct relationships from problematic drug use to any services (μ=0.10, $p < .05$), services to caregiver (μ=0.14, $p < .01$), concrete services (μ=0.10, $p < .05$), and child welfare services (μ=0.10, $p < .05$).

Next, single mediator models were run with each of the hypothesized mediators (emotional maltreatment, harsh discipline, parental monitoring, and exposure to violence) for all combinations of problematic substance use by type of service referral. None of the hypothesized mediators was a significant mediator in the relationship from caregiver self-reported problematic alcohol or drug use to any of the service referral variables at wave 2. See Appendices 21-25 for indirect parameter estimates and model fit statistics.

For the significant direct pathways from caregiver self-reported problematic drug use to any services, services to the caregiver, concrete services, and child welfare services at wave 2, moderation was tested with each of the three hypothesized moderators (caregiver criminal involvement, domestic violence, and caregiver depression). None of the hypothesized moderators moderated the direct relationship.

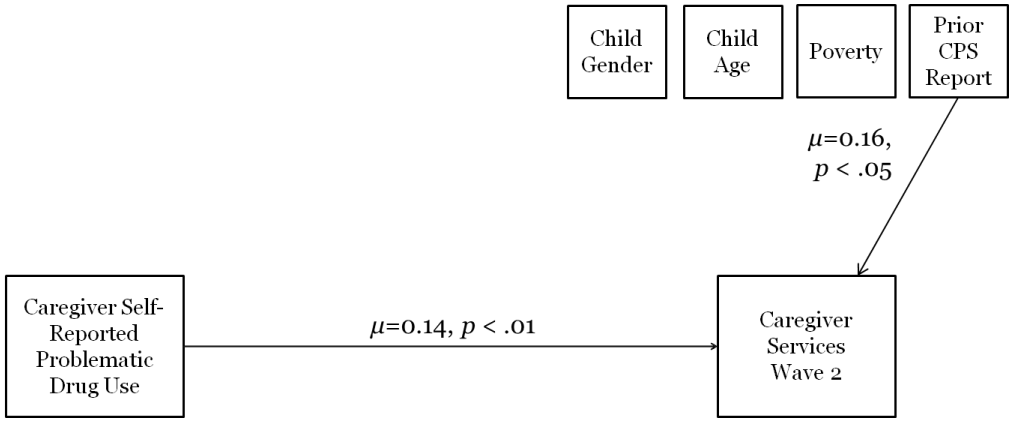
There are no final models reported for the relationship from problematic alcohol use to any of the services at wave 2 variables or for problematic drug use to services to child at wave 2 because there were no direct relationships after including the control variables in the model. The final models for problematic drug use to any services, caregiver services, concrete services, and child welfare services at wave 2 were direct models (Figure 26-29). These models indicate that self-report of problematic drug use is positively associated with services at wave 2. The direct models were just identified. Therefore, fit indices are not produced for these models.

Figure 26



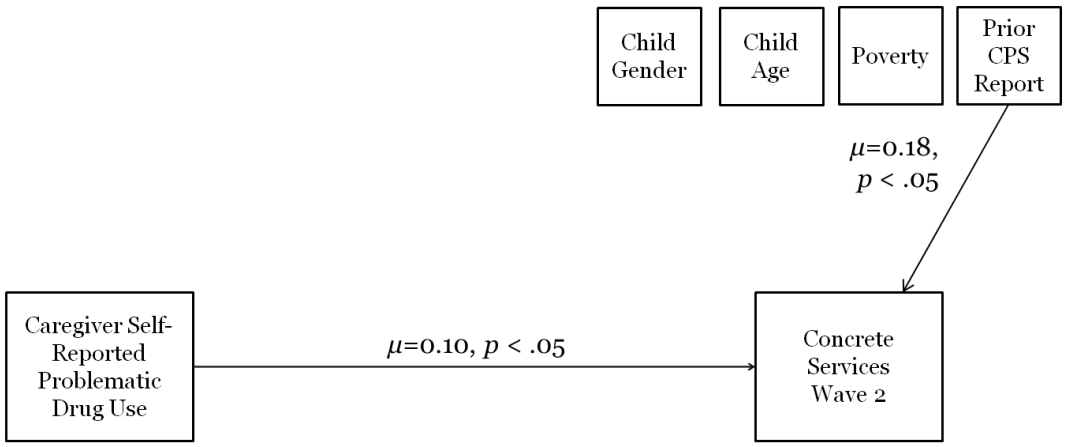
n = 1522
R^2= 0.067

Figure 27



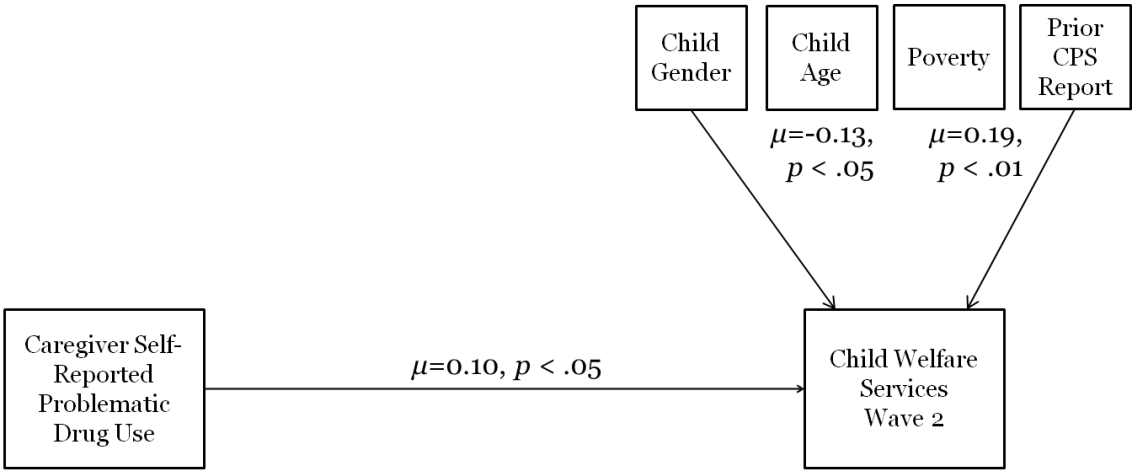
n = 1495
R^2= 0.067

Figure 28



n = 1522
R^2= 0.051

Figure 29



n = 1497
R^2= 0.077

Subsequent CPS Reports by Wave 2

After including the control variables in the model, there were no significant direct pathways from caregiver self-reported problematic alcohol or drug use to a subsequent CPS report by wave 2.

Single mediator models examined the four hypothesized mediators for all both types of problematic substance use with subsequent CPS reports. None of the hypothesized mediators were significant mediators in that relationship. See Appendix 26 for indirect parameter estimates and model fit statistics.

Case Outcomes at Wave 1

After including the control variables in the model, there were no significant direct pathways from caregiver self-reported problematic alcohol or drug use to case outcomes at wave 1.

Single mediator models examined the four hypothesized mediators for all both types of problematic substance use with case outcomes at wave 1. None of the hypothesized mediators were significant mediators in those relationships. See Appendix 27 for indirect parameter estimates and model fit statistics.

Case Outcomes at Wave 2

Consistent with the results for case outcomes at wave 1, there were no significant direct pathways from caregiver self-reported problematic alcohol and drug use to case outcomes at wave 2. There were also no significant single mediators in these models. See Appendix 27 for indirect parameter estimates and model fit statistics.

Out-of-Home Placement between Baseline and Wave 2

In the direct models regressing out-of-home (OOH) placements occurring between baseline and 18-month follow-up on caregiver self-reported problematic substance use (alcohol and drug), there were no significant direct relationships from problematic alcohol use to OOH placement or from problematic drug use to OOH placement after the inclusion of the control variables.

In the single mediator models, emotional maltreatment, parental monitoring, and exposure to violence were not significant pathways from either problematic alcohol use or problematic drug

use to OOH placement. Harsh discipline was a significant pathway which fully mediated the relationship from both problematic drug use and problematic alcohol use to OOH placement. See Appendix 28 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver self-reported problematic alcohol use to OOH placement, moderation was tested with each of the three hypothesized moderators (caregiver criminal involvement, domestic violence, and caregiver depression). See Appendix 29 for indirect parameter estimates and model fit statistics. Criminal involvement and domestic violence did not moderate the relationship. In the model examining caregiver depression as moderator in the direct relationship from problematic alcohol use to OOH placement, caregiver depression was not found to be moderator but it was a significant mediating pathway. For this reason, caregiver depression was examined in a separate single mediator model. The single mediator model with caregiver depression indicated it is a significant pathway which fully mediates the relationship from problematic alcohol use to OOH placement. The two significant single mediators (harsh discipline, caregiver depression) were tested in a double mediator model. For the mediated pathway from caregiver problematic alcohol use to OOH placement by wave 2 through harsh discipline, only caregiver depression was a significant moderator. Caregiver depression served as both a significant moderator in the mediating pathway from problematic alcohol use to OOH placement and a significant mediating pathway. Harsh discipline also remained a significant pathway in the model. Combinations of the significant mediators (harsh discipline, caregiver depression) and significant moderators (caregiver depression) were examined.

For the direct pathway from caregiver self-reported problematic drug use to OOH placement at wave 2, none of the hypothesized moderators moderated the relationship but major criminal

involvement fully mediated the relationship. A single mediator model with criminal involvement was then tested and found to have strong fit. For the mediated pathway from caregiver problematic drug use to OOH placement by wave 2 through harsh discipline, caregiver depression was found to both mediate and moderate the relationship. Caregiver depression was then examined separately in a single mediator model. See Appendix 30 for indirect parameter estimates and model fit statistics.

For problematic alcohol use to OOH placement, the final model is a mediation model with caregiver depression fully mediating the relationship from problematic alcohol use to OOH placement (Figure 30). The model indicates that the path from self-reported problematic alcohol use to child OOH placement is through caregiver depression such that higher problematic alcohol use is associated with the presence of caregiver depression which is associated with OOH placement. Another model, examining depression as both a mediator and a moderator in the direct relationship, had strong χ^2 test of model fit and RMSEA fit indices but weak CFI, TLI, and WRMR fit indices. See Appendix 29 for indirect parameter estimates and model fit statistics. The single mediator model (Figure 30) was chosen because of its consistently strong fit statistics on all fit indicators.

For problematic drug use to OOH placement, the final model is a mediation model with criminal involvement fully mediating the relationship from problematic drug use to OOH placement (Figure 31). The model indicates that the path from self-reported problematic drug use to child OOH placement is through caregiver criminal involvement such that higher problematic alcohol use is associated with having one or more convictions which is associated with not having a child placed OOH. Several alternative models also had strong fit indices and could arguably serve as the final model for this relationship. The single mediator model with

caregiver depression had very strong fit indices but pathway through caregiver depression was not significant, indicating a strong relationship between the variables but little explanatory power. The two mediator model contacting harsh discipline and criminal involvement had acceptable fit indices but did not indicate as strong a fit as the single mediator model containing only criminal involvement. Finally, the two mediator model containing depression and criminal involvement had strong fit indices. However, only criminal involvement was a significant pathway when both paths were included in the model. Therefore, the single mediator model (Figure 31) provides both strong fit and the same explanatory paths as the larger models. See Appendix 29 for indirect parameter estimates and model fit statistics.

Figure 30

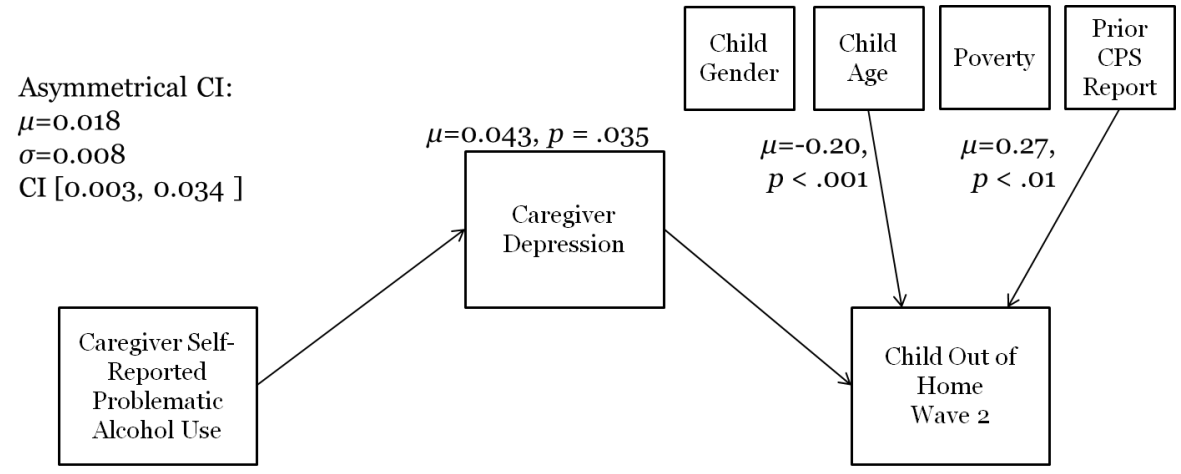
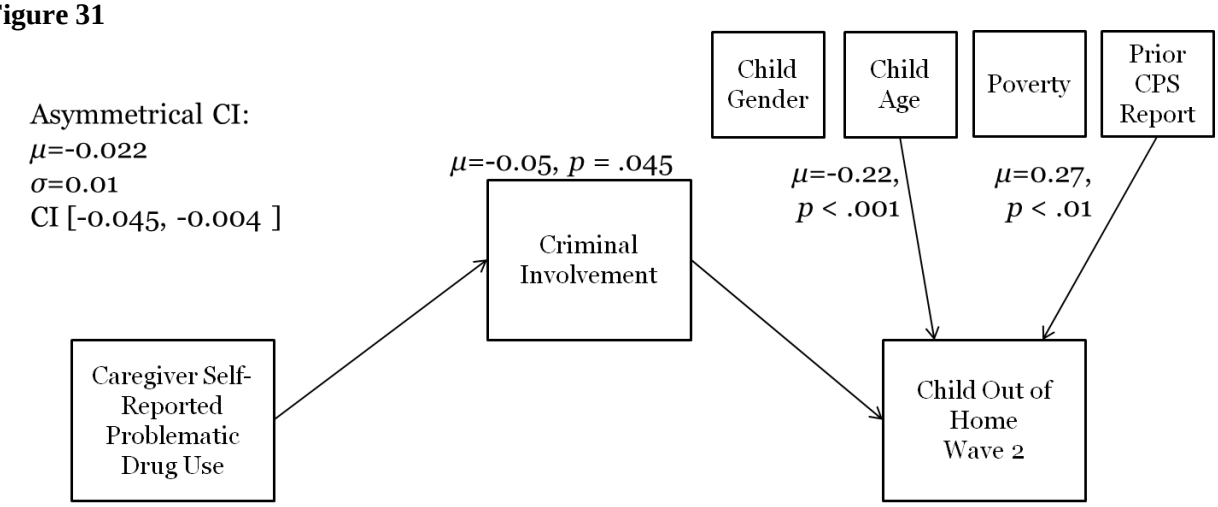


Figure 31



n = 1522
R^2= 0.173

Fit Statistics:
χ^2 Test of Model Fit = 2.91 p = .57
RMSEA = 0.000, p = .997
CFI = 1.00
TLI = 1.09
WRMR= 0.471

Child Depression at Wave 1

After including the control variables in the model, there were no significant direct pathways from caregiver self-reported problematic alcohol or drug use to child depression at wave 1.

Single mediator models examined the four hypothesized mediators for both types of problematic substance use with child depression at wave 1. Emotional maltreatment and harsh discipline were not significant mediators from caregiver self-reported problematic alcohol use or from self-reported problematic drug use to child depression at wave 1. In only the problematic alcohol use to child depression at wave 1 single mediator models, parental monitoring and exposure to violence each fully mediated the pathway from problematic alcohol use to child depression at wave 1. Parental monitoring and exposure to violence were not mediators in the

relationship from problematic drug use to child depression at wave 1. See Appendices 31-32 for indirect parameter estimates and model fit statistics.

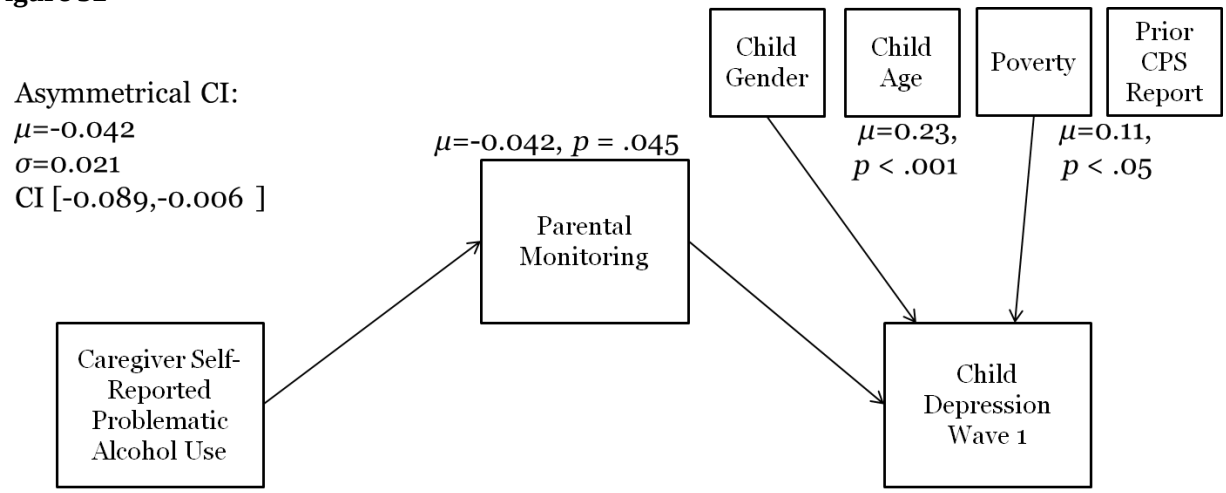
Next, a double mediator model was conducted to determine if including both significant single mediators (parental monitoring and exposure to violence) in a parallel double mediator model better fit the data than single mediator models. For the model examining the pathway from problematic alcohol use to child depression at wave 1, parental monitoring was a significant mediator that fully mediated the pathway. Exposure to violence was no longer a significant pathway in the double mediator model. See Appendix 31 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic alcohol use to child depression at wave 1, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child depression at wave 1 through parental monitoring, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child depression at wave 1 through exposure to violence, none of the hypothesized moderators moderated the relationship.

For problematic alcohol use to child depression at wave 1, the final model is a mediation model with parental monitoring fully mediating the relationship from problematic alcohol use to child depression at wave 1 (Figure 32). The model indicates that the path from self-reported problematic alcohol use to child depression is through parental monitoring such that higher problematic alcohol use is associated with better monitoring which is associated with lower reported child depression. The model had strong fit on all fit indices. The single mediator model with exposure to violence had acceptable fit but was not as good a fit to the data as the chosen final model. See Appendix 33 for indirect parameter estimates and model fit statistics. There is

no final model for the relationship from problematic drug use to child depression at wave 1 because there were no significant direct or mediating pathways.

Figure 32



n = 379
Children ≥ age 10
R^2= 0.202

Fit Statistics:
χ^2 Test of Model Fit = 4.83 p = .30
RMSEA = 0.023, p = .69
CFI = .98
TLI = .94
WRMR= 0.35

Child Depression at Wave 2

After including the control variables in the model, there was no significant direct pathway from caregiver self-reported problematic alcohol or drug use to child depression at wave 2.

Single mediator models examined the four hypothesized mediators for both types of problematic substance use with child depression at wave 2. Results were consistent with the single mediator results seen in the child depression at wave 1 models. Emotional maltreatment and harsh discipline were not significant mediators from caregiver self-reported problematic alcohol use or from self-reported problematic drug use to child depression at wave 2. In only the problematic alcohol use to child depression at wave 2 single mediator models, parental

monitoring and exposure to violence each fully mediated the pathway from problematic alcohol use to child depression at wave 2. Parental monitoring and exposure to violence were not mediators in the relationship from problematic drug use to child depression at wave 2. See Appendices 31-32 for indirect parameter estimates and model fit statistics.

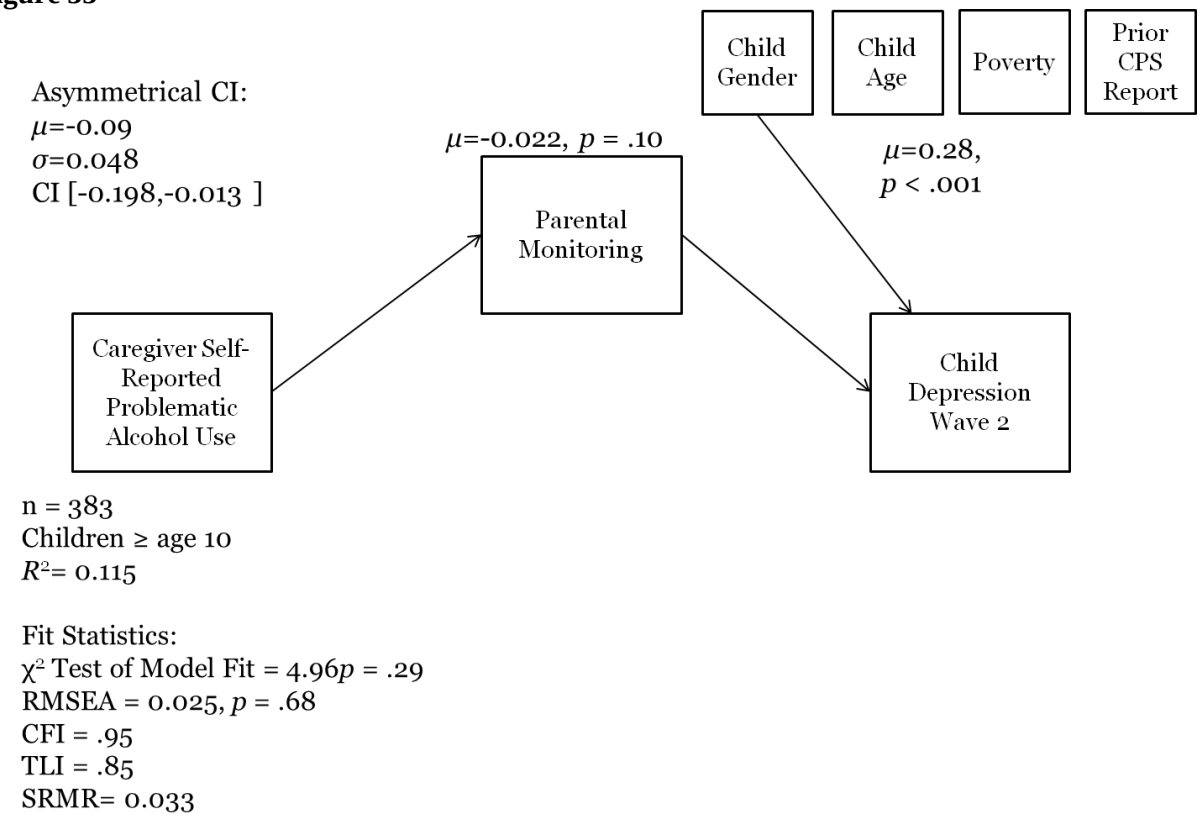
As was conducted in the caregiver depression at wave 1 models, a double mediator model was conducted that included both significant single mediators (parental monitoring and exposure to violence) in a parallel double mediator model. For the model examining the pathway from problematic alcohol use to child depression at wave 2, neither parental monitoring nor exposure to violence were significant pathways in the double mediator model. See Appendix 31 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic alcohol use to child depression at wave 2, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child depression at wave 2 through parental monitoring, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child depression at wave 2 through exposure to violence, depression was a significant moderator but the model fit was very poor.

For problematic alcohol use to child depression at wave 2, the final model is a mediation model with parental monitoring fully mediating the relationship from problematic alcohol use to child depression at wave 2 (Figure 33). The model indicates that the path from self-reported problematic alcohol use to child depression at wave 2 is again through parental monitoring such that higher problematic alcohol use is associated with better monitoring which is associated with lower reported child depression. The model had strong fit on all fit indices except the TLI. The single mediator model with exposure to violence had acceptable fit on all indices but the TLI but

was not as good a fit to the data as the chosen final model. See Appendix 34 for indirect parameter estimates and model fit statistics. There is no final model for the relationship from problematic drug use to child depression at wave 2 because there were no significant direct or mediating pathways.

Figure 33



Child Trauma at Wave 1

After including the control variables in the model, there were no significant direct pathways from caregiver self-reported problematic alcohol or drug use to child trauma at wave 1.

Single mediator models examined the four hypothesized mediators for both types of problematic substance use with child trauma at wave 1. The same pattern was found for child trauma that was present with child depression. Emotional maltreatment and harsh discipline were not significant mediators from caregiver self-reported problematic alcohol use or from self-

reported problematic drug use to child trauma at wave 1. In only the problematic alcohol use to child trauma at wave 1 single mediator models, parental monitoring and exposure to violence each fully mediated the pathway from problematic alcohol use to child trauma at wave 1. Parental monitoring and exposure to violence were not mediators in the relationship from problematic drug use to child trauma at wave 1. See Appendices 35-36 for indirect parameter estimates and model fit statistics.

In the same manner it was analyzed in child depression, a double mediator model was conducted to determine if including both significant single mediators (parental monitoring and exposure to violence) in a parallel double mediator model better fit the data than single mediator models. For the model examining the pathway from problematic alcohol use to child trauma at wave 1, neither parental monitoring nor exposure to violence were significant pathways in the double mediator model. See Appendix 35 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic alcohol use to child trauma at wave 1, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child trauma at wave 1 through parental monitoring, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child trauma at wave 1 through exposure to violence, none of the hypothesized moderators moderated the relationship.

For problematic alcohol use to child trauma at wave 1, there are two final models. Both models are single mediator models in which the mediator fully mediates the relationship from problematic alcohol use to child trauma at wave 1. The model indicates that the path from self-reported problematic alcohol use to child trauma at wave 1 is through parental monitoring such

that higher problematic alcohol use is associated with better monitoring which is associated with lower reported child trauma. In the parental monitoring model, model fit was strong for the χ^2 test of model fit, RMSEA, and SRMR but poor for the CFI and TLI (Figure 34). In the exposure to violence model, the same pattern was seen across the fit indices with an adequate χ^2 test of model fit, RMSEA, and SRMR but poor for the CFI and TLI (Figure 35). The model indicates that the path from self-reported problematic alcohol use to child trauma at wave 1 is through exposure to violence such that higher problematic alcohol use is associated with higher number of exposures to violence which is associated with higher reported child trauma. In the parental monitoring model, the χ^2 test of model fit, RMSEA, and SRMR fit indices are higher than the exposure to violence model but the exposure to violence model has stronger CFI and TLI fit indices. See Appendix 34 for indirect parameter estimates and model fit statistics. There is no final model for the relationship from problematic drug use to child trauma at wave 1 because there were no significant direct or mediating pathways.

Figure 34

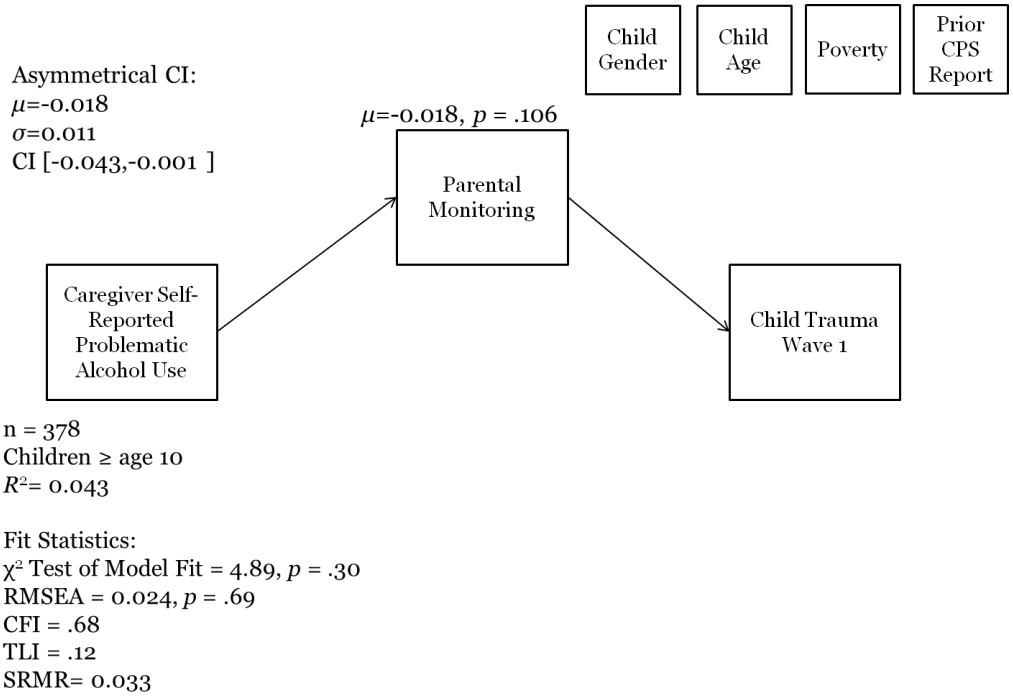
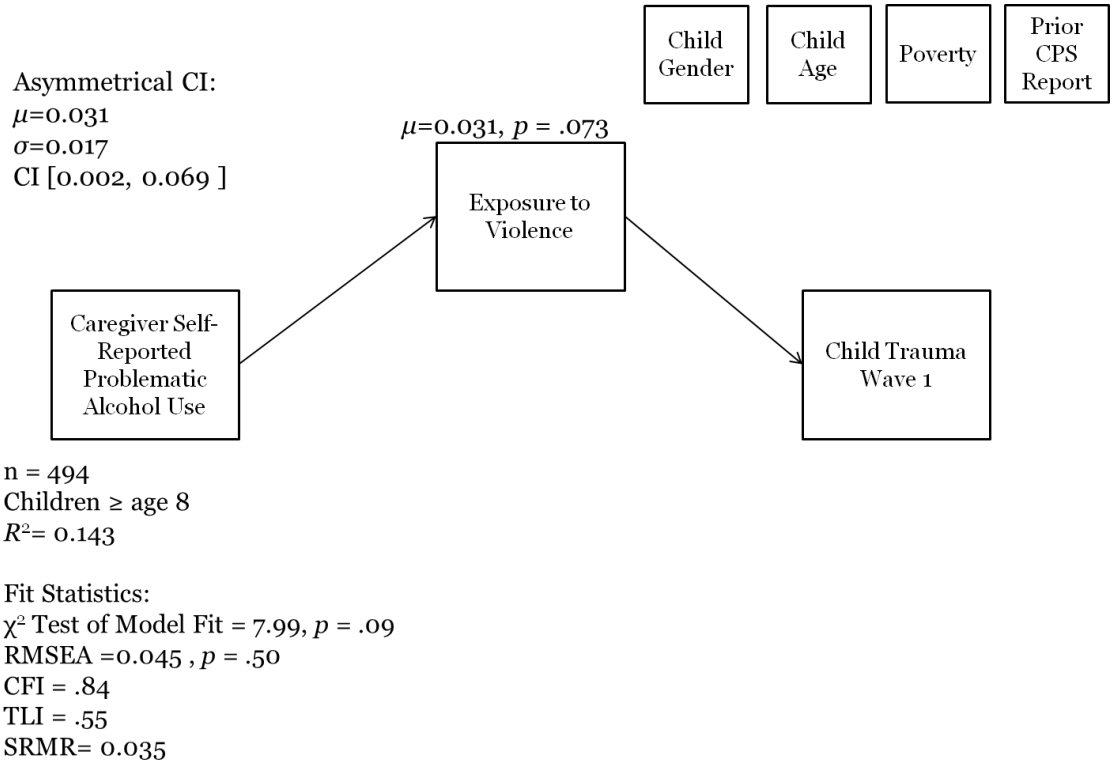


Figure 35



Child Trauma at Wave 2

After including the control variables in the model, there were no significant direct pathways from caregiver self-reported problematic alcohol or drug use child trauma at wave 2.

Single mediator models examined the four hypothesized mediators for both types of problematic substance use with child trauma at wave 2. Results were consistent with the single mediator results seen in the child trauma at wave 1 models. Emotional maltreatment and harsh discipline were not significant mediators from caregiver self-reported problematic alcohol use or from self-reported problematic drug use to child trauma at wave 2. In only the problematic alcohol use to child trauma at wave 2 single mediator models, parental monitoring and exposure to violence each fully mediated the pathway from problematic alcohol use to child trauma at wave 2. Parental monitoring and exposure to violence were not mediators in the relationship

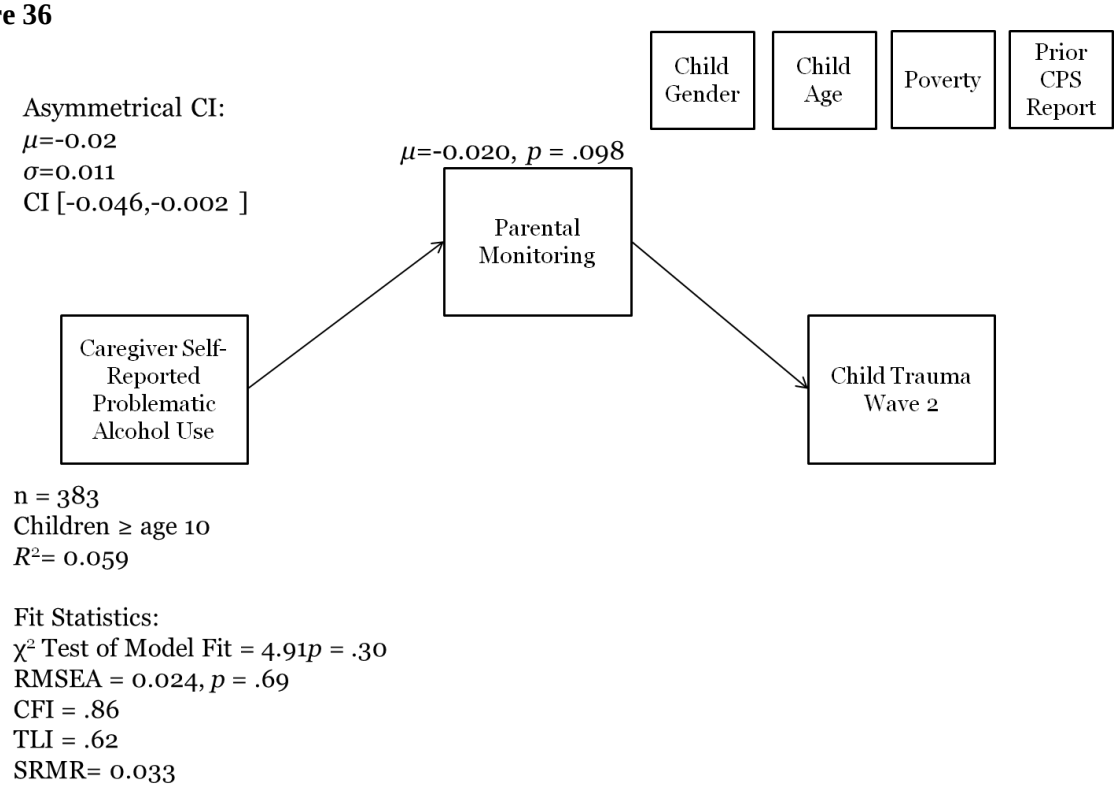
from problematic drug use to child trauma at wave 2. See Appendices 35-36 for indirect parameter estimates and model fit statistics.

A double parallel mediator model was conducted that included both significant single mediators (parental monitoring and exposure to violence). Neither parental monitoring nor exposure to violence were significant pathways in the double mediator model from problematic alcohol use to child trauma at wave 2. See Appendix 35 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic alcohol use to child trauma at wave 2, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child trauma at wave 2 through parental monitoring, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child trauma at wave 2 through exposure to violence, none of the hypothesized moderators moderated the relationship.

For problematic alcohol use to child trauma at wave 2, the final model is a single mediator models in which parental monitoring fully mediates the relationship from problematic alcohol use to child trauma at wave 2. Model fit was strong for the χ^2 test of model fit, RMSEA, and SRMR, borderline for the CFI, and poor for the TLI (Figure 36). The model indicates that the path from self-reported problematic alcohol use to child trauma at wave 2 is through parental monitoring such that higher problematic alcohol use is associated with better monitoring which is associated with lower reported child trauma. See Appendix 38 for indirect parameter estimates and model fit statistics. There is no final model for the relationship from problematic drug use to child trauma at wave 2 because there were no significant direct or mediating pathways.

Figure 36



Child Internalizing Behaviors at Wave 1

After including the control variables in the model, there were significant direct pathways from caregiver self-reported problematic alcohol use of alcohol (μ=0.11, p < .05) and drugs (μ=0.10, p < .05) to child internalizing behaviors at wave 1.

In a series of model building analyses, emotional maltreatment and harsh discipline were significant single mediators that fully mediated the relationship from caregiver self-reported problematic alcohol and drug use to child internalizing behaviors at wave 1. Parental monitoring and exposure to violence were not significant single mediators.

A double parallel mediator model (emotional maltreatment and harsh discipline) was run for each combination of alcohol use and drug use. For both models, when emotional maltreatment and harsh discipline were both mediators in the model, only emotional maltreatment was a

significant pathway. See Appendices 39-40 for indirect parameter estimates and model fit statistics.

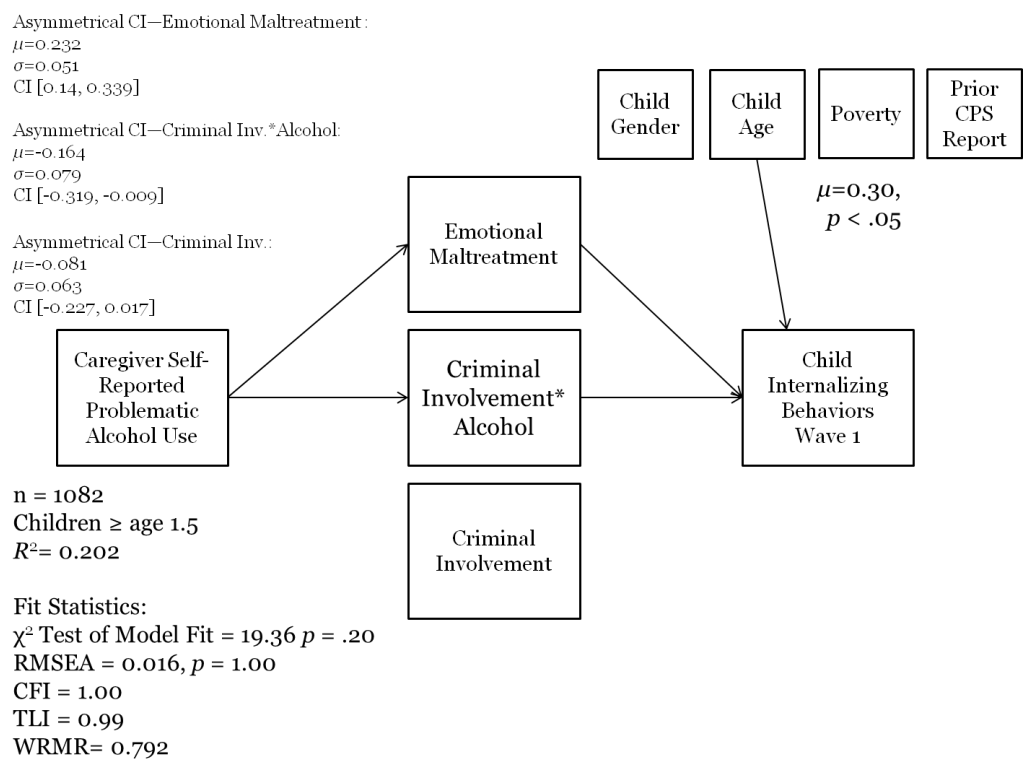
For the direct pathway from caregiver problematic alcohol use to child internalizing behavior at wave 1, criminal involvement was the only significant moderator in the direct pathway. Criminal involvement was also a significant moderator in the emotional maltreatment mediating pathway and a significant moderator in the harsh discipline mediating pathway. Depression was a significant moderator in both the emotional maltreatment and harsh discipline pathways. See Appendix 41 for indirect parameter estimates and model fit statistics. Due to the number of moderating relationships and the two significant mediating relationships, there were 15 separate models run examining these various combinations. See Appendix 41 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic drug use to child internalizing behavior at wave 1, there were no significant moderators in the direct pathway. However, criminal involvement mediated but did not moderate the relationship from caregiver self-reported problematic drug use to child internalizing behavior at wave 1 when it was examined as a moderator. For this reason, a separate single mediator model was analyzed for criminal involvement. For the mediated pathway from caregiver problematic drug use to child internalizing behavior at wave 1 through emotional maltreatment, caregiver depression was a significant moderator in the indirect relationship through emotional maltreatment. Caregiver depression was also a significant moderator in the indirect relationship through harsh discipline.

For problematic alcohol use to child internalizing behavior at wave 1, the final model (Figure 37) is a mediator and moderator model in which emotional maltreatment partially mediates the relationship from problematic alcohol use to child internalizing behavior at wave 1. There is also

a direct relationship from problematic alcohol use to child internalizing behavior at wave 1 that is moderated by criminal involvement. The model indicates that increased problematic alcohol use is associated with increased emotional maltreatment which is associated with increased child internalizing behaviors. The significant moderation indicated that when caregivers did not have a previous conviction, problematic alcohol use was significantly and positively correlated with internalizing behaviors. When caregivers did have a previous conviction, there was no significant correlation between problematic alcohol use and internalizing behaviors. This model indicates that emotional maltreatment is the significant pathway through which problematic alcohol use is associated with child internalizing behaviors and that the direct association is stronger among caregivers without a prior conviction. Model fit is excellent across the fit indices. See Appendix 41 for indirect parameter estimates and model fit statistics.

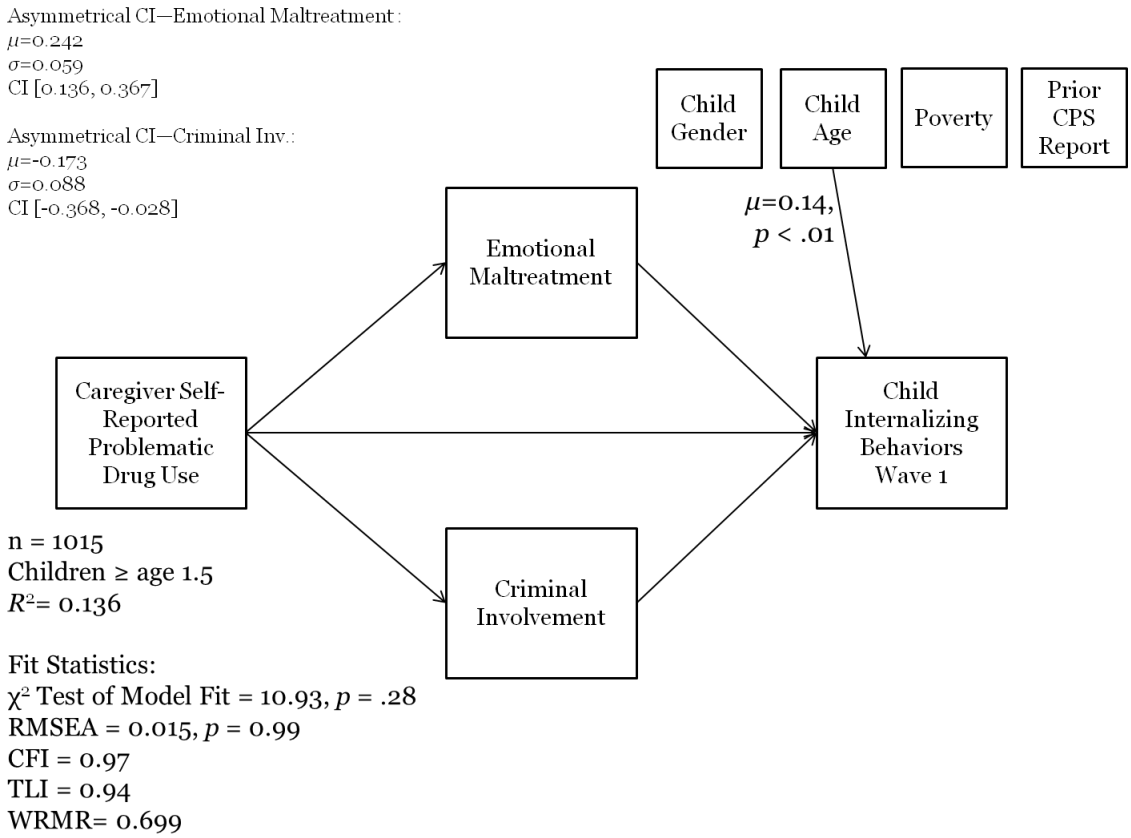
Figure 37



For problematic drug use to child internalizing behavior at wave 1, the final model (Figure 38) is double parallel mediator model in which emotional

maltreatment and criminal involvement each partially mediates the relationship from problematic drug use to child internalizing behavior at wave 1. There is also a direct relationship from problematic drug use to child internalizing behavior at wave 1. The model indicates that increased problematic drug use is associated with increased emotional maltreatment which is associated with increased child internalizing behaviors at wave 1. In a separate indirect pathway self-reported problematic drug use is associated with having a prior conviction and having a prior conviction is associated with decreased internalizing behaviors at wave 1. Even with emotional maltreatment and criminal involvement in the model there remains a direct positive relationship from self-reported problematic drug use to increased child internalizing behaviors. The model fit is very strong across the fit indices (Figure 38). See Appendix 42 to compare the fit indices and significant paths across the models.

Figure 38



Child Internalizing Behaviors at Wave 2

When including the control variables in the model, a significant direct pathway from caregiver self-reported problematic alcohol use to child internalizing behaviors at wave 2 was present (μ=0.12, $p < .05$). However, a direct pathway from caregiver self-reported problematic drug use to child internalizing behaviors at wave 2 was no longer present after the inclusion of the control variables.

In the single mediator models, emotional maltreatment and harsh discipline were significant single mediators that fully mediated the relationship from caregiver self-reported problematic alcohol and drug use to child internalizing behaviors at wave 2. Parental monitoring and exposure to violence were not significant single mediators. A double parallel mediator model (emotional maltreatment and harsh discipline) was run for both alcohol and drug use. For both models, when emotional maltreatment and harsh discipline were both mediators in the model, only emotional maltreatment was a significant pathway. See Appendices 39-40 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic alcohol use to child internalizing behavior at wave 2, caregiver criminal involvement was a moderator in the relationship. Domestic violence and caregiver depression did not serve as moderators in the direct relationship. However, when examined as a moderator, caregiver depression was seen to be a significant mediator in the relationship from caregiver self-reported alcohol use to child internalizing behavior at wave 2. Therefore, caregiver depression was examined separately in a single mediator model. For the mediated pathway from caregiver problematic alcohol use to child internalizing behavior at wave 2 through emotional maltreatment, caregiver depression was significant as both a moderator in the mediating relationship through emotional maltreatment as

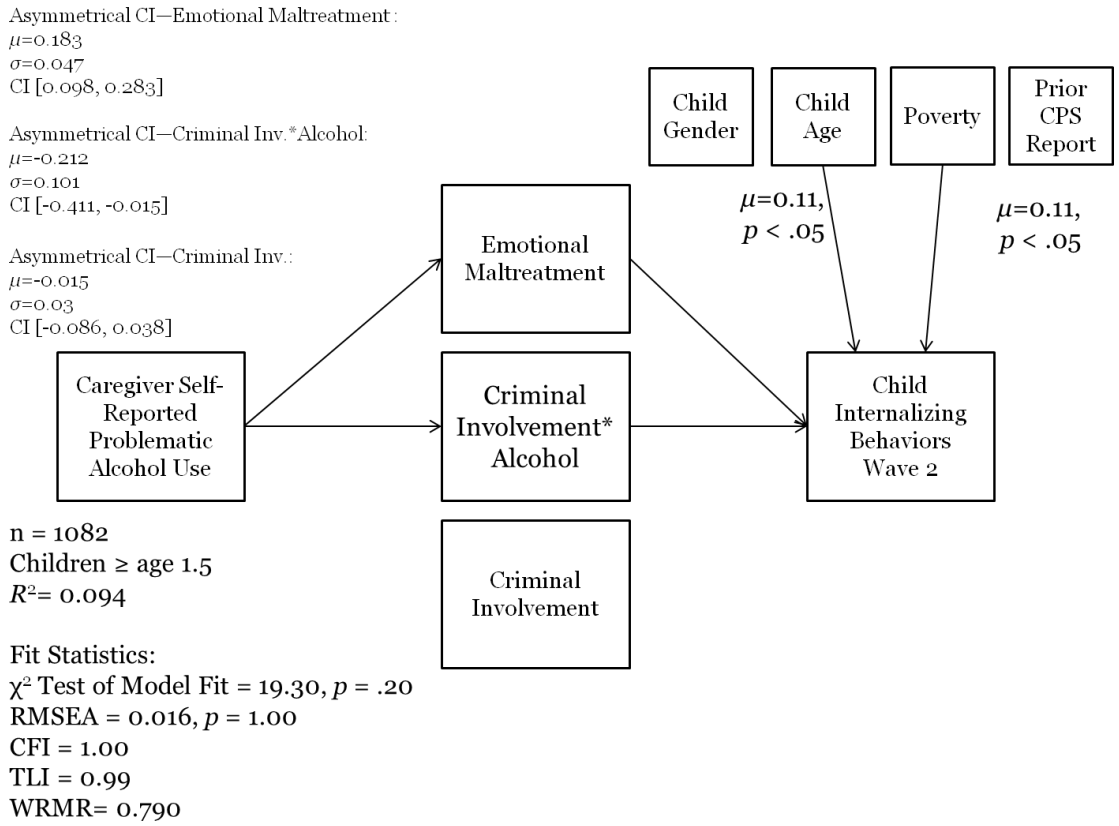
well as a significant mediator. For the mediated pathway from caregiver problematic alcohol use to child internalizing behavior at wave 2 through harsh discipline, none of the hypothesized moderators moderated the relationship. Again, caregiver depression served as a mediator in the relationship. See Appendix 43 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic drug use to child internalizing behavior at wave 2, none of the hypothesized moderators moderated the relationship. However, caregiver depression mediated the relationship from caregiver self-reported problematic drug use to child internalizing behavior at wave 2 when it was included in the moderation model as a control. Therefore, caregiver depression was examined in its own single mediator model. For the mediated pathway from caregiver problematic drug use to child internalizing behavior at wave 2 through emotional maltreatment, domestic violence moderated the relationship. For the mediated pathway from caregiver problematic drug use to child internalizing behavior at wave 2 through emotional maltreatment, caregiver depression both moderated the emotional maltreatment pathway and served as a mediator. For the mediated pathway from caregiver problematic drug use to child internalizing behavior at wave 2 through harsh discipline, none of the hypothesized moderators moderated the relationship. However, domestic violence and caregiver depression served as mediators in the relationship. See Appendix 44 for indirect parameter estimates and model fit statistics

For problematic alcohol use to child internalizing behavior at wave 2, the final model (Figure 39) is a mediator and moderator model in which emotional maltreatment partially mediates the relationship from problematic alcohol use to child internalizing behavior at wave 2. There is also a direct relationship from problematic alcohol use to child internalizing behavior at wave 2 that is moderated by criminal involvement. This model is consistent with the wave 1 model for

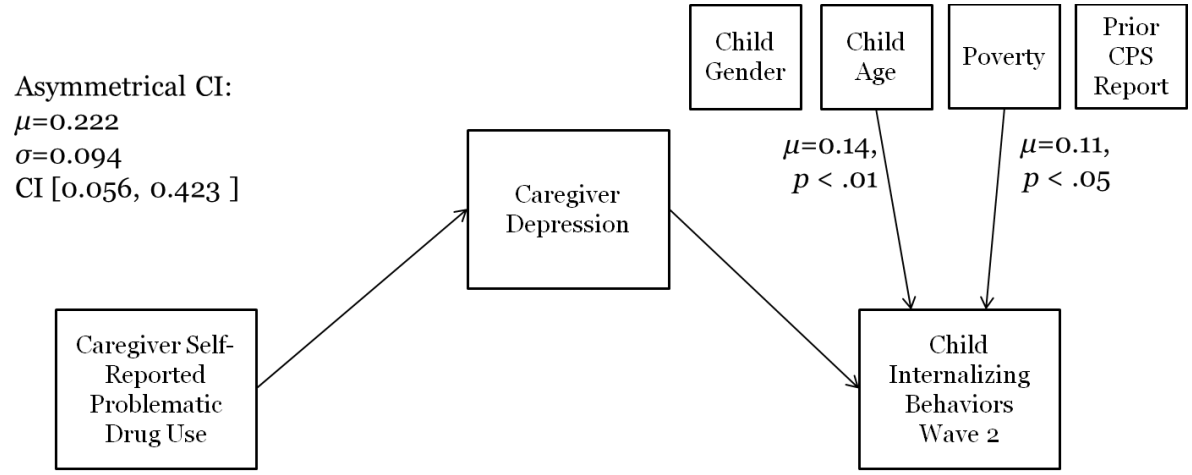
problematic alcohol use to child internalizing behavior. The model indicates that increased problematic alcohol use is associated with increased emotional maltreatment which is associated with increased child internalizing behaviors. The significant moderation indicated that when caregivers did not have a previous conviction, problematic alcohol use was significantly and positively correlated with internalizing behaviors. When caregivers did have a previous conviction, there was no significant correlation between problematic alcohol use and internalizing behaviors. This model indicates that emotional maltreatment is the significant pathway through which problematic alcohol use is associated with child internalizing behaviors and that the direct association is stronger among caregivers without a prior conviction. Model fit is excellent across the fit indices. Model fit is excellent across the fit indices (Figure 39). See Appendix 43 for indirect parameter estimates and model fit statistics.

Figure 39



For problematic drug use to child internalizing behaviors at wave 2, there are two final models. Both models are single mediator models in which the mediator fully mediates the relationship from problematic drug use to child internalizing behaviors at wave 2. The model presented in Figure 40 indicates that increased problematic drug use is associated with caregiver depression which is associated with increased child internalizing behaviors. The model presented in Figure 41 indicates that increased problematic drug use is associated with increased emotional maltreatment which is associated with increased child internalizing behaviors. In the emotional maltreatment model, model fit was strong for the χ^2 test of model fit, RMSEA, CFI, and SRMR and borderline for the TLI (Figure 41). In the caregiver depression model, all fit indices were strong but a lower R^2 value was seen (Figure 40). Both models provide an equally simple and strong fitting model. See Appendix 44 for indirect parameter estimates and model fit statistics.

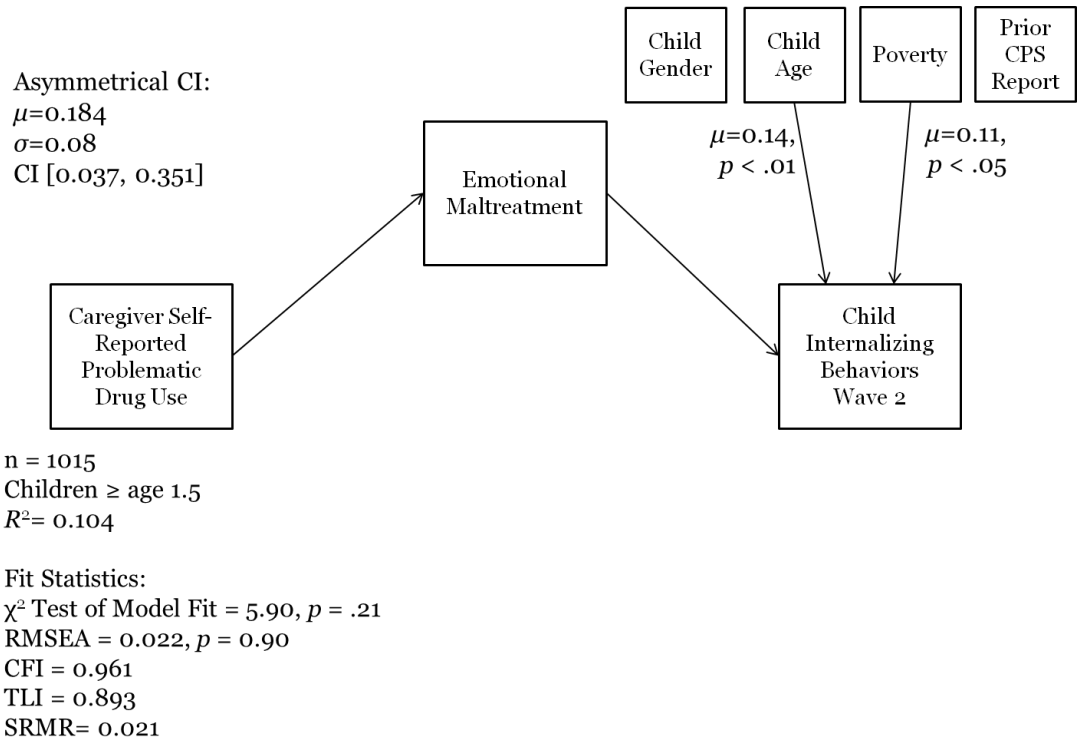
Figure 40



n = 1015
Children ≥ age 1.5
R^2= 0.070

Fit Statistics:
χ^2 Test of Model Fit = 3.42, p = .49
RMSEA = 0.000, p = 0.98
CFI = 1.00
TLI = 1.04
WRMR= 0.492

Figure 41



Child Externalizing Behaviors at Wave 1

When including the control variables in the model, there was a significant direct pathway from caregiver self-reported problematic alcohol or drug use to child externalizing behaviors at wave 1.

In the single mediator models, both emotional maltreatment and harsh discipline were significant mediators from caregiver self-reported problematic alcohol and drug use to child externalizing behaviors at wave 1. Exposure to violence and parental monitoring were not significant single mediators.

Double parallel mediator models containing emotional maltreatment and harsh discipline were run for both problematic alcohol use and problematic drug use to child externalizing behavior at wave 1. For problematic alcohol use, when emotional maltreatment and harsh discipline were both mediators in the model, only emotional maltreatment was a significant

pathway. For problematic drug use, both emotional maltreatment and harsh discipline remained significant pathways. See Appendices 45-46 for indirect parameter estimates and model fit statistics

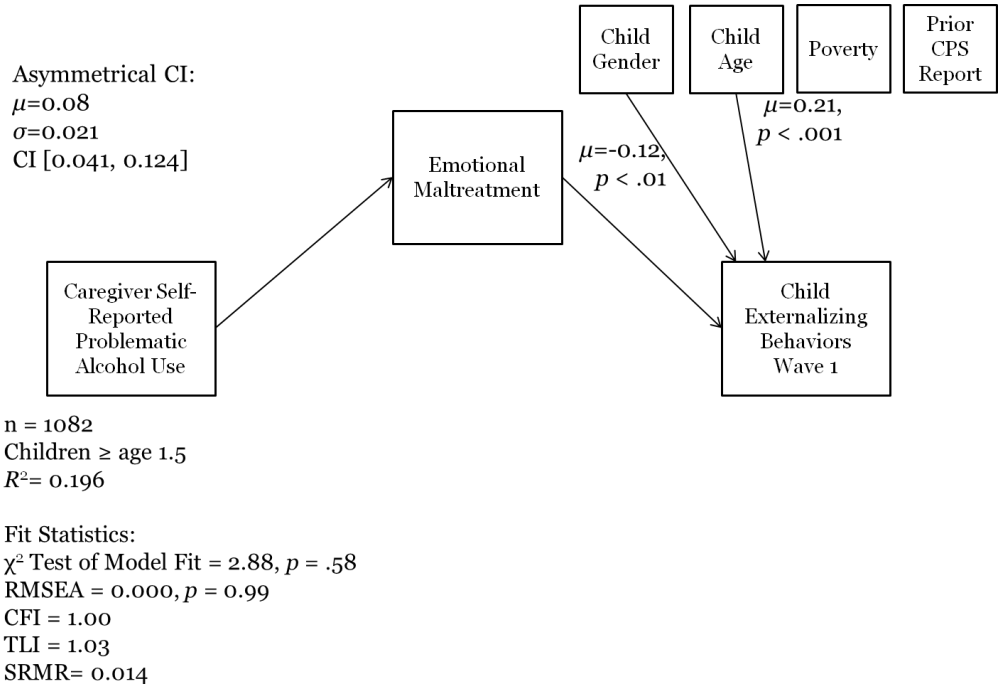
For the direct pathway from caregiver problematic alcohol use to child externalizing behavior at wave 1, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child externalizing behavior at wave 1 through emotional maltreatment, both criminal involvement and caregiver depression moderated the indirect relationship through emotional maltreatment. For the mediated pathway from caregiver problematic alcohol use to child externalizing behavior at wave 1 through harsh discipline, both criminal involvement and caregiver depression moderated the indirect relationship through harsh discipline. See Appendix 47 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic drug use to child externalizing behavior at wave 1, criminal involvement significantly moderated the direct relationship and served as a mediator in the model. A separate single mediator model was run with criminal involvement. Caregiver depression and domestic violence did not moderate the relationship from caregiver self-reported problematic drug use to child externalizing behavior at wave 1. For the mediated pathway from caregiver problematic drug use to child externalizing behavior at wave 1 through emotional maltreatment, caregiver depression was a significant moderator in the indirect relationship through emotional maltreatment. Criminal involvement mediated the relationship from caregiver self-reported problematic drug use to child externalizing behavior at wave 1 but did not serve as a moderator. For the mediated pathway from caregiver problematic drug use to child externalizing behavior at wave 1 through harsh discipline, caregiver depression was a

significant moderator in the indirect relationship through harsh discipline. Consistent with the direct relationship and the pathway mediated by emotional maltreatment, criminal involvement mediated the relationship from caregiver self-reported problematic drug use to child externalizing behavior at wave 1.

For problematic alcohol use to child externalizing behaviors at wave 1, the final model is a single mediator model in which emotional maltreatment fully mediates the relationship from problematic alcohol use to child externalizing behaviors at wave 1. The model indicates that increased problematic alcohol use is associated with increased emotional maltreatment which is associated with increased child externalizing behaviors. Model fit was very strong across all fit indices (Figure 42). See Appendix 47 for indirect parameter estimates and model fit statistics.

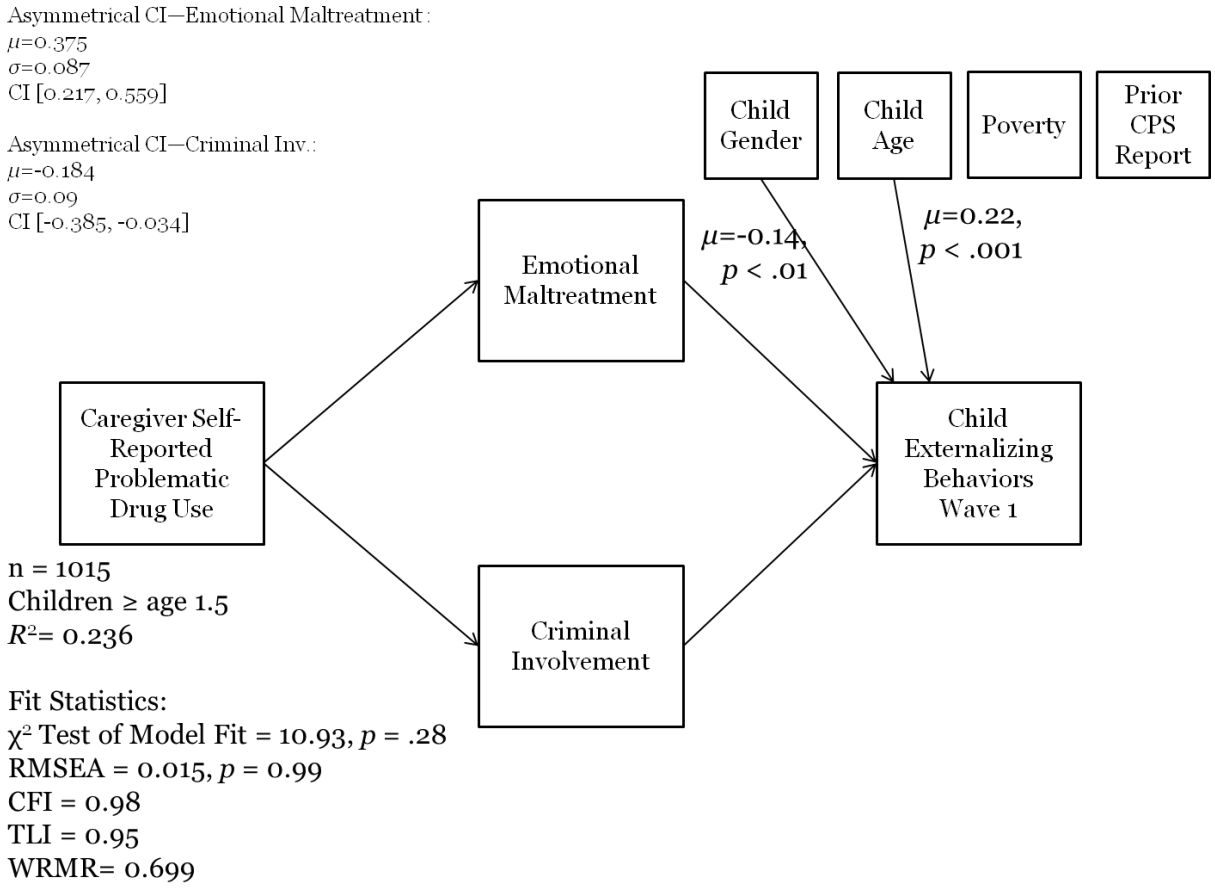
Figure 42



For problematic drug use to child externalizing behaviors at wave 1, the final model is a double parallel mediation model with emotional maltreatment and criminal involvement each serving as mediating pathways (Figure 43). The model indicates that increased problematic drug

use is associated with increased emotional maltreatment which is associated with increased child externalizing behaviors at wave 1. In a separate indirect pathway self-reported problematic drug use is associated with having a prior conviction and having a prior conviction is associated with decreased externalizing behaviors at wave 1. With emotional maltreatment and criminal involvement in the model, there is no longer a direct relationship in the model. All fit indices for this model are strong and indicate that the model fits the data very well.

Figure 43



Child Externalizing Behaviors at Wave 2

When including the control variables in the model, there was a significant direct pathway from caregiver self-reported problematic alcohol use to child externalizing behaviors at wave 2

(μ=0.08, $p < .05$). However, there was not a significant direct pathway from caregiver self-reported problematic drug use to child externalizing behaviors at wave 2.

In the single mediator models, both emotional maltreatment and harsh discipline were significant mediators from caregiver self-reported problematic alcohol and drug use to child externalizing behaviors at wave 2. Exposure to violence was a significant mediator in only the problematic alcohol use model and not the problematic drug use model. Parental monitoring was not significant single mediators in either the problematic drug use or problematic alcohol use models. See Appendices 45-46 for indirect parameter estimates and model fit statistics.

For problematic alcohol use to externalizing behavior at wave 2, when emotional maltreatment and harsh discipline were both mediators in the model, only emotional maltreatment was a significant pathway. For problematic alcohol use to externalizing behavior at wave 2, two addition double parallel mediator models (emotional maltreatment with exposure to violence; harsh discipline with exposure to violence) and one triple parallel mediator model were conducted to examine all the combinations of the significant mediators.

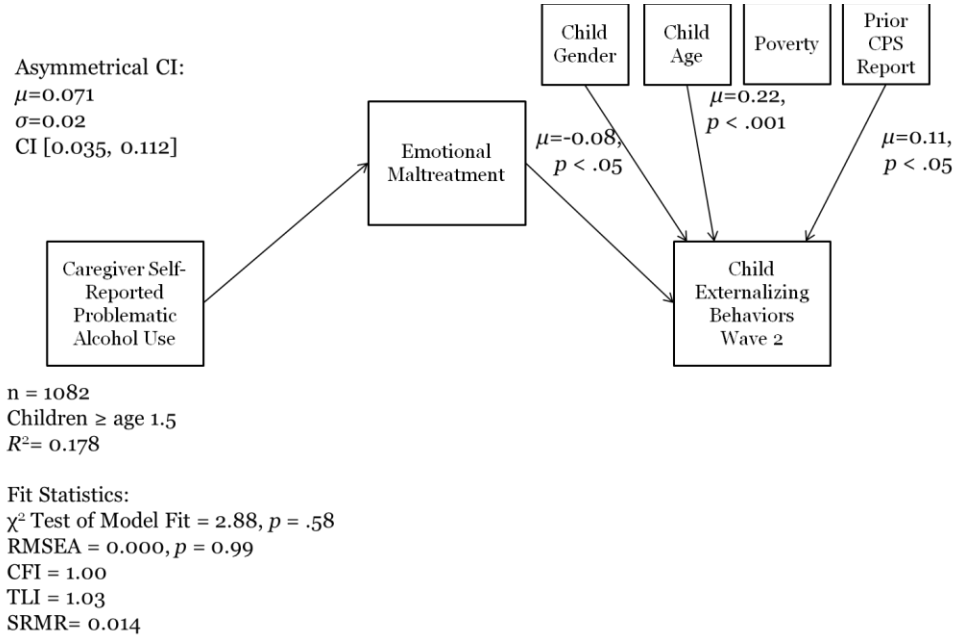
For the direct pathway from caregiver problematic alcohol use to child externalizing behavior at wave 2, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic alcohol use to child externalizing behavior at wave 2 through emotional maltreatment, caregiver depression was a significant moderator in the emotional maltreatment mediating pathway. For the mediated pathway from caregiver problematic alcohol use to child externalizing behavior at wave 1 through harsh discipline, caregiver depression was a significant moderator in the emotional maltreatment mediating pathway. For the mediated pathway from caregiver problematic alcohol use to child externalizing behavior at wave 2 through exposure to violence, none of the hypothesized

moderators moderated the relationship. See Appendix 49 for indirect parameter estimates and model fit statistics.

For the direct pathway from caregiver problematic drug use to child externalizing behavior at wave 2, none of the hypothesized moderators moderated the relationship. For the mediated pathway from caregiver problematic drug use to child externalizing behavior at wave 1 through emotional maltreatment, domestic violence and caregiver depression moderated the relationship. Caregiver criminal involvement did not serve as a moderator in the relationship. For the mediated pathway from caregiver problematic drug use to child externalizing behavior at wave 2 through harsh discipline, caregiver depression moderated the relationship.

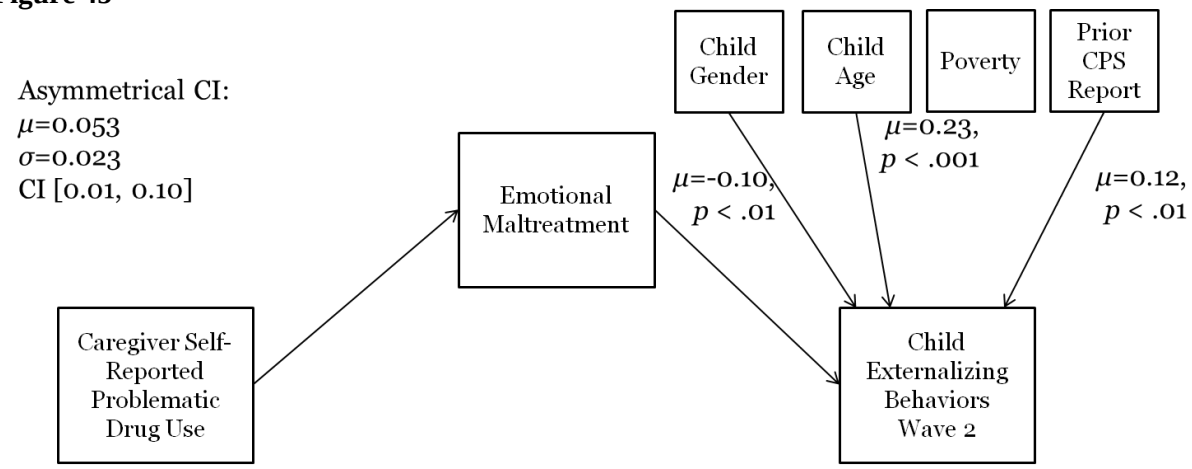
For both problematic alcohol and drug use to child externalizing behavior at wave 2, the model with the strongest fit statistics was the single mediator model through emotional maltreatment (Figures 44-45). Emotional maltreatment fully mediated the relationships in both models. These models indicate that increased problematic alcohol or drug use is associated with increased emotional maltreatment which is associated with increased child

Figure 44



externalizing behaviors. Model fit was strong across all fit indices. See Appendices 49-50 for indirect parameter estimates and model fit statistics.

Figure 45



E. Confirmation Models

Using the second half of the split sample, the finalized path models from the first sample were run again to test for confirmation. In Appendix 51-53, the fit statistics and indirect parameter estimates are listed for all models tested in the confirmation sample. Six models containing indirect paths were confirmed in the second half of the sample: (1) single mediator model from self-reported problematic alcohol use to wave 1 internalizing behaviors through emotional maltreatment, (2) single mediator model from self-reported problematic alcohol use to wave 2 internalizing behaviors through emotional maltreatment, (3) single mediator model from self-reported problematic alcohol use to wave 2 internalizing behaviors through caregiver

depression, (4) single mediator model from self-reported problematic drug use to wave 2 internalizing behaviors through caregiver depression, (5) single mediator model from self-reported problematic alcohol use to wave 2 externalizing behaviors through emotional maltreatment, and (6) single mediator model from self-reported problematic alcohol use to wave 2 externalizing behaviors through emotional maltreatment.

F. Limitations of the Study

Large longitudinal datasets, including the NSCAW II, contain limitations inherent in the collection of large amounts of data at multiple waves. Due to the amount of lag time between the baseline investigation and the baseline interview and the frequent turnover of employees of the child welfare system, in some cases the CPS investigator who conducted the case may not have been the worker who provided data to the study. In these situations, the worker reporting information to the study had full access to files for review, decreasing this concern. Data reported by the caseworkers is a retrospective report of the case, caregiver, and child information. Again, the examination of records and case notes by caseworkers decreases this concern. The measurement of caregiver criminal involvement is limited to the data available in the NSCAW II dataset. The type of criminal involvement is not available in the NSCAW II dataset. Therefore, it is unknown if and when the criminal involvement was directly related to the consumption, production, or distribution of substances. An additional limitation of the dataset relevant to this analysis is that data was not collected on the type of drug used. Without an ability to analyze subgroups of caregiver engaged in problematic drug use, some relationships between the independent and dependent variables may not be evident.

Caregiver gender is available in the dataset but both male and female caregivers were examined together in the same models to increase sample size and allows the results to be

reflective of all CPS involved families. Therefore, this examination does not provide a comparison of relationships for male versus female caregivers. The adoption of a developmental perspective, by comparing outcomes for different age groups of children, was not possible in this dissertation because it would have decreased power by further limiting the sample size of the analyses. Although this method would gave provided more specific information about how these paths change as children age, the decision to not conduct models in this way increased the power to detect the relationships present by utilizing the larger sample sizes. With the independent and mediating variables occurring at the same time point, it is possible that some of the relationships from independent variables to mediators could be bidirectional. As supported by theory, these relationships were tested unidirectionally. Although two separate measurement methods for problematic substance use are available in the dataset, neither method is able to perfectly identify all caregivers engaged in problematic alcohol or drug use. Caregiver self-report variables, including self-report of the problematic use of alcohol or drugs, are not available when children were removed from the home at baseline. Although caregivers were informed of the confidential procedures taken in the study and allowed to provide their responses using ACASI, some caregivers may have chosen to not report sensitive information including problematic substance use. All caregivers had a previous history of involvement with CPS and could have felt that disclosure of this information could negatively impact their relationship with CPS. Research indicates a higher prevalence of caregiver problematic substance use in the foster care system compared to lower levels of CPS involvement (Jones, 2004; Semidei et al., 2001; Young, Boles, & Otero, 2007). Although caseworker-report of caregiver problematic alcohol or drug use can be used to look at the total sample, it is a

limitation that caregiver self-report of problematic substance use cannot be examined in the total sample.

For the sample of families where children remained in the home at baseline, the AUDIT and DAST-20 were administered at both wave 1 and wave 2. The author considered incorporating the wave 2 AUDIT and DAST-20 measures into the models as additional mediating pathways or as a control variable. In both options, the dependent variable would be regressed on both the wave 1 and wave 2 problematic use variables. Problematic alcohol use at wave 1 and wave 2 (corr = 0.49, $p < .0001$) and problematic drug use at wave 1 and wave 2 were highly correlated (corr = 0.42, $p < .0001$) resulting in concerns for multicollinearity when a dependent variable is regressed on both waves of the problematic use variable. Therefore, wave 2 problematic use was not incorporated into the models.

Critiques of the NSCAW II data include its use of eight strata with seven of the strata representing the states with the largest child welfare caseloads in the nation. The remaining stratum consists of all remaining states. Some researchers feel that the NSCAW II dataset best represents the seven states with the largest child welfare caseloads in the country than it represents the remaining states. However, the complex use of weighting utilizing data is what makes the NSCAW II dataset a national probability sample (see NDACAN, 2010). Like the NSCAW I, the NSCAW II has numerous strengths which outweigh the existing limitations (Kohl et al., 2009). Making it a strong choice for these analyses, the dataset has numerous indicators of child safety, permanency, and well-being and collected data on caregiver problematic substance use as well as parenting behaviors.

Differences in which caregiver is reporting data on an outcome variable at wave 2 compared to wave 1 could potentially result in inaccurate comparisons. In this study, this change in

reporter only impacts dependent variables collected at wave 1 and wave 2 from the caregiver: internalizing disorders and externalizing disorders. A change in the caregiver interviewed could result in changes in perception of the child's behaviors. There was a change in the caregiver reporting at wave 2 compared to wave 1 in 13.69% of cases. Comparing scores on the internalizing and externalizing behavior subscales by whether or not there was a change in the caregiver reporting data from wave 1 to wave 2, a t-test indicated that there was a statistically different change in scores ($F = 5.64$, $p = 0.02$) for internalizing disorders but not for externalizing disorders ($F = 0.71$, $p = 0.40$). A change in caregiver (dichotomous, yes/no) was examined as a possible control variable in the wave 2 internalizing disorder models. The change in caregiver variable was compared with the control variables to test for multicollinearity. The variable was not included as a control variable in these models because it was highly correlated with both poverty ($\chi^2 = 14.65$, $p = .0003$) and with prior reports ($\chi^2 = 12.17$, $p = .0008$).

With only 27.02% of the sample (n = 1639 of total sample of 5872) having a secondary caregiver in the home and some of these cases having missing data on the risk assessment, a subgroup examination of the secondary caregiver problematic use based on caseworker report was not conducted due to limited power. The starting sample size in the split sample was just over 800 cases before further limiting the sample by child age and available data.

VI. Conclusions and Implications

A. Bivariate Analyses

At the bivariate level, caseworker perception of caregiver problematic alcohol or drug use was significantly associated with child safety and permanency variables that were reported by the caseworker (CPS services, case outcomes, and OOH placements) but was not associated with child well-being indicators (Table 3). At the bivariate, caseworker perception of problematic substance use is strongly correlated with caseworker report of services. In the total sample at wave 1, 81.09% of families where a caseworker reported problematic alcohol use by the primary caregiver (86.82% for drugs) were families where the caseworker reporting referring, providing, or arranging services for the family. Caseworker report of caregiver problematic alcohol and drug use were each associated with a higher prevalence of service referral, provision, or arrangement in all categories at wave 2. Caseworker perception of problematic alcohol use and problematic drug use were associated with higher prevalence rates of being in CPS custody at baseline and at wave 2 for problematic drug use. These results indicate that CPS worker perception that caregivers are engaged in problematic alcohol and drug use is associated with other caseworker-reported variables and case decisions. These results are consistent with prior research by Berger et al. (2010) indicating the caseworker perception of problematic use is associated with their perception of risk and harm to the child and to case outcomes.

Caregiver self-reported problematic alcohol and/or drug use were associated with the child well-being variables (internalizing behaviors, externalizing behaviors, and child depression) but only rarely with child safety and permanency variables. The significant correlations between self-reported problematic alcohol and drug use and child well-being indicate that as scores on the AUDIT and DAST-20 increase (indicating higher levels of problematic use) internalizing

behaviors, externalizing behaviors, and child depression increase. Consistent with the literature (Staton-Tindall et al., 2013), caregiver problematic use was correlated with poorer child behavior and mental health.

B. CPS Caseworker Detection of Caregiver Problematic Substance Use

The analysis comparing caseworker perception of caregiver problematic use to caregiver self-report of behavior indicates that caseworkers are identifying less than 40 percent of the caregivers who self-report engaging in problematic alcohol (17.65%) and drug use (37.59%). These results indicate a Type II error rate in detection at 82.35% for alcohol and 62.41% for drugs. The known error rate for caseworker detection is easier to arrive at than the percentage of caregivers who are not reporting their problematic substance use. Bias within the caregiver sample to not report problematic substance use creates uncertainty about whether or not caregiver problematic use is present when caregivers do not self-report problematic. Therefore, it is unknown what the Type I error rate is within the sample.

Figure 46

		Caregiver Self-Reports Problematic Alcohol Use	
		AUDIT Score ≥5 for women; 8 for men	AUDIT Score < 5 for women; 8 for men
Caseworker Reports Caregiver Engaged in Problematic Alcohol Use?	Yes	N=59 True Positive	N=158 False Positive
	No	N=215 False Negative	N=2857 True Negative

		Caregiver Self-Reports Problematic Drug Use	
		DAST-20 Score ≥ 6	DAST-20 Score < 6
Caseworker Reports Caregiver Engaged in Problematic Drug Use?	Yes	N=109 True Positive	N=482 False Positive
	No	N=58 False Negative	N=2470 True Negative

Sensitivity and specificity were calculated for both the detection of problematic alcohol use and the detection of problematic drug use as described by Lalkhen and McCluskey (2008). The caregiver's self-report of problematic substance use was utilized as true presence or absence of disease and the caseworker report was considered the test for disease. It is acknowledged that false positives and true negatives could be impacted by the bias of some caregivers to not self-report problematic substance use due to their involvement with child protective services. Sensitivity for the detection of problematic alcohol use (true positives of n = 59/ true positives + false negatives of n = 215) was calculated to be 21.53%. Specificity for the detection of problematic alcohol use (true negatives of n = 2857/ true negatives + false positives of n = 158) was calculated to be 94.76%. Sensitivity for the detection of problematic drug use (true positives of n = 109/ true positives + false negatives of n = 58) was calculated to be 65.27%. Specificity for the detection of problematic alcohol use (true negatives of n = 2470/ true negatives + false positives of n = 482) was calculated to be 83.67%.

C. Path Analysis Confirmation

Path analysis confirmation resulted in six confirmed models that contain indirect pathways. These models were similar in several ways. First, only models from self-reported problematic alcohol or drug use to child internalizing or externalizing behaviors confirmed. This is due to the highly significant associations between the variables in these models as well as the larger sample size of these models. These two factors resulted in higher power to detect these relationships. Second, these models only contained two significant mediators: emotional maltreatment and caregiver depression. These mediators, particularly emotional maltreatment, had very strong relationships with both problematic substance use and negative outcomes for children. The strength of the relationship and the confirmation of these models provide extremely strong

evidence that these are among the most salient factors leading to child harm in this population. In child welfare families where caregiver problematic substance use is present, emotional maltreatment is an extremely important pathway through which children have negative outcomes, specifically internalizing and externalizing disorders.

Although all of the unconfirmed models were significant in the first half of the sample, these models were not confirmed in the second half of the data for two reasons. First, in some of the unconfirmed models, there were weaker associations between the variables in the models than in the models that confirmed. Although unconfirmed here, these factors may still be important pathways through which children experience negative outcomes and deserve more examination in the future. Second, by splitting the sample into two halves the strength to detect these lower associations was diminished. In the smaller subgroups containing only older children, the ability to detect these lower associations may not have been possible due to less strength of the relationships than originally tested in the power analysis. This dissertation illustrates the importance of utilizing confirmation methods within structural equation modeling methods to decrease bias. However, additional confirmation methods should be explored including cross validation in order to increase power to detect relationships in smaller samples. Unconfirmed models in this dissertation may still indicate important pathways leading to child harm. However, these relationships should be rigorously explored before conclusions are made about their importance.

Results for the path models will be discussed below by type of caregiver problematic substance use and by outcome. Within each hypothesis, there were individual models for problematic alcohol use and problematic drug use as well as all of the dependent variables. This resulted in partial support for each hypothesis due to different relationships by each independent

and dependent variable grouping. To see the hypotheses and an overview of the support for each one, see appendix 54.

D. Models for Caseworker Reported Problematic Use of Substances

Caseworker reported problematic substance use was directly and positively related to safety and permanency indicators within the control of the caseworker: out-of-home placements, services at baseline and wave 2, and case outcomes. A caseworker's perception that a caregiver was engaged in problematic drug or alcohol use was positively associated with a referral for services. Caseworker report of problematic alcohol or drug use was not associated with any of the child well-being indicators. This finding is in contrast to the caregiver self-report of problematic alcohol and/or drug use being directly or indirectly related to each of the child well-being indicators. Caseworker reported problematic substance use was also not directly or indirectly associated with subsequent CPS reports.

For two models (caseworker reported problematic drug use to OOH placement at wave 2; caseworker reported problematic drug use to services at baseline), harsh discipline was an indirect pathway such that lower levels of harsh discipline lead to higher rates of baseline services and higher rates of OOH placements at wave 2. However, these models did not confirm during the confirmation process. Additional research is needed to examine these relationships.

These results suggest that caseworker perception of problematic alcohol or drug use impacts case decision making (e.g., decision to refer a family for services or place a child OOH) but that these case decisions may not be the result of an observed negative impact on child well-being. There are several possible explanations for these findings. It is possible that caseworkers were detecting lower levels of problematic substance use or an earlier onset of problematic substance use in caregivers that had not yet negatively impacted the children's well-being but given enough

time this outcome would be seen. To test this possibility, the third wave of the NSCAW II could be utilized. The relationship from caseworker report of problematic alcohol and drug use at wave 1 to child well-being indicators at wave 3 could be examined. Another possibility is that caseworkers were observing other negative impacts on the children that were not examined in this analysis (e.g., poor school performance) and that these negative impacts provide an explanation for the presence of negative case decisions in the absence of a negative impact on child well-being. Using data from NSCAW II, future analyses could test to see if caseworker reported caregiver problematic substance use was related to other negative outcomes for children including educational outcomes and engaging in substance use or other risky behaviors. A third explanation is that caseworkers were inaccurately detecting problematic substance use but making decisions based on their inaccurate assessment. Although caseworkers were clearly unable to identify most caregivers who self-reported problematic substance use, they also likely identified some caregivers as engaging in problematic substance use who were not actually engaging in problematic substance use. This possibility is consistent with the absence of negative outcomes in the children related to the problematic substance use. Results of this analysis do indicate that caseworkers are unable to identify the majority of caregivers who self-report problematic alcohol or drug use. To begin to detangle this relationship, the perception of CPS caseworkers around caregiver problematic substance use and the perceived impact of problematic substance use on children and families should be examined.

E. Path Analysis Models for Caregiver Self-Reported Problematic Use of Substances

The relationships from caregiver self-reported problematic alcohol and drug use to indicators of child safety, permanency, and well-being were more complicated than an examination of

caseworker reported problematic use. To explore these models in more depth, the analysis will be discussed in groupings by child harm indicator.

Referrals for Services

Caregiver self-reported problematic drug and alcohol use were both indirectly, but not directly, related to services at baseline. Within a single model, the direct pathway from caregiver self-reported problematic alcohol use to baseline services was moderated by caregiver depression and there was also an indirect pathway through caregiver depression (Figure 25). The pathway from self-reported problematic drug use to baseline services was through caregiver depression (Figure 26). However, these models were unconfirmed in the second half of the data. Additional research is needed to examine these relationships.

Although self-reported problematic alcohol use was not directly or indirectly related to any of the wave 2 service variables, self-reported problematic drug use was directly related to many of the wave 2 service variables (any services, caregiver services, concrete services, child welfare services). Interestingly, even as the level of caregiver self-reported problematic alcohol use increased, indicating a high likelihood of identification of problematic use, this did not impact the referral to services at wave 2. The high Type II error rate of 82.35% for problematic alcohol use may partially explain the lack of relationship from problematic alcohol use to service referral. At a higher level than with problematic drug use, CPS workers were not identifying problematic alcohol use and, therefore, not referring these caregivers to services at wave 2. The pathways from self-reported drug use to any services, caregiver services, concrete services, and child welfare services at wave 2 were direct pathways. The presence of problematic drug use at wave 1 is related to a referral for services at wave 2. However, this research was unable to determine any mediating or moderating pathways through which these variables are related.

Subsequent CPS Reports

Self-reported problematic alcohol and drug use were not associated with subsequent CPS reports. None of the problematic use variables (caseworker reported, self-reported, alcohol, or drug) were significantly associated with subsequent CPS reports. Regardless of whether or not problematic use is present, caregivers were not more or less likely to receive a subsequent report to CPS by the 18-month wave 2 follow-up. It could be that re-reports may happen in this population after the 18-month follow-up period has ended. Another possibility is that self-reported problematic alcohol and drug use at wave 2 is more strongly related to subsequent CPS reports than problematic use at wave 1. An analysis comparing changes in patterns of substance use from wave 1 to wave 2 and their relationship with subsequent CPS reports could further examine this possibility.

Case Outcomes

Self-reported problematic alcohol and drug use were also not associated with the case outcome. The lack of associations between self-reported problematic use and CPS case variables may be due to the high level of Type II error in the identification of problematic use. Within CPS the identification of problematic substance use alone is not sufficient to substantiate a case of maltreatment. Therefore, even when problematic substance use is present and identified by the caseworker, the problematic use must be directly related to concerns for the safety of the child. If problematic substance use is present and identified by the caseworker, a case could still be unsubstantiated by the caseworker. As CPS caseworker perception of problematic substance use was not directly associated with any of the indicators of child well-being examined in this dissertation, it may be difficult to substantiate cases in which the caseworker perceives caregiver problematic use is occurring if there is not a separate indicator of child harm present in the case.

Case outcomes was examined as a dependent variable in order to compare the results of this study to those in the literature that examine case outcomes as an indicator of child harm. Consistent with the child welfare literature (Drake et al., 2003; English et al., 2002; Hussey et al., 2005; Kohl et al., 2009), results further suggest case outcome (i.e., substantiation) is not a strong or sufficient indicator of negative outcomes within families where caregiver problematic use is present.

Out-of-Home Placement

Caregiver self-reported problematic drug and alcohol use were both indirectly, but not directly, related to out-of-home placement by wave 2. The pathway from caregiver self-reported problematic alcohol use to OOH placement was indirectly through caregiver depression (Figure 31). As the level of problematic alcohol use increased, caregivers were more likely to meet criteria for depression. Caregivers meeting criteria for depression were more likely to have children who were placed OOH by wave 2. The pathway from caregiver self-reported problematic drug use to OOH placement was indirectly through caregiver criminal involvement (Figure 32). As the level of problematic alcohol use increased, caregivers were more likely to have been recently convicted one or more times. Paradoxically, caregivers with recent convictions were less likely to have a child removed from the home than caregivers with no recent convictions. However, these models were unconfirmed in the second half of the data. Additional research is needed to further explore these relationships.

Child Depression

Although problematic alcohol and drug use were not directly associated with child depression, strong mediator models were found from problematic alcohol use to child depression at both waves 1 and 2 through parental monitoring. At both wave 1 and wave 2, exposure to

violence was another important variable that served as a mediator in the pathway from problematic use to child depression. Contrary to the theoretical relationship proposed, the mediating model through parental monitoring indicates that higher problematic alcohol use is associated with better monitoring which is associated with lower reported child depression. Again, these models were unconfirmed in the second half of the data. Additional research is needed to further explore these relationships.

Child Trauma

Very similar patterns in pathways were seen in child trauma compared to child depression. Again problematic alcohol and drug use were not directly associated with child trauma, single mediator models with adequate fit were found from problematic alcohol use to child depression at both wave 1 and wave 2 through parental monitoring and through exposure to violence respectively. As seen with child depression, increased levels of self-reported problematic alcohol use were associated with better parental monitoring which was associated with decreases in child trauma. These models were unconfirmed in the second half of the data. Additional research is needed to further explore these relationships. At both wave 1 and wave 2, exposure to violence was another important variable that served as a mediator in the pathway from problematic use to child depression. Increased problematic alcohol use was associated with increased exposure to violence which was associated with increased child trauma. For the exposure to violence model, the increase in alcohol use is associated with the child witnessing or experiencing more violence in the home. The increased exposure to violence is associated with higher child trauma scores. Again, these models were unconfirmed in the second half of the data. Additional research is needed to further explore these relationships.

Child Internalizing Behaviors

Within a single model, the direct pathway from caregiver self-reported problematic alcohol use to child internalizing behaviors at wave 1 was moderated by caregiver criminal involvement and there was also an indirect pathway through emotional maltreatment (Figure 38). As problematic alcohol use increases, emotional maltreatment increases. As emotional maltreatment increases, child internalizing behaviors increase. This model was unconfirmed in the second half of the data but a single mediator model through emotional maltreatment was confirmed. To see the parameter estimates and fit statistics for the confirmed and unconfirmed models see Appendix 52. The confirmed model is supported by the somewhat limited body of research that has examined emotional maltreatment (Miller et al., 1999). A strong pathway in several confirmed models, emotional maltreatment is a key behavior leading to negative outcomes for children in homes with caregiver problematic substance use. Similarly, the pathway from problematic drug use to child internalizing behaviors at wave 1 was through double parallel mediating pathways of emotional maltreatment and criminal involvement but was unconfirmed in the second half of the data.

Consistent with the pathways from problematic alcohol use to child internalizing behaviors at wave 1, the pathways to internalizing behaviors at wave 2 were a direct pathway moderated by criminal involvement and an indirect pathway through emotional maltreatment. The direction of the relationships was consistent with those seen in the wave 1 model (Figure 40). However, this model was not confirmed in the second half of the data. Two strong models from the first half of the data examining the pathways from problematic drug use to child internalizing behaviors at wave 2 were confirmed in the second half of the data. These models were single mediator models through emotional maltreatment and through caregiver depression. Both emotional

maltreatment and caregiver depression are important factors leading to negative outcomes when caregiver problematic drug use is present in the home.

Two models fit well in the first half of the data for problematic drug use to internalizing behaviors at wave 2. In the first, caregiver depression fully mediates the pathway from problematic drug use to internalizing behaviors at wave 2 such that increases in problematic drug use result in an increased likelihood of meeting criteria for depression. An increased likelihood of depression was associated with increased internalizing behavior scores for children. In the second model, emotional maltreatment fully mediates the pathway from problematic drug use to internalizing behaviors at wave 2 such that increases in problematic drug use are associated with emotional maltreatment which is positively associated with internalizing behaviors. However, only the single mediator model through caregiver depression was confirmed in the second half of the data. The confirmed model is well supported by the literature and fit statistics indicate it fits the data well.

Child Externalizing Behaviors

The pathway from problematic alcohol use to externalizing behaviors at wave 1 is a fully mediated model through emotional maltreatment. As problematic alcohol use increases, emotional maltreatment increases. As emotional maltreatment increases, child externalizing behaviors increase. This model was confirmed in the second half of the data and fit statistics indicate it fits the data well. This relationship is consistent with the previously discussed literature. The pathway from problematic drug use to child externalizing behaviors at wave 1 is through double parallel mediating pathways of emotional maltreatment and criminal involvement. Again, increases in problematic drug use were associated with increases in emotional maltreatment and increases in emotional maltreatment were associated with increases

in child externalizing behaviors. Increases in problematic drug use were associated with an increased likelihood of having one or more convictions which was associated with fewer externalizing behaviors. However, this model was unconfirmed in the second half of the data. See Appendix 53 to examine the parameter estimates and fit statistics for the confirmation models.

Both the model from problematic alcohol use and the model from problematic drug use to child externalizing behaviors at wave 2 are fully mediated models through emotional maltreatment. In both models, as problematic drug use increases, emotional maltreatment increases. As emotional maltreatment increases, child externalizing behaviors increase. The model from problematic alcohol use to externalizing behaviors at wave 2 through emotional maltreatment confirmed but the model from problematic drug use to externalizing behaviors at wave 2 through emotional maltreatment did not confirm.

F. Policy and Practice Implications

Although not associated with negative well-being indicators for children, CPS caseworker perception of caregiver problematic use is clearly associated with important case decisions including the provision of services, case outcomes that often serve as gateways to services, and the decision to remove children from the home. These results indicate a need to better understand how CPS caseworker perception of problematic use impacts case decision making. There are also concerns that caseworkers are unable to correctly identify the majority of caregivers engaged in problematic use. Even when caregivers self-reported problematic alcohol or drug use, caseworkers were able to detect less than 40 percent of the caregivers who self-report engaging in problematic alcohol (17.65%) and drug use (37.59%). These results indicate a need to better train CPS caseworkers about caregiver problematic use and its identification. A

particular focus on problematic alcohol use is warranted due to its higher prevalence and lower detection rates. The punitive nature of engagement in CPS services limits the ability of caregivers to voluntarily seek the help from CPS that they may already know they need. Other strategies to identify problematic use and provide voluntary drug or alcohol treatment to low-income caregivers at risk for negative parenting strategies should be explored in research and policy.

There are no national policies requesting state CPS agencies to report caregiver problematic use through the State Automated Child Welfare Information System. (SACWIS) A lack of federally collected data on the presence of problematic use within CPS limits the ability to look at this information at a national level. Gathering data through SACWIS would allow for a better understanding of the problems experienced by families involved with the child welfare system who are identified as engaging in problematic substance use based on caseworker perception.

Caregiver self-reported problematic drug use was directly related to wave 2 services but problematic alcohol use was not. This relationship is likely seen due to the higher rates of accurate detection by caseworkers of problematic drug use compared to problematic alcohol use. The lack of relationship between self-reported problematic alcohol use and wave 2 services highlights again the need for better training for CPS workers around detection of problematic alcohol use and referral to appropriate services. However, the need for better training must be balanced with recognition that the current CPS system is a punitive system for families in which identification of problematic substance use could result in severe consequences for families.

In the child welfare system, caregiver depression has a complex role in the relationship from caregiver problematic use to children experiencing harm. Caregiver depression was a significant pathway through which problematic substance use influenced baseline services, OOH placement,

and child internalizing behaviors. Caregiver depression was one of two confirmed mediating pathways to internalizing behaviors in children. There is support for caregiver depression being linked through genetics and caregiving to internalizing and externalizing behaviors in children (Kerr et al., 2013). Prevalent in the CPS system, caregiver depression serves as one point of intervention to prevent negative outcomes for children whose caregivers are living with comorbid problematic substance use and depression. When caregiver depression and problematic substance use are comorbid, services should be provided to these caregivers to address these two important medical concerns. There is also a need to develop more effective interventions aimed at treating these comorbid conditions.

A frequent mediating pathway from caregiver problematic substance use to children experiencing internalizing and externalizing behaviors, emotional maltreatment was a common experience among children in the CPS population. Experiencing one episode of emotional maltreatment per month on average, emotional maltreatment impacts how children behave and was found to play a more important role in child well-being than harsh discipline. CPS systems must take emotional maltreatment seriously and address this negative parenting behavior in families to prevent long term consequences. Individuals providing services to CPS families should recognize that almost all families engaged with CPS are involved in emotional maltreatment regardless of the maltreatment type alleged in the CPS report or identified by the caseworker. Even at low levels, emotional maltreatment impacts children's well-being and should be addressed to strengthen the relationship between caregivers and their children.

G. Research Implications

Caseworkers report problematic substance use in less than half of those caregivers who self-reported problematic substance use. Detection was lower with problematic alcohol use than

problematic drug use. Future research should look at differences in cases of self-reported problematic substance use comparing those where caseworkers were able to detect the substance use and those where they were not.

Caseworker report of problematic substance use was not associated with the child well-being dependent variables but highly associated with child safety and permanency. First, self-report of problematic substance use was associated with poorer child well-being but unassociated with most of the safety and permanency indicators. These results must be explored in more detail. Safety and permanency indicators in this study were variables highly influenced by CPS worker perception and reported by the CPS worker. It could be that CPS worker perception of problematic use is driving case decision making even when it is inaccurate. Future analyses need to explore CPS caseworker perception of substance use and its relationship with child harm as well as case decision making.

Even utilizing large child welfare datasets, additional power is necessary to examine some subpopulations of the child welfare system. Future research should consider additional cross validation techniques beyond split samples. These techniques may make it possible to compare separate models by child or caregiver characteristics. Future studies can also utilize the third wave of NSCAW II data, providing additional strength to the models through the sequential ordering of variables.

Finally, research exploring the relationship from caregiver problematic substance use to child harm should also be conducted with other datasets to confirm that the relationships present within NSCAW II are seen when measurement and sample characteristics are different. This work will strengthen support for the results of this dissertation and lead to a stronger body of evidence on which to base prevention efforts and intervention research.

These analyses indicate that the relationships from caregiver problematic use to child harm are complex. No single mediator was present in all models or even consistently present in the child well-being models. Decreasing child harm among children with caregivers engaged in problematic substance use will involve comprehensive assessments of which risk factors are present in these families and then providing services to address these factors. Further, we need to better understand how parenting behaviors and characteristics are impacted by problematic use and how they impact child well-being and case decision making.

The results of this dissertation provide preliminary support for the cognitive disorganization hypothesis. Applying the cognitive disorganization hypothesis to violence towards children, Miller, Maguin, and Downs (1997) propose that problematic alcohol use results in the caregiver noticing only the most prominent social cues and missing all others. This impaired detection increases the perceived severity of threats encountered, decreases concern for the consequences of aggression thus increasing the likelihood of exhibiting violent behavior towards the child. Within this dissertation, violent behavior was conceptualized as both verbally and physically aggressive acts. Although support was not present for harsh discipline as a pathway, emotional maltreatment was a consistent pathway from caregiver self-reported problematic alcohol use to internalizing and externalizing behaviors that was supported in both halves of the data.

The results of this dissertation form a tentative theoretical model in need of future testing. In a national probability sample of caregivers involved with child welfare, caregiver problematic substance use increased child harm through the risk factors of emotional maltreatment and caregiver depression. This theoretical model outlines the preliminary constructs in a theory of child harm related to caregiver problematic substance use that will be refined through future inquiry.

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Appendix 1

Construct	Data for Variable Collected From	Measure	Measurement Details (Age Range for Child Measures)	Internal Consistency Reliability	Purpose of Variable (Hypothesis)
DEPENDENT VARIABLES—Child Harm					
Safety					
CPS services	CPS worker	Following baseline report or between baseline and 18 month follow-up, CPS worker referred, provided, and/or arranged for services for family, or did none of these At Wave 1—Single variable (CPS Services) At Wave 2—5 variables (Any Services, Caregiver Services, Child Services, Concrete Services, Child Welfare Services	Dichotomous	N/A	H1, H2, H3, H4, H5, H6, H7, H8
Subsequent CPS reports	CPS worker	Any reports to CPS for child maltreatment since index report on which the family was recruited into the study? Yes (Had one or more new reports since baseline) No (Did not have any new reports since baseline)	Dichotomous	N/A	H3, H4, H7, H8
Case outcome	CPS worker	Outcome of baseline CPS investigation or subsequent investigations between baseline and 18 month follow-up Unsubstantiated/Not Indicated/Unfounded/Rule Out/Low Risk Substantiated/Indicated/High Risk/Medium Risk	Dichotomous	N/A	H1, H2, H3, H4, H5, H6, H7, H8
Permanency					
Out-of-home placement	CPS worker	Child is placed out-of-home following baseline report or between baseline and 18 month follow-up	Dichotomous	N/A	H1, H2, H3, H4, H7, H8
Well-Being					
Child Depression	Child Interview	Children's Depression Inventory (Kovacs, 1992), (NDACAN, 2010) Continuous range of scores with higher scores indicating higher levels of child depression	Continuous (Children ≥ age 7)	.81 (7-12 yr. olds) .87 (13-15 yr. olds)	H1, H2, H3, H4, H5, H6, H7, H8
Child Trauma	Child Interview	NSCAW adaptation of Trauma Symptom Checklist for Children—PTSD section (Briere, 1996) (Everson et al., 2008) Continuous range of scores with higher scores indicating higher levels of child trauma	Continuous (Children ≥ age 8)	.94	H1, H2, H3, H4, H5, H6, H7, H8
Child Internalizing Behaviors	Caregiver Report	Child Behavior Checklist (Achenbach, 1991; Achenbach, 2000) Assessing internalizing behaviors Continuous range of scores with higher scores indicating higher levels of child internalizing behaviors	Continuous (Children 18 months to 18 years)	.80 (2-3 yr. olds) .90 (4+ yr. olds)	H1, H2, H3, H4, H5, H6, H7, H8
Child Externalizing Behaviors	Caregiver Report	Child Behavior Checklist (Achenbach, 1991; Achenbach, 2000) Assessing externalizing behaviors Continuous range of scores with higher scores indicating higher levels of child externalizing behaviors	Continuous (Children 18 months to 18 years)	.91 (2-3 yr. olds) .92 (4+ yr. olds)	H1, H2, H3, H4, H5, H6, H7, H8

Appendix 2

Construct	Data for Variable Collected From	Measure	Measurement Details (Age Range for Child Measures)	Internal Consistency Reliability	Purpose of Variable (Hypothesis)
INDEPENDENT VARIABLES					
Caseworker Report of Problematic Alcohol Use	CPS worker	CPS caseworker perceived caregiver had an active alcohol problem at the time of the investigation or not	Dichotomous	N/A	H1, H2, H3, H4
Caseworker Report of Problematic Drug Use	CPS worker	CPS caseworker perceived caregiver had an active drug problem at the time of the investigation or not	Dichotomous	N/A	H1, H2, H3, H4
Level of Problematic Alcohol Use	Caregiver self-report	Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993) Continuous range of scores from 0 to 40 with higher scores indicating higher levels of alcohol problems Dichotomous analysis with scores of 5 or higher for females and 8 or higher for males indicating at-risk drinking	Continuous (Range from 0 to 40) Dichotomous	.88 (Saunders et al., 1993)	H5, H6, H7, H8
Level of Problematic Drug Use	Caregiver self-report	Drug Abuse Screening Test (DAST-20) (Skinner, 1982) Continuous range of scores from 0 to 20 with higher scores indicating higher levels of drug related problems Dichotomous analysis with scores 6 or higher indicating current drug use	Continuous (Range from 0 to 20) Dichotomous	.95 (Skinner, 1982)	H5, H6, H7, H8
MEDIATOR VARIABLES					
Caregiver Factors					
Parental Monitoring	Child Interview	Supervision-Child Scale from Fast Track Project indicating extent to which caregiver supervises child and monitors activities (Conduct Problems Prevention Research Group, 1994) (Ammerman et al., 1999)	Continuous (Children ≥ age 10)	.66	H2, H4, H6,
Harsh Discipline	Child Interview Caregiver Self-Report	Parent-Child Conflict Tactics Scale (CTS-PC), Physical Assault Sub-Scale (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) Continuous range of scoring with higher scores indicating a higher frequency of physical assault in last 12 months	Continuous (Children ≥ age 11 for child report)	.55	H2, H4, H6,
Emotional Maltreatment	Child Interview Caregiver Self-Report	Parent-Child Conflict Tactics Scale (CTS-PC), Psychological Aggression Sub-Scale (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) Continuous range of scoring with higher scores indicating a higher frequency of psychological aggression in last 12 months	Continuous (Children ≥ age 11 for child report)	.60	H2, H4, H6,
Child Factors					
Exposure to Violence	Child Interview	Violence Exposure Scale (VEX-R) – Home Set (Fox & Leavitt, 1995) Continuous range of scoring with higher scores indicating a higher number of exposure to witnessing or experiencing mild or severe violence	Continuous (Children ≥ age 8)	.96	H2, H4, H6,
MODERATOR VARIABLES					
Caregiver Depression	Caregiver Self-Report	Composite International Diagnostic Interview Short-Form (CIDI-SF) – module for depression (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998) Yes (Met diagnostic criteria for depression) No (Did not meet diagnostic criteria for depression)	Dichotomous	N/A	H6, H8
Domestic Violence	Caregiver Self-Report	Conflict Tactics Scale (CTS2) – Physical Assault Subscale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) Continuous range of scoring with higher scores indicating higher number of physical assaults in last 12 months	Continuous	.86	H6, H8
Criminal Involvement of Caregiver	Caregiver Self-Report	Derived from caregiver self-report questions on criminal involvement No criminal involvement (i.e., no reported convictions One or more convictions	Dichotomous	N/A	H6, H8

Appendix 3

Construct	Data for Variable Collected From	Measure	Measurement Details (Age Range for Child Measures)	Internal Consistency Reliability	Purpose of Variable (Hypothesis)
CONTROL VARIABLES					
Demographics					
Child age	Confirmed with Caregiver	Age of child at interview (Range 0 to 17.5 years)	Continuous	N/A	H1, H2, H3, H4, H5, H6, H7, H8
Child gender	Confirmed with Caregiver	Male or female	Dichotomous	N/A	H1, H2, H3, H4, H5, H6, H7, H8
Poverty	CPS worker	Derived from family income and number of adults and children in the household and based on federal poverty level at time of data collection Above the poverty line At or below the poverty line	Dichotomous	N/A	H1, H2, H3, H4, H5, H6, H7, H8
CPS History					
Prior reports to CPS	CPS worker	Has CPS received any reports on family prior to this report? Yes No	Dichotomous	N/A	H1, H2, H3, H4, H5, H6, H7, H8

Appendix 4

Individual Models with Significance

Dir=Direct EM=Emotional Maltreatment HD=Harsh Discipline PM=Parental Monitoring EX=Exposure to Violence		Caseworker Report				Self-Report															
		Alcohol		Drugs		Alcohol								Drugs							
Wave of Dependent Variable →		W1	W2	W1	W2	W1				W2				W1				W 2			
Dependent Variables ↓		Med	Med	Med	Med	Med	Mod			Med	Mod			Med	Mod			Med	Mod		
							Criminal Inv.	DV	Depress		Criminal Inv.	DV	Depress		Criminal Inv.	DV	Depress		Criminal Inv.	DV	Depress
Child Internalizing	Dir	N	N	N	N	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	N	N	N	N	Y
	EM	N	N	N	N	Y	Y	N	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	Y	Y
	HD	N	N	N	N	Y	Y	N	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	Y	Y
	PM	N	N	N	N	N				N				N				N			
	EX	N	N	N	N	N				N				N				N			
Child Externalizing	Dir	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	N
	EM	N	N	N	N	Y	Y	N	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	Y	Y
	HD	N	N	N	N	Y	Y	N	Y	Y	N	N	Y	Y	Y	N	Y	Y	N	N	Y
	PM	N	N	N	N	N				N				N				N			
	EX	N	N	N	N	N				Y	N	N	N	N				N			
Child Depression	Dir	N	N	N	N	N	N	N	N	N	N	N	N	N				N			
	EM	N	N	N	N	N				N				N				N			
	HD	N	N	N	N	N				N				N				N			
	PM	N	N	N	N	Y	N	N	N	Y	N	N	N	N				N			
	EX	N	N	N	N	Y	N	N	N	Y	N	N	Y	N				N			
Child Trauma	Dir	N	N	N	N	N	N	N	N	N	N	N	N	N				N			
	EM	N	N	N	N	N				N				N				N			
	HD	N	N	N	N	N				N				N				N			
	PM	N	N	N	N	Y	N	N	N	Y	N	N	N	N				N			
	EX	N	N	N	N	Y	N	N	N	Y	N	N	N	N				N			
OOH Placement	Dir	Y	Y	Y	Y					N	N	N	Y					N	Y	N	N
	EM	N	N	N	N					N								N			
	HD	N	N	N	Y					Y	N	N	Y					Y	Y	N	Y
	PM	N	N	N	N					N								N			
	EX	N	N	N	N					N								N			
CPS Services — CPS services B	Dir	Y		Y		N	N	Y	Y					N	N	N	Y				
	EM	N		N		N								N							
	HD	N		Y		Y	N	N	Y					Y	N	N	Y				
	PM	N		N		N								N							
	EX	N		N		N								N							
Any services 2	Dir		Y		Y					N								Y	N	N	N
	EM		N		N					N								N			
	HD		N		N					N								N			
	PM		N		N					N								N			
	EX		N		N					N								N			
CG services 2	Dir		Y		Y					N								Y	Y	N	N
	EM		N		N					N								N			
	HD		N		N					N								N			
	PM		N		N					N								N			
	EX		N		N					N								N			
Child services 2	Dir		Y		Y					N								N			
	EM		N		N					N								N			
	HD		N		N					N								N			
	PM		N		N					N								N			
	EX		N		N					N								N			
Concrete services 2	Dir		Y		Y					N								Y	N	N	N
	EM		N		N					N								N			
	HD		N		N					N								N			
	PM		N		N					N								N			
	EX		N		N					N								N			
CW services 2	Dir		Y		Y					N								Y	N	N	N
	EM		N		N					N								N			
	HD		N		N					N								N			
	PM		N		N					N								N			
	EX		N		N					N								N			
Subsequent CPS Reports	Dir		N		N					N								N			
	EM		N		N					N								N			
	HD		N		N					N								N			
	PM		N		N					N								N			
	EX		N		N					N								N			
Case Outcome	Dir	Y	N	Y	N	N				N				N				N			
	EM	N	N	N	N	N				N				N				N			
	HD	N	N	N	N	N				N				N				N			
	PM	N	N	N	N	N				N				N				N			
	EX	N	N	N	N	N				N				N				N			

Appendix 5

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Referral for Services at Wave 1

Wave 1										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit (df), p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	2084	0+				JI				0.066
Single Mediator Model										
Emotional Maltreatment	2103	0+	−0.004 (0.011) p=.745	−0.001	[−4.316, 6.490]	3.75(4) p=.441	0.000 p=.999	1.00 1.04	0.517	0.068
Harsh Discipline	2103	0+	0.008 (0.031) p=.810	0.001	[−0.060, 0.079]	9.15(4) p=.058	0.025 p=.975	0.81 0.48	0.820	0.085
Parental Monitoring	445	10+	0.009 (0.045) p=.840	0.001	[−0.090, 0.116]	4.51(4) p=.341	0.017 p=.764	0.97 0.91	0.571	0.138
Exposure to Violence	605	8+	0.057 (0.057) p=.318	0.008	[−0.037, 0.209]	8.56(4) p=.073	0.043 p=.541	0.85 0.59	0.788	0.105
Problematic Drug Use										
Direct Model	2132	0+				JI				0.110
Single Mediator Model										
Emotional Maltreatment	2152	0+	0.013 (0.013) p=.313	0.003	[−0.007, 0.047]	2.55(4) p=.636	0.000 p=1.00	1.00 1.14	0.425	0.112
Harsh Discipline	2152	0+	0.050 (0.029) p=.082	0.014	[0.008, 0.112]	10.15(4) p=.038	0.027 p=.968	0.86 0.62	0.865	0.126
Parental Monitoring	450	10+	−0.007 (0.031) p=.819	−0.001	[−0.088, 0.066]	5.32(4) p=.256	0.027 p=.697	0.84 0.55	0.624	0.085
Exposure to Violence	611	8+	0.000 (0.024) p=.988	0.000	[−0.064, 0.063]	8.25(4) p=.083	0.042 p=.569	0.48 −0.43	0.779	0.073

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 6

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Referral for Any Services at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	2118	0+				JI				0.099
Single Mediator Model										
Emotional Maltreatment	2118	0+	0.000 (0.001) p=.970	0.000	[−0.028, 0.028]	3.66(4) p=.455	0.000 p=.999	1.00 1.03	0.510	0.099
Harsh Discipline	2118	0+	0.003 (0.013) p=.810	0.001	[−0.034, 0.048]	9.15(4) p=.058	0.025 p=.976	0.86 0.61	0.820	0.102
Parental Monitoring	445	10+	0.001 (0.006) p=.859	0.000	[−0.047, 0.052]	4.51(4) p=.342	0.017 p=.764	0.00 −3.03	0.571	0.051
Exposure to Violence	605	8+	0.005 (0.037) p=.893	0.001	[−0.082, 0.100]	8.56(4) p=.073	0.043 p=.541	0.55 −0.24	0.788	0.071
Problematic Drug Use										
Direct Model	2169	0+				JI				0.116
Single Mediator Model										
Emotional Maltreatment	2169	0+	−0.003 (0.012) p=.809	−0.001	[−0.039, 0.028]	2.55(4) p=.636	0.000 p=1.00	1.00 1.13	0.425	0.116
Harsh Discipline	2169	0+	0.014 (0.022) p=.526	0.004	[−0.033, 0.065]	10.15(4) p=.038	0.027 p=.969	0.86 0.60	0.865	0.117
Parental Monitoring	450	10+	−0.001 (0.009) p=.878	0.000	[−0.050, 0.043]	5.32(4) p=.256	0.027 p=.697	0.94 0.83	0.624	0.140
Exposure to Violence	611	8+	0.000 (0.00) p=.995	0.000	[−0.032, 0.032]	8.25(4) p=.083	0.042 p=.569	0.78 0.40	0.779	0.132

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 7

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Referral for Services to Caregiver at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	2036	0+				JI				0.099
Single Mediator Model										
Emotional Maltreatment	2059	0+	0.004 (0.012) p=.753	0.001	[−0.031, 0.048]	3.73(4) p=.443	0.000 p=.999	1.00 1.02	0.516	0.101
Harsh Discipline	2059	0+	0.001 (0.007) p=.839	0.000	[−0.029, 0.035]	9.15(4) p=.058	0.025 p=.973	0.86 0.61	0.820	0.099
Parental Monitoring	444	10+	0.000 (0.005) p=.951	0.000	[−0.056, 0.054]	4.51(4) p=.342	0.017 p=.764	0.00 −308.	0.571	0.056
Exposure to Violence	603	8+	−0.032 (0.039) p=.412	−0.005	[−0.141, 0.040]	8.56(4) p=.073	0.043 p=.540	0.59 −0.14	0.788	0.092
Problematic Drug Use										
Direct Model	2080	0+				JI				0.107
Single Mediator Model										
Emotional Maltreatment	2104	0+	−0.016 (0.016) p=.325	−0.004		2.55(4) p=.636	0.000 p=1.00	1.00 1.14	0.425	0.111
Harsh Discipline	2104	0+	0.002 (0.021) p=.928	0.001		10.15(4) p=.038	0.027 p=.964	0.84 0.56	0.865	0.107
Parental Monitoring	449	10+	0.000 (0.004) p=.996	0.000		5.32(4) p=.256	0.027 p=.696	0.92 0.77	0.624	0.116
Exposure to Violence	609	8+	0.001 (0.012) p=.927	0.000		8.25(4) p=.083	0.042 p=.569	0.77 0.37	0.779	0.137

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 8

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Referral for Services to Child at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	2118	0+				JI				0.056
Single Mediator Model										
Emotional Maltreatment	2118	0+	0.000 (0.004) p=.962	0.000		3.75(4) p=.441	0.000 p=.999	1.00 1.08	0.517	0.056
Harsh Discipline	2118	0+	0.004 (0.015) p=.808	0.001		9.15(4) p=.058	0.025 p=.976	0.64 −0.00	0.820	0.059
Parental Monitoring	445	10+	−0.002 (0.011) p=.855	0.000		4.51(4) p=.342	0.017 p=.764	0.00 1.00	0.571	0.041
Exposure to Violence	605	8+	0.012 (0.040) p=.771	0.002		8.56(4) p=.073	0.043 p=.541	0.23 −1.12	0.788	0.092
Problematic Drug Use										
Direct Model	2169	0+				JI				0.065
Single Mediator Model										
Emotional Maltreatment	2169	0+	0.002 (0.013) p=.863	0.001		2.55(4) p=.636	0.000 p=1.00	1.00 1.28	0.425	0.065
Harsh Discipline	2169	0+	0.024 (0.030) p=.425	0.007		10.15(4) p=.038	0.027 p=.969	0.77 0.35	0.865	0.069
Parental Monitoring	450	10+	0.002 (0.007) p=.822	0.000		5.32(4) p=.256	0.027 p=.697	0.91 0.74	0.624	0.101
Exposure to Violence	611	8+	0.000 (0.001) p=.962	0.000		8.25(4) p=.083	0.042 p=.569	0.67 0.10	0.779	0.093

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 9

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Referral for Concrete Services at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	2118	0+				JI				0.083
Single Mediator Model										
Emotional Maltreatment	2118	0+	0.000 (0.004) p=.968	0.000		3.66(4) p=.455	0.000 p=.999	1.00 1.04	0.510	0.084
Harsh Discipline	2118	0+	0.002 (0.009) p=.822	0.000		9.15(4) p=.058	0.025 p=.976	0.80 0.45	0.820	0.085
Parental Monitoring	445	10+	−0.004 (0.025) p=.858	−0.001		4.51(4) p=.341	0.017 p=.764	0.71 0.21	0.571	0.059
Exposure to Violence	605	8+	−0.006 (0.035) p=.857	−0.001		8.56(4) p=.073	0.043 p=.541	0.57 −0.17	0.788	0.067
Problematic Drug Use										
Direct Model	2169	0+				JI				0.107
Single Mediator Model										
Emotional Maltreatment	2169	0+	−0.007 (0.013) p=.602	−0.002		2.55(4) p=.636	0.000 p=1.00	1.00 1.14	0.425	0.108
Harsh Discipline	2169	0+	0.007 (0.022) p=.741	0.002		10.15(4) p=.038	0.027 p=.969	0.85 0.58	0.865	0.107
Parental Monitoring	450	10+	0.004 (0.018) p=.822	0.001		5.32(4) p=.256	0.027 p=.697	0.95 0.86	0.624	0.151
Exposure to Violence	611	8+	0.000 (0.005) p=.955	0.000		8.25(4) p=.083	0.042 p=.569	0.80 0.44	0.779	0.131

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 10

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Referral for Child Welfare Services at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	2039	0+				JI				0.089
Single Mediator Model										
Emotional Maltreatment	2060	0+	0.000 (0.007) p=.968	0.000		3.66(4) p=.455	0.000 p=.999	1.00 1.04	0.510	0.089
Harsh Discipline	2060	0+	0.002 (0.010) p=.822	0.000		9.15(4) p=.058	0.025 p=.973	0.82 0.50	0.820	0.090
Parental Monitoring	445	10+	0.003 (0.016) p=.844	0.000		4.51(4) p=.342	0.017 p=.764	0.50 −0.36	0.571	0.067
Exposure to Violence	603	8+	−0.037 (0.048) p=.446	−0.005		8.56(4) p=.073	0.043 p=.540	0.51 −0.35	0.788	0.083
Problematic Drug Use										
Direct Model	2085	0+				JI				0.096
Single Mediator Model										
Emotional Maltreatment	2107	0+	−0.010 (0.013) p=.463	−0.003		2.55(4) p=.636	0.000 p=1.00	1.00 1.16	0.425	0.098
Harsh Discipline	2107	0+	0.008 (0.022) p=.716	0.002		10.15(4) p=.038	0.027 p=.964	0.83 0.52	0.865	0.096
Parental Monitoring	450	10+	−0.004 (0.018) p=.848	−0.001		5.32(4) p=.256	0.027 p=.697	0.93 0.82	0.624	0.151
Exposure to Violence	609	8+	0.000 (0.017) p=.987	0.000		8.25(4) p=.083	0.042 p=.568	0.77 0.37	0.779	0.140

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 11

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Subsequent CPS Report by Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	2091	0+				JI				0.124
Single Mediator Model										
Emotional Maltreatment	2110	0+	−0.003 (0.009) p=.755	0.000		3.74(4) p=.443	0.000 p=.999	1.00 1.05	0.516	0.126
Harsh Discipline	2110	0+	0.003 (0.013) p=.807	0.001		9.15(4) p=.058	0.025 p=.976	0.73 0.26	0.820	0.127
Parental Monitoring	445	10+	−0.001 (0.007) p=.905	0.000		4.51(4) p=.342	0.017 p=.764	0.83 0.54	0.571	0.246
Exposure to Violence	603	8+	0.079 (0.067) p=.238	0.011		8.56(4) p=.073	0.043 p=.540	0.72 0.22	0.788	0.249
Problematic Drug Use										
Direct Model	2140	0+				JI				0.113
Single Mediator Model										
Emotional Maltreatment	2159	0+	0.007 (0.013) p=.577	0.002		2.55(4) p=.636	0.000 p=1.00	1.00 1.29	0.425	0.115
Harsh Discipline	2159	0+	0.016 (0.022) p=.482	0.004		10.15(4) p=.038	0.027 p=.968	0.76 0.33	0.865	0.115
Parental Monitoring	450	10+	0.001 (0.006) p=.858	0.000		5.32(4) p=.256	0.027 p=.697	0.71 0.21	0.624	0.251
Exposure to Violence	609	8+	−0.001 (0.031) p=.978	0.000		8.25(4) p=.083	0.042 p=.568	0.67 0.10	0.779	0.250

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 12

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Case Outcomes

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use																				
Direct Model	2098	0+				JI				0.061	2071	0+				JI				0.123
Single Mediator Models																				
Emotional Maltreatment	2115	0+	0.001 (0.006) p=.799	0.000		3.74(4) p=.442	0.000 p=.999	1.00 1.04	0.517	0.061	2105	0+	0.000 (0.007) p=.998	0.000		3.80(5) p=.579	0.000 p=1.00	1.00 1.25	0.470	0.123
Harsh Discipline	2115	0+	0.000 (0.004) p=.934	0.000		9.15(4) p=.058	0.025 p=.976	0.77 0.36	0.820	0.061	2105	0+	0.003 (0.012) p=.802	0.000		10.94(5) p=.053	0.024 p=.990	0.68 0.16	0.819	0.125
Parental Monitoring	445	10+	0.007 (0.037) p=.847	0.001		4.51(4) p=.341	0.017 p=.764	0.97 0.93	0.571	0.148	445	10+	0.002 (0.012) p=.876	0.000		4.49(5) p=.481	0.000 p=.877	1.00 1.00	0.510	0.190
Exposure to Violence	605	8+	0.030 (0.045) p=.506	0.004		8.56(4) p=.073	0.043 p=.541	0.68 0.12	0.788	0.070	603	8+	0.086 (0.073) p=.238	0.012		8.47(5) p=.132	0.034 p=.711	0.71 0.24	0.714	0.237
Problematic Drug Use																				
Direct Model	2150	0+				JI				0.130	2119	0+				JI				0.115
Single Mediator Models																				
Emotional Maltreatment	2166	0+	−0.004 (0.013) p=.753	−0.001		2.55(4) p=.038	0.000 p=1.00	1.00 1.11	0.425	0.131	2153	0+	0.004 (0.013) p=.753	0.001		2.77(5) p=.735	0.000 p=1.00	1.00 1.39	0.400	0.114
Harsh Discipline	2166	0+	−0.009 (0.026) p=.741	−0.002		10.15(4) p=.038	0.027 p=.969	0.87 0.65	0.865	0.131	2153	0+	0.014 (0.026) p=.594	0.004		11.87(5) p=.037	0.025 p=.987	0.75 0.36	0.853	0.115
Parental Monitoring	450	10+	−0.005 (0.025) p=.838	−0.001		5.32(4) p=.256	0.027 p=.697	0.98 0.93	0.624	0.221	450	10+	−0.002 (0.011) p=.850	0.000		5.27(5) p=.383	0.011 p=.830	0.00 1.00	0.559	0.191
Exposure to Violence	611	8+	0.000 (0.015) p=.997	0.000		8.25(4) p=.083	0.042 p=.569	0.80 0.44	0.779	0.115	609	8+	0.000 (0.034) p=.995	0.000		8.55(5) p=.129	0.034 p=.710	0.60 −0.05	0.719	0.237

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 13

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Out-of-Home Placement

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use																				
Direct Model	2118	0+				JI				0.169	2112	0+				JI				0.129
Single Mediator Models																				
Emotional Maltreatment	2118	0+	0.002 (0.057) p=.977	0.000		3.80(5) p=.578	0.000 p=1.00	1.00 1.07	0.485	0.227	2116	0+	−0.006 (0.019) p=.763	−0.001		3.74(4) p=.443	0.000 p=.999	1.00 1.02	0.516	0.135
Harsh Discipline	2118	0+	0.011 (0.041) p=.787	0.002		10.94(5) p=.053	0.024 p=.990	0.88 0.70	0.844	0.198	2116	0+	0.008 (0.032) p=.803	0.001		9.15(4) p=.058	0.025 p=.976	0.89 0.71	0.820	0.148
Parental Monitoring	445	10+	0.009 (0.056) p=.872	0.001		4.49(5) p=.481	0.000 p=.877	1.00 1.06	0.526	0.286	445	10+	−0.011 (0.053) p=.838	−0.002		4.51(4) p=.342	0.017 p=.764	0.95 0.86	0.571	0.194
Exposure to Violence	605	8+	0.040 (0.031) p=.201	0.006		8.48(5) p=.132	0.034 p=.712	0.81 0.50	0.737	0.190	605	8+	0.079 (0.060) p=.186	0.011		8.56(4) p=.073	0.043 p=.541	0.70 0.16	0.788	0.137
Problematic Drug Use																				
Direct Model	2169	0+				JI				0.245	2163	0+				JI				0.146
Single Mediator Models																				
Emotional Maltreatment	2169	0+	0.057 (0.043) p=.181	0.014		2.77(5) p=.734	0.000 p=1.00	1.00 1.07	0.413	0.294	2167	0+	0.019 (0.021) p=.358	0.005		2.55(4) p=.636	0.000 p=1.00	1.00 1.12	0.425	0.152
Harsh Discipline	2169	0+	0.070 (0.041) p=.088	0.018		11.87(5) p=.037	0.025 p=.987	0.93 0.80	0.880	0.273	2167	0+	0.054 (0.029) p=.064	0.014		10.15(4) p=.038	0.027 p=.969	0.87 0.65	0.865	0.163
Parental Monitoring	450	10+	−0.010 (0.045) p=.832	−0.002		5.27(5) p=.384	0.011 p=.830	0.99 0.98	0.576	0.351	450	10+	0.009 (0.043) p=.836	0.002		5.32(4) p=.256	0.027 p=.697	0.86 0.62	0.624	0.188
Exposure to Violence	611	8+	0.000 (0.011) p=.981	0.000		8.54(5) p=.129	0.034 p=.712	0.86 0.63	0.741	0.227	611	8+	0.000 (0.030) p=.996	0.000		8.25(4) p=.083	0.042 p=.569	0.64 0.01	0.779	0.135

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 14

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Child Depression

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Problematic Alcohol Use																				
Direct Model	658	7+				JI				0.041	538	7+				JI				0.067
Single Mediator Models																				
Emotional Maltreatment	691	7+	−0.006 (0.232) p=.979	0.000 (0.003) p=.979		3.28 p=.512	0.000 p=.937	1.00 1.35	0.022	0.041	670	7+	−0.014 (0.127) p=.912	0.000 (0.002) p=.912		3.27 p=.514	0.000 p=.933	1.00 1.15	0.021	0.069
Harsh Discipline	691	7+	0.025 (0.121) p=.834	0.000 (0.002) p=.835		14.39 p=.006	0.061 p=.247	0.52 −0.32	0.047	0.045	670	7+	−0.007 (0.050) p=.890	0.000 (0.001) p=.890		14.40 p=.006	0.062 p=.234	0.63 −0.03	0.046	0.068
Parental Monitoring	439	10+	0.417 (1.643) p=.800	0.006 (0.022) p=.800		5.38 p=.251	0.028 p=.684	0.96 0.89	0.037	0.202	441	10+	0.231 (0.820) p=.778	0.003 (0.012) p=.779		5.54 p=.236	0.030 p=.670	0.88 0.66	0.035	0.098
Exposure to Violence	579	8+	1.740 (1.54) p=.260	0.023 (0.021) p=.263		8.84 p=.065	0.046 p=.502	0.88 0.66	0.035	0.136	590	8+	1.282 (1.228) p=.297	0.019 (0.019) p=.304		8.19 p=.085	0.042 p=.559	0.88 0.68	0.033	0.131
Problematic Drug Use																				
Direct Model	663	7+				JI				0.040	542	7+				JI				0.066
Single Mediator Models																				
Emotional Maltreatment	696	7+	−0.001 (0.139) p=.995	0.000 (0.003) p=.995		3.20 p=.525	0.000 p=.941	1.00 1.45	0.021	0.040	678	7+	0.006 (0.079) p=.936	0.000 (0.002) p=.936		3.19 p=.527	0.000 p=.938	1.00 1.18	0.021	0.067
Harsh Discipline	696	7+	0.072 (0.154) p=.641	0.001 (0.003) p=.640		14.47 p=.006	0.061 p=.246	0.51 −0.34	0.047	0.045	678	7+	−0.038 (0.074) p=.605	−0.001 (0.002) p=.606		14.51 p=.006	0.062 p=.234	0.63 −0.01	0.046	0.067
Parental Monitoring	444	10+	−0.048 (0.830) p=.954	−0.001 (0.014) p=.954		5.92 p=.205	0.033 p=.639	0.95 0.87	0.038	0.206	446	10+	−0.025 (0.443) p=.956	0.000 (0.008) p=.956		6.11 p=.191	0.034 p=.623	0.87 0.63	0.036	0.107
Exposure to Violence	585	8+	−0.229 (0.814) p=.779	−0.004 (0.014) p=.779		9.46 p=.051	0.048 p=.461	0.86 0.62	0.035	0.139	595	8+	−0.189 (0.614) p=.758	−0.004 (0.012) p=.758		8.69 p=.069	0.044 p=.525	0.87 0.65	0.034	0.130

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 15

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Child Trauma

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Problematic Alcohol Use																				
Direct Model Single Mediator Models	574	8+				JI				0.006	462	8+				JI				0.014
Emotional Maltreatment	597	8+	0.549 (0.408) p=.178	0.007 (0.005) p=.197		1.68 p=.795	0.000 p=.979	1.00 1.00	0.015	0.013	575	8+	−0.064 (0.243) p=.793	−0.001 (0.004) p=.794		1.73 p=.785	0.000 p=.975	1.00 1.00	0.015	0.015
Harsh Discipline	597	8+	−0.141 (0.207) p=.496	−0.002 (0.003) p=.504		8.03 p=.091	0.041 p=.247	0.00 −4.24	0.039	0.011	575	8+	−0.153 (0.197) p=.439	−0.002 (0.003) p=.435		8.24 p=.083	0.043 p=.544	0.00 −1.83	0.038	0.019
Parental Monitoring	438	10+	0.204 (0.781) p=.794	0.003 (0.010) p=.795		5.41 p=.247	0.028 p=.680	0.73 0.25	0.034	0.052	441	10+	0.194 (0.756) p=.798	0.003 (0.012) p=.798		5.41 p=.247	0.028 p=.682	0.61 −0.08	0.034	0.048
Exposure to Violence	577	8+	1.816 (1.715) p=.290	0.023 (0.022) p=.292		8.47 p=.076	0.044 p=.528	0.78 0.40	0.033	0.110	588	8+	1.197 (1.160) p=.302	0.018 (0.018) p=.309		8.35 p=.080	0.043 p=.545	0.69 0.16	0.033	0.074
Problematic Drug Use																				
Direct Model Single Mediator Models	580	8+				JI				0.008	465	8+				JI				0.011
Emotional Maltreatment	603	8+	0.131 (0.387) p=.734	0.002 (0.007) p=.735		1.63 p=.804	0.000 p=.981	1.00 1.00	0.015	0.018	582	8+	0.000 (0.047) p=.993	0.000 (0.001) p=.993		1.66 p=.798	0.000 p=.978	1.00 1.00	0.015	0.011
Harsh Discipline	603	8+	−0.220 (0.271) p=.417	−0.004 (0.005) p=.427		8.15 p=.086	0.041 p=.572	0.00 −2.62	0.039	0.013	582	8+	−0.257 (0.321) p=.423	−0.005 (0.006) p=.415		8.36 p=.079	0.043 p=.540	0.00 −1.81	0.038	0.018
Parental Monitoring	443	10+	−0.030 (0.423) p=.944	0.000 (0.007) p=.944		5.96 p=.202	0.033 p=.635	0.74 0.28	0.035	0.055	446	10+	−0.036 (0.408) p=.931	−0.001 (0.008) p=.931		5.96 p=.202	0.033 p=.637	0.69 0.15	0.035	0.056
Exposure to Violence	583	8+	−0.258 (0.866) p=.766	−0.004 (0.015) p=.766		9.00 p=.061	0.046 p=.493	0.78 0.38	0.034	0.115	593	8+	−0.174 (0.552) p=.753	−0.004 (0.011) p=.753		8.82 p=.066	0.045 p=.514	0.64 0.01	0.033	0.071

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 16

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Child Internalizing Behaviors

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Problematic Alcohol Use																				
Direct Model Single Mediator Models	1262	1.5+				JI				0.023	1032	1.5+				JI				0.021
Emotional Maltreatment	1264	1.5+	0.391 (0.554) p=.481	0.006 (0.008) p=.483		3.42 p=.490	0.000 p=.989	1.00 1.04	0.016	0.087	1214	1.5+	0.268 (0.484) p=.580	0.004 (0.008) p=.580		3.41 p=.491	0.000 p=.987	1.00 1.05	0.016	0.077
Harsh Discipline	1264	1.5+	0.205 (0.402) p=.609	0.003 (0.006) p=.609		23.83 p<.001	0.063 p=.167	0.54 −0.26	0.036	0.064	1214	1.5+	0.097 (0.251) p=.700	0.002 (0.004) p=.700		23.29 p<.001	0.063 p=.165	0.44 −0.55	0.036	0.043
Parental Monitoring	445	10+	0.032 (0.138) p=.813	0.000 (0.002) p=.814		5.48 p=.241	0.029 p=.679	0.62 −0.06	0.034	0.036	442	10+	0.067 (0.262) p=.796	0.001 (0.004) p=.797		5.47 p=.242	0.029 p=.678	0.67 0.09	0.034	0.043
Exposure to Violence	605	8+	0.393 (0.537) p=.464	0.005 (0.007) p=.467		8.29 p=.082	0.042 p=.562	0.52 −0.32	0.033	0.037	598	8+	0.802 (0.762) p=.293	0.012 (0.011) p=.294		9.04 p=.060	0.046 p=.501	0.76 0.33	0.034	0.083
Problematic Drug Use																				
Direct Model Single Mediator Models	1285	1.5+				JI				0.022	1051	1.5+				JI				0.024
Emotional Maltreatment	1287	1.5+	−0.336 (0.346) p=.331	−0.007 (0.008) p=.336		3.38 p=.496	0.000 p=.990	1.00 1.05	0.015	0.085	1236	1.5+	−0.305 (0.305) p=.317	−0.007 (0.007) p=.320		3.21 p=.523	0.000 p=.990	1.00 1.07	0.015	0.079
Harsh Discipline	1287	1.5+	−0.376 (0.254) p=.140	−0.008 (0.006) p=.144		26.43 p<.001	0.066 p=.114	0.51 −0.34	0.037	0.061	1236	1.5+	−0.255 (0.175) p=.145	−0.006 (0.004) p=.148		25.70 p<.001	0.066 p=.115	0.42 −0.58	0.037	0.047
Parental Monitoring	450	10+	−0.005 (0.067) p=.937	0.000 (0.001) p=.937		6.03 p=.197	0.034 p=.633	0.44 −0.53	0.035	0.033	447	10+	−0.010 (0.116) p=.930	0.000 (0.002) p=.930		6.02 p=.198	0.034 p=.633	0.61 −0.07	0.035	0.044
Exposure to Violence	611	8+	−0.052 (0.184) p=.777	−0.001 (0.003) p=.778		8.85 p=.065	0.045 p=.524	0.30 −0.93	0.033	0.031	604	8+	−0.105 (0.353) p=.766	−0.002 (0.007) p=.766		9.60 p=.048	0.048 p=.465	0.70 0.18	0.035	0.080

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 17

Path Models from Caseworker Reported Problematic Alcohol and Drug Use to Child Externalizing Behaviors

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Problematic Alcohol Use																				
Direct Model Single Mediator Models	1263	1.5+				JI				0.039	1032	1.5+				JI				0.048
Emotional Maltreatment	1264	1.5+	0.523 (0.824) p=.526	0.007 (0.011) p=.526		3.55 p=.470	0.000 p=.988	1.00 1.02	0.017	0.171	1214	1.5+	0.280 (0.780) p=.720	0.004 (0.011) p=.720		3.34 p=.504	0.000 p=.988	1.00 1.03	0.017	0.166
Harsh Discipline	1264	1.5+	0.291 (0.665) p=.662	0.004 (0.009) p=.661		25.10 p<.001	0.065 p=.136	0.68 0.11	0.039	0.129	1214	1.5+	0.152 (0.570) p=.789	0.002 (0.008) p=.789		23.39 p<.001	0.063 p=.162	0.71 0.21	0.038	0.135
Parental Monitoring	445	10+	0.085 (0.339) p=.802	0.001 (0.004) p=.802		5.30 p=.258	0.027 p=.695	0.00 −4.62	0.033	0.027	442	10+	0.054 (0.233) p=.816	0.001 (0.003) p=.816		5.35 p=.253	0.028 p=.689	0.31 −0.91	0.033	0.034
Exposure to Violence	605	8+	0.680 (0.734) p=.354	0.009 (0.010) p=.359		8.43 p=.077	0.043 p=.551	0.40 −0.64	0.033	0.039	598	8+	1.003 (0.840) p=.233	0.014 (0.011) p=.233		8.88 p=.064	0.045 p=.513	0.69 0.14	0.034	0.077
Problematic Drug Use																				
Direct Model Single Mediator Models	1286	1.5+				JI				0.042	1051	1.5+				JI				0.043
Emotional Maltreatment	1287	1.5+	−0.356 (0.509) p=.484	−0.008 (0.011) p=.483		3.68 p=.451	0.000 p=.988	1.00 1.01	0.017	0.177	1236	1.5+	−0.418 (0.473) p=.378	−0.009 (0.011) p=.379		3.21 p=.523	0.000 p=.990	1.00 1.03	0.016	0.167
Harsh Discipline	1287	1.5+	−0.503 (0.347) p=.147	−0.011 (0.007) p=.143		27.60 p<.001	0.068 p=.093	0.63 −0.01	0.040	0.127	1236	1.5+	−0.520 (0.359) p=.148	−0.012 (0.008) p=.149		25.57 p<.001	0.066 p=.118	0.67 0.09	0.039	0.133
Parental Monitoring	450	10+	−0.015 (0.217) p=.943	0.000 (0.004) p=.943		5.81 p=.214	0.032 p=.653	0.00 −3.05	0.034	0.027	447	10+	−0.012 (0.134) p=.926	0.000 (0.002) p=.926		5.87 p=.209	0.032 p=.646	0.08 −1.54	0.034	0.035
Exposure to Violence	611	8+	−0.108 (0.364) p=.766	−0.002 (0.006) p=.766		9.00 p=.061	0.045 p=.513	0.20 −1.20	0.034	0.036	604	8+	−0.162 (0.505) p=.748	−0.003 (0.009) p=.747		9.46 p=.051	0.048 p=.475	0.62 −0.04	0.035	0.079

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 18

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Referral for Services at Wave 1

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1560	0+				JI				0.055
Single Mediator Model										
Emotional Maltreatment	1633	0+	−0.003 (0.004) p=.488	−0.007		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.056
Harsh Discipline	1633	0+	−0.010 (0.005) p=.031	−0.026		10.57(4) p=.032	0.032 p=.887	0.93 0.80	0.884	0.069
Parental Monitoring	385	10+	−0.006 (0.006) p=.293	−0.015		4.44(4) p=.349	0.017 p=.732	0.93 0.81	0.567	0.085
Exposure to Violence	515	8+	0.004 (0.005) p=.413	0.011		6.07(4) p=.194	0.032 p=.676	0.56 −0.23	0.663	0.070
Problematic Drug Use										
Direct Model	1457	0+				JI				0.052
Single Mediator Model										
Emotional Maltreatment	1522	0+	−0.004 (0.003) p=.261	−0.008		7.50(4) p=.112	0.024 p=.948	0.90 0.72	0.737	0.055
Harsh Discipline	1522	0+	−0.011 (0.004) p=.015	−0.022		11.34(4) p=.023	0.035 p=.830	0.83 0.52	0.916	0.072
Parental Monitoring	363	10+	−0.005 (0.010) p=.609	−0.008		5.71(4) p=.222	0.034 p=.595	0.78 0.40	0.646	0.142
Exposure to Violence	480	8+	−0.001 (0.010) p=.924	−0.001		4.98(4) p=.289	0.023 p=.745	0.90 0.72	0.599	0.143

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 19

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Baseline Services

Wave 1

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	Model Fit Statistics: X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Harsh Discipline	1633	0+	−0.010 (0.005) p=.031	−0.026		10.57(4) p=.032	0.032 p=.887	0.93 0.80	0.884	0.069
Depression	1633	0+	0.021 (0.006) p=.001	0.054		5.01(4) p=.286	0.012 p=.989	0.98 0.95	0.627	0.119
Two Mediator Model										
HD and Depression	1633	0+				20.92(9) p=.013	0.028 p=.998	0.84 0.68	0.988	0.084
HD			−0.004 (0.006) p = 0.553	−0.020						
Depression			0.008 (0.012) p = 0.491	0.043						
Moderator Model										
Depression Moderating direct Path	1633	0+				9.96(9) p=.354	0.008 p=1.00	1.00 1.00	0.678	0.127
Depression moderating direct path			−0.032 (0.013) p=.014	−0.080	[−0.057, −0.006]					
Path controlling for Depression			0.021 (0.006) p = 0.001	0.054	[0.009, 0.0436]					
Domestic Violence (DV) Moderating direct Path	1633	0+				966.14(9) p<.001	0.255 p<.001	0.09 −0.82	7.377	0.058
DV moderating direct path			−0.002 (0.001) p=.035	−0.005						
Path controlling for DV			0.002 (0.003) p = 0.513	0.004						
Mediator and Moderator Model										
HD Mediator with Depression Moderating HD Path	1633	0+				358.47(15) p<.001	0.118 p<.001	0.34 −0.14	3.851	0.148
HD Mediator			−0.010 (0.005) p=.031	−0.026						
Depression moderating HD path			−0.011 (0.003) p = 0.001	−0.027						
Path controlling for Major Depression			0.021 (0.006) p = 0.001	0.054						
HD Mediator with Depression Moderating Direct Path	1633	0+				53.208(15) p<.001	0.039 p=.928	0.99 0.99	1.403	0.141
HD Mediator			−0.010 (0.005) p=.031	−0.026						
Depression moderating direct path			−0.032 (0.013) p = 0.014	−0.080						
Path controlling for Major Depression			0.021 (0.006) p = 0.001	0.054						
Mediator and Moderator Model										
HD and Depression Mediators with Depression Moderating HD and Direct Paths and DV Moderating the Direct Path	1633	0+				2270.92(39) p<.001	0.187 p<.001	0.67 0.48	7.920	0.158

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 20

Final Path Models from Caregiver Self-Reported Problematic Drug Use to Baseline Services

Wave 1										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Harsh Discipline	1522	0+	−0.011 (0.004) p=.015	−0.022		11.34(4) p=.023	0.035 p=.830	0.83 0.52	0.916	0.072
Depression	1522	0+	0.025 (0.009) p=.005	0.053	[0.009, 0.045]	2.54(4) p=.638	0.000 p=.998	1.00 1.11	0.430	0.112
Two Mediator Model										
HD and Depression	1522	0+				17.50 p=.041	0.025 p=.993	0.87 0.75	0.919	0.132
HD			−0.011 (0.004) p = 0.015	−0.023						
Depression			0.025 (0.009) p = 0.005	0.053						
Moderator Model										
Depression Moderating direct Path	1522	0+				25.85(9) p=.002	0.035 p=.934	0.99 0.97	1.167	0.115
Depression moderating direct path			0.023 (0.023) p=.332	0.048						
Path controlling for Depression			0.025 (0.009) p = 0.005	0.053						
Full Model										
HD Mediator with Depression Moderating HD Path	1522	0+				342.00(15) p<.001	0.120 p<.001	0.15 −0.48	3.786	0.162
HD Mediator			−0.009 (0.003) p=.005	−0.020						
Depression moderating HD path			−0.011 (0.004) p = 0.015	−0.023						
Path controlling for Major Depression			0.025 (0.009) p = 0.005	0.053						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 21

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Referral for Any Services at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1633	0+				JI				0.051
Single Mediator Model										
Emotional Maltreatment	1633	0+	−0.002 (0.005) p=.717	−0.004		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.052
Harsh Discipline	1633	0+	−0.006 (0.005) p=.220	−0.016		10.57(4) p=.032	0.032 p=.887	0.92 0.78	0.884	0.056
Parental Monitoring	387	10+	−0.003 (0.005) p=.510	−0.008		4.44(4) p=.349	0.017 p=.733	0.00 1.00	0.567	0.037
Exposure to Violence	520	8+	0.001 (0.003) p=.702	0.003		6.07(4) p=.194	0.032 p=.680	0.00 −2.65	0.663	0.051
Problematic Drug Use										
Direct Model	1522	0+				JI				0.067
Single Mediator Model										
Emotional Maltreatment	1522	0+	−0.002 (0.004) p=.643	−0.004		7.50(4) p=.112	0.024 p=.948	0.90 0.73	0.737	0.067
Harsh Discipline	1522	0+	−0.006 (0.004) p=.126	−0.014		11.34(4) p=.023	0.035 p=.830	0.81 0.48	0.916	0.074
Parental Monitoring	364	10+	−0.002 (0.005) p=.661	−0.003		5.71(4) p=.222	0.034 p=.595	0.00 1.00	0.646	0.041
Exposure to Violence	484	8+	0.000 (0.002) p=.920	0.000		4.98(4) p=.289	0.023 p=.748	0.00 −7.30	0.599	0.058

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 22

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Referral for Services for Caregiver at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1604	0+				JI				0.057
Single Mediator Model										
Emotional Maltreatment	1633	0+	0.003 (0.005) p=.516	0.008		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.058
Harsh Discipline	1633	0+	−0.003 (0.005) p=.523	−0.007		10.57(4) p=.032	0.032 p=.887	0.92 0.78	0.884	0.058
Parental Monitoring	387	10+	−0.002 (0.005) p=.646	−0.005		4.44(4) p=.349	0.017 p=.733	0.00 1.00	0.567	0.039
Exposure to Violence	520	8+	−0.001 (0.002) p=.718	−0.002		6.07(4) p=.194	0.032 p=.680	0.20 −1.20	0.663	0.078
Problematic Drug Use										
Direct Model	1495	0+				JI				0.067
Single Mediator Model										
Emotional Maltreatment	1522	0+	0.001 (0.004) p=.810	0.002		7.50(4) p=.112	0.024 p=.948	0.90 0.72	0.737	0.067
Harsh Discipline	1522	0+	−0.005 (0.004) p=.260	−0.010		11.34(4) p=.023	0.035 p=.830	0.80 0.45	0.916	0.071
Parental Monitoring	364	10+	−0.002 (0.005) p=.670	−0.003		5.71(4) p=.222	0.034 p=.596	0.00 1.00	0.646	0.028
Exposure to Violence	484	8+	0.000 (0.001) p=.938	0.000		4.98(4) p=.289	0.023 p=.748	0.00 1.00	0.599	0.044

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 23

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Referral for Services for Child at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1633	0+				JI				0.033
Single Mediator Model										
Emotional Maltreatment	1633	0+	−0.002 (0.005) p=.644	−0.006		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.034
Harsh Discipline	1633	0+	−0.006 (0.006) p=.291	−0.015		10.57(4) p=.032	0.032 p=.887	0.91 0.76	0.884	0.038
Parental Monitoring	387	10+	−0.001 (0.004) p=.793	−0.003		4.44(4) p=.349	0.017 p=.733	0.00 1.00	0.567	0.041
Exposure to Violence	520	8+	0.001 (0.003) p=.759	0.002		6.07(4) p=.194	0.032 p=.680	0.20 −44.0	0.663	0.045
Problematic Drug Use										
Direct Model	1522	0+				JI				0.036
Single Mediator Model										
Emotional Maltreatment	1522	0+	−0.003 (0.004) p=.471	−0.006		7.50(4) p=.112	0.024 p=.948	0.87 0.63	0.737	0.038
Harsh Discipline	1522	0+	−0.007 (0.005) p=.167	−0.015		11.34(4) p=.023	0.035 p=.830	0.74 0.29	0.916	0.045
Parental Monitoring	364	10+	−0.002 (0.005) p=.677	−0.003		5.71(4) p=.222	0.034 p=.596	0.00 −4.82	0.646	0.060
Exposure to Violence	484	8+	0.000 (0.003) p=.923	0.000		4.98(4) p=.289	0.023 p=.748	0.00 1.00	0.599	0.060

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 24

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Referral for Concrete Services at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1633	0+				JI				0.038
Single Mediator Model										
Emotional Maltreatment	1633	0+	−0.001 (0.005) p=.894	−0.002		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.038
Harsh Discipline	1633	0+	−0.005 (0.005) p=.340	−0.012		10.57(4) p=.032	0.032 p=.887	0.92 0.77	0.884	0.041
Parental Monitoring	387	10+	0.001 (0.005) p=.767	0.004		4.44(4) p=.349	0.017 p=.733	0.00 1.00	0.567	0.033
Exposure to Violence	520	8+	0.000 (0.003) p=.920	0.001		6.07(4) p=.194	0.032 p=.680	0.20 −3.54	0.663	0.047
Problematic Drug Use										
Direct Model	1522	0+				JI				0.051
Single Mediator Model										
Emotional Maltreatment	1522	0+	−0.001 (0.004) p=.783	−0.002		7.50(4) p=.112	0.024 p=.948	0.89 0.68	0.737	0.052
Harsh Discipline	1522	0+	−0.005 (0.004) p=.208	−0.011		11.34(4) p=.023	0.035 p=.830	0.78 0.38	0.916	0.057
Parental Monitoring	364	10+	0.001 (0.003) p=.838	0.001		5.71(4) p=.222	0.034 p=.596	0.00 1.00	0.646	0.028
Exposure to Violence	484	8+	0.000 (0.001) p=.924	0.000		4.98(4) p=.289	0.023 p=.748	0.00 1.00	0.599	0.050

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 25

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Referral for Child Welfare Services at Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1606	0+				JI				0.057
Single Mediator Model										
Emotional Maltreatment	1633	0+	0.002 (0.005) p=.674	0.005		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.058
Harsh Discipline	1633	0+	−0.004 (0.005) p=.439	−0.009		10.57(4) p=.032	0.032 p=.887	0.92 0.78	0.884	0.059
Parental Monitoring	387	10+	−0.005 (0.005) p=.351	−0.012		4.45(4) p=.349	0.017 p=.733	0.53 −0.29	0.567	0.060
Exposure to Violence	520	8+	−0.002 (0.003) p=.537	−0.004		6.07(4) p=.194	0.032 p=.680	0.00 −1.82	0.663	0.068
Problematic Drug Use										
Direct Model	1497	0+				JI				0.077
Single Mediator Model										
Emotional Maltreatment	1522	0+	0.001 (0.004) p=.717	0.003		7.50(4) p=.112	0.024 p=.948	0.91 0.74	0.737	0.076
Harsh Discipline	1522	0+	−0.005 (0.004) p=.243	−0.010		11.34(4) p=.023	0.035 p=.830	0.81 0.48	0.916	0.080
Parental Monitoring	387	10+	−0.005 (0.005) p=.351	−0.012		4.45(4) p=.349	0.017 p=.733	0.53 −0.29	0.567	0.060
Exposure to Violence	484	8+	0.000 (0.003) p=.926	0.000		4.98(4) p=.289	0.023 p=.748	0.00 −2.27	0.599	0.084

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 26

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Subsequent CPS Report by Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1609	0+				JI				0.121
Single Mediator Model										
Emotional Maltreatment	1633	0+	−0.004 (0.005) p=.361	−0.010		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.123
Harsh Discipline	1633	0+	−0.005 (0.005) p=.287	−0.012		10.57(4) p=.032	0.032 p=.887	0.93 0.80	0.884	0.124
Parental Monitoring	387	10+	−0.002 (0.004) p=.649	−0.004		4.45(4) p=.348	0.017 p=.733	0.91 0.76	0.567	0.248
Exposure to Violence	518	8+	0.004 (0.004) p=.331	0.009		6.07(4) p=.194	0.032 p=.678	0.81 0.47	0.663	0.232
Problematic Drug Use										
Direct Model	1499	0+				JI				0.119
Single Mediator Model										
Emotional Maltreatment	1522	0+	−0.002 (0.004) p=.558	−0.005		7.50(4) p=.112	0.024 p=.948	0.91 0.74	0.737	0.120
Harsh Discipline	1522	0+	−0.004 (0.004) p=.385	−0.008		11.34(4) p=.023	0.035 p=.830	0.81 0.46	0.916	0.121
Parental Monitoring	364	10+	−0.001 (0.003) p=.722	−0.001		5.72(4) p=.221	0.034 p=.595	0.65 0.02	0.647	0.239
Exposure to Violence	482	8+	−0.001 (0.008) p=.924	−0.001		4.98(4) p=.289	0.023 p=.746	0.85 0.60	0.599	0.224

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 27

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Case Outcomes

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use																				
Direct Model	1562	0+				JI				0.020	1592	0+				JI				0.121
Single Mediator Models																				
Emotional Maltreatment	1633	0+	−0.001 (0.005) p=.857	−0.002		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.020	1633	0+	−0.003 (0.005) p=.560	−0.007		4.15(5) p=.529	0.000 p=.999	1.00 1.03	0.492	0.121
Harsh Discipline	1633	0+	−0.001 (0.006) p=.799	−0.004		10.57(4) p=.032	0.032 p=.887	0.91 0.75	0.884	0.020	1633	0+	−0.004 (0.005) p=.431	−0.010		11.70(5) p=.039	0.029 p=.946	0.92 0.79	0.852	0.122
Parental Monitoring	385	10+	−0.006 (0.006) p=.297	−0.016		4.45(4) p=.348	0.017 p=.732	0.98 0.94	0.567	0.144	387	10+	−0.004 (0.004) p=.342	−0.010		4.57(5) p=.471	0.000 p=.844	1.00 1.69	0.516	0.193
Exposure to Violence	514	8+	0.002 (0.004) p=.569	0.005		6.07(4) p=.194	0.032 p=.676	0.54 −0.26	0.663	0.047	518	8+	0.004 (0.004) p=.312	0.009		5.93(5) p=.314	0.019 p=.825	0.85 0.60	0.593	0.211
Problematic Drug Use																				
Direct Model	1459	0+				JI				0.035	1485	0+				JI				0.120
Single Mediator Models																				
Emotional Maltreatment	1522	0+	−0.002 (0.004) p=.506	−0.005		7.50(4) p=.112	0.024 p=.948	0.87 0.65	0.737	0.036	1522	0+	−0.002 (0.004) p=.663	−0.004		7.66(5) p=.176	0.019 p=.985	0.93 0.81	0.675	0.120
Harsh Discipline	1522	0+	−0.004 (0.005) p=.428	−0.008		11.34(4) p=.023	0.035 p=.830	0.75 0.31	0.916	0.037	1522	0+	−0.004 (0.005) p=.451	−0.008		14.17(5) p=.015	0.035 p=.864	0.77 0.40	0.939	0.122
Parental Monitoring	363	10+	−0.004 (0.008) p=.635	−0.006		5.71(4) p=.222	0.034 p=.595	0.92 0.77	0.646	0.152	364	10+	−0.003 (0.005) p=.577	−0.004		5.76(5) p=.331	0.020 p=.739	0.00 1.00	0.585	0.169
Exposure to Violence	480	8+	0.000 (0.004) p=.922	−0.001		4.98(4) p=.289	0.023 p=.745	0.84 0.57	0.599	0.077	482	8+	−0.001 (0.008) p=.940	−0.001		5.06(5) p=.408	0.005 p=.860	0.92 0.80	0.546	0.191

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 28

Path Models from Caregiver Self-Reported Problematic Alcohol and Drug Use to Out-of-Home Placements between Baseline and Wave 2

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	WRMR	R^2
Problematic Alcohol Use										
Direct Model	1627	0+				JI				0.112
Single Mediator Models										
Emotional Maltreatment	1633	0+	−0.008 (0.008) p=.306	−0.020		4.00(4) p=.407	0.000 p=.995	1.00 1.00	0.534	0.119
Harsh Discipline	1633	0+	−0.014 (0.004) p=.001	−0.035		10.57(4) p=.032	0.032 p=.887	0.93 0.82	0.884	0.138
Parental Monitoring	387	10+	0.017 (0.013) p=.191	0.026		4.44(4) p=.349	0.017 p=.733	0.98 0.96	0.567	0.702
Exposure to Violence	520	8+	0.002 (0.004) p=.667	0.004		6.07(4) p=.194	0.032 p=.680	0.66 0.06	0.663	0.215
Problematic Drug Use										
Direct Model	1516	0+				JI				0.128
Single Mediator Model										
Emotional Maltreatment	1522	0+	−0.005 (0.006) p=.374	−0.011		7.50(4) p=.112	0.024 p=.948	0.91 0.75	0.737	0.132
Harsh Discipline	1522	0+	−0.012 (0.004) p=.005	−0.024		11.34(4) p=.023	0.035 p=.830	0.85 0.59	0.916	0.149
Parental Monitoring	364	10+	0.008 (0.017) p=.634	0.010		5.71(4) p=.222	0.034 p=.596	0.92 0.78	0.646	0.378
Exposure to Violence	484	8+	0.000 (0.003) p=.924	0.000		4.98(4) p=.289	0.023 p=.748	0.63 −.02	0.599	0.168

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 29

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Out of Home Placement

Wave 2

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Harsh Discipline (HD)	1633	0+	−0.014 (0.004) p=.001	−0.035		10.57(4) p=.032	0.032 p=.887	0.93 0.82	0.884	0.138
Depression	1633	0+	0.018 (0.008) p=.035	0.043		5.01(4) p=.286	0.012 p=.989	0.98 0.95	0.627	0.152
Two Mediator Model										
HD and Depression	1633	0+				20.92 p=.013	0.028 p=.988	0.91 0.82	1.011	0.179
HD			−0.014 (0.004) p = 0.001	−0.035						
Depression			0.018 (0.008) p = 0.035	0.043						
Moderator Model										
Depression Moderating direct Path	1633	0+				9.96(9) p=.354	0.008 p=1.00	1.00 1.00	0.678	0.162
Depression moderating direct path			−0.037 (0.020) p=.065	−0.089	[−0.076, 0.003]					
Path controlling for Depression			0.018 (0.008) p=.035	0.043	[0.003, 0.034]					
HD Mediator with Depression Moderating HD Path	1633	0+				358.47(15) p<.001	0.118 p<.001	0.32 −0.18	3.851	0.202
HD Mediator			−0.014 (0.004) p=.001	−0.035						
Depression moderating HD patl			−0.013 (0.005) p=.004	−0.033						
Path controlling for Major Depression			0.018 (0.008) p=.035	0.043						
Mediator and Moderator Model										
HD as Mediator with Depression Moderating direct Path	1633	0+				53.21(15) p<.001	0.039 p=.928	0.99 0.99	1.403	0.188
HD			−0.014 (0.004) p = 0.001	−0.035						
Depression moderating direct path			0.018 (0.008) p=.035	0.043						
Path controlling for Depression			−0.037 (0.020) p=.065	−0.089						
Model with all Models Nested Within HD and Depression as Mediators with Depression Moderatin Direct and HD Paths	1633	0+				538.74(22) p<.001	0.120 p<.001	0.90 0.84	4.33	0.212

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 30

Final Path Models from Caregiver Self-Reported Problematic Drug Use to Out of Home Placement

Wave 2

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Harsh Discipline (HD)	1522	0+	−0.012 (0.004) p=.005	−0.024		11.34(4) p=.023	0.035 p=.830	0.85 0.59	0.916	0.149
Depression	1522	0+	0.019 (0.011) p=.076	0.040	[−0.001, 0.044]	2.54(4) p=.638	0.000 p=.998	1.00 1.11	0.430	0.161
Criminal Involvement (CI)	1522	0+	−0.022 (0.011) p=.045	−0.045	[−0.045, −0.004]	2.91(4) p=.574	0.000 p=.997	1.00 1.09	0.471	0.173
Two Mediator Models										
HD and CI	1522	0+				14.41(9) p=.108	0.020 p=.998	0.91 0.81	0.793	0.187
HD			−0.012 (0.004) p = 0.005	−0.024						
CI			−0.016 (0.009) p = 0.067	−0.033						
HD and Depression	1522	0+				17.50(9) p=.041	0.025 p=.993	0.88 0.75	0.919	0.183
HD			−0.012 (0.004) p = 0.005	−0.024						
Depression			0.019 (0.011) p = 0.076	0.040						
Depression and CI	1522	0+				8.739(9) p=.462	0.000 p=1.00	1.00 1.02	0.602	0.182
Depression			0.012 (0.008) p = 0.161	0.024						
CI			−0.016 (0.009) p = 0.067	−0.033						
Three Mediator Model										
HD, CI, and Depression	1522	0+				26.276(15) p=.035	0.022 p=1.00	0.86 0.75	0.937	0.221
HD			−0.012 (0.004) p = 0.005	−0.024						
CI			−0.016 (0.009) p = 0.067	−0.033						
Depression			0.019 (0.011) p = 0.076	0.040						
Moderator Model										
CI Moderating direct Path	1522	0+				29.22(9) p=.001	0.038 p=.877	0.96 0.93	1.197	0.173
CI moderating direct path			−0.037 (0.020) p=.065	−0.089						
Path controlling for CI			0.018 (0.008) p=.035	0.043						
HD Mediator with Depression Moderating HD Path	1522	0+				342.00(15) p<.001	0.120 p<.001	0.10 −0.55	3.786	0.197
HD Mediator			−0.012 (0.004) p=.005	−0.024						
Depression moderating HD path			−0.007 (0.003) p=.054	−0.014						
Path controlling for Major Depression			0.019 (0.011) p=.076	0.040						
Model with all Models Nested Within HD, CI, and Depression as Mediators with CI Moderating Direct Path and Depression Moderating the HD Path	1522	0+				339.90(30) p<.001	0.082 p<.001	0.58 0.37	3.06	0.243

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 31

Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Depression

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	572	7+				JI				0.051	471	7+				JI				0.089
Single Mediator Models																				
Emotional Maltreatment	614	7+	0.054 (0.054) p=.324	0.012 (0.012) p=.325		4.25 p=.373	0.010 p=.865	0.99 0.96	0.021	0.055	614	7+	0.023 (0.051) p=.646	0.005 (0.012) p=.645		4.25 p=.37	0.010 p=.865	0.99 0.98	0.021	0.092
Harsh Discipline	614	7+	−0.014 (0.044) p=.756	−0.003 (0.009) p=.755		17.70 p=.001	0.075 p=.103	0.47 −0.45	0.047	0.051	614	7+	0.024 (0.026) p=.349	0.006 (0.006) p=.358		17.70 p=.001	0.075 p=.103	0.65 0.03	0.047	0.092
Parental Monitoring	379	10+	−0.019 (0.093) p=.042	−0.042 (0.021) p=.045		4.83 p=.305	0.023 p=.691	0.98 0.94	0.035	0.202	383	10+	−0.091 (0.054) p=.095	−0.022 (0.013) p=.100		4.96 p=.291	0.025 p=.682	0.95 0.85	0.033	0.115
Exposure to Violence	496	8+	0.139 (0.069) p=.043	0.030 (0.015) p=.044		8.53 p=.074	0.048 p=.462	0.90 0.73	0.037	0.169	503	8+	0.110 (0.065) p=.094	0.025 (0.015) p=.099		7.86 p=.097	0.044 p=.520	0.93 0.80	0.036	0.193
Two-Mediator Model																				
Parental Monitoring & Exposure to Violence	379	10+				21.07 p=.012	0.059 p=.280	0.81 0.63	0.061	0.239	383	10+				21.13 p=.012	0.059 p=.282	0.69 0.39	0.058	0.164
Parental Monitoring			−0.143 (0.080) p = 0.072	−0.033 (0.019) p = 0.075									−0.045 (0.044) p = 0.310	−0.011 (0.011) p=.313						
Exposure to Violence			0.063 (0.071) p = 0.371	0.015 (0.016) p = 0.373									0.054 (0.069) p = 0.432	0.013 (0.017) p=.430						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 32

Path Models from Caregiver Self-Reported Problematic Drug Use to Child Depression

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	539	7+				JI				0.063	442	7+				JI				0.106
Single Mediator Models																				
Emotional Maltreatment	575	7+	0.055 (0.087) p=.523	0.007 (0.011) p=.524		5.17 p=.270	0.023 p=.784	0.93 0.81	0.024	0.065	575	7+	0.024 (0.060) p=.688	0.003 (0.008) p=.688		5.17 p=.271	0.023 p=.784	0.96 0.89	0.024	0.110
Harsh Discipline	575	7+	−0.018 (0.041) p=.657	−0.002 (0.005) p=.656		18.04 p=.001	0.078 p=.084	0.51 −0.34	0.049	0.063	575	7+	0.023 (0.023) p=.323	0.003 (0.003) p=.327		18.04 p=.001	0.078 p=.084	0.66 0.07	0.049	0.110
Parental Monitoring	358	10+	−0.084 (0.167) p=.613	−0.011 (0.022) p=.613		7.66 p=.105	0.051 p=.418	0.89 0.71	0.040	0.201	362	10+	−0.051 (0.102) p=.617	−0.007 (0.015) p=.616		7.85 p=.097	0.052 p=.406	0.84 0.55	0.039	0.163
Exposure to Violence	465	8+	0.013 (0.195) p=.946	0.002 (0.025) p=.946		7.72 p=.103	0.045 p=.502	0.92 0.77	0.035	0.188	472	8+	0.003 (0.173) p=.984	0.000 (0.024) p=.984		6.83 p=.145	0.039 p=.581	0.95 0.86	0.034	0.234

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 33

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Depression

Wave 1										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Parental Monitoring	379	10+	−0.190 (0.093) p=.042	−0.042 (0.021) p=.045		4.83(4) p=.305	0.023 p=.691	0.98 0.94	0.035	0.202
Exposure to Violence	496	8+	0.139 (0.069) p=.043	0.030 (0.015) p=.044		8.53(4) p=.074	0.048 p=.462	0.90 0.73	0.037	0.169
Model with all Models Nested Within										
Two-mediator model with Parental Monitoring and Exposure to Violence	379	10+				21.07 p=.012	0.059 p=.280	0.81 0.63	0.061	0.239
Parental Monitoring			−0.143 (0.080) p = 0.072	−0.033 (0.019) p = 0.075						
Exposure to Violence			0.063 (0.071) p = 0.371	0.015 (0.016) p = 0.373						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 34

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Depression

Wave 2

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Parental Monitoring (PM)	383	10+	−0.091 (0.054) p=.095	−0.022 (0.013) p=.100	[−0.198, −0.013]	4.96(4) p=.291	0.025 p=.682	0.95 0.85	0.033	0.115
Exposure to Violence (EX)	503	8+	0.110 (0.065) p=.094	0.025 (0.015) p=.099		7.86(4) p=.097	0.044 p=.520	0.93 0.80	0.036	0.193
Two Mediator Model										
PM and EX	383	10+				21.13(9) p=.012	0.059 p=.282	0.69 0.39	0.058	0.164
PM			−0.045 (0.044) p = 0.310	−0.011 (0.011) p=.313						
EX			0.054 (0.069) p = 0.432	0.013 (0.017) p=.430						
Mediator and Moderator Model										
EX Mediator with Major Depression Moderating EX Pathway	520	8+				64.90(15) p<.001	0.08 0.006	0.38 −0.07	1.537	0.261
EX Mediator			0.092 (0.089) p=.300	0.021						
Depression moderating EX pathway			0.094 (0.060) p = 0.116	0.021						
Pathway controlling for Major Depression			0.097 (0.110) p = 0.377	0.022						
Full Model for Comparison										
PM and EX Mediators with Depression Moderating EX Path	387	10+				63.77(22) p<.001	0.070 p=.047	0.24 −0.21	1.347	0.372

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 35

Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Trauma

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	491	8+				JI				0.010	400	8+				JI				0.033
Single Mediator Models																				
Emotional Maltreatment	520	8+	0.068 (0.039) p=.083	0.014 (0.008) p=.101		4.15 p=.388	0.009 p=.832	0.96 0.89	0.020	0.015	520	8+	−0.020 (0.035) p=.565	−0.005 (0.008) p=.567		4.15 p=.386	0.009 p=.832	0.98 0.96	0.020	0.037
Harsh Discipline	520	8+	0.013 (0.021) p=.537	0.003 (0.004) p=.543		11.91 p=.018	0.062 p=.264	0.00 −3.92	0.041	0.014	520	8+	0.011 (0.019) p=.547	0.003 (0.005) p=.546		11.91 p=.018	0.062 p=.264	0.18 −1.26	0.042	0.035
Parental Monitoring	378	10+	−0.086 (0.051) p=.090	−0.018 (0.011) p=.106		4.89 p=.298	0.024 p=.685	0.68 0.12	0.033	0.043	383	10+	−0.076 (0.045) p=.094	−0.020 (0.012) p=.098		4.91 p=.297	0.024 p=.687	0.86 0.62	0.033	0.059
Exposure to Violence	494	8+	0.056 (0.086) p=.068	0.031 (0.017) p=.073		7.99 p=.092	0.045 p=.503	0.84 0.55	0.035	0.143	502	8+	0.101 (0.066) p=.124	0.024 (0.016) p=.131		7.82 p=.098	0.044 p=.522	0.82 0.51	0.034	0.115
Two-Mediator Model																				
Parental Monitoring & Exposure to Violence	378	10+				21.17 p=.011	0.060 p=.275	0.56 0.11	0.057	0.136	383	10+				20.71 p=.014	0.058 p=.299	0.58 0.15	0.057	0.125
Parental Monitoring			−0.036 (0.042) p = 0.400	−0.008 (0.009) p = 0.413									−0.033 (0.038) p=.386	−0.009 (0.010) p=.386						
Exposure to Violence			0.074 (0.082) p = 0.366	0.016 (0.017) p = 0.368									0.056 (0.067) p=.407	0.015 (0.019) p=.414						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 36

Path Models from Caregiver Self-Reported Problematic Drug Use to Child Trauma

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	460	8+				JI				0.011	372	8+				JI				0.020
Single Mediator Models																				
Emotional Maltreatment	484	8+	0.107 (0.093) p=.250	0.013 (0.011) p=.265		4.70 p=.320	0.019 p=.771	0.00 −2.17	0.023	0.022	484	8+	0.015 (0.049) p=.764	0.002 (0.007) p=.764		4.70 p=.320	0.019 p=.771	0.48 −0.44	0.023	0.021
Harsh Discipline	484	8+	0.020 (0.045) p=.663	0.002 (0.005) p=.666		11.48 p=.021	0.062 p=.263	0.00 −3.98	0.015	0.014	484	8+	0.027 (0.035) p=.451	0.004 (0.005) p=.451		11.48 p=.022	0.062 p=.263	0.00 −1.86	0.042	0.023
Parental Monitoring	357	10+	−0.041 (0.083) p=.619	−0.005 (0.011) p=.618		7.73 p=.102	0.051 p=.411	0.00 −1.76	0.038	0.045	362	10+	−0.042 (0.085) p=.624	−0.007 (0.014) p=.624		7.73 p=.102	0.051 p=.416	0.45 −0.51	0.039	0.060
Exposure to Violence	463	8+	0.011 (0.209) p=.960	0.001 (0.025) p=.960		7.32 p=.112	0.042 p=.533	0.81 0.47	0.033	0.132	471	8+	0.003 (0.152) p=.985	0.000 (0.022) p=.985		7.08 p=.132	0.040 p=.559	0.82 0.52	0.033	0.117

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 37

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Trauma

Wave 1

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Parental Monitoring (PM)	378	10+	−0.086 (0.051) p=.090	−0.018 (0.011) p=.106	[−0.043, −0.001]	4.89(4) p=.298	0.024 p=.685	0.68 0.12	0.033	0.043
Exposure to Violence (EX)	494	8+	0.056 (0.086) p=.068	0.031 (0.017) p=.073	[0.002, 0.069]	7.99(4) p=.092	0.045 p=.503	0.84 0.55	0.035	0.143
Two Mediator Model										
PM and EX	378	10+				21.17 p=.011	0.060 p=.275	0.56 0.11	0.057	0.136
PM			−0.036 (0.042) p = 0.400	−0.008 (0.009) p = 0.413						
EX			0.074 (0.082) p = 0.366	0.016 (0.017) p = 0.368						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 38

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Trauma

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Parental Monitoring	383	10+	−0.076 (0.045) p=.094	−0.020 (0.012) p=.098	[−0.046, −0.002]	4.91(4) p=.297	0.024 p=.687	0.86 0.62	0.033	0.059
Exposure to Violence	502	8+	0.101 (0.066) p=.124	0.024 (0.016) p=.131		7.82(4) p=.098	0.044 p=.522	0.82 0.51	0.034	0.115
Model with all Models Nested Within										
Two-mediator model with Parental Monitoring and Exposure to Violence	383	10+				20.71(9) p=.014	0.058 p=.299	0.58 0.15	0.057	0.125
Parental Monitoring			−0.033 (0.038) p=.386	−0.009 (0.010) p=.386						
Exposure to Violence			0.056 (0.067) p=.407	0.015 (0.019) p=.414						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 39

Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Internalizing Behaviors

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	1080	1.5+				JI				0.038	891	1.5+				JI				0.038
Single Mediator Models																				
Emotional Maltreatment	1082	1.5+	0.234 (0.058) p=.000	0.054 (0.014) p=.000		2.88 p=.58	0.000 p=.987	1.00 1.05	0.013	0.104	1082	1.5+	0.185 (0.049) p<.001	0.047 (0.013) p<.001		2.88(4) p=.58	0.000 p=.987	1.00 1.06	0.013	0.089
Harsh Discipline	1082	1.5+	0.156 (0.049) p=.002	0.036 (0.012) p=.002		28.01 p<.001	0.074 p=.050	0.60 −0.09	0.036	0.079	1082	1.5+	0.085 (0.032) p=.008	0.022 (0.008) p=.009		28.01(4) p<.001	0.074 p=.050	0.57 −0.18	0.036	0.055
Parental Monitoring	387	10+	−0.016 (0.033) p=.633	−0.004 (0.007) p=.633		4.93 p=.295	0.024 p=.688	0.91 0.76	0.032	0.061	385	10+	−0.028 (0.035) p=.418	−0.007 (0.009) p=.422		4.95 p=.293	0.025 p=.685	0.90 0.71	0.032	0.059
Exposure to Violence	530	8+	0.029 (0.033) p=.388	0.006 (0.007) p=.386		8.03 p=.091	0.044 p=.520	0.67 0.08	0.034	0.048	513	8+	0.055 (0.037) p=.142	0.013 (0.009) p=.144		8.60 p=.072	0.047 p=.470	0.79 0.43	0.036	0.082
Two-Mediator Model																				
Emotional Maltreatment & Harsh Discipline	1082	1.5+				132.42 p<.001	0.113 p<.001	0.41 −0.19	0.090	0.096	1082	1.5+				132.42 p<.001	0.113 p<.001	0.41 −0.17	0.090	0.095
Emotional Maltreatment			0.208 (0.060) p = 0.001	0.048 (0.014) p = 0.001									0.199 (0.052) p<.001	0.051 (0.013) p<.001						
Harsh Discipline			0.043 (0.042) p = 0.310	0.010 (0.010) p = 0.314									−0.022 (0.035) p=.525	−0.006 (0.009) p=.525						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 40

Path Models from Caregiver Self-Reported Problematic Drug Use to Child Internalizing Behaviors

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	1014	1.5+				JI				0.040	837	1.5+				JI				0.041
Single Mediator Models																				
Emotional Maltreatment	1015	1.5+	0.218 (0.098) p=.026	0.040 (0.018) p=.029		5.90 p=.207	0.022 p=.904	0.963 0.899	0.021	0.113	1015	1.5+	0.083 (0.082) p=.026	0.037 (0.017) p=.026		5.90 p=.207	0.022 p=.904	0.961 0.893	0.021	0.104
Harsh Discipline	1015	1.5+	0.149 (0.060) p=.013	0.028 (0.011) p=.015		21.76 p<.001	0.066 p=.138	0.653 0.046	0.036	0.089	1015	1.5+	0.090 (0.041) p=.029	0.018 (0.009) p=.032		21.76 p<.001	0.066 p=.138	0.617 −0.053	0.036	0.066
Parental Monitoring	364	10+	−0.012 (0.025) p=.626	−0.002 (0.003) p=.627		7.749 p=.101	0.051 p=.416	0.541 −0.263	0.038	0.055	363	10+	−0.013 (0.027) p=.645	−0.002 (0.004) p=.647		7.80 p=.099	0.051 p=.411	0.101 −1.471	0.038	0.047
Exposure to Violence	484	8+	0.002 (0.046) p=.971	0.000 (0.006) p=.971		7.099 p=.131	0.040 p=.568	0.582 −0.149	0.032	0.053	479	8+	0.005 (0.083) p=.950	0.001 (0.011) p=.950		7.85 p=.097	0.045 p=.502	0.636 −0.002	0.034	0.070
Two-Mediator Model																				
Emotional Maltreatment & Harsh Discipline	1015	1.5+				121.51 p<.001	0.111 p<.001	0.384 −0.233	0.092	0.105	1015	1.5+				121.51 p<.001	0.111 p<.001	0.394 −0.212	0.092	0.107
Emotional Maltreatment			0.189 (0.092) p=.040	0.035 (0.017) p=.043									0.188 (0.083) p=.026	0.038 (0.017) p=.026						
Harsh Discipline			0.049 (0.039) p=.208	0.009 (0.007) p=.214									−0.009 (0.029) p=.773	−0.002 (0.006) p=.772						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 41

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Internalizing Behaviors

Wave 1

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1082	1.5+	0.234 (0.058) p<.001	0.054 (0.014) p<.001		2.88(4) p=.58	0.000 p=.987	1.00 1.05	0.013	0.104
Harsh Discipline (HD)	1082	1.5+	0.156 (0.049) p=.002	0.036 (0.012) p=.002		28.01(4) p<.001	0.074 p=.050	0.62 −0.09	0.036	0.079
Two-Mediator Model										
EM & HD	1082	1.5+				132.42(9) p<.001	0.113 p<.001	0.41 −0.19	0.090	0.096
EM			0.208 (0.060) p = 0.001	0.048 (0.014) p = 0.001						
HD			0.043 (0.042) p = 0.310	0.010 (0.010) p = 0.314						
Combined Models										
Criminal Involvement (CI) Moderating Direct Path	1081	1.5+				11.50(9) p=.243	0.016 p=.994	1.00 1.00	0.722	0.072
CI Moderating Direct Path			−0.163 (0.078) p=.035	−0.038						
Path controlling for CI			−0.078 (0.058) p=.177	−0.018						
EM Mediator with CI Moderating EM	1082	1.5+				167.52(15) p<.001	0.097 p<.001	0.31 −0.19	2.587	0.145
EM Mediator			0.233 (0.049) p<.001	0.055						
CI moderating EM pathway			0.044 (0.021) p = 0.038	0.010						
Path controlling for CI			−0.081 (0.059) p = 0.174	−0.019						
EM Mediator with Depression Moderating EM	1082	1.5+				172.08(15) p<.001	0.098 p<.001	0.44 0.03	2.640	0.131
EM Mediator			0.231 (0.049) p<.001	0.054						
Depression moderating EM path			0.145 (0.052) p = 0.005	0.034						
Path controlling for depression			0.088 (0.056) p = 0.113	0.020						
HD Mediator with CI Moderating HD	1082	1.5+				208.12(15) p<.001	0.109 p<.001	0.32 −0.19	2.880	0.104
HD Mediator			0.159 (0.028) p<.001	0.037						
CI moderating HD path			0.039 (0.014) p = 0.007	0.009						
Path controlling for CI			−0.078 (0.058) p = 0.177	−0.018						
HD Mediator with Depression Moderating HD	1082	1.5+				256.29(15) p<.001	0.122 p<.001	0.41 −0.02	3.187	0.082
HD Mediator			0.159 (0.028) p<.001	0.037						
Depression moderating HD path			0.060 (0.023) p = 0.011	0.014						
Path controlling for depression			0.088 (0.056) p = 0.114	0.020						
Model Combinations										
EM Mediator with CI Moderating the Direct Path	1082	1.5+				19.36(15) p=.198	0.016 p=1.00	1.00 1.00	0.792	0.137
HD Mediator with CI Moderating the Direct Path	1082	1.5+				24.59(15) p=.056	0.024 p=.996	0.99 0.98	0.910	0.102
EM and HD as Mediators with CI Moderating the Direct Path	1082	1.5+				215.31(22) p<.001	0.090 p<.001	0.83 0.72	2.640	0.166
EM as Mediator with CI Moderating the Direct Path and the EM Path	1082	1.5+				285.83(22) p<.001	0.105 p<.001	0.76 0.62	3.086	0.149
EM as Mediator with CI Moderating the Direct Path and Depression Moderating the EM Path	1082	1.5+				190.83(30) p<.001	0.070 p<.001	0.84 0.76	2.294	0.160
HD as Mediator with CI Moderating the Direct Path and the HD Path	1082	1.5+				355.53(22) p<.001	0.118 p<.001	0.72 0.56	3.473	0.108
HD as Mediator with CI Moderating the Direct Path and Depression Moderating the HD Path	1082	1.5+				249.45(30) p<.001	0.082 p<.001	0.80 0.71	2.632	0.105
Full Model for Comparison										
HD and EM as Mediators with CI Moderating the Direct Path, the HD Path and the EM Path, and Depression Moderating the HD and EM Path	1082	1.5+				2008.19(72) p<.001	0.158 p<.001	0.24 −0.001	6.693	0.224

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 42

Final Path Models from Caregiver Self-Reported Problematic Drug Use to Child Internalizing Behaviors

Wave 1

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1015	1.5+	0.218 (0.098) p=.026	0.040 (0.018) p=.029		5.90(4) p=.207	0.022 p=.904	0.96 0.90	0.021	0.113
Harsh Discipline (HD)	1015	1.5+	0.149 (0.060) p=.013	0.028 (0.011) p=.015		21.76(4) p<.001	0.066 p=.138	0.65 0.05	0.036	0.089
Criminal Involvement (CI)	1015	1.5+	−0.173 (0.087) p=.046	−0.032	[−0.369, −0.028]	3.17(4) p=.530	0.000 p=.980	1.00 1.09	0.474	0.070
Two Mediator Model										
EM & HD	1015	1.5+				121.51(9) p<.001	0.111 p<.001	0.38 −0.23	0.092	0.105
EM			0.189 (0.092) p=.040	0.035 (0.017) p=.043						
HD			0.049 (0.039) p=.208	0.009 (0.007) p=.214						
EM & CI	1015	1.5+				10.93(9) p=.281	0.015 p=.994	0.97 0.94	0.699	0.136
EM			0.243 (0.062) p<.001	0.045	[0.136, 0.367]					
CI			−0.173 (0.086) p=.046	−0.032	[−0.368, −0.028]					
HD & CI	1015	1.5+				16.15(9) p=.064	0.028 p=.953	0.92 0.83	0.864	0.105
HD			0.146 (0.045) p=.001	0.027						
CI			−0.173 (0.087) p=.046	−0.032						
Three Mediator Model										
EM, HD, and CI	1015	1.5+				225.45(15) p<.001	0.118 p<.001	0.29 −0.23	3.012	0.171
EM			0.243 (0.062) p<.001	0.045						
HD			0.146 (0.045) p=.001	0.027						
CI			−0.173 (0.086) p=.046	−0.032						
Moderation Models										
EM Mediator with Depression Moderating EM	1082	1.5+				191.90(15) p<.001	0.108 p<.001	0.38 −0.07	2.802	0.134
EM Mediator			0.241 (0.062) p<.001	0.045						
Depression moderating EM path			0.170 (0.057) p = 0.003	0.031						
Path controlling for Depression			0.103 (0.087) p = 0.237	0.019						
HD Mediator with Depression Moderating HD	1082	1.5+				233.46(15) p<.001	0.120 p<.001	0.29 −0.24	3.081	0.088
HD Mediator			0.146 (0.045) p = 0.001	0.146						
Depression moderating HD path			0.054 (0.022) p = 0.013	0.010						
Path controlling for Depression			0.105 (0.087) p = 0.230	0.019						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 43

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Internalizing Behaviors

Wave 2										
						Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1082	1.5+	0.185 (0.049) p<.001	0.047 (0.013) p<.001		2.88(4) p=.58	0.000 p=.987	1.00 1.06	0.013	0.089
Harsh Discipline (HD)	1082	1.5+	0.085 (0.032) p=.008	0.022 (0.008) p=.009		28.01(4) p<.001	0.074 p=.050	0.57 −0.18	0.036	0.055
Depression	1082	1.5+	0.148 (0.062) p=.017	0.038		5.52(4) p=.24	0.019 p=.932	0.97 0.91	0.633	0.071
Two-Mediator Models										
EM & HD	1082	1.5+				132.42(9) p<.001	0.113 p<.001	0.41 −0.17	0.090	0.095
EM			0.199 (0.052) p<.001	0.051 (0.013) p<.001						
HD			−0.022 (0.035) p=.525	−0.006 (0.009) p=.525						
EM & Depression	1082	1.5+				19.88(9) p=.02	0.033 p=.909	0.90 0.79	0.974	0.117
EM			0.183 (0.043) p<.001	0.047						
Depression			0.148 (0.062) p=.017	0.038						
HD & Depression	1082	1.5+				24.28(9) p=.004	0.040 p=.794	0.87 0.73	1.06	0.082
HD			0.087 (0.027) p=.001	0.022						
Depression			0.148 (0.062) p=.017	0.038						
Three-Mediator Model										
EM, HD, Depression	1082	1.5+				236.76(15) p<.001	0.117 p<.001	0.35 −0.12	3.079	0.127
EM			0.183 (0.043) p<.001	0.047						
HD			0.087 (0.027) p=.001	0.022						
Depression			0.148 (0.062) p=.017	0.038						
Moderation Models										
Criminal Involvement (CI) Moderating Direct Pathway	1081	1.5+				11.50(9) p=.24	0.016 p=.994	1.00 1.00	0.722	0.048
CI Moderating Direct Pathway			−0.212 (0.100) p=.033	−0.054						
Pathway controlling for CI			−0.015 (0.028) p=.594	−0.004						
Depression Moderating Direct Pathway	1082	1.5+				10.98(9) p=.28	0.014 p=.996	1.00 1.00	0.699	0.071
Depression Moderating Direct Pathway			−0.011 (0.100) p=.912	−0.003						
Pathway controlling for Depression			0.148 (0.062) p=.017	0.038	[0.045, 0.275]					
EM Mediator with Depression Moderating EM	1082	1.5+				172.08(15) p<.001	0.098 p<.001	0.43 0.01	2.640	0.128
EM Mediator			0.183 (0.043) p<.001	0.047						
Depression moderating EM pathway			0.097 (0.039) p = 0.013	0.025						
Pathway controlling for Depression			0.147 (0.062) p = 0.017	0.038						
Model Combinations										
EM Mediator and CI Moderating Direct Path	1082	1.5+				19.30(15) p=.20	0.016 p=1.00	1.00 0.99	0.790	0.094
CI Moderating Direct Pathway			−0.212 (0.100) p=.033	−0.054						
Pathway controlling for CI			−0.015 (0.028) p=.594	−0.004						
EM Mediator			0.183 (0.043) p<.001	0.047						
Depression Mediator and CI Moderating Direct Path	1082	1.5+				40.96(15) p<.001	0.040 p=0.86	0.97 0.95	1.238	0.081
CI Moderating Direct Pathway			−0.213 (0.100) p=.033	−0.054						
Pathway controlling for CI			−0.015 (0.028) p=.595	−0.004						
Depression Mediator			0.148 (0.062) p = 0.017	0.038						
Model for Comparison of Strong Models										
Depression and EM Mediator and CI Moderating Direct Path	1082	1.5+				55.84(22) p<.001	0.038 p=0.95	0.96 0.94	1.281	0.127

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 44

Final Path Models from Caregiver Self-Reported Problematic Drug Use to Child Internalizing Behaviors

Wave 2

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1015	1.5+	0.083 (0.082) p=.026	0.037 (0.017) p=.026		5.90(4) p=.207	0.022 p=.904	0.96 0.89	0.021	0.104
Harsh Discipline (HD)	1015	1.5+	0.090 (0.041) p=.029	0.018 (0.009) p=.032		21.76(4) p<.001	0.066 p=.138	0.62 −0.05	0.036	0.066
Depression	1015	1.5+	0.222 (0.100) p=.026	0.045		3.42(4) p=.490	0.000 p=.975	1.00 1.04	0.492	0.070
Two Mediator Model										
EM & HD	1015	1.5+				121.51(9) p<.001	0.111 p<.001	0.39 −0.21	0.092	0.107
EM			0.188 (0.083) p=.026	0.038 (0.017) p=.026						
HD			−0.009 (0.029) p=.773	−0.002 (0.006) p=.772						
EM & Depression	1015	1.5+				17.12(9) p=.047	0.030 p=.939	0.91 0.82	0.900	0.126
EM			0.204 (0.053) p<.001	0.041						
Depression			0.222 (0.100) p=.026	0.045						
HD & Depression	1015	1.5+				19.89(9) p=.019	0.035 p=.883	0.86 0.72	0.961	0.086
HD			0.088 (0.032) p=.005	0.018						
Depression			0.222 (0.100) p=.026	0.045						
Three-Mediator Model										
EM, HD, Depression	1015	1.5+				235.23(15) p<.001	0.120 p<.001	0.29 −0.24	3.068	0.142
EM			0.204 (0.053) p<.001	0.041						
HD			0.088 (0.032) p=.005	0.018						
Depression			0.222 (0.100) p=.026	0.045						
Moderator Models										
Depression Moderating Direct Pathway	1015	1.5+				27.39(9) p=.001	0.045 p=.636	0.98 0.97	1.161	0.070
Depression Moderating Direct Pathway			0.044 (0.145) p=.759	0.009						
Pathway controlling for Depression			0.222 (0.100) p=.026	0.045						
EM Mediator with Depression Moderating EM	1015	1.5+				191.86(15) p<.001	0.108 p<.001	0.41 −0.03	2.802	0.142
EM Mediator			0.204 (0.053) p<.001	0.041						
Depression moderating EM pathway			0.123 (0.041) p=.003	0.025						
Pathway controlling for Depression			0.222 (0.100) p=.026	0.045						
EM Mediator with Domestic Violence (DV) Moderating EM	1015	1.5+				42.05(15) p<.001	0.042 p=.786	0.56 0.24	0.079	0.125
EM Mediator			0.192 (0.085) p=.024	0.039						
DV moderating EM pathway			−0.062 (0.026) p=.016	−0.013						
Pathway controlling for DV			0.034 (0.026) p=.185	0.007						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

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Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Externalizing Behaviors

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	1081	1.5+				JI				0.056	891	1.5+				JI				0.065
Single Mediator Models																				
Emotional Maltreatment (EM)	1082	1.5+	0.371 (0.081) p<.001	0.080 (0.018) p<.001		2.88 p=.58	0.000 p=.987	1.00 1.03	0.014	0.196	1082	1.5+	0.303 (0.074) p<.001	0.071 (0.018) p<.001		2.88 p=.58	0.000 p=.987	1.00 1.03	0.014	0.178
Harsh Discipline (HD)	1082	1.5+	0.257 (0.076) p=.001	0.055 (0.048) p=.001		28.00 p<.001	0.074 p=.050	0.71 0.20	0.039	0.150	1082	1.5+	0.209 (0.072) p=.003	0.049 (0.017) p=.004		28.01 p<.001	0.074 p=.050	0.72 0.24	0.039	0.144
Parental Monitoring (PM)	387	10+	−0.064 (0.039) p=.100	−0.013 (0.008) p=.102		4.66 p=.324	0.021 p=.713	0.93 0.80	0.032	0.061	385	10+	−0.042 (0.039) p=.287	−0.010 (0.009) p=.287		4.75 p=.314	0.022 p=.703	0.89 0.69	0.032	0.054
Exposure to Violence (EX)	520	8+	0.052 (0.040) p=.191	0.011 (0.008) p=.190		8.14 p=.087	0.045 p=.511	0.61 −0.08	0.035	0.050	513	8+	0.079 (0.042) p=.061	0.017 (0.009) p=.066		8.69 p=.069	0.048 p=.464	0.74 0.29	0.036	0.080
Two-Mediator Models																				
EM & HD	1082	1.5+				132.42 p<.001	0.113 p<.001	0.48 −0.04	0.092	0.181	1082	1.5+				132.42 p<.001	0.113 p<.001	0.48 −0.04	0.091	0.167
EM			0.322 (0.080) p<.001	0.070 (0.018) p<.001									0.261 (0.067) p<.001	0.062 (0.016) p<.001						
HD			0.082 (0.051) p=.109	0.018 (0.011) p=.111									0.069 (0.051) p=.181	0.016 (0.012) p=.183						
EM & EX											520	8+				16.77 p=.053	0.041 p=.655	0.86 0.72	0.043	0.165
EM													0.257 (0.070) p<.001	0.055 (0.016) p<.001						
EX													0.061 (0.031) p=.052	0.013 (0.007) p=.058						
HD & EX											520	8+				22.36 p=.008	0.053 p=.377	0.72 0.45	0.052	0.171
HD													0.063 (0.068) p=.358	0.013 (0.015) p=.361						
EX													0.070 (0.037) p=.061	0.015 (0.008) p=.067						
Three-Mediator Model																				
EM, HD, & EX											520	8+				118.59 p<.001	0.115 p<.001	0.36 −0.11	0.101	0.154
EM													0.174 (0.064) p=.006	0.038 (0.014) p=.007						
HD													0.035 (0.043) p=.413	0.008 (0.009) p=.415						
EX													0.061 (0.032) p=.052	0.013 (0.007) p=.058						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

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Path Models from Caregiver Self-Reported Problematic Drug Use to Child Externalizing Behaviors

	Wave 1										Wave 2									
						Model Fit Statistics										Model Fit Statistics				
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Direct Model	1014	1.5+				JI				0.067	837	1.5+				JI				0.080
Single Mediator Models																				
Emotional Maltreatment	1015	1.5+	0.336 (0.142) p=.018	0.058 (0.025) p=.021		5.90 p=.207	0.022 p=.904	0.979 0.942	0.022	0.213	1015	1.5+	0.283 (0.123) p=.022	0.053 (0.023) p=.023		5.90 p=.207	0.022 p=.904	0.98 0.94	0.022	0.206
Harsh Discipline	1015	1.5+	0.236 (0.087) p=.007	0.041 (0.015) p=.008		21.76 p<.001	0.066 p=.138	0.756 0.330	0.038	0.168	1015	1.5+	0.196 (0.078) p=.012	0.037 (0.015) p=.015		21.76 p<.001	0.066 p=.138	0.78 0.38	0.039	0.169
Parental Monitoring	364	10+	−0.038 (0.071) p=.598	−0.005 (0.009) p=.599		7.182 p=.127	0.047 p=.463	0.728 0.251	0.037	0.073	363	10+	−0.027 (0.054) p=.621	−0.004 (0.008) p=.622		7.34 p=.119	0.048 p=.448	0.57 −0.19	0.037	0.065
Exposure to Violence	484	8+	0.002 (0.082) p=.982	0.000 (0.010) p=.982		7.245 p=.124	0.041 p=.555	0.677 0.113	0.033	0.065	479	8+	0.004 (0.116) p=.976	0.000 (0.015) p=.976		7.86 p=.097	0.045 p=.501	0.75 0.31	0.035	0.093
Two-Mediator Model																				
Emotional Maltreatment & Harsh Discipline	1015	1.5+				121.51 p<.001	0.111 p<.001	0.465 −0.069	0.093	0.196	1015	1.5+				121.51 p<.001	0.111 p<.001	0.47 −0.06	0.092	0.193
Emotional Maltreatment			0.285 (0.131) p=.029	0.050 (0.024) p=.033									0.240 (0.113) p=.033	0.046 (0.022) p=.035						
Harsh Discipline			0.084 (0.048) p=.083	0.015 (0.009) p=.087									0.070 (0.046) p=.128	0.013 (0.009) p=.133						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 47

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Externalizing Behaviors

Wave 1

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1082	1.5+	0.371 (0.081) p<.001	0.080 (0.018) p<.001	[0.041, 0.124]	2.88 p=.58	0.000 p=.987	1.00 1.03	0.014	0.196
Harsh Discipline (HD)	1082	1.5+	0.257 (0.076) p=.001	0.055 (0.048) p=.001		28.00 p<.001	0.074 p=.050	0.71 0.20	0.039	0.150
Two-Mediator Model										
EM & HD	1082	1.5+				132.42 p<.001	0.113 p<.001	0.48 −0.04	0.092	0.181
EM			0.322 (0.080) p<.001	0.070 (0.018) p<.001						
HD			0.082 (0.051) p=.109	0.018 (0.011) p=.111						
Mediator and Moderator Models										
EM Mediator with Criminal Involvement (CI) Moderating EM	1082	1.5+				167.44(15) p<.001	0.097 p<.001	0.34 −0.15	2.586	0.247
EM Mediator			0.367 (0.058) p<.001	0.080						
CI moderating EM path			0.081 (0.032) p=.011	0.018						
Path controlling for CI			−0.080 (0.058) p=.169	−0.017						
EM Mediator with Depress Moderating EM	1082	1.5+				172.08(15) p<.001	0.098 p<.001	0.45 0.04	2.640	0.247
EM Mediator			0.367 (0.058) p<.001	0.080						
Depress moderating EM path			0.219 (0.065) p=.001	0.048						
Path controlling for Depress			0.113 (0.068) p=.097	0.025						
HD Mediator with CI Moderating HD	1082	1.5+				208.12(15) p<.001	0.109 p<.001	0.32 −0.18	2.880	0.175
HD Mediator			0.262 (0.041) p<.001	0.057						
CI moderating HD path			0.073 (0.024) p=.002	0.016						
Path controlling for CI			−0.080 (0.058) p=.169	−0.017						
HD Mediator with Depress Moderating HD	1082	1.5+				256.29(15) p<.001	0.122 p<.001	0.40 −0.03	3.187	0.155
HD Mediator			0.262 (0.041) p<.001	0.057						
Depress moderating HD path			0.119 (0.030) p<.001	0.026						
Path controlling for Depress			0.113 (0.068) p=.098	0.024						

Note: JI= just identified. Model fit statistics are not calculated for just identified models.

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Final Path Models from Caregiver Self-Reported Problematic Drug Use to Child Externalizing Behaviors

Wave 1

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1015	1.5+	0.336 (0.142) p=.018	0.058 (0.025) p=.021		5.90(4) p=.207	0.022 p=.904	0.98 0.94	0.022	0.213
Harsh Discipline (HD)	1015	1.5+	0.236 (0.087) p=.007	0.041 (0.015) p=.008		21.76(4) p<.001	0.066 p=.138	0.76 0.33	0.038	0.168
Criminal Involvement (CI)	1015	1.5+	−0.183 (0.097) p=.059	−0.032		3.17(4) p=.530	0.000 p=.980	1.00 1.07	0.474	0.096
Two-Mediator Model										
EM & HD	1015	1.5+				121.51(9) p<.001	0.111 p<.001	0.47 −0.07	0.093	0.196
EM			0.285 (0.131) p=.029	0.050 (0.024) p=.033						
HD			0.084 (0.048) p=.083	0.015 (0.009) p=.087						
EM & CI	1015	1.5+				10.93(9) p=.281	0.015 p=.994	0.98 0.95	0.699	0.236
EM			0.374 (0.086) p<.001	0.065						
CI			−0.183 (0.097) p=.059	−0.032	[−0.385, −0.112]					
HD & CI	1015	1.5+				16.15(9) p=.064	0.028 p=.953	0.93 0.86	0.865	0.174
HD			0.231 (0.064) p<.001	0.040						
CI			−0.183 (0.097) p=.059	−0.032						
Three Mediator Model										
EM, HD, and CI	1015	1.5+				225.45(15) p<.001	0.118 p<.001	0.32 −0.19	3.012	0.314
EM			0.374 (0.086) p<.001	0.065						
HD			0.231 (0.064) p<.001	0.040						
CI			−0.183 (0.097) p=.059	−0.032						
Moderator Model										
CI Moderating Direct Pathway	1015	1.5+				29.50(15) p<.001	0.047 p=.554	0.95 0.90	1.187	0.099
CI Moderating Direct Pathway			0.374 (0.086) p<.001	0.065						
Pathway controlling for CI			0.245 (0.079) p=.002	0.043						
Mediator and Moderator Models										
EM Mediator with Depress Moderating EM	1015	1.5+				191.86(15) p<.001	0.108 p<.001	0.38 −0.08	2.802	0.260
EM Mediator			0.374 (0.086) p<.001	0.065						
Depress moderating EM path			0.245 (0.079) p=.002	0.043						
Path controlling for Depress			0.125 (0.109) p=.251	0.022						
HD Mediator with Depress Moderating HD	1015	1.5+				233.46(15) p<.001	0.120 p<.001	0.29 −0.23	3.081	0.170
HD Mediator			0.231 (0.064) p<.001	0.040						
Depress moderating HD path			0.092 (0.034) p=.006	0.043						
Path controlling for Depress			0.126 (0.109) p=.248	0.016						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

Appendix 49

Final Path Models from Caregiver Self-Reported Problematic Alcohol Use to Child Externalizing Behaviors

Wave 2

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1082	1.5+	0.303 (0.074) p<.001	0.071 (0.018) p<.001	[0.035, 0.112]	2.88 p=.58	0.000 p=.987	1.00 1.03	0.014	0.178
Harsh Discipline (HD)	1082	1.5+	0.209 (0.072) p=.003	0.049 (0.017) p=.004		28.01 p<.001	0.074 p=.050	0.72 0.24	0.039	0.144
Exposure to Violence (EX)	513	8+	0.079 (0.042) p=.061	0.017 (0.009) p=.066		8.69 p=.069	0.048 p=.464	0.74 0.29	0.036	0.080
Two-Mediator Models										
EM & HD	1082	1.5+				132.42 p<.001	0.113 p<.001	0.48 −0.04	0.091	0.167
EM			0.261 (0.067) p<.001	0.062 (0.016) p<.001						
HD			0.069 (0.051) p=.181	0.016 (0.012) p=.183						
EM & EX	520	8+				16.77 p=.053	0.041 p=.655	0.86 0.72	0.043	0.165
EM			0.257 (0.070) p<.001	0.055 (0.016) p<.001						
EX			0.061 (0.031) p=.052	0.013 (0.007) p=.058						
HD & EX	520	8+				22.36 p=.008	0.053 p=.377	0.72 0.45	0.052	0.171
HD			0.063 (0.068) p=.358	0.013 (0.015) p=.361						
EX			0.070 (0.037) p=.061	0.015 (0.008) p=.067						
Three Mediator Models										
EM, HD, & EX	520	8+				118.59 p<.001	0.115 p<.001	0.36 −0.11	0.101	0.154
EM			0.174 (0.064) p=.006	0.038 (0.014) p=.007						
HD			0.035 (0.043) p=.413	0.008 (0.009) p=.415						
EX			0.061 (0.032) p=.052	0.013 (0.007) p=.058						
Mediator and Moderator Models										
EM Mediator with Depress Moderating EM	1082	1.5+				172.11(15) p<.001	0.098 p<.001	0.43 0.02	2.640	0.210
EM Mediator			0.303 (0.059) p<.001	0.072						
Depress moderating EM path			0.155 (0.055) p=.005	0.037						
Path controlling for Depress			0.083 (0.058) p=.150	0.020						
HD Mediator with Depress Moderating HD	1082	1.5+				256.29(15) p<.001	0.122 p<.001	0.43 0.02	3.187	0.141
HD Mediator			0.213 (0.037) p<.001	0.050						
Depress moderating HD path			0.091 (0.033) p=.005	0.022						
Path controlling for Depress			0.081 (0.058) p=.157	0.019						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

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Final Path Models from Caregiver Self-Reported Problematic Drug Use to Child Externalizing Behaviors

Wave 2

Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	**Model Fit Statistics** X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR/ WRMR	R^2
Single Mediator Models										
Emotional Maltreatment (EM)	1015	1.5+	0.283 (0.123) p=.022	0.053 (0.023) p=.023	[0.01, 0.10]	5.90 p=.207	0.022 p=.904	0.98 0.94	0.022	0.206
Harsh Discipline (HD)	1015	1.5+	0.196 (0.078) p=.012	0.037 (0.015) p=.015		21.76 p<.001	0.066 p=.138	0.78 0.38	0.039	0.169
Two-Mediator Model										
EM &HD	1015	1.5+				121.51 p<.001	0.111 p<.001	0.47 −0.06	0.092	0.193
EM			0.240 (0.113) p=.033	0.046 (0.022) p=.035						
HD			0.070 (0.046) p=.128	0.013 (0.009) p=.133						
Mediator and Moderator Model										
EM Mediator with Domestic Violence (DV) Moderating EM	1015	1.5+				42.05(15) p<.001	0.042 p=.786	0.66 0.40	0.079	0.213
EM Mediator			0.285 (0.124) p=.022	0.053						
DV moderating EM path			−0.035 (0.018) p=.047	−0.007						
Path controlling for DV			0.033 (0.026) p=.209	0.006						
EM Mediator with Depress Moderating EM	1015	1.5+				191.88(15) p<.001	0.108 p<.001	0.41 −0.02	2.802	0.238
EM Mediator			0.318 (0.074) p<.001	0.060						
Depress moderating EM path			0.179 (0.062) p=.004	0.034						
Path controlling for Depress			0.108 (0.089) p=.226	0.020						
HD Mediator with Depress Moderating HD	1015	1.5+				233.46(15) p<.001	0.120 p<.001	0.35 −0.13	3.081	0.167
HD Mediator			0.192 (0.055) p<.001	0.036						
Depress moderating HD path			0.078 (0.033) p=.018	0.015						
Path controlling for Depress			0.106 (0.089) p=.234	0.020						

Note: JI = just identified. Model fit statistics are not calculated for just identified models.

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Confirmation of Path Models for Self-Reported Problematic Substance use to Baseline Services, OOH placement at W2, Child Depression W1 and W2, and Child Trauma W1 and W2

	Finalized Models in First Half-Sample										Confirmation of Models in Second Half-Sample									
						Model Fit Statistics									Model Fit Statistics					
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR /WRMR	R^2	N	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR /WRMR	R^2
Self-Reported Problematic Alcohol Use to Baseline Services																				
Depression as single mediator	1633	0+	0.021 (0.006) p=.001	0.054		5.01(4) p=.286	0.012 p=.989	0.98 0.95	0.627	0.119	1601	0.002 (0.005) p=.666	0.007		2.08 (4) p=.722	0.000 p=.999	1.00 1.61	0.390	0.034
Depression Moderating direct Path	1633	0+				9.96(9) p=.354	0.008 p=1.00	1.00 1.00	0.678	0.127	1521				15.49 (9) p=.078	0.021 p=1.00	1.00 0.99	0.862	0.037
Depression moderating direct path			−0.032 (0.013) p=.014	−0.080	[−0.057, −0.006]							−0.016 (0.013) p=.206	−0.049						
Path controlling for Depression			0.021 (0.006) p = 0.001	0.054	[0.009, 0.0436]							0.002 (0.005) p = 0.668	0.007						
Self-Reported Problematic Drug Use to Baseline Services																				
Depression as single mediator	1522	0+	0.025 (0.009) p=.005	0.053	[0.009, 0.045]	2.54(4) p=.638	0.000 p=.998	1.00 1.11	0.430	0.112	1521	0.002 (0.007) p=.770	0.003		2.76 (4) p=.598	0.000 p=.998	1.00 1.33	0.458	0.066
Self-Reported Problematic Alcohol Use to Out of Home Placement at W2																				
Depression as single mediator	1633	0+	0.018 (0.008) p=.035	0.043		5.01(4) p=.286	0.012 p=.989	0.98 0.95	0.627	0.152	1601	0.001 (0.005) p=.839	0.003		2.08(4) p=.722	0.000 p=.999	1.00 1.91	0.390	0.028
Self-Reported Problematic Drug Use to Out of Home Placement at W2																				
Criminal Involvement (CI)as single mediator	1522	0+	−0.022 (0.011) p=.045	−0.045	[−0.045, −0.004]	2.91(4) p=.574	0.000 p=.997	1.00 1.09	0.471	0.173	1521	−0.007 (0.010) p=.488	−0.011		19.15 (4) p=.001	0.050 p=.456	0.49 −0.40	1.24	0.052
Self-Reported Problematic Alcohol Use to Child Depression at W1																				
Parental Monitoring	379	10+	−0.190 (0.093) p=.042	−0.042 (0.021) p=.045		4.83(4) p=.305	0.023 p=.691	0.98 0.94	0.035	0.202	372	0.020 (0.044) p=.647	0.007 (0.016) p=.649		1.14 (4) p=.887	0.000 p=.976	1.00 1.50	0.013	0.128
Self-Reported Problematic Alcohol Use to Child Depression at W2																				
Parental Monitoring (PM)	383	10+	−0.091 (0.054) p=.095	−0.022 (0.013) p=.100	[−0.198, −0.013]	4.96(4) p=.291	0.025 p=.682	0.95 0.85	0.033	0.115	373	0.010 (0.022) p=.656	0.004 (0.009) p=.656		1.20 (4) p=.878	0.000 p=.973	1.00 2.13	0.013	0.091
Self-Reported Problematic Alcohol Use to Child Trauma at W1																				
Parental Monitoring (PM)	378	10+	−0.086 (0.051) p=.090	−0.018 (0.011) p=.106	[−0.043, −0.001]	4.89(4) p=.298	0.024 p=.685	0.68 0.12	0.033	0.043	372	0.007 (0.018) p=.678	0.003 (0.006) p=.679		1.14 (4) p=.888	0.000 p=.976	1.00 3.35	0.013	0.067
Exposure to Violence (EX)	494	8+	0.056 (0.086) p=.068	0.031 (0.017) p=.073	[0.002, 0.069]	7.99(4) p=.092	0.045 p=.503	0.84 0.55	0.035	0.143	476	0.082 (0.086) p=.340	0.028 (0.030) p=.348		6.47 (4) p=.166	0.036 p=.614	0.94 0.84	0.034	0.212
Self-Reported Problematic Alcohol Use to Child Trauma at W2																				
Parental Monitoring	383	10+	−0.076 (0.045) p=.094	−0.020 (0.012) p=.098	[−0.046, −0.002]	4.91(4) p=.297	0.024 p=.687	0.86 0.62	0.033	0.059	373	0.009 (0.022) p=.673	0.004 (0.009) p=.676		1.20 (4) p=.879	0.000 p=.974	1.00 2.48	0.013	0.108

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Confirmation of Path Models for Self-Reported Problematic Substance use to Internalizing Behaviors W1 and W2

	Finalized Models in First Half-Sample										Confirmation of Models in Second Half-Sample									
						Model Fit Statistics									Model Fit Statistics					
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR /WRMR	R^2	N	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR /WRMR	R^2
Self-Reported Problematic Alcohol Use to Internalizing Behaviors W1																				
Emotional Maltreatment (EM) as single mediator	1082	1.5+	0.234 (0.058) p<.001	0.054 (0.014) *p*<.001		2.88(4) p=.58	0.000 p=.987	1.00 1.05	0.013	0.104	1035	0.144 (0.066) p=.029	0.040 (0.018) p=.030		2.93 (4) p=.570	0.000 p=.985	1.00 1.08	0.013	0.101
Criminal Involvement (CI) Moderating Direct Pathway	1081	1.5+				11.50(9) p=.243	0.016 p=.994	1.00 1.00	0.722	0.072	1035				24.29 (4) p=.004	0.041 p=.765	0.99 0.97	1.08	0.036
CI Moderating Direct Path			−0.163 (0.078) p=.035	−0.038								−0.162 (0.131) p=.217	−0.045						
Path controlling for CI			−0.078 (0.058) p=.177	−0.018								0.085 (0.067) p=.201	0.024						
EM Mediator with CI Moderating the Direct Path	1082	1.5+				19.36(15) p=.198	0.016 p=1.00	1.00 1.00	0.792	0.137	1035				28.18 (15) p=.021	0.029 p=.984	0.99 0.98	0.968	0.115
Self-Reported Problematic Drug Use to Internalizing Behaviors W1																				
EM as single mediator	1015	1.5+	0.218 (0.098) p=.026	0.040 (0.018) p=.029		5.90(4) p=.207	0.022 p=.904	0.96 0.90	0.021	0.113	981	0.073 (0.073) p=.319	0.010 (0.010) p=.322		5.70 (4) p=.223	0.021 p=.904	0.95 0.86	0.019	0.085
CI as single mediator	1015	1.5+	−0.173 (0.087) p=.046	−0.032	[−0.369, −0.028]	3.17(4) p=.530	0.000 p=.980	1.00 1.09	0.474	0.070	981	0.032 (0.056) p=.570	0.004		15.60 (4) p=.004	0.054 p=.349	0.32 −0.88	1.08	0.030
EM & CI	1015	1.5+				10.93(9) p=.281	0.015 p=.994	0.97 0.94	0.699	0.136					22.49(9) p=.008	0.039 p=.791	0.64 0.27	1.02	0.092
EM			0.243 (0.062) p<.001	0.045	[0.136, 0.367]						981	0.069 (0.060) p=.251	0.010						
CI			−0.173 (0.086) p=.046	−0.032	[−0.368, −0.028]							0.032 (0.056) p=.570	0.004						
Self-Reported Problematic Alcohol Use to Internalizing Behaviors W2																				
EM as single mediator	1082	1.5+	0.185 (0.049) p<.001	0.047 (0.013) p<.001		2.88(4) p=.58	0.000 p=.987	1.00 1.06	0.013	0.089	844	0.140 (0.067) p=.035	0.036 (0.017) p=.038		2.78 (5) p=.734	0.000 p=.993	1.00 1.27	0.012	0.072
Depression as single mediator	1082	1.5+	0.148 (0.062) p=.017	0.038		5.52(4) p=.24	0.019 p=.932	0.97 0.91	0.633	0.071	1035	0.184 (0.071) p=.009	0.050		2.14 (4) p=.710	0.000 p=.993	1.00 1.13	0.382	0.163
EM Mediator and CI Moderating Direct Path	1082	1.5+				19.30(15) p=.20	0.016 p=1.00	1.00 0.99	0.790	0.094	1035				28.18 (15) p=.021	0.029 p=0.984	0.99 0.98	0.968	0.086
CI Moderating Direct Pathway			−0.212 (0.100) p=.033	−0.054								−0.020 (0.176) p=.908	−0.005						
Pathway controlling for CI			−0.015 (0.028) p=.594	−0.004								0.096 (0.091) p=.291	0.026						
EM Mediator			0.183 (0.043) p<.001	0.047								0.113 (0.045) p=.013	0.030						
Self-Reported Problematic Drug Use to Internalizing Behaviors W2																				
EM as single mediator	1015	1.5+	0.083 (0.082) p=.026	0.037 (0.017) p=.026		5.90(4) p=.207	0.022 p=.904	0.96 0.89	0.021	0.104	981	0.060 (0.062) p=.326	0.008 (0.008) p=.332		5.70 (4) p=.223	0.021 p=.904	0.91 0.76	0.019	0.061
Depression as single mediator	1015	1.5+	0.222 (0.100) p=.026	0.045		3.42(4) p=.490	0.000 p=.975	1.00 1.04	0.492	0.070	981	0.314 (0.123) p=.011	0.043		2.61 (4) p=.626	0.000 p=.986	1.00 1.13	0.427	0.123

Appendix 53

Confirmation of Path Models for Self-Reported Problematic Substance use to Externalizing Behaviors W1 and W2

	Finalized Models in First Half-Sample										Confirmation of Models in Second Half-Sample									
						Model Fit Statistics									Model Fit Statistics					
Models	N	Age (Yrs)	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR /WRMR	R^2	N	Unstandardized Specific Indirect Parameter Estimate (SE)	STDYX Specific Indirect Parameter Estimate	Asym. Conf. Interval	X^2 Test of Model Fit, p-value	RMSEA p-value	CFI TLI	SRMR /WRMR	R^2
Self-Reported Problematic Alcohol Use to Externalizing Behaviors W1																				
Emotional Maltreatment (EM) as single mediator	1082	1.5+	0.371 (0.081) p<.001	0.080 (0.018) p<.001	[0.041, 0.124]	2.88 p=.58	0.000 p=.987	1.00 1.03	0.014	0.196	1035	0.148 (0.059) p=.013	0.040 (0.016) p=.014		2.93 (4) p=.570	0.000 p=.985	1.00 1.04	0.013	0.154
Self-Reported Problematic Drug Use to Externalizing Behaviors W1																				
EM as single mediator	1015	1.5+	0.336 (0.142) p=.018	0.058 (0.025) p=.021		5.90(4) p=.207	0.022 p=.904	0.98 0.94	0.022	0.213	981	0.084 (0.081) p=.301	0.011 (0.011) p=.302		5.70 (4) p=.223	0.021 p=.904	0.97 0.92	0.020	0.141
Criminal Involvement (CI) as single mediator	1015	1.5+	−0.183 (0.097) p=.059	−0.032		3.17(4) p=.530	0.000 p=.980	1.00 1.07	0.474	0.096	981	0.041 (0.057) p=.475	0.005		15.60 (4) p=.004	0.054 p=.349	0.75 0.30	1.08	0.083
EM & CI as double parallel mediators	1015	1.5+				10.93(9) p=.281	0.015 p=.994	0.98 0.95	0.699	0.236	981				22.49 (9) p=.008	0.039 p=.791	0.80 0.59	1.02	0.154
EM			0.374 (0.086) p<.001	0.065								0.079 (0.068) p=.245	0.010						
CI			−0.183 (0.097) p=.059	−0.032	[−0.385, −0.112]							0.041 (0.057) p=.475	0.005						
Self-Reported Problematic Alcohol Use to Externalizing Behaviors W2																				
EM as single mediator	1082	1.5+	0.303 (0.074) p<.001	0.071 (0.018) p<.001	[0.035, 0.112]	2.88 p=.58	0.000 p=.987	1.00 1.03	0.014	0.178	1035	0.120 (0.057) p=.036	0.032 (0.015) p=.036		2.93 (4) p=.570	0.000 p=.985	1.00 1.08	0.013	0.105
Self-Reported Problematic Drug Use to Externalizing Behaviors W2																				
EM as single mediator	1015	1.5+	0.283 (0.123) p=.022	0.053 (0.023) p=.023	[0.01, 0.10]	5.90 p=.207	0.022 p=.904	0.98 0.94	0.022	0.206	981	0.063 (0.064) p=.327	0.008 (0.009) p=.326		5.70 (4) p=.223	0.021 p=.904	0.95 0.87	0.019	0.101

Appendix 54

Overview of Support for Hypotheses

Aim 1: Examine direct and indirect pathways from caseworker-identified caregiver problematic substance use to indicators of child harm (safety, permanency, well-being) at baseline and 18-month follow-up (n = 5872).	
H1: Caregiver problematic substance use at baseline will be positively associated with increased levels of child harm at baseline.	Supported for safety and permanency but not well-being
H2: Caregiver and child factors (i.e., parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) will mediate the relationship from caregiver problematic substance use at baseline to child harm at baseline.	Supported in one model
H3: Caregiver problematic substance use at baseline will be positively associated with increased levels of child harm at 18-month follow-up.	Supported for safety and permanency but not well-being
H4: Caregiver and child factors will mediate the relationship from caregiver problematic substance use at baseline to child harm at 18-month follow-up.	Supported in one model
Aim 2: Examine direct and indirect pathways from self-reported levels of caregiver problematic substance use to indicators of child harm (safety, permanency, well-being) at baseline and 18-month follow-up in a sub-group of investigated families where the child remained in the home after the investigation (n = 3512).	
H5: As self-reported levels of caregiver problematic use of alcohol and/or drugs at baseline increase the level of child harm at baseline will also increase.	Supported for well-being but not safety and permanency
H6: Caregiver and child factors will mediate (i.e., parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) and moderate (i.e., caregiver depression, domestic violence, criminal involvement) the pathway from caregiver problematic substance use baseline to child harm at baseline.	Supported in well-being and some services
H7: As self-reported levels of caregiver problematic use of alcohol and/or drugs at baseline increase the level of child harm at 18-month follow-up will also increase.	Supported for well-being and some safety but not permanency
H8: Caregiver and child factors will mediate (i.e., parental monitoring, harsh discipline, emotional maltreatment, exposure to violence) and moderate (i.e., caregiver depression, domestic violence, criminal involvement) the pathway from caregiver problematic substance use at baseline to child harm at 18-month follow-up.	Supported for well-being and some safety and permanency