



# The effect of child mental health service use on child safety and permanency in substance misusing families



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## ABSTRACT

Research has shown that parental substance misuse leads to a great number of adverse child protection outcomes for children including delays in reunification and reentry into out-of-home care. Although studies suggest that provision of behavioral health services for children can serve as a protective factor in this regard, empirical evidence for the beneficial effect of these services for families experiencing substance misuse is lacking. This study examined whether receipt of children's behavioral health services mitigated the effects of parental substance misuse with regard to child safety and permanency outcomes. The study sample included all children who either entered or exited out-of-home care in Florida anytime between July 2007 and June 2010 and were enrolled in the Child Welfare-Prepaid Mental Health plan. Data were obtained from the Florida Safe Families Network (FSFN) and Medicaid claims data sets. Cox regression was used to examine time to reunification and time to reentry into care. Findings revealed that parental substance misuse was significantly negatively associated with family reunification. The presence of parental substance misuse significantly reduced the likelihood of family reunification, whether or not children received mental health services. However, children who received mental health services and were reunified with their parents were almost three times less likely to reenter out-of-home care – even in families experiencing parental substance misuse. Receipt of behavioral health services was differentially associated with time to reunification and reentry into out-of-home care. As child welfare systems strive to become more family focused, e.g. addressing parent *and* child needs, these findings suggest that mental health service delivery to children in foster care remains important.

## 1. Introduction

In 2017, 674,000 children were victims of verified maltreatment nationwide (U.S. Department of Health and Human Services [USDHHS], 2019). In federal fiscal year 2017, according to the national Data Archive on Child Abuse and Neglect (NCANDS), 12.1% of these victims had a caregiver with an alcohol abuse risk factor and 30.8% of these victims had a caregiver with a drug abuse risk factor (U.S. Department of Health and Human Services, 2018).

Although parental substance misuse is not the sole reason for removal it is frequently reported as a co-occurring condition. In federal fiscal year 2018, parental alcohol or drug misuse was identified as a condition of removal for almost 41% of all children placed in out-of-home care (U.S. DHHS, AFCARS, 2019). In Florida during fiscal year 2017–2018, 40 percent of children with verified maltreatment had parents with identified misuse (Florida Department of Children & Families, 2018). Parental substance misuse can include use of illicit

substances (e.g., cocaine and other recognized street drugs), as well as non-medical use of alcohol and prescription medications (Smith & Wilson, 2016). Children may be at risk of maltreatment as a result of parental substance misuse and/or when substance use interferes with the parent's ability to “provide a safe, nurturing environment” (Smith & Wilson, 2016).

### 1.1. Consequences of parental substance misuse

Research focusing on parental substance misuse and child welfare outcomes increasingly points to undesirable effects. For example, parental drug misuse has been associated with lower reunification rates, and children who are removed due to parental substance misuse face the lowest probability of being reunified with their parents (Brook, McDonald, Gregoire, Press, & Hindman, 2010; Courtney & Hook, 2012; Green, Rockhill, & Furrer, 2007; McDonald, Poertner, & Jennings, 2007). Parental drug or alcohol misuse as the initial reason for removal

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has also been associated with higher risk of reunification failure and was shown to be a predictor for multiple out-of-home care placements (Shaw, 2006; Smith, Johnson, Pears, Fisher, & DeGarmo, 2007). Further, caregiver substance misuse has been linked to recurrence of maltreatment, multiple involvements with the child welfare system, and has been found to be a significant predictor of higher severity of maltreatment (Laslett, Room, Dietze, & Ferris, 2012; Sprang, Clark, & Bass, 2005; Yampolskaya & Banks, 2006). Several studies indicated that children of parents who misuse substances have longer stays in out-of-home care, and they are more likely to experience reentry into care (Brook, McDonald, Gregoire, Press, & Hindman, 2010; Kimberlin, Anthony, & Austin, 2009; Lloyd & Akin, 2014; Wilson, 2000). Moreover, mothers with child welfare involvement and substance misuse problems are at increased risk of permanently losing custody of their children compared to those who did not have this problem (Barnard & McKeganey, 2004; Grella, Needell, Shi, & Hser, 2009). Parental substance misuse has also been found to be associated with domestic violence with documented negative effects on child development and health outcomes (Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008; Jones, Gross, & Becker, 2002). There is also evidence that parental misuse is a well-established antecedent to child welfare system involvement, and this is often identified as a reason for placement into out-of-home care due to serious maltreatment (Boles, Young, Moore, & DiPirro-Beard, 2007; Smith et al., 2007; Testa & Smith, 2009; Walsh, MacMillan, & Jamieson, 2003).

### 1.2. Consequences of placement in out-of-home care

The empirical literature focusing on the consequences of placement in out-of-home care or experiences of multiple out-of-home placements has frequently revealed an association with child behavioral problems (Berzanski & Yates, 2011; Kaplow & Widom, 2007; Spataro, Mullen, Burgess, Wells, & Moss, 2004). In general, studies have shown that placement in out-of-home care and greater number of out-of-home placements can lead to escalation of child emotional and behavioral problems. Placement out-of-home can also aggravate existing mental health problems in children and increase the risk of developing new problems (Anderson, 2011; Harden, 2004). Although studies suggest that placement in out-of-home care is associated with an increased risk for child emotional and behavioral problems, there is evidence that parental substance misuse further undermines children's mental health. Parental alcohol and drug abuse has been identified as a strong factor for suicide attempts in youth, as well as non-suicidal self-injurious behaviors, and has been shown to be among the most powerful and robust predictors of addiction disorders in adolescents (Doksat, Zahmacioglu, Demirci, Kocaman, & Erdogan, 2017; Widom, White, Czaja, & Marmorstein, 2007). Children of parents who misused substances, were shown to exhibit elevated symptom levels for both internalizing (anxiety and depression) and externalizing (aggression, substance use/abuse) problems (Hanson et al., 2006). They are also at increased risk of depressive symptoms, Diagnostic and Statistical Manual of Mental Disorders - IV (APA, 1994) criteria for alcohol abuse, and compared to children of parents with no substance abuse diagnosis are more likely to show aggressive behaviors, have fewer friends and experience more peer conflict (Dunn et al., 2002; Fals-Stewart, Kelley, Fincham, Golden, & Logsdon, 2004). In addition, children of parents who misused substances were more likely to experience trauma and its effects, which include difficulties with (a) concentration and learning, (b) controlling physical and emotional responses to stress, and (c) forming trusting relationships (Staton-Tindall, Sprang, Clark, Walker, & Craig, 2013).

### 1.3. The effect of emotional and behavioral problems on permanency and safety outcomes

These emotional and behavioral problems have a negative effect on safety and permanency outcomes. For example, links were found

between serious child mental health problems and lower likelihood of family reunification; between child mental health problems that require inpatient psychiatric treatment and placement instability; and between identified problem behavior and an increased risk for reentry (Akin, 2011; Barth, Weigensberg, Fisher, Fetrow, & Green, 2008; Fawley-King & Snowden, 2012; Park & Ryan, 2009; Snowden, Leon, & Sieracki, 2008). Given these findings that demonstrated the association between child mental health problems and poor child welfare outcomes, it is reasonable to expect that receipt of children's mental health services would address these issues and therefore would increase the likelihood of positive child welfare outcomes, including increased chances for reunification and reduced risk for reentry into care.

### 1.4. The effect of mental health services

Studies examining the impact of mental health services among children involved in the child welfare system, however, have mixed results. Several studies failed to support the effectiveness of children's mental health services in this population. For example, findings from two large longitudinal, nationally representative studies that included a sample of children who had experienced long-term foster care and children who were involved with the child welfare system, ages 4 to 12 from low income, urban areas, suggested that children's behavioral health did not improve after the receipt of either early mental health services or outpatient mental health services (Bellamy, Gopalan, & Traube, 2010; Tabone, Thompson, & Wiley, 2010). Similarly, results based on the National Survey of Child and Adolescent Well-Being (NSCAW) data found no positive relationship between receipt of mental health services (when all types of mental health services were included) and changes in children's behavior over time (McCrae, Barth & Guo, 2010). A study by Kerker and Dore (2006) yielded similar results and reported no association between receipt of mental health services and reductions in emotional and behavioral problems. Findings based on the sample of maltreated children revealed that treatment had no effect on either rates of child placement or re-abuse (Kolko, Baumann, and Caldwell 2003).

In contrast, other studies have shown beneficial effects on child behavioral problems and child welfare outcomes. For example, Thompson (2009) indicated that children who received mental health services prior to age four exhibited fewer externalizing behavior problems than did children who had not received early mental health services. In a sample of youth with child welfare and juvenile justice involvement, Glisson and Green (2006) found that children who received specialty mental health care—defined as treatment provided by professionals trained specifically in this regard (Hazen, Hough, Landsverk, & Wood, 2004)—were less likely to experience out-of-home placement. In another study, Miller, Fisher, Fetrow, and Jordan (2006) showed that children who received individual, group, or family therapy were more likely to have intact family reunifications. This inconsistency in the literature may be explained by differences in study samples, the type of mental health services assessed, and/or parent mental illness. An inverse relationship or lack of association between mental health services receipt and child behavioral health were reported in studies including the following samples: children who had experienced long-term foster care; children ages 4 and older at time of investigation, whose caregiver reported borderline or clinical-level emotional-behavioral problems; and child welfare-involved children with high level of externalizing behavior problems (Bellamy et al., 2010; McCrae, Barth, & Guo, 2010; Tabone et al., 2010). In contrast, children's mental health services provided during child welfare involvement were found to have a positive effect in studies with children from low income urban areas; school-aged children (4–18 years old) who were referred for in-home child welfare and juvenile justice case management services; and children involved in the Early Intervention Foster Care program (Glisson & Green, 2006; Miller et al., 2006; Thompson, 2009). Specialty mental health services were also found to

have a beneficial effect on child behavioral problems (Glisson & Green, 2006; Miller et al., 2006).

Taken together, the literature suggests that provision of mental health services may have beneficial effects on child welfare outcomes and may be important in explaining safety and permanency outcomes for families experiencing child removal. Therefore, the goals of this study were to examine whether receipt of mental health services mitigated the effects of parental substance misuse resulting in improved reunification and reentry into out-of-home care. The following specific research questions were addressed in this study: (a) Is receipt of mental health services associated with timely reunification? (b) Does receipt of mental health services reduce the risk of reentry into out-of-home care? (c) Is parental substance misuse as a type of maltreatment experienced by the child mitigated by the receipt of children’s mental health services and associated with permanency and safety outcomes? The study was approved by the Institutional Review Board of the University of South Florida.

## 2. Method

### 2.1. Sample characteristics and study design

A longitudinal design based on child welfare entry and exit cohorts was employed for this study. Children were grouped by fiscal year (i.e., the year they entered or exited out-of-home care) and were tracked for 12 months.

**Entry Cohort.** The study sample included all children ( $N = 39,028$ ), ages birth to 18 years ( $M = 6.51$ ,  $SD = 5.43$ ) who entered out-of-home care in Florida anytime between July 2007 and June 2010 and were enrolled in the Child Welfare-Prepaid Mental Health plan. Of these youth, 50% were male. The race/ethnicity of this sample was 38% African American, 48% Caucasian, 13% Hispanic, and 1% Other (see Table 1).

**Exit Cohort.** The study sample included all children ( $N = 45,412$ ), ages birth to 18 years ( $M = 7.15$ ,  $SD = 4.91$ ) who exited out-of-home care in Florida anytime between July 2007 and June 2010 and were enrolled in the Child Welfare-Prepaid Mental Health plan. Of these youth, 51% were male. The race/ethnicity of this sample was 39% African American, 48% Caucasian, 12% Hispanic, and 1% Other (see Table 1).

### 2.2. Data sources

Data were obtained from two administrative data sources. The Florida child welfare data set, the Florida Safe Families Network (FSFN), was used to obtain information about child demographics, case characteristics, child maltreatment history, and out-of-home care

**Table 1**  
Sample characteristics.

| Variables                    | Entry Cohort (N = 39,028)<br>(%) | Exit Cohort<br>(45,412)<br>(%) |
|------------------------------|----------------------------------|--------------------------------|
| Age                          |                                  |                                |
| Gender (male)                | 50                               | 51                             |
| African American             | 38                               | 39                             |
| Caucasian                    | 48                               | 48                             |
| Hispanic                     | 13                               | 12                             |
| Other race/ethnicity         | 1                                | 1                              |
| Physical health problems     | 7.5                              | 8.1                            |
| Sexual abuse                 | 3.9                              | 3.0                            |
| Physical abuse               | 18.9                             | 16.4                           |
| Neglect                      | 39.7                             | 36.4                           |
| Domestic violence            | 16.2                             | 16.5                           |
| Child mental health problems | 23.6                             | 29.9                           |
| Parental substance use       | 44.4                             | 44.9                           |

placements. Medicaid claims data were used to obtain information about children’s mental health diagnoses and the number and type of children’s mental health services received. These data were merged using children’s social security numbers.

### 2.3. Predictor variables

**Child demographic characteristics.** Characteristics included gender, age at the time the child was placed into out-of-home care, and race/ethnicity categorized into African American, Caucasian, Hispanic, and Other.

**Child maltreatment type.** Four types of verified maltreatment were recorded in this study: (a) physical abuse, (b) sexual abuse, (c) neglect, and (d) threatened harm. Chapter 39 of the Florida Statutes (41), defines abuse as any willful or threatened act that results in any physical, mental, sexual injury, or harm that causes or is likely to cause significant impairment in the child’s physical, mental, or emotional health. Neglect is defined as living in an environment or under circumstances in which the lack of necessary food, clothing, shelter, or medical treatment occurs to the extent that the child is placed in danger of significant impairment to her or his physical, mental, or emotional health. Finally, threatened harm is defined as a behavior that is not accidental and is likely to result in harm to the child, such as domestic violence or parental substance misuse. A dichotomized variable was created to indicate whether the child experienced or did not experience a specific maltreatment type. Only primary maltreatment type was selected.

**Presence of child mental health problems.** Presence of mental health problems was defined as any ICD-9-CM mental health diagnoses as recorded in the Medicaid claims dataset. The most prevalent ICD-9-CM mental health diagnoses including (a) adjustment reaction disorder, (b) attention deficit disorder, (c) conduct disorder, (d) other youth disorders, (e) depression, and (f) anxiety disorders were examined. A dichotomized variable was created to indicate if the child had mental health any diagnosis (yes or no).

**Child physical health status.** Physical health status was measured by the presence of physical health problems defined as any chronic illness or disability (e.g., diabetes). The presence of health problems was identified based on Comprehensive Behavioral Health Assessments (CBHA) conducted for all children placed in out-of-home care in Florida and collateral information available to case managers regarding each child’s physical health and emotional/behavioral health status.

**Receipt of mental health services.** This dichotomous measure indicated whether a child received any mental health service during the study period. Behavioral health services were identified based on the procedure codes used in the Medicaid claims data set.

**Parental history of substance misuse.** A child’s family was identified as having a history of substance misuse if these problems were recorded by case managers as reasons for the child’s placement into out-of-home care. The information regarding parental substance misuse was based on the Family Functioning Assessment (State of Florida Department of Children and Families, 2017) and collateral information available to case managers. Family substance misuse problems were coded as either being *present* or *absent*.

**Parental substance misuse by receipt of children’s behavioral health services interaction term.** To examine the effect of behavioral health services receipt by parental substance misuse, an interaction term was created and tested. The interaction term was added to the model to expand understanding of the relationships between parental substance misuse as a type of maltreatment experienced by the child and child receipt of mental health services. It also allowed us to test a hypothesis related to whether the effects of parental substance use on child safety and permanency outcomes is mitigated by children’s mental health services. Although the use of a multivariate model helps to control for other covariates, without an interaction term it remains unclear whether the effect of substance misuse on reunification and re-

**Table 2**  
Factors associated with time to reunification (N = 39,028).

| Predictors  | Cox regression model parameters |                  |            |  |       |
|---|---------------------------------|------------------|------------|--|-------|
|   | B                               | Wald $\chi^2(1)$ | Odds ratio | 95% Confidence interval for risk ratio |       |
|   |                                 |                  |            | Lower                                  | Upper |
| Gender  | 0.05                            | 10.98*           | 1.05       | 1.02                                   | 1.08  |
| Child age   | 0.01                            | 0.17             | 1.00       | 0.99                                   | 1.00  |
| African American  | -0.11                           | 39.74*           | 0.90       | 0.87                                   | 0.93  |
| Hispanic  | 0.03                            | 1.86             | 1.03       | 0.99                                   | 1.08  |
| Other race/ethnicity**  | 0.16                            | 5.87*            | 1.17       | 1.03                                   | 1.33  |
| Physical health problems  | -0.99                           | 675.72*          | 0.37       | 0.34                                   | 0.40  |
| Type of maltreatment <sup>†</sup>                                 |                                 |                  |            |  |       |
| Sexual abuse  | 0.08                            | 4.80*            | 1.09       | 1.01                                   | 1.17  |
| Physical abuse  | 0.24                            | 174.52*          | 1.27       | 1.23                                   | 1.32  |
| Neglect   | 0.03                            | 4.05*            | 1.03       | 1.00                                   | 1.06  |
| Threatened harm as a result of domestic violence                  | 0.23                            | 145.87*          | 1.26       | 1.21                                   | 1.31  |
| Presence of mental health problems                                | -0.04                           | 0.78             | 0.97       | 0.89                                   | 1.04  |
| Receipt of mental health services X parental substance abuse**    |                                 |                  |            |  |       |
| Receipt of mental health services but no parental substance abuse | -0.08                           | 3.70             | 0.93       | 0.86                                   | 1.00  |
| Parental substance abuse but no mental health services received   | -0.16                           | 76.88*           | 0.85       | 0.82                                   | 0.88  |
| Receipt of mental health services and parental substance abuse    | -0.19                           | 20.87*           | 0.83       | 0.77                                   | 0.90  |

Note.  
\*  $p < 0.05$ .  
\*\* The following values were used as reference categories: Caucasian (race/ethnicity), other type of maltreatment), and no parental substance use and no mental health services.

entry depends on the presence of mental health services receipt.

#### 2.4. Measures of timely reunification and reentry into care

**Timely reunification.** In this study reunification was defined as returning children to their families of origin from a temporary out-of-home care placement. Following ASFA (1997) and Federal Register (2014) guidelines, timely reunification was defined as discharge from out-of-home care within 12 months of entry. The measure “time to reunification” was calculated for all children who entered out-of-home care for the first time during a specific fiscal year, therefore requiring an entry cohort. If the child was reunified within 12 months of placement in out-of-home care, then time to reunification was calculated as the number of months between the date the child was placed in out-of-home care and the date when reunification occurred. If the child did not experience reunification during 12-month period after entry into out-of-home care, then time to reunification was calculated as the number of months between the date the child was placed in out-of-home care and the last day of the study period, and the case was treated as a censored observation.

**Reentry into out-of-home care.** Reentry into out-of-home care was defined as a second entry into out-of-home care for the same child within 12 months of the latest discharge date from the first removal episode. The measure “time to reentry” was calculated for all children who exited out-of-home care as indicated by the discharge date in the FSFN database. This measure, therefore, required an exit cohort. If the same child (identified by the unique FSFN ID) had a subsequent removal within 12 months following original discharge date, this child was considered as reentering out-of-home care. All children who exited out-of-home care within a specific fiscal year, as indicated by the discharge date, and were discharged from services due to family reunification were included in the exit cohort. If the child reentered care during the study period, then the number of months between the date the child was discharged from out-of-home care and the date when second entry into out-of-home care occurred was calculated. If the child did not reenter out-of-home care during the 12-month period after discharge, then the number of months between the date the child was discharged from out-of-home care and the last day of the study period was calculated, and the case was treated as a censored observation.

#### 2.5. Analytic approach

Cox regression, also known as proportional hazards modeling (Cox, 1972), was used to examine time to reunification and time to reentry into care. Cox regression is a type of event history analysis that is used extensively in outcomes research because of its ability to simultaneously examine both the risk of an event occurring and potential differential effects related to the timing of that event (Cox, 1972). The major advantage of using Cox proportional hazards modeling in this study is that it utilizes information about children who experienced reunification or reentry within the 12-month study period and children who did not get reunified or did not reenter (i.e., censored observations). If a child was not reunified or did not experience reentry, the case was treated as a censored observation. To facilitate model interpretation, odds ratios were used to index the magnitude of the effect of each predictor on time to reunification or reentry.

### 3. Results

#### 3.1. Time to reunification

Child demographic characteristics, maltreatment type, presence of mental health problems, and receipt of mental health services by parental substance misuse interaction term were examined as independent variables in a Cox regression model, with the dependent variable as time to discharge from out-of-home care as a result of reunification. Multivariate Cox regression analysis was conducted to examine the amount of unique variance explained by each predictor. Table 2 provides the summary of findings related to factors associated with time to reunification. A number of significant risk and protective factors emerged in the multivariate analysis.

Child health and case characteristics demonstrated significant inverse effects on time to reunification. Children who were placed in out-of-home care for reasons of physical abuse had 27% greater odds of getting reunified (OR = 1.27,  $p < 0.05$ ), compared to children who were placed in out-of-home care for reasons related to other types of maltreatment. Children who were placed in out-of-home care because of threatened harm as a result of domestic violence had 26% greater odds of achieving reunification (OR = 1.26,  $p < 0.05$ ). In contrast, the odds of failure to achieve reunification for children with physical health

problems was almost 3 times greater (OR = 0.37,  $p < 0.001$ ). Although neglect and sexual abuse maltreatment types were significant predictors of reunification, the size effects were negligible (OR = 1.03 and 1.09, respectively).

Demographic characteristics were significantly associated with timely reunification. Specifically, compared to Caucasian children, children identified as having a different race/ethnicity, and boys, in general, were more likely to be reunified with their original caregivers. African American children were less likely to experience timely reunification. However, the size effect for these predictors was very small. Odds ratios of 0.90 for African American children, 1.05 for gender, and 1.17 for those who was having a different race/ethnicity suggested that these associations were very weak.

Examination of the interaction term revealed that parental substance misuse is significantly negatively associated with family reunification. Regardless of whether children received mental health services, parental substance misuse significantly reduced the likelihood of family reunification. The odds of failing to experience timely reunification for children of parents who misused substances and who received mental health services was 20%, compared to children who did not receive any mental health services and whose parents did not have these issues. Further, the odds of failing to experience timely reunification was 18% for children whose parents misused substances and who did not receive any mental health services, compared to children who did not receive any mental health services and did not experience maltreatment related to parental substance misuse issues (see Table 2).

### 3.2. Reentry into out-of-home care

Cox regression analysis was used to determine which child and case characteristics were associated with reentry into out-of-home care. As shown in Table 3, demographics, child health, maltreatment type, and parental substance misuse by receipt of mental health services interaction term were significantly associated with reentry. The odds of reentering out-of-home care were significantly lower for boys overall,

**Table 3**  
Factors associated with time to reentry into out-of-home care (N = 45,412).

| Predictors  | Cox regression model parameters |                  |      |        |       |
|---|---------------------------------|------------------|------|--------|-------|
|   | B                               | Wald $\chi^2(1)$ | OR   | 95% CI |       |
|   |                                 |                  |      | Lower  | Upper |
| Gender  | -0.10                           | 8.40*            | 0.91 | 0.85   | 0.97  |
| Child age   | -0.08                           | 377.19*          | 0.93 | 0.92   | 0.93  |
| African American  | -0.18                           | 25.66*           | 0.83 | 0.78   | 0.89  |
| Hispanic  | -0.28                           | 25.50*           | 0.75 | 0.68   | 0.84  |
| Other race/ethnicity**  | -0.10                           | 0.74             | 0.91 | 0.73   | 1.13  |
| Physical health problems  | 0.72                            | 141.41*          | 2.06 | 1.83   | 2.32  |
| Type of maltreatment**  |                                 |                  |      |        |       |
| Sexual abuse  | -0.35                           | 8.81*            | 0.70 | 0.56   | 0.89  |
| Physical abuse  | -0.19                           | 15.06*           | 0.83 | 0.76   | 0.91  |
| Neglect   | -0.02                           | 0.45             | 0.98 | 0.91   | 1.05  |
| Threatened harm as a result of domestic violence                  | -0.02                           | 0.14             | 0.98 | 0.91   | 1.07  |
| Presence of mental health problems                                | 1.41                            | 981.89*          | 4.11 | 3.77   | 4.50  |
| Receipt of mental health services X parental substance abuse**    |                                 |                  |      |        |       |
| Receipt of mental health services but no parental substance abuse | -1.06                           | 295.99*          | 0.35 | 0.31   | 0.39  |
| Parental substance abuse but no mental health services received   | 0.12                            | 8.81*            | 1.13 | 1.04   | 1.22  |
| Receipt of mental health services and parental substance abuse    | -1.05                           | 252.88*          | 0.35 | 0.31   | 0.40  |

Note.

\*  $p < 0.05$ .

\*\* The following values were used as reference categories: Caucasian (race/ethnicity), other type of maltreatment, and no parental substance use and no mental health services.

African American children, Hispanic children, and younger children. Compared to boys, girls had 10% greater odds of reentering out-of-home care (OR = 0.91,  $p < 0.05$ ). Compared to Caucasian children, African American children had 20% lower odds of returning to out-of-home care (OR = 0.83,  $p < 0.05$ ) and Hispanic children had 33% lower odds of reentry. In addition, a one-year reduction in age increased the odds of reentering out-of-home care by 8% (see Table 3).

Child mental and physical health were also significantly associated with reentry into care. Children with mental health problems had four times greater odds of experiencing reentry into care (OR = 4.11,  $p < 0.05$ ). Children with physical health problems had two times greater odds to reenter out-of-home care compared to those who did not have these problems (OR = 2.06,  $p < 0.05$ ).

Maltreatment type was also found to be related to reentry into out-of-home care but the relation was inverse. Compared to children who were placed in out-of-home care because they experienced threatened harm (with the exception of threatened harm as a result of domestic violence), children who were sexually abused had 42% lower odds (OR = 0.70,  $p < 0.05$ ), and children who were physically abused had 21% lower odds (OR = 0.83,  $p < 0.05$ ) of reentering care.

Table 3 also presents results of the testing effect of parental substance misuse on reentry into out-of-home care, as moderated by receipt of mental health services. Children who received these services, whether or not their parents misused substances, had almost three times lower odds of reentering out-of-home care (OR = 0.35,  $p < 0.05$ ). Further, the odds of reentering out-of-home care were 13% greater for children who had substance misusing parents and who did not receive behavioral health services, compared to children whose parents did not misuse substances and who did not receive any behavioral health services.

## 4. Discussion

This study examined whether child removal as a consequence of parental substance misuse is mitigated by the mental health services received by children experiencing out-of-home placement with specific attention to reunification and re-entry into care. This study is one of a few recent efforts that uses large administrative data sets to investigate the role of mental health service provision in improving child welfare outcomes, such as expediting reunification with the original caregiver and preventing reentry into out-of-home care. Results suggest that receipt of mental services was differentially associated with time to reunification and reentry into out-of-home care. Although receipt of mental health services by children placed in out-of-home care did not increase their chances of getting reunified, our findings point to the utility of mental health service provision in preventing repeated placement into out-of-home care. This finding dovetails with previous research (Glisson & Green, 2006; Miller et al., 2006) showing that children who received mental health services while in out-of-home care were less likely to experience subsequent reentry. The inverse relationship between the parental substance misuse by receipt of behavioral health services interaction term and reentry into out-of-home care remained significant controlling for demographics, presence of mental and physical health problems, and the type of child maltreatment.

There was not a similarly positive effect of mental health service receipt on timely reunification. Moreover, a significant adverse effect was observed for children whose parents had substance misuse problems. That is, these children stayed in out-of-home care longer and they were less likely to be reunified. One plausible explanation for this finding is that the decision for family reunification often depends on resolution of parental problems (Choi & Ryan, 2007). Parents with substance misuse problems typically have complex service needs and therefore, in addition to the core elements of substance misuse treatment, often have a substantially greater number of case plan requirements. Achieving satisfactory or successful treatment outcomes for

substance use disorders requires not only a variety of services, but a fairly long treatment period (D'Andrade & Chambers, 2012; Walker, 2009). Thus, regardless of the services provided to children, the time required for parents to complete treatment requirements may inevitably delay reunification. Another explanation for the lack of effect observed related to children's receipt of mental health services is that if parents are not able to comply with plans or are not able to resolve problems, reunification is delayed or alternative permanency options are pursued (Choi & Ryan, 2007).

This study further revealed a significant association between the presence of child physical health problems and time to reunification. Consistent with previous research, results indicate that likelihood of being reunified were significantly reduced for children with physical health problems (Choi, Huang, & Ryan, 2012; Harris & Courtney, 2003; Hayward & DePanfilis, 2007; Yampolskaya, Armstrong, Strozier, & Swanke, 2017).

Conversely, no association was found in our study between the presence of child mental health problems and time to reunification suggesting that children with emotional and behavioral problems were reunified as fast as children without such problems. This lack of association may exist for a couple of reasons. First, the effect for mental health problems was examined in the multivariate model. When presence of child mental health was entered as a covariate in a bivariate model, a small but significant negative association was observed,  $\chi^2(1, N = 39,028) = 19.44, OR = 0.93, p < 0.001$ . When mental health service use was added as a covariate, results differed. No significant relationship was observed between child mental health problems and return to original caregivers. Second, as noted above, time to discharge from out-of-home care due to reunification largely depends on whether parents have met case plan requirements in a timely manner and whether the child welfare agency can arrange for efficient provision of treatment and other services for the caregiver (Cheng & Li, 2012). Therefore, the presence of child mental health needs, on their own, may not play an important role in the reunification process. This study result contradicts previous studies showing that children with behavior problems were either more likely (Hayward & DePanfilis, 2007) or less likely to achieve reunification (Wulczyn, 2004). However, it confirms findings from another study that examined the associations between child behavior problems and reunification and was not able to prove a significant association between the constructs (Leathers, Falconnier, & Spielfogel, 2010).

The study results extend previous findings by illustrating that both child physical and mental health problems are associated with reentry into care (Barth et al., 2008; Kimberlin et al., 2009; Yampolskaya, Armstrong, & Vargo, 2007). Our data also suggested that the presence of child mental health problems has a more deleterious effect on the stability of family reunification than do physical health problems. These findings underscore the need for more attention given to children's overall health needs within the scope of child welfare services to ensure child safety and improve family functioning.

#### 4.1. Limitations

Limitations of the study should be noted. First, this study relies on administrative data sets. Therefore, the validity of the records and reliability of reporting across providers and child welfare agencies are limited by the quality and consistency of the data entry. Second, some potentially important variables such as parental income, parental skills, and services provided to the parent were unavailable. In addition, no information about children's experience in out-of-home care was available. Third, there was no information available about the quality of services provided and whether these services were consistent with evidence-based practice. Further, only a "gross" measure of receipt of children's mental health services was used—e.g. whether any mental health services were received or not. Number of services and the type of services were not examined. Further research should examine the effect

of the number of mental health services provided, the type of mental health services, and the dose. Finally, the correlational nature of the study does not permit inference of causal processes that may underlie the relationships between parental substance abuse, children's receipt of behavioral health services, and child welfare outcomes.

## 5. Conclusions and implications

To our knowledge, this is the only study of child welfare involved children and youth that examined whether the receipt of children's mental health services promotes reunification and mitigates reentry into out-of-home care for children with substance misusing parents. The study revealed important findings about the differential impacts of children's mental health services on reunification with their original caregivers and reentry into out-of-home care. It also highlighted the importance of children's mental health services within the context of child welfare. A preliminary and practical conclusion is that strategies should be developed to ensure mental health service provision continues after children exit care to further reduce the risk of subsequent out-of-home care reentry. Findings from this study also suggest that additional support is needed for families with substance misuse issues to achieve and expedite reunification. An integrated approach that focuses on both child behavioral health and parental substance misuse is therefore recommended to more efficiently improve overall outcomes for children. Thus, a combination of behavioral health service provision to parents and their children might be a promising approach to effectively prevent reentry of children into out-of-home care and expedite reunification.

Considering additional barriers to reunification for children with physical health problems, additional supports to foster and biological parents might prove to have important short- and long-term benefits for these children, in particular. Finally based on our findings, we also advocate for strengthening collaboration between behavioral health and child welfare systems. Strategies focused on collaborative planning and enhanced communication between the two systems might respond more effectively to the needs of families involved in the child welfare system, and thus provide a more comprehensive approach to address the complex needs of families with parental substance misuse.

### CRedit authorship contribution statement

**Svetlana Yampolskaya:** Conceptualization, Methodology, Writing - original draft. **Linda M. Callejas:** Conceptualization, Writing - review & editing.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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