Journal Pre-proofs

Ohio START: An adaption of the national sobriety treatment and recovery teams model

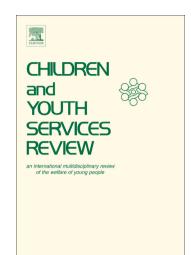Elinam Dellor, Megan Allbright-Campos, Joyce Lee, Alicia Bunger, Fawn Gadel, Bridget Freisthler

Please cite this article as: E. Dellor, M. Allbright-Campos, J. Lee, A. Bunger, F. Gadel, B. Freisthler, Ohio START: An adaption of the national sobriety treatment and recovery teams model, *Children and Youth Services Review* (2024), doi: https://doi.org/10.1016/j.childyouth.2024.107575

Title: Ohio START: An Adaption of the National Sobriety Treatment and Recovery Teams Model.

Authors and Affiliations
Elinam Dellor[1], PhD (Corresponding Author)
Assistant Professor
The Ohio State University, College of Social Work
1947 College Road N.
Columbus, OH 43210
Tel: 614.292.3085
Email: dellor.1@osu.edu

Megan Allbright-Campos[1], MS IMFT
Graduate Research Assistant

Joyce Lee[1], PhD
Assistant Professor

Alicia Bunger[2], PhD
Professor

Fawn Gadel[2], JD
Director of Ohio START

Bridget Freisthler[1], PhD
Professor

[1]The Ohio State University, College of Social Work. Columbus, Ohio
[2]The Ohio State University, College of Medicine. Columbus, Ohio
[3]Public Children Services Association of Ohio. Columbus, Ohio

Word count
Abstract: 253
Total word count: 5,984
Number of tables: 3
Number of figures: 0

- Our findings show general support for the expansion of the National START model to serve eligible families with children of all ages.

- Fidelity to timely access to services did not differ between families with older children and those with young children 0-5.

- Successful completion of the Ohio START model did not differ between the two groups.

- No regional or cohort effects on timely access to services nor for successful completion of the model.

- Increasing availability of the START model to families with children of all ages may have wider reaching impacts on youth's own substance misuse.

Abstract

Background: The Sobriety Treatment and Recovery Teams (START) model is an evidence-supported intervention for families with at least one child under age 6 involved in the child welfare system due to substance misuse. The hallmark of the START model is early identification and linkage to addiction treatment services. To address the dual problem of heightened need for addiction treatment services and limited treatment availability in the wake of the opioid epidemic, Ohio's adaptation extended the model to serve all eligible families regardless of the age of children in the household.
Objective: To investigate the delivery of the START model for parents and caregivers of older youth (age 6-18) only as compared to the population for which it was originally intended.
Methods: We used data from 40 counties and with parents as the unit of analysis (N=714). We used multilevel models to estimate the relationship between the age of children in the home and 1) meeting fidelity for timely access to treatment services and 2) successful completion of the model.
Results: There was no statistically significant difference in the likelihood of meeting fidelity requirement for timely access to treatment services, nor in successful completion for families with older children as compared to those with at least one child aged 0-5.
Conclusions: These results lend support to the use of the START model for all eligible families, regardless of the children's ages. Future studies can examine more nuanced relationships to include the role of specific substances, child placement, and the role of family peer mentors.

1. INTRODUCTION

The rise of foster care rates amid the national opioid epidemic in the United States illustrated how parental substance misuse can lead to physical abuse, neglect and child welfare involvement for children of all ages (Feder et al., 2019; Radel et al., 2018) Parents who misuse substances are more likely to have their children removed and placed in out-of-home care, and less likely to eventually reunify with their children because safety and parenting concerns remain unaddressed due to unmet addiction treatment needs (Marsh et al., 2012). The Sobriety Treatment and Recovery Teams (START) model is a child welfare-led intervention that has been shown to be effective for identifying substance misuse among parents, expediting access to addiction treatment, improving sobriety, and family reunification (Hall et al., 2021; Huebner et al., 2017). However, START was developed and demonstrated to be effective for parents with at least one child under age 6 and it remains unclear whether the model is also effective for parents of older children. This study examines whether the START model can be used for

parents and caregivers of older youth which will inform decisions about whether START can be scaled out to broader populations than the subset of families on which it was initially tested.

1.1. Prevalence of parental substance misuse in child welfare populations

Parental substance misuse is one of the most prevailing risks associated with child maltreatment (Berger et al., 2010; Stein et al., 2002). Nationwide, parental alcohol abuse was a risk factor in 14% and parental drug abuse was a risk factor in 26% of child maltreatment cases reported to Child Protective Services (US DHHS, 2003). A report using data from 2017 found that an estimated one in three children entered foster care as a result of parental substance (Sepulveda & Williams, 2019) misuse. Children affected by parental substance misuse are exposed to more traumatic experiences compared to their counterparts who are not affected by parental substance misuse (Dellor et al., 2022; Garcia et al., 2019). Consequently, these children are at higher risk for adverse developmental outcomes including depression, aggressive behavior, and substance misuse in adolescence and adulthood (Smith et al., 2016; Stein et al., 2002).

Opioid misuse in particular has led to a rise in foster care placements. Nationwide, a 10% increase in overdose death rates corresponds to a 4.4% increase in the rate of foster care entries (Radel et al., 2018). Several studies have also documented a relationship between opioid prescriptions, fatal opioid overdoses, and child removals (Ghertner et al., 2018; Quast, 2018; Quast et al., 2019). Communities with high levels of prescription opioid overdose rates tend to have higher rates of hospitalizations for child maltreatment (Wolf et al., 2016) and foster care entries (Bullinger & Wing, 2019; Ghertner et al., 2018). Further, prescription opioid distribution is positively associated with child removal from the home (Quast et al., 2019) and nationwide, counties with higher overdose death and drug hospitalization rates also report a higher number of children involved with child welfare systems (Ghertner et al., 2018;

4

Radel et al., 2018). Counties with higher rates of substantiated child maltreatment reports also had higher levels of opioid prescribing (Morris et al., 2019), and in Ohio, higher rates of naloxone administration was related to increased referrals for child welfare investigations and substantiations (Freisthler et al., 2022). Child welfare caseworkers further report that unlike previous substance misuse epidemics, entire families, including relatives and across multiple generations often struggle with opioid addiction (Radel et al., 2018), making kinship placement difficult and further contributing to the number of children placed in foster care.

1.2 Parental substance misuse as a risk factor for child welfare system involvement by child age

Due in part to mandated reporting through medical systems, younger children are more likely than older children to enter child welfare systems due to parental substance misuse (Brewsaugh et al., 2023; NCSACW, n.d.). Analysis of the 2019 National Child Abuse and Neglect Data System (NCANDS) data shows that parental substance misuse was a risk factor in 37% of reports involving infants less than a year and in 22% of reports among children ages 1 to 5 (Brewsaugh et al., 2023). In contrast, parental substance misuse was a primary risk factor in smaller proportions of reports involving children ages 6-12 years and 13-17 years (19% and 17%, respectively; Brewsaugh et al., 2023)). Among children placed in foster care, parental substance misuse was a risk factor in over half (51%) of cases involving children less than a year old, and in 45% of placements for children ages 1 to 5 (Brewsaugh et al., 2023; NCSACW, n.d.). In comparison, parental substance misuse was a risk factor for foster care placement in 38% of cases involving school-aged children 6-12 years old, and in 19% of cases involving adolescents 13-17 years old (Brewsaugh et al., 2023; NCSACW, n.d.). Because of these higher risks for families with young children, evidence-based interventions overwhelmingly target parents with infants and young children (Landers et al., 2018).

Child welfare-based interventions including START typically target parents of children 0 to 5 for three major reasons. First, as detailed above, infants, toddlers and young children comprise a larger proportion of substance-affected children in child welfare systems (Crouse et

al., 2021). Second, younger children are particularly vulnerable to poor developmental outcomes as result of abuse and neglect experienced during sensitive developmental periods (Boivin & Hertzman, 2012). Third, younger children are more likely to enter out-of-home care due to parental substance use (Brewsaugh et al., 2023). However, the same strategies employed to ensure the safety and permanency of younger children while addressing parental substance misuse may be equally beneficial for older children. Although older children may come to the attention of child welfare agencies for a wider range of reasons, they are more likely to have been exposed to harmful behaviors associated with parental substance misuse than their younger counterparts (Kolar et al., 1994; Leza et al., 2021; M. Solis et al., 2012). Older youth are more likely to witness substance misuse, experiences of withdrawal, overdose, and violence within and outside of the home (Leza et al., 2021; Sullivan et al., 2004a). These youth often present with more complex and severe cases of child abuse and neglect, have more need for services across multiple sectors (Semidei et al., 2001), and experience multiple placements and longer stays in out of home care overall (Brook & McDonald, 2009; Mowbray et al., 2017). Additionally, older children have increased risk of witnessing violence within the home (Sullivan et al., 2004b), a strong and consistent predictor of initiation and progression of substance misuse among older youth (Sale et al., 2003; Sullivan et al., 2004b). This likely also has implications for younger siblings given evidence that older siblings influence substance misusing behavior in their younger counterparts, and that these effects are evident even after accounting to parent and peer influences (Feinberg et al., 2012; J.-Y. Kim et al., 2007; Low et al., 2012). Assuming, START model strategies are equally beneficial for families with older youth only, the probability of meeting model fidelity and of successful completion would not differ between families with at least one child under age 6 and those with older children only should be similar in fully adjusted models.

1.3. Challenges to serving child welfare-involved parents with substance misuse concerns

6

Addiction recovery is complicated by both individual and environmental factors. Oftentimes, substance misuse across generations is a source of early life trauma for parents (E. D. Dellor et al., 2022; Dodge et al., 2009), ultimately resulting in the formation and sustainment of their own substance misuse behaviors (Solis et al., 2012). Typically, substance misuse and family violence are linked across generations (Noll et al., 2009) so that left untreated, the cycle is more apt to intensify rather than improve. This has important implications for engagement in addiction treatment since individuals who report greater severity of drug dependency are more likely to drop out of treatment relative to individuals with less severe drug dependency problems (Melnick et al., 2001).

Families affected by parental substance misuse also typically struggle with co-occurring needs including housing and food insecurity (Gruber & Taylor, 2006), domestic violence, mental health concerns, social isolation, and lack of social support that add to the complexity of such cases (Landers et al., 2018). Treatment related costs including transportation and childcare may influence motivation to participate in engagement and retention efforts (Shockley McCarthy et al., 2022). Oftentimes special efforts, including the use of certified family peer mentors (FPMs)—peer recovery supporters with lived child welfare and addiction recovery experience— are needed to match parents to services in order to encourage engagement (Shockley McCarthy et al., 2022; Yoon et al., 2021). Similarly, parents' motivation for enrollment, engagement and retention in addiction treatment services may be influenced by child welfare case characteristics. Parents who are court mandated to complete addiction treatment services ("involuntary" cases) may have strong external motivation to engage in treatment (Peters, R et al., 2001)or find themselves resistant and distrustful of treatment services (Rockhill et al., 2008) to negatively impact the likelihood of treatment completion (Gregoire & Schultz, 2001).

Although rates of parental substance misuse are comparable between rural and urban regions, (Cerdá et al., 2021; Havens et al., 2007; Paulozzi & Xi, 2008), families in rural areas experience unique service accessibility barriers (Gale & Hansen, 2017; Heflinger & Christens,

2006) due to relatively fewer social service providers in general (Girth et al., 2012) and even fewer addiction treatment resources specifically (Cummings et al., 2016). Waiting lists, local workforce shortages, travel distances, and service fees further limit service accessibility in these regions (Belanger & Stone, 2008; Boydell et al., 2006; Clary et al., 2020). The cyclical nature of addiction recovery in the face of these contextual factors is often at odds with federally mandated timelines laid out in the Adoption and Safe Families Act (ASFA) of 1997. The Act generally requires state agencies to file petitions to terminate parental rights when children have been in foster care for 15 of the most recent 22 months (Ahlin et al., 2022). In fact, parental substance misuse is the most common reason for termination of parental rights (Wattenberg et al., 2001). ASFA has been widely critiqued as detrimental to families struggling with substance misuse since addiction recovery does not occur on a strict 15-month timeframe (Trivedi, 2023), however it remains the guideline for achieving permanency outcomes for children (Trivedi, 2023). As a result of the constellation of issues described above, families affected by parental substance misuse experience worse outcomes at every stage from investigation to removal and reunification (Marsh et al., 2012b). Parents struggling with substance misuse are less likely to reunify with their children (Forrester & Harwin, 2008; He et al., 2014; Lloyd et al., 2017) such that those children are more likely to end up in permanent custody of the state compared to children who enter care for other reasons (Vanderploeg et al., 2007). Among those who reunify, children affected by parental substance misuse are more likely to re-enter child welfare (Barth et al., 2006; Lloyd, 2017).

1.4 The National Sobriety Treatment and Recovery Teams (START) model

In response to the needs of substance-affected families, child welfare agencies are increasing turning to evidence-based practices (EBPs) to ensure timely access to addiction treatment services (Kessler et al., 2005; Larsen, 2000; Magura & Laudet, 1996; Semidei et al., 2001). EBPs with strong cross-system alignment between child welfare and addiction treatment systems are particularly appealing based on the understanding that these parents

require assistance beyond what child welfare systems can provide, and that parents who are quickly identified, linked to services and who are supported by both child welfare and addiction treatment services are more likely to be reunified with their children (Huebner et al., 2015).

The National START model is an evidence-supported intervention for child welfare-involved families where parental substance misuse is a primary risk factor of child maltreatment. Because infants, toddlers and young children make up an estimated 70% of child welfare-involved children (Kelly et al., 2021; US DHHS, 2023), the model targets families with at least one child ages 0 to 5 years. This child welfare-led model is implemented in formal partnership with local addiction treatment providers to expedite access to treatment services and provide intensive supports to help parents recover and reunify with their children (Hall, Kelmel, et al., 2021a; Huebner et al., 2012; Huebner, Hall, et al., 2021). Given strict child welfare timelines, the hallmark of the model is early identification of substance misuse, and immediate linkage to addiction treatment services including SUD counseling, intensive inpatient and outpatient programs. The model pairs child welfare workers with FPMs who have lived experience in substance misuse and child welfare involvement   FPMs engage parents in treatment by helping to navigate across child welfare and behavioral health systems. The START model includes sequenced practice components to achieve fidelity to practice guidelines (Huebner et al., 2015, 2017). Specifically, within 38 calendar days, participants must 1) be screened for substance misuse and referred to START, 2) attend a shared decision-making meeting (SDMM) that bring child welfare, behavioral health, and other service professionals together with families to plan services, 3) meet with assigned FPMs, 4) have a formal assessment by addiction treatment providers, and 5) attend four treatment sessions. Parents and caregivers successfully complete their work with the START team after completing all services specified in their individualized child welfare case plans. This may occur prior to or in conjunction with child welfare case closure. The model has shown effectiveness in reducing time to completing SUD treatment,

and higher levels of sobriety compared to parents who received treatment as usual (Huebner et al., 2012). Furthermore, children are less likely to experience subsequent maltreatment, or re-enter foster care (Hall et al., 2021; Huebner et al., 2017). The model has since been replicated and scaled to meet the diverse needs and policies of communities in Maryland, North Carolina, West Virginia, Kansas, New York, and Ohio (Children and Family Futures, 2023).

1.5 The Ohio Sobriety Treatment and Reducing Trauma (START) model

Ohio's implementation of the model—Ohio Sobriety Treatment and Reducing Trauma Ohio START)—was piloted in 17 counties in rural and Appalachian communities (Cohort 1) at the peak of the opioid crisis in 2017 when opioid overdose death rates were among the highest in the nation (CDC Wonder, 2017). Child welfare systems in the state were struggling with a high volume of families entering the child welfare system due to substance misuse (PCSAO, 2017). Given the urgency of the opioid crisis, restricting the intervention only to families with young children, and effectively withholding a potentially effective intervention from families in crisis was not acceptable to policy makers and agency leaders across the state. As such, Ohio's implementation of START extended the age requirement to include all eligible families regardless of the age of children in the home. Ohio implemented all other elements of the START model as required in the National START model.

1.6.   The current study

The purpose of the current study was to investigate the effectiveness of the START model for Ohio families with older youth (age 6-18) only as compared to families with young children (ages 0-5), the population for which START was originally intended. We examined differences in 1) meeting fidelity for timely access to addiction treatment services, and 2) successful completion of child welfare case plans through participation in Ohio START. We further considered the role of individual, family and regional level contextual factors on each of the two outcomes.

2. METHODOLOGY

2.1. Study sample and Data Collection

The study used data from adult parents and caregivers who participated in Ohio START

between October 2017 and June 2023. The 714 adults represent 567 families nested in 40

counties across the state. Participant data were collected using the Needs Portal, a hybrid web-

based resource referral and Management Information System (Dellor et al., 2015). The Needs

Portal acts as the organizing body for communication around each case by allowing

caseworkers, FPMs, and addiction treatment providers to track and share information about

participating families including substance misuse and trauma assessments, treatment service

dates, and reasons for terminating enrollment.

2.2   Measures

2.2.1. Dependent Variables

Fidelity to timely access to treatment services: Ohio START cases follow a protocol outlining the

essential tasks and services that should occur within a certain amount of time to implement the

model to fidelity. Timely access to treatment services is measured at the parent or caregiver

level and is defined as completion the following six milestones within the first 38 calendar days

of child welfare contact: 1) substance misuse screening and referral to Ohio START, 2) attend a

shared decision-making meeting (SDMM), 3) meet with assigned FPM, 4) have a formal

assessment by addiction treatment providers, and 5) attend four addiction treatment sessions.

As opposed to all adult participants, the sub-sample for this outcome was composed of 394

adults (55% of the original sample) with valid data on this variable. A dichotomous variable was

created where 1 = *fidelity met* and 0 = *fidelity not met*. Given the number of adults with missing

information on this variable, we conducted missing data analysis using chi-square and t-tests to

determine the extent to which adults with missing information differed from the analytic sample.

Adults excluded from the sample scored lower on the UNCOPE screening instrument for substance misuse (4.42 vs 4.89; t (712) = 4.07, *p < 0.01*). They were significantly more likely to be non-mothers—fathers or other kin(53.18% vs 48.82%; X^2(1, N=714) =7.6, *p < 0.01*), more likely to live in Appalachian areas (53.88% vs 46.12%; X^2(1, N=714) =21.61, *p < 0.001*), and were significantly more likely to be in the first implementation cohort (61.00% vs. 48.20%; X^2 (2, N=394) =19.06, *p < 0.001*).

Successful completion of case plans: An individual-level dichotomous variable was created indicating successful completion of child welfare case plans through participation in Ohio START. Successful completion of case plans was coded as *1*, and Ohio START enrollment termination for all other reasons including legal custody to someone else, ongoing substance misuse or relapse, family request to exit the program, family location unknown and long-term incarceration (> 6 months) were coded as *0*.

2.2.2. Individual-Level Predictors

The primary independent variable was the *distribution of children's ages within the home*. A dichotomous variable was constructed indicating *1* for families with at least one child ages 0 to 5 and *0* for families with older children ages 6-18 only. We included several contextual variables at the individual level. The 6-item *UNCOPE* screening tool (Hoffmann et al., 2003) was used to assess substance misuse severity in adult caregivers. The screener includes questions regarding substance misuse, neglect of responsibilities, ability to cut down on use, other's objections to use, preoccupation with use, and relieving emotional distress. Questions are answered with yes/no responses with total scores ranging from 0 to 6. Reports on UNCOPE accuracy and psychometric properties present comparable results with substance misuse diagnoses and good internal validity (Hoffmann et al., 2003; Proctor et al., 2017; Proctor & Hoffmann, 2016). Eligibility criteria for Ohio START requires a score of three or above on the UNCOPE screening tool for enrollment. *Race* was a dichotomous variable for adult race

indicated as White or any other race. *Family role* was a dichotomous variable indicating if the participant was a mother or other participating adult. A continuous variable was used indicating *length of participation in the START program* in months.

2.2.3. Family or Case-Level Predictors

A family or case-level continuous variable was used indicating the *number of children in the home*. *Type of case* was a dichotomous variable recorded where 1 equals *court involved*, indicating individuals with open legal cases, and 0 equals *not court involved*, indicating individuals who received child welfare services on a voluntary basis.

2.2.4. County-Level Predictors

A categorical variable was created by grouping the 40 Ohio counties into the following *regions*: *Appalachia*, *Rural*, *Suburban*, and *Urban* through county classifications developed by the Ohio Department of Public Health and adopted by the Ohio Department of Mental Health and Addiction Services Crane (Massatti, 2013). Rural was used as the reference group. Because START implementation was staggered by cohort at the county level, a second categorical variable was created by grouping the 40 Ohio counties into START cohorts from one through five depending on when the county began implementing the model, and with cohort 1 as the reference group.

2.3 Data Analysis

Univariate descriptive statistics provided a demographic profile of Ohio START participants (see Table 1). Bivariate analyses (t-tests, chi squared tests and logistic regression) were first conducted to identify the density of variables and relationships among predictor and outcome variables using SPSS Version 28. Next, to account for clustering of adults within families and counties, 3-level multi-level logistic regression models were estimated using restricted maximum likelihood in HLM Version 8. The goal of the 3-level model was to partition within cluster effects

(e.g., the extent to which participant characteristics are associated with the odds of meeting fidelity for timely access to treatment services) from between-cluster effects (e.g., the extent to which family and/or county characteristics are associated with odds of meeting fidelity for timely access to treatment services). In this way, the odds that the outcome variable equals one instead of zero may be allowed to vary from one family to the other and from one county to the other. We first estimated an empty (null) model for both outcome variables. Since no predictors are included at this stage, the fixed intercept (B_{00}) indicates the overall odds of a given outcome for a typical participant (level 1) within a typical family (level 2) and in a typical county (level 3). The level 2 and 3 residuals indicate deviation of specific odds of an outcome in a given family and county from the overall odds of the outcome occurring. The intraclass correlation coefficient (ICC) was then calculated for each outcome variable to quantify clustering of the data at family and county levels. Level one models were created by adding individual level predictors. Level two models were created through adding family level variables and level three models were created by adding county level variables. We assessed model fit using a likelihood ratio test.

3.0. RESULTS

3.1. Sample Characteristics and Descriptive Statistics

A description of the analytic sample for both outcome variables is presented in Table 1.

3.2. Bivariate Analyses

Bivariate analyses are presented in Table 1. There was a statistically significant association between family role (χ^2 = 4.015, $p < 0.05$) and region (χ^2 = 9.150, $p < 0.05$) with timely access to treatment services. Logistic regression revealed that compared to rural regions, adults in urban regions were more likely to achieve timely access to treatment services (β = 1.934, $p < 0.05$). Overall (*not shown*), 63.0% of parents and caregivers of younger children met fidelity for timely access to services compared to 52.0% of parents and caregivers of older children (χ^2 = 1.63, *p*

14

=0.201). The age of children in the home (χ^2 = 5.781, *p < 0.05*), race (χ^2 = 7.787, *p < 0.01*),

UNCOPE score (t = 2.580, *p <.05*), number of children in the household (t = -2.859, *p < 0.01*),

and region (χ^2 = 11.395, *p < 0.05*) were significantly associated with successful completion of

case plans. Logistic regression revealed that compared to rural regions, adults in urban regions

were less likely to achieve successful completion of case plans (β = .522, *p < 0.01*). Overall (*not*

shown), 60.0% of parents and caregivers of younger children successfully completed the model

compared to 52.0% of parents and caregivers of older children (χ^2 = 5.782, *p <0.01*).

3.3. Multilevel Analyses

Table 2 presents estimated effects on meeting the fidelity indicator for timely access to

treatment services. The odds of meeting fidelity for timely access to treatment services for

participants in the same county were slightly correlated (ICC=0.168), while odds of for

participants within the same family were highly correlated (ICC=0.859), indicating that parents

and caregivers within the same family were highly correlated on this indicator. . Distribution of

child age was not significantly associated with meeting fidelity, indicating that across counties,

there is not a statistically significant difference in adherence to fidelity for families with older

children 6 to 18 compared to families with at least one child 0 to 5 (OR = .739, 95% CI [0.385 –

1.416] *p = 0.299*). No other individual, family, or county level variables were significantly

associated with meeting the fidelity indicator of timely access to addiction treatment services,

indicating no statistically significant difference in any variables across counties (see table 2).

Results for experiencing successful completion of case plans are presented in Table 3. The

odds of successful completion of case plans for participants in the same county were also

slightly correlated (ICC=0.2), while odds for participants within the same family are highly

correlation (ICC=0.93). Distribution of child age was not significantly associated with successful

completion of case plans, indicating that across counties, there was not a statistically significant

difference in experiencing successful completion of case plans between families with older

children 6 to 18 and families with at least one child 0 to 5 (OR = .633, 95% CI [.380 – 1.053], $p = 0.20$). Race was significantly associated with successful completion of case plans where white parents were more likely to experience successful case plan completion than parents of other races (OR = 1.907, 95% CI [1.017, 3.575], p < 0.05). Number of children in the household was significantly associated with successful case plan completion where a higher number of children in the home was associated with a higher likelihood of successful completion of case plan (OR = 1.243, 95% CI [1.020, 1.526], $p < 0.05$). No other individual, family, or county level variables were significantly associated with successful case plan completion, indicating no statistically significant difference in those variables across counties (see table 3).

4.0. DISCUSSION

Parental substance misuse and child maltreatment are critical and interconnected public health problems due to association with family separations through child removal from the home (Cunningham & Finlay, 2013; Radel et al., 2018.; Staton-Tindall et al., 2016). Fortunately, evidence-supported models including START have shown promise for addressing parental substance misuse problems and improving child and family outcomes (Hall et al., 2021; Huebner et al., 2017). However, to date, evidence supporting the model has been limited to families with younger children although prior research shows multiple challenges facing older children whose parents misuse substance or have substance misuse problems (Leza et al., 2021; M. Solis et al., 2012; Sullivan et al., 2004a). Using data from Ohio's adaptation of the START model, this study sought to contribute to the literature by investigating whether the model works similarly for families with older youth ages 6-18 only, as compared to the population for which it was originally intended.

Overall, our findings provide initial support for the expansion of the START target population to include all eligible families regardless of the age of the children in the home. Fidelity to timely access to services did not differ between families with older children and those with younger children. Similarly, we found no statistically significant difference in the odds of successfully completing the model between the two groups. Interestingly we found that the odds of successful completion of case plans increased with each additional child in the home. A possible explanation is that children may act as a source of social support for each other and parents as they navigate addiction recovery (Tracy et al., 2010). A second and related possibility is that older children may be able to care for younger children while parents engage in treatment services. Furthermore, White participants were more likely to successfully complete the model which may be due to overrepresentation of white participants (92%) in the overall sample The first two cohorts of the model were concentrated in rural and largely white counties in southern Ohio. While Ohio START has since expanded to include metro counties that are more racially and ethnically diverse, those data were not available for the current study. In another jurisdiction, there was no difference in odds of successfully completing case plans for Black families as compared to White families (Huebner, Willauer, et al., 2021). That said, other evidence-based interventions in child welfare also report lower than expected engagement of families of color based on the demographics of child welfare-involved families (Garcia et al., 2019; Mowbray et al., 2017). This may be due to structural disadvantage including a lack of behavioral health resources in local neighborhoods (Reardon et al., 2015; VanderWielen et al., 2015) , biases related to risks posed by use of legal vs. illegal substances (Freisthler et al., 2017), and racial biases when it comes to child welfare referral and engagement (Dettlaff & Boyd, 2020).

We did not find statistically significant relationships between a number of individual, family and county-level factors and our outcomes of interest. The lack of significance for

substance misuse severity as measured by the UNCOPE assessment is most likely due to limited variance between the two groups. The UNCOPE assessment is the primary tool used to determine eligibility. All participating adults must score a three or higher on the six-point scale, making it difficult to detect differences between the two groups. As an example, individuals who met fidelity for timely access to services on average scored 4.86 on the UNCOPE, compared to 4.58 among those who did not meet fidelity for timely access to services and with standard deviations of 1.41 and 1.63 respectively.

Moreover, the lack of significance for length of time in the program and successful completion of case plans is in line with previous findings that days spent in treatment was not significantly correlated with treatment outcomes (Green et al., 2007). Relatedly, our finding that court-involvement had no impact on either outcome is consistent with existing literature that court-ordered treatment was not predictive of treatment completion (Gregoire & Schultz, 2001). Lastly, we did not find significant regional or cohort effects on the odds of receiving timely access to services or for successful completion of case plans. Prior to implementation, prospective child welfare agencies complete a pre-implementation period. Agencies receive intensive training and technical assistance on best practices for implementing the START model to fidelity, form partnerships with addiction treatment providers, and together develop collaborative strategies for working jointly. The goal of operationalizing collaborative strategies is to expedite access to treatment, align case and treatment plans, and delineate data sharing plans as parents navigate the model (Bunger et al., 2020). It may be that this process works to standardize implementation across different counties and between cohorts. For example, rural counties tend to have relatively fewer behavioral health providers and consequently tend to be characterized by longer waiting times (Belanger & Stone, 2008; Gale & Hansen, n.d.; J. Kim et al., 2020). However, a formal partnership aimed at expediting access to treatment for child welfare-involved adults may alleviate this barrier.

Our findings show general support for expanding the model to serve eligible families with children of all ages. In this way there may be potential to increase the number of families who may benefit from the model, as well as the public health significance of models like START. Evidence from Kentucky's implementation of the model shows that compared to non-START counterparts, mothers in the START program had higher rates of sobriety, showed improved parenting capacity, and their children were more likely to remain at home and among children, lower rates of out of home placement in out-of-home care (Hall et al., 2021; Huebner et al., 2017). Younger and older children alike may benefit directly by engaging with FPMs who may serve as recovery role models in way that may directly challenge permissive attitudes towards substance misuse behavior within the home. Children may benefit indirectly from improved relationships with parents and improved stability within the home environment (Rusby et al., 2018).

Older children in this population are especially vulnerable to initiating substance use at younger ages and for misusing substances over the life course (Biederman et al., 2000). This pattern tends to continue across generations where grandparents' substance misuse is predictive of substance misuse in parents and grandchildren (Capaldi, Kerr & Tiberio, 2018) (Capaldi et al., 2018). This in turn has a ripple effect on kinship placement opportunities. However, there is promising evidence that interventions targeting substance misuse in parents decreases risk of substance in their children later in life (Haggerty et al., 2008). To that end, the START model screens all individuals for trauma exposure and refers them to trauma-informed services. This is in line with best practices indicating trauma informed approaches in addiction treatment for improved treatment effectiveness (Savage et al., 2007) and with respect to youth, a way to interrupt the intergenerational nature of trauma exposure and substance misuse (Marcellus, 2014). Moreover, because older siblings influence substance misuse in younger siblings (Kim et al., 2007; Low et al., 2012), older youth may be able to influence substance misuse initiation in younger siblings. Lastly, given the well-established link between foster care

placement and substance misuse, youth may further benefit from protective factors of remaining at home (Braciszewski & Stout, 2012; Siegel et al., 2016).

Increasing availability of the START model to families with children of all ages may have wider reaching impacts on youth's own substance misuse via participation in their parents' treatments. Ohio START impact studies should not only describe and compare outcomes for Ohio START participants and otherwise eligible non-participants, but also examine differences in reunification rates, length in out of home placements as well as child welfare entries rates for families with older youth ages 6 to 18. Given our findings, Ohio START impact studies may further shed light on the extent to which adherence to fidelity indicators translate the model's stated goal to improve child well-being, family functioning, and adult recovery (Huebner, Willauer, & Posze, 2012). *4.1. Limitations and Future Research Directions*

Although the current study provides important insights into the START model's use, there are several limitations that may influence the interpretation and generalizability of our findings. First, although we accounted for known contextual factors, there are multiple factors that influence an individual's ability to meet fidelity to the START model and to complete case plans including, types of social support, childcare and transportation barriers when it comes to accessing services. Second, parents can elect to participate in Ohio START, which may result in selection bias. As such findings may not be representative of parents involved in the child welfare system in the state of Ohio. Third, our findings related to timely access to addiction treatment services should be interpreted in light of significant missing data as 45% of the original sample did not have valid data on this variable. However, missing data analysis revealed that excluded participants were not significantly different from the final analytic sample on the primary predictor of interest, the distribution of children's ages in the home. Fourth, due to limitations on

20

existing data, this study did not investigate the role of substance type. While the START model is not restricted by substance type, it is possible parents may experience different outcomes based on specific substances use given evidence that risk of relapse may differ by substance type (Amini et al., 2023) and that individuals who use multiple substances sequentially or concurrently—polysubstance misuse—are less likely to maintain sobriety (Kabisa et al., 2021). Future studies should explore the effect of substance type on Ohio START outcomes.

4.2. Conclusions

The START model is unique in focusing on expedited access to treatment services, intensive case management and wraparound services, all while keeping children within the home when it is safe to do so. These strategies are in line with state and federal priorities to shift child welfare resources towards prevention services (McKlindon & Sun, 2020). Overall, our findings show promise for the utility of the START model for eligible families with older youth.

References

Ahlin, E. M., Hummer, D., & Honardoost, M. (2022). Parental sobriety and Parent-Child reunification in dependency court: Does the 15-month Adoption and Safe Families Act (ASFA) rule support parent-child reunification? *Journal of Family Trauma*, Child Custody & Child Development, 19(3–4), 340–358. https://doi.org/10.1080/26904586.2021.1957060

Amini, K., Long, T., Jafari Varjoshani, N., & Rabie Siahkali, S. (2023). A comparison of risk factors for relapse in opiate-related and stimulant-related substance use disorders: A cross-sectional multicenter study. *Journal of Nursing Scholarship*, 55(3), 566–576. https://doi.org/10.1111/jnu.12872

Barth, R. P., Gibbons, C., & Guo, S. (2006). Substance abuse treatment and the recurrence of maltreatment among caregivers with children living at home: A propensity score analysis. *Journal of Substance Abuse Treatment*, 30(2), 93–104. https://doi.org/10.1016/j.jsat.2005.10.008

Belanger, K., & Stone, W. (2008). The Social Service Divide: Service Availability and Accessibility in Rural Versus Urban Counties and Impact on Child Welfare Outcomes. *Child Welfare*, 87(4), 101–124.

Berger, L. M., Slack, K. S., Waldfogel, J., & Bruch, S. K. (2010). Caseworker-Perceived Caregiver Substance Abuse and Child Protective Services Outcomes. *Child Maltreatment*, 15(3), 199–210. https://doi.org/10.1177/1077559510368305

Biederman, J., Faraone, S. V., Monuteaux, M. C., & Feighner, J. A. (2000). Patterns of Alcohol and Drug Use in Adolescents Can Be Predicted by Parental Substance Use Disorders. *Pediatrics*, 106(4), 792–797. https://doi.org/10.1542/peds.106.4.792

Boydell, K. M., Pong, R., Volpe, T., Tilleczek, K., Wilson, E., & Lemieux, S. (2006). Family Perspectives on Pathways to Mental Health Care for Children and Youth in Rural Communities. *The Journal of Rural Health*, 22(2), 182–188. https://doi.org/10.1111/j.1748-0361.2006.00029.x

Braciszewski, J. M., & Stout, R. L. (2012). Substance use among current and former foster youth: A systematic review. *Children and Youth Services Review*, 34(12), 2337–2344. https://doi.org/10.1016/j.childyouth.2012.08.011

Brewsaugh, K., Tucker, L. P., Loveless, A., & McDaniel, M. (2023). Parental Substance Use and Child Welfare System Involvement. https://policycommons.net/artifacts/3495251/parental-substance-use-and-child-welfare-system-involvement/4295797/

Brook, J., & McDonald, T. (2009). The impact of parental substance abuse on the stability of family reunifications from foster care. *Children and Youth Services Review*, 31(2), 193–198. https://doi.org/10.1016/j.childyouth.2008.07.010

Boivin, M., & Hertzman, C. (Eds.). (2012). Early childhood development: adverse experiences and developmental healthOttawa, ON: Royal Society of Canada. Retrieved from: <tp:e-path>https://rsc-src.ca/sites/default/files/pdf/ECD%20Report_0</tp:e-path>.pdf.

Bullinger, L. R., & Wing, C. (2019). How many children live with adults with opioid use disorder? *Children and Youth Services Review*, 104, 104381. https://doi.org/10.1016/j.childyouth.2019.06.016

Bunger, A. C., Chuang, E., Girth, A., Lancaster, K. E., Gadel, F., Himmeger, M., Saldana, L., Powell, B. J., & Aarons, G. A. (2020). Establishing cross-systems collaborations for implementation: Protocol for a longitudinal mixed methods study. *Implementation Science*, 15(1), 55. https://doi.org/10.1186/s13012-020-01016-9

Capaldi DM, Kerr DCR, & Tiberio SS (2018). The Oregon Youth Study—Three Generational Study: A review of design, theory, and findings In Eichelsheim VI & van de Weijer SGA (Eds.), Intergenerational continuity of criminal or antisocial behaviour: An international overview of studies (pp. 137–161). New York, NY: Routledge.

CDC WONDER (2017). Underlying Cause of Death 1999-2015 on CDC WONDER Online Database, released December, 2016. Data are from the Multiple Cause of Death Files, 1999-2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on July 15, 2023

Cerdá, M., Jalali, M. S., Hamilton, A. D., DiGennaro, C., Hyder, A., Santaella-Tenorio, J., Kaur, N., Wang, C., & Keyes, K. M. (2021). A Systematic Review of Simulation Models to Track and Address the Opioid Crisis. *Epidemiologic Reviews*, 43(1), 147–165. https://doi.org/10.1093/epirev/mxab013

Clary, E., Ribar, C., & Weigensberg, E. Radel, L., & Madden, E. (2020). Challenges in Providing Substance Use Disorder Treatment to Child Welfare Clients in Rural Communities. *US Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation*.

Crouse, G., Ghertner, R., Madden, E., & Radel, L. (2021). Foster Care Entry Rates Grew Faster for Infants than for Children of Other Ages, 2011–2018.

Cummings, J. R., Wen, H., & Ko, M. (2016). Decline In Public Substance Use Disorder Treatment Centers Most Serious In Counties With High Shares Of Black Residents. *Health Affairs*, 35(6), 1036–1044. https://doi.org/10.1377/hlthaff.2015.1630

Cunningham, S., & Finlay, K. (2013). Parental Substance Use and Foster Care: Evidence From Two Methamphetamine Supply Shocks. *Economic Inquiry*, 51(1), 764–782. https://doi.org/10.1111/j.1465-7295.2012.00481.x

Dellor, E.D., Yoon, S., Bunger, A. C., Himmeger, M., & Freishtler, B. (2022). Benchmarking Trauma in Child Welfare: A Brief Report. *Journal of Interpersonal Violence*, 37(19–20), NP18568–NP18588. https://doi.org/10.1177/08862605211038324

Dellor, E.D., Lovato-Hermann, K., Price Wolf, J., Curry, S. R., & Freisthler, B. (2015). Introducing Technology in Child Welfare Referrals: A Case Study. *Journal of Technology in Human Services*, 33(4), 330–344. https://doi.org/10.1080/15228835.2015.1107520

Dettlaff, A. J., & Boyd, R. (2020). Racial Disproportionality and Disparities in the Child Welfare System: Why Do They Exist, and What Can Be Done to Address Them? *The ANNALS of the American Academy of Political and Social Science*, 692(1), 253–274. https://doi.org/10.1177/0002716220980329

Dodge, K.A., Malone, P. S., Lansford, J. E., Miller, S., Pettit, G. S., & Bates, J. E. (2009). A dynamic cascade model of the development of substance-use onset. *Monographs of the Society for Research in Child Development*, 74(3), vii–119. https://doi.org/10.1111/j.1540-5834.2009.00528.x

Feder, K.A., Letourneau, E. J., & Brook, J. (2019). Children in the Opioid Epidemic: Addressing the Next Generation's Public Health Crisis. *Pediatrics*, 143(1), e20181656. https://doi.org/10.1542/peds.2018-1656

Feinberg, M. E., Solmeyer, A. R., & McHale, S. M. (2012). The Third Rail of Family Systems: Sibling Relationships, Mental and Behavioral Health, and Preventive Intervention in Childhood and Adolescence. *Clinical Child and Family Psychology Review*, 15(1), 43–57. https://doi.org/10.1007/s10567-011-0104-5

Forrester, D., & Harwin, J. (2008). Parental Substance Misuse and Child Welfare: Outcomes for Children Two Years after Referral. *The British Journal of Social Work*, 38(8), 1518–1535. https://doi.org/10.1093/bjsw/bcm051

Freisthler, B., Kepple, N. J., Wolf, J. P., Curry, S. R., & Gregoire, T. (2017). Substance use behaviors by parents and the decision to substantiate child physical abuse and neglect by caseworkers. *Children and Youth Services Review*, 79, 576–583. https://doi.org/10.1016/j.childyouth.2017.07.014

Freisthler, B., Michaels, N., & Wolf, J. P. (2022). Families in Crisis: The Relationship Between Opioid Overdoses and Child Maltreatment in Neighborhood Areas. *Journal of Studies on Alcohol and Drugs*, 83(1), 145–154. https://doi.org/10.15288/jsad.2022.83.145

Gale, J. A., & Hansen, A. Y. & Williamson (2017). Rural Opioid Prevention and Treatment Strategies: The Experience in Four States [Policy Brief].

Garcia, A. R., DeNard, C., Morones, S. M., & Eldeeb, N. (2019). Mitigating barriers to implementing evidence-based interventions in child welfare: Lessons learned from scholars and agency directors. *Children and Youth Services Review*, 100, 313–331. https://doi.org/10.1016/j.childyouth.2019.03.005

Ghertner, R., Waters, A., Radel, L., & Crouse, G. (2018). The role of substance use in child welfare caseloads. *Children and Youth Services Review*, 90, 83–93. https://doi.org/10.1016/j.childyouth.2018.05.015

Girth, A. M., Hefetz, A., Johnston, J. M., & Warner, M. E. (2012). Outsourcing Public Service Delivery: Management Responses in Noncompetitive Markets. *Public Administration Review*, 72(6), 887–900. https://doi.org/10.1111/j.1540-6210.2012.02596.x

Green, B. L., Rockhill, A., & Furrer, C. (2007). Does substance abuse treatment make a difference for child welfare case outcomes? A statewide longitudinal analysis. *Children and Youth Services Review*, 29(4), 460–473. https://doi.org/10.1016/j.childyouth.2006.08.006

Gregoire, K. A., & Schultz, D. J. (2001). Substance-Abusing Child Welfare Parents: Treatment and Child Placement Outcomes. *Child Welfare*, 80(4), 433–452.

Gruber, K. J., & Taylor, M. F. (2006). A Family Perspective for Substance Abuse: Implications from the Literature. *Journal of Social Work Practice in the Addictions*, 6(1–2), 1–29. https://doi.org/10.1300/J160v06n01_01

Haggerty, K. P., Skinner, M., Fleming, C. B., Gainey, R. R., & Catalano, R. F. (2008). Long-term effects of the Focus on Families project on substance use disorders among children of parents in methadone treatment. *Addiction*, 103(12), 2008–2016. https://doi.org/10.1111/j.1360-0443.2008.02360.x

Hall, M. T., Kelmel, A. B., Huebner, R. A., Walton, M. T., & Barbee, A. P. (2021). Sobriety Treatment and Recovery Teams for families with co-occurring substance use and child maltreatment: A randomized controlled trial. *Child Abuse & Neglect*, 114, 104963. https://doi.org/10.1016/j.chiabu.2021.104963

Havens, J. R., Walker, R., & Leukefeld, C. G. (2007). Prevalence of opioid analgesic injection among rural nonmedical opioid analgesic users. *Drug and Alcohol Dependence*, 87(1), 98–102. https://doi.org/10.1016/j.drugalcdep.2006.07.008

He, A. S., Traube, D. E., & Young, N. K. (2014). Perceptions of parental substance use disorders in cross-system collaboration among child welfare, alcohol and other drugs, and dependency court organizations. *Child Abuse & Neglect*, 38(5), 939–951. https://doi.org/10.1016/j.chiabu.2013.10.020

Heflinger, C. A., & Christens, B. (2006). Rural behavioral health services for children and adolescents: An ecological and community psychology analysis. *Journal of Community Psychology*, 34(4), 379–400. https://doi.org/10.1002/jcop.20105

Hoffmann, N. G., Hunt, D. E., Rhodes, W. M., & Riley, K. J. (2003). UNCOPE: A Brief Substance Dependence Screen for Use with Arrestees. *Journal of Drug Issues*, 33(1), 29–44. https://doi.org/10.1177/002204260303300102

Huebner, R. A., Hall, M. T., Walton, M. T., Smead, E., Willauer, T., & Posze, L. (2021a). The Sobriety Treatment and Recovery Teams program for families with parental substance use: Comparison of child welfare outcomes through 12 months post-intervention. *Child Abuse & Neglect*, 120, 105260. https://doi.org/10.1016/j.chiabu.2021.105260

Huebner, R. A., Posze, L., Willauer, T. M., & Hall, M. T. (2015). Sobriety Treatment and Recovery Teams: Implementation Fidelity and Related Outcomes. *Substance Use & Misuse*, 50(10), 1341–1350. https://doi.org/10.3109/10826084.2015.1013131

Huebner, R. A., Willauer, T., Hall, M. T., Smead, E., Poole, V., Posze, L., & Hibbeler, P. G. (2021b). Comparative outcomes for Black children served by the Sobriety Treatment and Recovery Teams program for families with parental substance abuse and child maltreatment. *Journal of Substance Abuse Treatment*, 131, 108563. https://doi.org/10.1016/j.jsat.2021.108563

Huebner, R. A., Willauer, T., & Posze, L. (2012). The Impact of Sobriety Treatment and Recovery Teams (START) on Family Outcomes. *Families in Society*, 93(3), 196–203. https://doi.org/10.1606/1044-3894.4223

Huebner, R. A., Young, N. K., Hall, M. T., Posze, L., & Willauer, T. (2017). Serving families with child maltreatment and substance use disorders: A decade of learning. *Journal of Family Social Work*, 20(4), 288–305. https://doi.org/10.1080/10522158.2017.1348110

Kabisa, E., Biracyaza, E., Habagusenga, J. d'Amour, & Umubyeyi, A. (2021). Determinants and prevalence of relapse among patients with substance use disorders: Case of Icyizere Psychotherapeutic Centre. *Substance Abuse Treatment, Prevention, and Policy*, 16(1), 13. https://doi.org/10.1186/s13011-021-00347-0

Kessler, M. L., Gira, E., & Poertner, J. (2005). Moving Best Practice to Evidence-Based Practice in Child Welfare. *Families in Society*, 86(2), 244–250. https://doi.org/10.1606/1044-3894.2459

Kim, J., Clary, E., Ribar, C., Palmer, S., & Weigensberg, E. (2020). Strategies for rural communities for addressing substance misuse among families involved with the child welfare system. Washington, DC: *US Department of Health and Human Services*, *Office of the Assistant Secretary for Planning and Evaluation*.

Kim, J.-Y., McHale, S. M., Crouter, A. C., & Osgood, D. W. (2007). Longitudinal linkages between sibling relationships and adjustment from middle childhood through adolescence. *Developmental Psychology*, 43(4), 960–973. https://doi.org/10.1037/0012-1649.43.4.960

Kolar, A. F., Brown, B. S., Haertzen, C. A., & Michaelson, B. S. (1994). Children of Substance Abusers: The Life Experiences of Children of Opiate Addicts in Methadone Maintenance. *The American Journal of Drug and Alcohol Abuse*, 20(2), 159–171. https://doi.org/10.3109/00952999409106780

Landers, A. L., McLuckie, A., Cann, R., Shapiro, V., Visintini, S., MacLaurin, B., Trocmé, N., Saini, M., & Carrey, N. J. (2018). A scoping review of evidence-based interventions available to parents of maltreated children ages 0-5 involved with child welfare services. *Child Abuse & Neglect*, 76, 546–560. https://doi.org/10.1016/j.chiabu.2017.09.012

Larsen, B. J. (2000). Court Strategies Under ASFA To Help Subtance-Using Families Recover. *Juvenile and Family Court Journal*, 51(1), 1–8. https://doi.org/10.1111/j.1755-6988.2000.tb00013.x

Leza, L., Siria, S., López-Goñi, J. J., & Fernandez-Montalvo, J. (2021). Adverse childhood experiences (ACEs) and substance use disorder (SUD): A scoping review. *Drug and Alcohol Dependence*, 221, e108563. https://doi.org/10.1016/j.drugalcdep.2021.108563

Lloyd, M. H., Akin, B. A., & Brook, J. (2017). Parental drug use and permanency for young children in foster care: A competing risks analysis of reunification, guardianship, and adoption. *Children and Youth Services Review*, 77, 177–187. https://doi.org/10.1016/j.childyouth.2017.04.016

Low, S., Shortt, J. W., & Snyder, J. (2012). Sibling influences on adolescent substance use: The role of modeling, collusion, and conflict. *Development and Psychopathology*, 24(1), 287–300. https://doi.org/10.1017/S0954579411000836

Magura, S., & Laudet, A. B. (1996). Parental substance abuse and child maltreatment: Review and implications for intervention. *Children and Youth Services Review*, 18(3), 193–220. https://doi.org/10.1016/0190-7409(96)00001-1

Marcellus, L. (2014). Supporting Women with Substance Use Issues: Trauma-Informed Care as a Foundation for Practice in the NICU. Neonatal Network, 33(6), 307–314. https://doi.org/10.1891/0730-0832.33.6.307

Marsh, J. C., Angell, B., Andrews, C. M., & Curry, A. (2012). Client-Provider Relationship and Treatment Outcome: A Systematic Review of Substance Abuse, Child Welfare, and Mental Health Services Research. *Journal of the Society for Social Work and Research*, 3(4), 233–267. https://doi.org/10.5243/jsswr.2012.15

Massatti, R. (2013). Naloxone (Narcan) Administration in Ohio 2003-2012. Ohio Mental Health and Addiction Services.

McKlindon, A., & Sun, S. (2020). Considerations for Scaling Evidence-Based Prevention Programs under the Family First Prevention Services Act. *Child Trends*, 1-12.

Melnick, G., De Leon, G., Thomas, G., Kressel, D., & Wexler, H. K. (2001). Treatment Process in Prison Therapeutic Communities: Motivation, Participation, and Outcome. *The American Journal of Drug and Alcohol Abuse*, 27(4), 633–650. https://doi.org/10.1081/ADA-100107660

Morris, M. C., Marco, M., Bailey, B., Ruiz, E., Im, W., & Goodin, B. (2019). Opioid prescription rates and risk for substantiated child abuse and neglect: A Bayesian spatiotemporal analysis. *Drug and Alcohol Dependence*, 205, 107623. https://doi.org/10.1016/j.drugalcdep.2019.107623

Mowbray, O., Ryan, J. P., Victor, B. G., Bushman, G., Yochum, C., & Perron, B. E. (2017). Longitudinal trends in substance use and mental health service needs in child welfare. *Children and Youth Services Review*, 73, 1–8. https://doi.org/10.1016/j.childyouth.2016.11.029

National Center on Substance Abuse and Child Welfare (n.d.). Identifying Safety and Protective Capacities For Families with Parental Substance Use Disorders and Child Welfare Involvement. Retrieved from https://ncsacw.acf.hhs.gov/files/safety-and-risk-tip-sheet-1.pdf

Noll, J. G., Trickett, P. K., Harris, W. W., & Putnam, F. W. (2009). The Cumulative Burden Borne by Offspring Whose Mothers Were Sexually Abused as Children: Descriptive Results From a Multigenerational Study. *Journal of Interpersonal Violence*, 24(3), 424–449. https://doi.org/10.1177/0886260508317194

Paulozzi, L. J., & Xi, Y. (2008). Recent changes in drug poisoning mortality in the United States by urban–rural status and by drug type. *Pharmacoepidemiology and Drug Safety*, 17(10), 997–1005. https://doi.org/10.1002/pds.1626

Peters, R, Haas A.L, & Hunt, W.M. (2001). Treatment "Dosage" Effects in Drug Court Programs. In Drug Courts in Operation. Routledge.

Proctor, S. L., & Hoffmann, N. G. (2016). The UNCOPE: An effective brief screen for DSM–5 substance use disorders in correctional settings. *Psychology of Addictive Behaviors*, 30(5), 613–618. https://doi.org/10.1037/adb0000170

Proctor, S. L., Kopak, A. M., & Hoffmann, N. G. (2017). Psychometric properties of the UNCOPE: Screening for DSM-5 substance use disorder among a state juvenile justice population. *Journal of Offender Rehabilitation*, 56(7), 494–504. https://doi.org/10.1080/10509674.2017.1359224

Public Children's Services Association of Ohio. (2017b). The Opioid Epidemic's Impact on Children's Services in Ohio. Columbus, OH: Public Children's Services Association of Ohio. Retrieved from: http://www.pcsao.org/pdf/advocacy/OpioidBriefingSlides.pdf on July 15th, 2023.

Quast, T. (2018). State-level variation in the relationship between child removals and opioid prescriptions. *Child Abuse & Neglect*, 86, 306–313. https://doi.org/10.1016/j.chiabu.2018.10.001

Quast, T., Bright, M. A., & Delcher, C. (2019). The relationship between foster care entries and high-dose opioid prescribing in California. *Addictive Behaviors*, 93, 52–58. https://doi.org/10.1016/j.addbeh.2019.01.015

Radel, L., Baldwin, M. Crouse, G., Ghertner, R., & Waters, A. (2018). Substance Use, the Opioid Epidemic, and the Child Welfare System: Key Findings from a Mixed Methods Study. *Office of the Assistant Secretary for Planning and Evaluation*, 1-9

Reardon, S. F., Fox, L., & Townsend, J. (2015). Neighborhood Income Composition by Household Race and Income, 1990–2009. *The Annals of the American Academy of Political and Social Science*, 660(1), 78–97. https://doi.org/10.1177/0002716215576104

Rockhill, A., Green, B. L., & Newton-Curtis, L. (2008). Accessing Substance Abuse Treatment: Issues for Parents Involved with Child Welfare Services. *Child Welfare*, 87(3), 63–94.

Rusby, J. C., Light, J. M., Crowley, R., & Westling, E. (2018). Influence of parent–youth relationship, parental monitoring, and parent substance use on adolescent substance use onset. *Journal of Family Psychology*, 32(3), 310–320. https://doi.org/10.1037/fam0000350

Sale, E., Sambrano, S., Springer, J. F., & Turner, C. W. (2003). Risk, Protection, and Substance Use in Adolescents: A Multi-Site Model. *Journal of Drug Education*, 33(1), 91–105. https://doi.org/10.2190/LFJ0-ER64-1FVY-PA7L

Savage, A., Quiros, L., Dodd, S.-J., & Bonavota, D. (2007). Building Trauma Informed Practice: Appreciating the Impact of Trauma in the Lives of Women with Substance Abuse and Mental Health Problems. *Journal of Social Work Practice in the Addictions*, 7(1–2), 91–116. https://doi.org/10.1300/J160v07n01_06

Semidei, J., Radel, L. F., & Nolan, C. (2001). Substance abuse and child welfare: Clear linkages and promising responses. *Child Welfare*, 109–128.

Sepulveda, K., Williams S. (2019). One in three children entered foster care in 2017 because of parental drug abuse. *Child Trends*. Available from https://www.childtrends.org/one-in-three-children-entered-foster-care-in-fy-2017-because-of-parental-drug-abuse

Shockley McCarthy, K., Price Wolf, J., & Dellor, E. (2022). Promoting permanency in families with parental substance misuse: Lessons from a process evaluation of a multi-system program. *BMC Public Health*, 22(1), 2261. https://doi.org/10.1186/s12889-022-14528-4

Siegel, A., Benbenishty, R., & Astor, R. A. (2016). A Comparison of Adolescents in Foster Care and Their Peers in High School: A Study of Substance Use Behaviors and Attitudes. *Journal of Child & Adolescent Substance Abuse*, 25(6), 530–538. https://doi.org/10.1080/1067828X.2016.1139481

Smith, V. C., Wilson, C.R., Ryan, S.A., Gonzalez, P.K., Patrick, S.W., Quigley, J., Siqueira, L., & Walker, L. (2016). Families Affected by Parental Substance Use. *Pediatrics*, 138(2), e20161575. https://doi.org/10.1542/peds.2016-1575

Solis, J., M. Shadur, J., R. Burns, A., & M. Hussong, A. (2012). Understanding the Diverse Needs of Children Whose Parents Abuse Substances. *Current Drug Abuse Review*, 5(2), 135–147. https://doi.org/10.2174/1874473711205020135

Staton-Tindall, M., Sprang, G., & Straussner, L. (2016). Caregiver Substance Use and Child Trauma: Implications for Social Work Research and Practice. Routledge.

Stein, J. A., Leslie, M. B., & Nyamathi, A. (2002). Relative contributions of parent substance use and childhood maltreatment to chronic homelessness, depression, and substance abuse problems among homeless women: Mediating roles of self-esteem and abuse in adulthood. *Child Abuse & Neglect*, 26(10), 1011–1027. https://doi.org/10.1016/S0145-2134(02)00382-4

Sullivan, T. N., Kung, E. M., & Farrell, A. D. (2004). Relation Between Witnessing Violence and Drug Use Initiation Among Rural Adolescents: Parental Monitoring and Family Support as Protective Factors. *Journal of Clinical Child & Adolescent Psychology*, 33(3), 488–498. https://doi.org/10.1207/s15374424jccp3303_6

Tracy, E. M., Munson, M. R., Peterson, L. T., & Floersch, J. E. (2010). Social Support: A Mixed Blessing for Women in Substance Abuse Treatment. *Journal of Social Work Practice in the Addictions*, 10(3), 257–282. https://doi.org/10.1080/1533256X.2010.500970

Trivedi, S. (2023). The Adoption and Safe Families Act is not worth saving: The case for repeal. Family Court Review, 61(2), 315–340. https://doi.org/10.1111/fcre.12711

U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2023). *Child Maltreatment 2021*. Available from https://www.acf.hhs.gov/cb/data-research/child-maltreatment.

Vanderploeg, J. J., Connell, C. M., Caron, C., Saunders, L., Katz, K. H., & Kraemer Tebes, J. (2007). The Impact of Parental Alcohol or Drug Removals on Foster Care Placement

Experiences: A Matched Comparison Group Study. *Child Maltreatment*, 12(2), 125–136. https://doi.org/10.1177/1077559507299292

VanderWielen, L. M., Gilchrist, E. C., Nowels, M. A., Petterson, S. M., Rust, G., & Miller, B. F. (2015). Not Near Enough: Racial and Ethnic Disparities in Access to Nearby Behavioral Health Care and Primary Care. *Journal of Health Care for the Poor and Underserved*, 26(3), 1032–1047. https://doi.org/10.1353/hpu.2015.0083

Wattenberg, E., Kelley, M., & Kim, H. (2001). When the Rehabilitation Ideal Fails: A Study of Parental Rights Termination. *Child Welfare*, 80(4), 405–431.

White, O. G., Hindley, N., & Jones, D. P. H. (2015). Risk Factors for Child Maltreatment Recurrence: An Updated Systematic Review Article. *Medicine, Science and the Law*, 55(4), 259–277.

Wolf, J. P., Ponicki, W. R., Kepple, N. J., & Gaidus, A. (2016). Are community level prescription opioid overdoses associated with child harm? A spatial analysis of California zip codes, 2001–2011. *Drug and Alcohol Dependence*, 166, 202–208. https://doi.org/10.1016/j.drugalcdep.2016.07.014

Yoon, S., Coxe, K., Bunger, A., Freisthler, B., Dellor, E., Langaigne, A., & Millisor, J. (2021). Feasibility of engaging child welfare-involved parents with substance use disorders in research: Key challenges and lessons learned. *Journal of Public Child Welfare*, 0(0), 1–19. https://doi.org/10.1080/15548732.2021.1899099

Table 1. Sample Characteristics of Parents by Timely Access to Addiction Treatment Services and Successful Completion of Ohi							
		All (n=714)		Timely Access to Services (n=394)			(
	n	% / Mean (SD)	n	% / Mean (SD)	X² / t	n	% /
Individual Level Variables							
Child(ren) age					1.635		
At least 1 child age 0 to 5	591	82.80%	334	84.80%		591	
Age 6 to 18 only	123	17.20%	60	15.20%		123	
Race					0.163		
White	641	89.80%	360	8.60%		641	
Other	73	10.20%	34	91.40%		73	
Role					4.015*		
Mother	541	75.80%	313	79.40%		541	
Other	173	24.20%	81	20.60%		173	
UNCOPE score (range: 0-6)	714	4.69 (1.56)	394	4.89 (1.30)	-1.917	714	4.69 (1
Time in program (months)	714	10.21 (6.52)	--			714	10.21 (
Family Level Variables							
Number of Children in Household	714	1.81	394	1.78 (1.05)	1.925	714	
Case Type					0.989		
Court-Involved	155	21.70%	88	22.30%		155	
Non court-involved	559	78.30%	306	77.70%		559	
County Level Variables							
Region					9.150*		
Appalachian	219	30.70%	100	25.40%		219	
Rural	178	24.90%	105	26.60%		178	
Suburban	161	22.50%	84	21.30%		161	
Urban	156	21.80%	105	26.60%		156	
Cohort					4.765		
Cohort 1	382	53.50%	190	48.20%		382	
Cohort 2	188	26.30%	126	32.00%		188	
Cohort 3	120	16.80%	78	19.80%		120	
Cohort 4	14	2.00%	0	0.00%		14	
Cohort 5	10	1.40%	0	0.00%		10	

*p<0.05; **p<0.01

Table 2. Results of Multilevel Model of Timely Access to Addiction Treatment Services	
	Full Model
	OR (95% CI)
Individual Level Variables	
Child age (Ref. At least 1 child age 0 to 5)	
Child(ren) age 6 to 18 only	.739 (.385, 1.416)
Race (Ref. Other)	
White	1.182 (.495, 2.822)
Role (Ref. Other)	
Mother	1.489 (.847, 2.619)

UNCOPE score	1.118 (.927, 1.349)
Family Level Variables	
Number of Children in Household	0.869 (.689, 1.095)
Case Type (Ref. Non court-involved)	
Court-Involved	0.733 (.377, 1.424)
County Level Variables	
Region (Ref. Rural)	
Appalachian	1.020 (.394, 2.643
Suburban	0.852 (.339, 2.139)
Urban	1.979 (.783, 5.006)
Cohort (Ref. Cohort 1)	
Cohort 2	1.686 (.682, 4.168)
Cohort 3	1.119 (.413, 3.032)

*p<0.05; **p<0.01

Table 3. Results of Multilevel Model of Successful Completion of Ohio START	
	Full Model
	OR (95% CI)
Individual Level Variables	
Child age (Ref. At least 1 child age 0 to 5)	
Child(ren) age 6 to 18 only	.633 (.380, 1.053)
Race (Ref. Other)	
White	1.907 (1.017, 3.575)*
Role (Ref. Other)	
Mother	.934 (.602, 1.450)
UNCOPE score	.912 (.799, 1.042)
Time in program (months)	1.017 (.985, 1.049)
Family Level Variables	
Number of Children in Household	1.243 (1.020, 1.526)*
Case Type (Ref. Non court-involved)	
Court-Involved	.635 (.375, 1.074)
County Level Variables	
Region (Ref. Rural)	
Appalachian	1.357 (.602, 3.062)
Suburban	.666 (.285, 1.559)
Urban	.726 (.317, 1.662)

Cohort (Ref. Cohort 1)	
Cohort 2	.652 (.292, 1.457)
Cohort 3	.501 (.207, 1.210)
Cohort 4	.492 (.083, 2.912)
Cohort 5	.382 (.048, 3.055)

$^*p<0.05$; $^{**}p<0.01$

CRediT authorship contribution statement

Elinam Dellor: Conceptualization, Methodology, Validation, Writing - original draft, Writing - review & editing.
Megan Allbright-Campos: Conceptualization, Methodology, Formal analysis, Writing - review & editing
Joyce Lee: Conceptualization, Writing - original draft, Writing - review & editing
Alicia Bunger: Conceptualization, Methodology, Writing - original draft, Writing - review & editing.
Fawn Gadel: Writing - review & editing.
Bridget Freisthler: Conceptualization, Writing - review & editing.

Declarations of interest: none