# Comparing Early-Childhood and School-Aged Systems of Care for Children with Emotional and Behavioral Difficulties: Risk, Symptom Presentation, and Outcomes

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## **Abstract**

Objectives: Most large-scale evaluations of systems of care (SOCs) have focused on school-aged populations, with limited research examining early childhood SOCs. As a result, little is known about how risk profiles, symptom presentation, and outcomes may vary between early childhood and school-aged SOC participants. This descriptive study uses data from two SOCs—an early childhood SOC (EC-SOC) and a school-aged SOC (SA-SOC)—to examine the differences across age groups in how children and families present to SOCs and the extent to which risk factors and symptoms change over six months of enrollment.

*Method:* Participants were 184 children in the EC-SOC ( $m_{age} = 3.91$ ) and 142 children in the SA-SOC ( $m_{age} = 9.36$ ). Families completed measures assessing risk factors and functioning at enrollment and at six-month follow up. Descriptive analyses measured the presence of risk factors and symptoms at enrollment and follow-up. Correlations were computed to determine the associations between symptom measures.

*Results:* Results identified areas of similarity and difference between families presenting for SOCs at different developmental stages. Younger children experienced greater behavioral problems (Hedge's g = 0.52, p < 0.001) with more associated caregiver stress (Hedge's g range = 0.34-0.62, p < 0.01) and strain (Hedge's g = 0.34, p = 0.005). Trauma was more strongly associated with child and caregiver symptoms among younger children. Greater change in symptom measures was observed for the EC-SOC.

*Conclusions:* Findings highlight the importance of providing services in early childhood and provide guidance for SOC service provision at different ages.

*Keywords:* Systems of care; Family risk factors; Youth outcomes; Early childhood; School-aged

Systems of care (SOC) are comprehensive community-based supports for children with serious emotional and behavioral problems, designed to be family driven, vouth-guided, and culturally and linguistically competent (Substance Abuse and Mental Health Services Administration [SAMHSA] 2015; Stroul et al. 2008; Stroul and Friedman 1986, 1994). A key component of SOCs is the coordination of services between child-serving sectors, including mental health, child welfare/social services, iuvenile iustice, substance abuse, health, educational, vocational, and recreational services (Brannan et al. 2002; Chenven 2010; Stroul et al. 2008). Stroul and colleagues (2008) describe a SOC as a framework through which the integration of services creates a more efficient and effective system, leading to improved outcomes. Specifically, research has highlighted the wraparound care coordination process as the mechanism through which this system change occurs (Coldiron et al. 2017. Cook and Kilmer 2012; Stroul 2002). Within SOCs, the wraparound model focuses on family empowerment, the prioritization of youth and family strengths, and a collaborative, team-based approach to developing plans of care (Bruns et al. 2004). While a substantial body of literature has evaluated SOCs broadly (e.g., SAMHSA 2015: U.S. Department of Health and Human Services [U.S. DHHS] 2003). limited research to date has compared SOCs serving different populations, in both presentation to services and outcomes.

Families who participate in SOCs tend to present with numerous family risk factors, in addition to the presence of serious emotional and behavioral difficulties (SAMHSA 2015; Stroul and Friedman 1986, 1994). Previous evaluations of SOCs have found that over half of children had a family member with a history of substance abuse problems and nearly 40% of children had been exposed to domestic violence. Caregivers of school-aged children reported clinically significant concerns related to parenting stress and depression at baseline (Whitson et al. 2013; Whitson et al. 2015). However, SOCs have demonstrated success in reducing symptoms and increasing functioning over time (SAMHSA 2015). Children enrolled in SOCs have demonstrated improved school functioning, reduced internalizing and externalizing symptoms, and caregivers reported reduced overall strain (SAMHSA 2015; U.S. DHHS 2003).

Since their development in the 1980s, SOCs have been applied to many populations, including child welfare, juvenile justice, school- and community-based systems, and more recently, early childhood. SAMHSA has funded over 300 grants and cooperative agreements to implement SOCs within communities since 1993, with the majority targeting school-aged children and adolescents, ages seven to 16 (Cook and Kilmer 2012). Two EC-SOCs were funded between 1997 and 2002 (SAMHSA 2016a; SAMHSA 2016b), followed by a surge in SOC development grants specific to early childhood in 2005 (SAMHSA 2016b). To guide the development of EC-SOCs, the American Academy of Child and Adolescent Psychiatry (AACAP) identified best principles, highlighting the importance of screening, prevention, and early intervention (AACAP 2002). Yet, to date, there has been limited literature evaluating EC-SOCs (e.g., Lowell et al. 2011; Snyder et al. 2012), with most large-scale evaluations (e.g., SAMHSA 2015) and smaller-scale studies (e.g., Bickman et al. 1999; Brannan et al. 2002; Foster et al. 2007; Graves 2005) focusing on the school-aged population. Although these studies have largely demonstrated positive findings, the paucity of research on early childhood SOCs has precluded comparisons across these populations.

Because most literature to date has focused on school-aged populations, there is little known about how early childhood populations present to SOCs. Further, no research has been conducted to date that identifies the extent to which risk factors, symptom presentation, and outcomes may vary between early childhood and school-aged individuals engaged in SOCs. Outside of SOCs, a broad literature base on risk factors suggests that young children are more likely to be exposed to child maltreatment or family violence compared to older children (e.g., U.S. DHHS 2018). This indicates that younger children may present with higher rates of trauma exposure when measured within the past six months, the commonly used follow up time frame in SOC evaluations. However, when measuring lifetime exposure, older children may be more likely to have higher rates of trauma due to greater opportunity to experience traumatic events. Existing literature on symptom presentation suggests that young children, school-aged children, and their caregivers may present with different needs. For example, young children are more likely to exhibit externalizing behavior problems; evidence suggests that the prevalence of externalizing behavior problems decreases as children age, while internalizing symptoms tend to increase with age (Campbell et al. 2006; Crijnen et al. 1997; Fanti and Henrich 2010). Similarly, maternal depression is significantly associated with children's internalizing and externalizing behavior problems (Goodman et al. 2011), and younger children tend to be impacted more strongly by maternal depression than older children (Connell and Goodman 2002).

Information about how children and families present to SOCs at different developmental stages has important implications for prevention. There is substantial research evidence supporting the importance of early intervention in improving outcomes for children, with findings suggesting that intervening early in life leads to larger impacts both in terms of direct and indirect outcomes and economic returns (e.g., Heckman 2008; SAMHSA 2007; SAMHSA 2016b). In a study examining outcomes for new and ongoing users of community mental health services, Kim et al. (2015) found better outcomes for new users of services. They suggest that positive treatment outcomes and subsequent stability when children are younger reduce the likelihood of impairments as children age. This study adds to the small literature base on early childhood SOCs and is an initial opportunity to examine how families with children at different developmental stages present to SOCs.

The current study uses data from two SOCs—an early childhood SOC (EC-SOC) and a school-aged SOC (SA-SOC) – to examine how children and families present to SOCs and the extent to which child and family risk factors and symptom measures change during the first six months of enrollment. Specifically, we addressed the following research questions: (1) how did children and families in an EC-SOC compare to children in a SA-SOC in child and family risk factors and symptoms at enrollment?; (2) how did children and families in an EC-SOC compare to children in a SA-SOC in child and family risk factors and symptoms at six-month follow up?; and (3) how did child and family risk factors and symptoms change from enrollment to six-month follow up within an EC-SOC and SA-SOC? We hypothesized that there would be differences in risk profiles and symptom measures between children and families enrolled in an EC-SOC compared to a SA-SOC. For example, we expected that children in the SA-SOC would present with higher rates of trauma exposure. We also expected that children in the EC-SOC would present with greater levels of externalizing behavior problems and associated caregiver stress and strain. At followup, we expected that children in both SOCs would have more similarities across risk profiles and symptom measures. Finally, we expected that children in the EC-SOC

would demonstrate greater change in symptom measures from enrollment to followup than children in the SA-SOC.

### Method

# **Participants**

# Early childhood SOC

A total of 256 families enrolled in the EC-SOC. Of those families, 184 consented to participate in the longitudinal outcomes study. There was a significant difference between those who consented to participate in the longitudinal outcome study and those who did not consent to participate based on gender,  $X^2$  (1) = 9.099, p=0.003, such that the longitudinal outcome study was comprised of a lower proportion of girls (n=46, 25%) compared to the those participants who did not consent to participate (n=30, 45%). There were no other significant differences across demographic variables. At enrollment, children who participated in the longitudinal outcome study were 3.91 years on average (SD=1.09), 75% male, and 59% White. Forty children (21.9%) identified as Latino/Hispanic and 22 (12.0%) identified as multiracial. On average, caregivers were 32.66 years of age (SD=9.06), and 97.2% female. The majority of children in this SOC were referred to services by the caregiver (70.1%). See Table 1 for additional demographic information.

# School-aged SOC

A total of 395 families enrolled in the SA-SOC. Of those families, 142 consented to participate in the longitudinal outcomes study. There was a significant difference between those who participated in the longitudinal outcome study and those who did not on child age, t(394) = -3.014, p = 0.003, such that youth who participated were older ( $m_{\rm age} = 8.63$ , SD = 2.30) compared to those who did not participate ( $m_{\rm age} = 7.87$ , SD = 2.44). There were no other significant differences across demographic variables. Of those who participated in the longitudinal outcome study, twenty-two children were under the age of six years at intake, overlapping with the age range in the EC-SOC, and were excluded from analyses resulting in a total of 120 families. Children were 9.36 years on average (SD = 1.61), 77.3% male, and 47.1% White. Twenty-nine children (24.4%) identified as Hispanic and 12 (10.1%) identified as multiracial. On average, caregivers were 36.23 years of age (SD = 7.76) and 93.3% female. The majority of children in this SOC were referred to services by the school (96.7%). See Table 1 for additional demographic information.

	EC-SOC	SA-SOC	
Child			
Age**	3.91 (1.09)	9.36 (1.61)	
Gender	(-1-2-)	, ,	
Male	138 (75.0%)	92 (77.3%)	
Female	46 (25.0%)	27 (22.7%)	
Ethnicity*		,	
White	108 (59.0%)	56 (47.1%)	
Hispanic	40 (21.9%)	29 (24.4%)	
Multiracial	22 (12.0%)	12 (10.1%)	
Other	13 (7.1%)	22 (18.5%)	
Caregiver			
Age*	32.66 (9.06)	36.23 (7.76)	
Gender			
Male	5 (2.7%)	8 (6.7%)	
Female	179 (97.2%)	112 (93.3%)	
Relationship to child			
Biological parent	155 (84.2%)	104 (86.7%	
Adoptive/stepparent	10 (5.4%)	8 (6.7%)	
Grandparent	9 (4.9%)	2 (1.7%)	
Foster parent	8 (4.3%)	0	
Other	2 (1.0%)	6 (4.8%)	
Education			
Less than HSD	29 (15.8%)	28 (23.3%)	
HSD/GED	116 (63.0%)	71 (59.2%)	
Greater than HSD	39 (21.2%)	21 (17.5%)	
Employment in previous 6 months	92 (50.0%)	73 (60.8%)	
Family			
Income**			
<\$10,000	53 (29.9%)	15 (12.5%)	
\$10,000-\$19,999	31 (17.5%)	35 (29.2%)	
\$20,000-\$49,999	41 (23.2%)	55 (45.8%)	
>\$50,000	52 (29.4%)	15 (12.5%)	
Medicaid*	94 (61.0%)	54 (46.2%)	
Private Insurance	41 (26.6%)	37 (31.6%)	
Temporary Aid for Needy Families (TANF)**	35 (22.7%)	6 (5.1%)	
Supplemental Security Income (SSI)*	3 (2.0%)	8 (6.8%)	
N = 184 for the EC-SOC and $N = 120reported as either n (%) or m (SD)*p < 0.05, **p < 0.01$	) for the SA-S	OC. Data an	

#### **Procedures**

The EC- and SA-SOC were implemented in two different New England states between 2007 and 2011. Both evaluations were funded in the 2005 cohort of programs by the Center for Mental Health Services within SAMHSA. The two SOCs are their communities are described below.

## Early childhood SOC

The New London Building Blocks project (NLBB) received a six-year grant in 2005 as part of the Federal Comprehensive Community Mental Health Services for Children and Their Families Program (Kaufman and Griffin 2012). Implemented in New London County in Southeastern Connecticut, this SOC was designed to improve service delivery for children under six years old and their families. Specifically, NLBB sought to implement comprehensive in-home mental health supports and wraparound services, and build the capacity of the workforce to care for young children with emotional and behavioral disorders (Kaufman and Griffin 2012). SOC services were provided from January 2007 through August 2011. Specific EC-SOC services provided by a Master's level clinician, and family advocacy services. EC-SOC services were predominantly provided in-home.

New London County is one of eight counties in Connecticut. Based on 2010 U.S. Census Data, New London County had a population of 274,055, of which 5.5% were under five years of age, 5.9% were five to nine years of age, and 6.3% were 10 to 14 years of age. The median age of individuals in the county was 40.4 years. Approximately 82.2% of the population of New London County identified as White, and approximately 8.5% identified as Hispanic/Latino (U.S. Census Bureau 2010a). The median household income was \$65,419; nearly 11% of families with children under age five had income below the federal poverty level (U.S. Census Bureau 2010b).

## School-aged SOC

The Rhode Island Positive Educational Partnership (RIPEP) received a six-year grant in 2005 as part of the Federal Comprehensive Community Mental Health Services for Children and Their Families Program (Crusto et al. 2012). Implemented throughout the state of Rhode Island, this SOC was designed to improve service delivery for children birth through 12 years of age, with a focus on school-aged children. Like NLBB, RIPEP developed in-home mental health services and wraparound supports, in addition to building workforce capacity (Crusto et al. 2012). Prior to this SOC implementation, the educational, early childhood, and behavioral health systems in Rhode Island were siloed and did not engage in much collaboration. RIPEP focused on system development and was designed to bring the educational, early childhood, and behavioral health systems together. While RIPEP included an early childhood component, this study focused on the school-aged population. Specific SA-SOC services included wraparound care coordination and school-based Positive Behavioral Interventions and Supports (PBIS; Horner et al. 2005; Sugai and Horner 2006). Within PBIS, Tier 1 and Tier 2 SA-SOC services (for youth with less complex needs) were predominantly provided through coordination with the school, while youth with complex needs (Tier 3) received more comprehensive care coordination services and family supports through the wraparound process.

Based on 2010 U.S. Census Data, the state of Rhode Island had a population of 1,052,567, of which 5.5% were under five years of age, 5.7% were five to nine years of age, and 6.1% were 10 to 14 years of age. The median age of individuals in the state was 39.4 years. Approximately 81.4% of the population of Rhode Island identified as White, and 12.4% identified as Hispanic/Latino (U.S. Census Bureau 2010a). The median household income was \$54,902; nearly 13% of families with children under age five had income below the federal poverty level (U.S. Census Bureau 2010b).

As described above, a subset of families enrolled in the SOC participated in the longitudinal outcomes study. Youth were ineligible to participate if they had a sibling who was already enrolled, if the child received only care coordination without clinical services, and if families missed the identified data collection window. In addition to the exclusion criteria, families could also decline to participate (Crusto et al. 2012; Kaufman and Griffin 2012). For families consented to participate in a longitudinal outcomes study, data were collected in six-month intervals from intake to 36-month follow up. On average, families were enrolled in the SOC for approximately 6.5 months (Kaufman and Griffin 2012). Semi-structured interviews were conducted at locations preferred by caregivers (e.g., their homes, public libraries). Measures included in the cross-sectional SAMHSA evaluation were administered by SOC project staff, while supplemental measures included in the longitudinal outcome study were administered by University-based research team members. All measures were read aloud to caregivers and follow-up questions were posed when appropriate. Visual aids (e.g., cards with printed Likert-type scales corresponding to specific questionnaires) were also used to help with any literacy-related issues. Caregivers received a \$40 gift card upon completion of each semi-structured interview. Following data collection, research team members entered all data into a database. All participants provided informed consent to participate and the University's Human Research Protection Program approved all components of the studies.

#### **Measures**

Data were collected at enrollment (T1) and six-month follow up (T2). All measures were required data elements for SAMHSA national evaluations of SOCs or were administered as supplemental measures for participants in the longitudinal outcome study.

**Enrollment Demographic and Information Form (EDIF; U.S. DHHS**-2007) Demographic data were collected using the EDIF, which is required for SAMHSA-funded national evaluations of SOCs. Items on the EDIF include child demographics and details about enrollment in the SOC. The EDIF was administered only at enrollment.

Caregiver Information Questionnaire (CIQ; U.S. DHHS-2007) Family risk factor data were collected using the CIQ, which is required for SAMHSA-funded national evaluations of SOCs. Items on the CIQ include caregiver demographics, risk factors, family composition and custody, child's mental and physical health service usage, caregiver employment status, and child's presenting problems. The CIQ was administered at enrollment; a separate follow-up form was administered at subsequent time points.

Child Behavior Checklist (CBCL; Achenbach and Rescorla 2001) The CBCL is a 100-item caregiver report measure designed to assess a child's internalizing (e.g., anxious, depressed) and externalizing (e.g., aggressive) symptoms and problem behaviors. Caregivers in the EC-SOC completed the version for children 1.5 to 5 years of age and caregivers in the SA-SOC completed the version for children ages 6 years to 18 years. Scales are comparable across age ranges. Items assess symptoms within the past six months and are rated on a three-point Likert-type scale ranging from *not true* (0) to *often true* (2). Data are reported as T scores based on separate norms for age and sex, with T scores of 70 or above indicating clinically significant symptoms. In the current samples, scores on the measure demonstrated excellent internal consistency reliability at each timepoint ranging from  $\alpha = .97$  to  $\alpha = 1.00$ .

**Columbia Impairment Scale (CIS; Bird et al.**1993) The CIS is a 13-item caregiver report measure that assesses a child's impairment in functioning. Items are rated on a five-point Likert-type scale ranging from *no problem* (0) to *a very big problem* (4). Scores are summed for a global measure of impairment. Total scores of 15 or above suggest clinically significant impairment. Scores on the CIS at intake for the EC-SOC demonstrated poor internal consistency reliability ( $\alpha$  = .47), but internal consistency reliability was improved at six-month follow up and both timepoints in the SA-SOC ( $\alpha$  = .88 to  $\alpha$  = .99).

Traumatic Events Screening Inventory (TESI-PRR; Ippen et al.2002) The TESI-PRR is a 24-item, developmentally sensitive measure designed to assess lifetime exposure to potentially traumatic events. Items include non-interpersonal (e.g., serious accident, natural disaster) and interpersonal trauma (e.g., sexual abuse, separation from caregiver). Total number of items endorsed by the caregiver are summed to create a total score with a potential range of 0 to 24. At enrollment, caregivers were queried about the child's lifetime exposure. At six-month follow up, caregivers responded about the child's exposure during the previous six months.

Center for Epidemiologic Studies Depression Scale (CES-D; Radloff 1977) The CES-D is a 20-item self-report measure that assesses the presence of current parental depressive symptoms. Items are rated on a four-point Likert-type scale with responses ranging from *rarely or none of the time* (0) to *most or all of the time* (3), that reflect the frequency of occurrence of the symptom in the past week. Four items are reverse-scored and the scale is summed for a total score ranging from 0 to 60. Higher scores indicate the presence of greater symptoms. A score of 16 has been identified as a cut-off between clinical and non-clinical levels of depression (Radloff 1977). In the current samples, scores demonstrated adequate to excellent internal consistency reliability at each timepoint ( $\alpha$  = .88 to  $\alpha$  = .94).

**Caregiver Strain Questionnaire (CGSQ; Brannan et al.**1997) The CGSQ is a 21-item measure assessing strain experienced by caregivers related to the care of their children. This measure consists of three subscales: Objective Strain, Subjective Internalizing Strain, and Subjective Externalizing Strain. Items are rated on a five-point Likert-type scale ranging from *not at all* (1) to *very much* (5). Subscale scores are the mean of items within that scale, with higher scores indicating greater strain. The Global Strain score is the sum of the three mean subscale scores. In the current

samples, scores demonstrated adequate to excellent internal consistency reliability at each timepoint ( $\alpha = .79$  to  $\alpha = 1.00$ ).

**Parenting Stress Index, Short Form (PSI-SF; Abidin**1995) The PSI is a 36-item measure assessing parenting stress across three subscales: Parental Distress (PD), Parent-Child Dysfunctional Interaction (PCDI), and Difficult Child behaviors (DC). Items are rated on a five-point Likert-type scale, with responses ranging from *strongly disagree* (5) to *strongly agree* (1). The subscale scores are summed to create a total stress score, with higher scores indicating greater stress. Total scores above 90 indicate clinically significant levels of stress. In the current samples, scores on the total stress scale demonstrated internal consistency reliability ranging from  $\alpha = .90$  to  $\alpha = .95$ .

**Addiction Severity Index (ASI; McLellan et al.**1980) The ASI is a 41-item measure that assesses the severity and duration of current and lifetime drug and alcohol use. For the current study, overall alcohol composite scores were calculated; drug composite scores were not available for the SA-SOC so were not included in these analyses. Composite scores were calculated following the weighting procedures identified in the scoring manual (McGahan et al. 1986). Internal consistency reliability could not be calculated as too few participants reported alcohol use.

**Multi-Sector Services Contact-Revised (MSSC-R)** The MSSC-R was developed to assess child and family service use across service sectors. This caregiver report measure consists of items assessing services received, the service setting, and satisfaction with services received. Seven items assessing receipt of SOC services, receipt of wraparound services, receipt of non-SOC community services, and presence of a youth and family team were included in the current study. The MSSC-R was not administered at enrollment; data were collected only at follow-up.

## **Data Analyses**

First, descriptive analyses were conducted to measure the presence of child and family risk factors at enrollment and at six-month follow up. Independent samples t-tests and crosstabs were conducted to identify significant differences between participants in each SOC at enrollment. Descriptive analyses were then conducted to calculate participants' scores (i.e., means and standard deviations) on all measures assessed at enrollment and six-month follow up. Correlations were computed to determine the associations between symptom measures within SOC. Finally, paired samples t-tests were conducted to assess whether scores on symptom measures differed significantly from enrollment to six-month follow up within each SOC. The alpha level was set at .05. All analyses were conducted using SPSS Version 24.

Table 2 Child and family risk factors at enrollment and six-month follow up

	EC-SOC T1	EC-SOC T2	SA-SOC T1	SA-SOC T2
Currently in foster care	16 (8.7%)	-	4 (3.3%)	-
Recurring physical health problem	71 (38.6%)	69 (42.9%)	38 (31.7%)	24 (33.3%)
Taking medication for emotional/behavioral problem	26 (14.1%)	34 (21.1%)	70 (58.3%)	47 (65.3%)
Outpatient services in past 12 months	73 (39.7%)	-	101 (84.2%)	-
Child currently in school	130 (70.7%)	128 (71.5%)	108 (90.0%)	70 (97.2%)
School attendance impacted by emotional/ behavioral problem	11 (6.0%)	9 (5.0%)	21 (17.5%)	15 (12.5%)
Number of schools attended	1.15 (0.50)	1.29 (0.99)	0.39 (0.83)	0.43 (0.68)
Someone in household with mental illness <sup>a</sup>	69 (37.5%)	33 (21.3%)	36 (30.0%)	17 (24.3%)
Someone in household with criminal history <sup>a</sup>	59 (32.4%)	4 (2.5%)	25 (20.8%)	5 (6.9%)
Child exposed to family violence <sup>a</sup>	68 (37.0%)	8 (5.0%)	42 (35.0%)	1 (1.4%)
Child experienced physical abuse <sup>a</sup>	11 (6.0%)	5 (3.1%)	12 (10.0%)	0
Child experienced sexual abuse <sup>a</sup>	4 (2,2%)	3 (1.9%)	8 (6.7%)	1 (1.4%)
Trauma exposure (TESI-PRR) <sup>a</sup>				
Family violent events	0.56 (1.22)	0.28 (0.69)	0.52 (0.77)	0.37 (0.65)
Other violence events	0.31 (0.71)	0.29 (0.65)	0.39 (0.68)	0.38 (0.70)
Total events	2.23 (2.34)	1.97 (2.21)	3.27 (2.48)	1.85 (2.35)
Someone in household with substance abuse problem <sup>a</sup>	53 (29.1%)	10 (6.7%)	32 (26.7%)	4 (5.7%)
Alcohol use composite (ASI) <sup>a</sup>	0.01 (0.03)	0.01 (0.04)	0.03 (0.04)	0.02 (0.04)

N = 184 and 161 for the EC-SOC and N = 120 and 72 for the SA-SOC at T1 and T2, respectively. Data are reported as either n (%) or m (SD)

#### **Results**

#### **Enrollment in SOC**

Descriptive statistics for each family risk factor can be found in Table 2. Significant differences in family risk were observed between SOCs at enrollment. Children in the EC-SOC were significantly more likely to be in foster care,  $X^2(3) = 108.402$ , p < 0.001and to live in a household with someone with a criminal history,  $X^2(2) = 8.575$ , p =0.014. On average, caregivers reported that children in the EC-SOC had attended 1.15 different schools in the past six months (in addition to their current school), while children in the SA-SOC had attended .39 different schools on average, t(235) =8.067, p < 0.001, Hedge's g = 1.20. Children in the SA-SOC were significantly more likely to be taking medication for an emotional or behavioral problem,  $X^{2}(2) =$ 68.108, p < 0.001, have received outpatient services in the past 12 months,  $X^2(2) =$ 169.942, p < 0.001, be enrolled in school,  $X^2(2) = 33.358$ , p < 0.001, and to have school attendance impacted by an emotional or behavioral problem,  $X^{2}(2) =$ 12.413, p = 0.002. In addition, SA-SOC children were significantly more likely to have a caregiver with more alcohol usage, t(297) = -4.039, p < 0.001, Hedge's g = 0.58, to have experienced sexual abuse,  $X^2(2) = 12.413$ , p = 0.002, and to have experienced more total trauma exposure, t(302) = -3.673, p < 0.001, Hedge's g = 0.43. On average, children in the SA-SOC experienced 3.27 different types of trauma events

aAt T1, items assess lifetime exposure. At T2, items assess exposure within the past six months

while children in the EC-SOC experienced 2.23 different types of trauma events. Similarities in risk profiles were also observed. Many children in both SOCs lived with someone with mental illness (37.5 and 30.0%, respectively), and had been exposed to family violence (37.0 and 35.0%, respectively); there were no significant differences between groups on these variables. There also were no significant differences between children in both SOC regarding the presence of a recurring physical health problem, experience of physical abuse, and living with someone with a substance abuse problem.

Significant differences on symptom measures were also observed at enrollment. Caregivers identified significantly greater externalizing behavior problems in the EC-SOC, t(300) = 4.443, p < 0.001, Hedge's g = 0.52. Children in the EC-SOC also had externalizing problem and total T scores above the clinical cutoff, indicating clinically significant symptoms. Related to parenting strain and stress, caregivers in the EC-SOC reported significantly greater objective caregiver strain, t(302) = 2.856, p = 0.005, Hedge's g = 0.34, parental distress, t(296) = 2.734, p = 0.009. Hedge's g = 0.33, stress related to their child's behaviors, t(296) = 5.216, p < 0.001, Hedge's g = 0.62, and total stress, t(297) = 3.429, p = 0.002, Hedge's g = 0.41. Caregivers in the SA-SOC reported significantly higher (and clinically significant) depressive symptoms, t(296) = -4.220, p < 0.001, Hedge's g = 0.50. Caregivers in both SOCs identified clinically significant concerns related to their child's impairment. There were no significant differences between SOCs on caregiver report of internalizing symptoms, subjective or global caregiver strain, or stress related to dysfunctional interactions between the caregiver and child. Descriptive statistics for symptom measures can be found in Table 3.

Correlations were conducted to assess the relationships between risk factors and symptom measures at enrollment within each SOC (Table 4). Within the EC-SOC, child trauma exposure was significantly associated with both caregiver strain and parenting stress. There was also a significant relationship observed between child trauma exposure and both child externalizing behavior problems and total behavior problems in the EC-SOC. These relationships were not observed in the SA-SOC. Similarly, caregiver alcohol use was significantly associated with parental depression in the EC-SOC but not in the SA-SOC. Across both SOCs, trauma exposure was significantly positively associated with caregiver report of child impairment and caregiver depression, and caregiver report of child impairment was significantly positively associated with all measures of parenting stress. Child externalizing behavior problems were also significantly positively associated with ratings of child impairment, caregiver strain, caregiver depression, and all measures of parenting stress in both SOC.

### **Six-Month Follow Up**

Related to child and family risk factors at follow up, children in the EC-SOC continued to attend more schools than their older counterparts, 1.29 and 0.43, respectively, t(193) = 6.388, p < 0.001. Children in the SA-SOC continued to be significantly more likely to be taking medication for an emotional or behavioral problem,  $X^2(1) = 42.780$ , p < 0.001, to be enrolled in school,  $X^2(2) = 6.616$ , p = 0.037, and to have school attendance impacted by an emotional or behavioral

Table 3 Symptom measures at enrollment and six-month follow up and change over time

	EC-SOC T1 m (SD)	EC-SOC T2 m (SD)	$m \ diff \ (SD)$	SA-SOC T1 m (SD)	SA-SOC T2 m (SD)	m diff (SD)
CBCL						
Internalizing problems	65.74 (8.86)	62.21 (10.26)	3.61 (7.36)**	64.43 (9.97)	62.90 (10.21)	1.58 (8.02)
Externalizing problems	72.80 (11.92)	67.09 (12.09)	6.29 (10.44)**	66.96 (9.91)	65.77 (9.99)	1.38 (6.67)
Total problems	70.15 (9.60)	65.31 (10.88)	5.21 (7.99)**	68.17 (9.41)	66.46 (9.56)	1.93 (5.98)**
CIS	20.11 (9.37)	17.35 (9.06)	3.35 (9.12)**	20.69 (10.36)	18.41 (10.73)	2.49 (8.92)*
CES-D**	10.05 (12.37)	14.40 (12.1)	-3.89 (13.31)**	16.39 (12.97)	14.45 (10.34)	1.49 (9.58)
PSI-SF						
Parental distress	32.37 (9.21)	30.26 (9.77)	2.34 (9.77)**	29.18 (10.62)	26.70 (10.32)	1.60 (8.58)
Parent/Child dysfunction	26.49 (6.94)	24.97 (6.77)	1.78 (7.21)**	26.79 (9.30)	25.57 (9.24)	.88 (9.01)
Difficult child	39.83 (8.30)	36.79 (9.02)	3.41 (8.17)**	34.24 (10.01)	33.93 (10.41)	.42 (9.06)
Total stress	98.69 (19.48)	91.64 (21.81)	8.00 (20.67)**	89.66 (25.88)	85.79 (25.94)	3.17 (21.29)
CGSQ						
Objective strain	2.61 (0.98)	2.22 (0.93)	0.42 (0.86)**	2.28 (0.98)	2.05 (0.94)	.18 (0.62)*
Subjective externalizing strain	2.14 (0.90)	1.90 (0.77)	0.26 (0.85)**	2.10 (0.97)	1.94 (0.85)	.16 (0.70)
Subjective internalizing strain	3.27 (1.04)	2.88 (0.98)	0.40 (0.91)**	3.19 (1.12)	2.74 (1.15)	.31 (0.75)**
Global strain	8.02 (2.50)	7.00 (2.20)	1.08 (2.06)**	7.57 (2.73)	6.73 (2.55)	.65 (1.60)**

Bold font indicates scores above the clinical cut-off

CBCL Child Behavior Checklist, CIS Columbia Impairment Scale, CES-D Center for Epidemiologic Studies-Depression Scale, PSI-SF Parenting Stress Index-Short Form, CGSQ Caregiver Strain Questionnaire

p < 0.05, p < 0.01

Table 4 Correlations between symptom measures at enrollment

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. CBCL-I	-	.463**	.818**	.234**	.528**	.432**	.037	.288**	.313**	.339**	.468**	.467**
2. CBCL-E	.591**	_	.833**	.189*	.667**	.640**	026	.303**	.445**	.497**	.699**	.684**
3. CBCL-T	.838**	.878**	_	.256**	.676**	.610**	018	.365**	.446**	.496**	.677**	.675**
4. TESI	.201*	.131	.155	_	.208**	.194**	.066	.293**	.221**	.005	.196**	.190**
5. CIS	.519**	.619**	.622**	.212**	_	.658**	.043	.347**	.368**	.396**	.598**	.567**
6. CGSQ-O	495**	.626**	.638**	.114	.565**	-	071	.412**	.577**	.364**	.669**	.687**
7. ASI	044	.076	.011	.111	.065	.003	-	.194*	011	123	.052	026
8. CES-D	.377**	.317**	.380**	.180*	.274**	.397**	.056	-	.578**	.162*	.381**	.493**
9. PSI-PD	.331**	.390**	.393**	.059	.423**	.417**	.032	.636**	-	.333**	.544**	.823**
10. PSI-PCDI	.373**	.539**	.497**	.050	.533**	.413**	.052	.351**	.625**	-	.451**	.705**
11. PSI-DC	.506**	.690**	.632**	.136	.592**	.571**	.082	.291**	.421**	.640**	-	.844**
12. PSI-T	.469**	.633**	.583**	.086	.595**	.550**	.076	.503**	.822**	.892**	.809**	-

Correlations for the EC-SOC are provided in the top of the table and correlations for the SA-SOC are provided in the bottom of the table

CBCL-I Child Behavior Checklist-Internalizing Scale, CBCL-E Child Behavior Checklist-Externalizing Scale, CBCL-T Child Behavior Checklist-Total Problem Behaviors Scale, TESI Traumatic Events Screening Inventory, CIS Columbia Impairment Scale, CGSQ-O Caregiver Strain Questionnaire-Objective Strain Scale, ASI Addiction Severity Index, CES-D Center for Epidemiologic Studies-Depression Scale, PSI-PD Parenting Stress Index-Parental Distress Scale, PSI-PCDI Parenting Stress Index-Parent-Child Dysfunctional Interaction Scale, PSI-DC Parenting Stress Index-Difficult Child Scale, PSI-T Parenting Stress Index-Total Score

<sup>\*</sup>p < 0.05; \*\*p < 0.01

problem,  $X^2(3) = 14.597$ , p = 0.002. At follow up, there were no longer significant differences regarding receiving outpatient services, living in a household with someone with a criminal history, experiencing sexual abuse in the previous six months, total trauma exposure in the previous six months, or caregiver alcohol use. All non-significant findings at enrollment remained non-significant at follow up. Descriptive statistics can be found in Table 2.

Related to symptom measures, caregivers in the EC-SOC continued to report significantly higher parental distress, t(223) = 2.454, p = 0.015, and stress related to their child's behaviors, t(224) = 2.083, p = 0.038, but no longer reported significantly different levels of total stress. There were also no longer significant differences between SOCs on child externalizing behaviors (with symptoms dropping below the clinically significant T score threshold for early childhood), caregiver depression, or caregiver objective strain. All other non-significant findings at enrollment remained non-significant at follow up (Table 3).

At follow up, caregivers also completed a measure assessing SOC service use. Significantly more caregivers in the EC-SOC reported receipt of SOC services (79.3 and 46.7%, respectively,  $X^2(2) = 35.816$ , p < 0.001), receipt of wraparound services (67.0 and 33.3%, respectively,  $X^2(3) = 39.436$ , p < 0.001), presence of a youth and family team (68.7 and 25.8%, respectively,  $X^2(3) = 55.062$ , p < .001), and receipt of non-SOC community services (44.1 and 30.8%, respectively,  $X^2(2) = 31.050$ , p < 0.001).

Relationships between variables were also explored at follow-up (Table 5). Child trauma exposure became significantly positively associated with internalizing problems and remained associated with total behavior problems in the EC-SOC, but was no longer associated with externalizing problems. Trauma exposure was significantly positively associated with caregiver depression, caregiver report of child impairment, and objective caregiver strain in the EC-SOC. Caregiver alcohol use was significantly negatively associated with parenting stress related to dysfunctional parent/child interactions in the EC-SOC. None of these significant associations were observed in the SA-SOC. Across both SOCs, significant positive relationships were observed between caregiver report of child impairment, child internalizing and externalizing problems, caregiver strain, and all measures of parenting stress. Similarly, caregiver depression was significantly positively associated with problem behaviors, caregiver strain, parenting stress, and child impairment.

## **Change Over Time**

Children in the EC-SOC experienced statistically significant reductions in all measures of problematic behaviors, including internalizing behaviors, externalizing behaviors, total behavior problems, and caregiver ratings of impairment. Externalizing behavior problems and total behavior problems fell below the clinically significant range from enrollment to follow up. Similarly, caregivers of children in the EC-SOC also demonstrated statistically significant reductions in all subscales measuring parenting stress and caregiver strain. However, caregivers in the EC-SOC demonstrated a significant increase in depressive symptoms, though these symptoms remained below the level of clinical significance. In the SA-SOC, children demonstrated a significant reduction in total behavior problems and caregiver ratings of impairment, along with a significant reduction in measures of caregiver

Table 5 Correlations between symptom measures at six-month follow up

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. CBCL-I	-	.594**	.857**	.271**	.602**	.582**	061	.284**	.362**	.409**	.577**	.542**
2. CBCL-E	.617**	_	.868**	.147	.701**	.589**	033	.181*	.346**	.432**	.716**	.585**
3. CBCL-T	.828**	.906**	_	.257**	.739**	.646**	086	.292**	.395**	.488**	.735**	.641**
4.TESI-tot	112	.088	002	-	.223**	.229**	.051	.251**	.135	.068	.139	.141
5.CIS-tot	.568**	.653**	.697**	.044	_	.616**	081	.287**	.360**	.393**	.675**	.564**
6.CGS-obj	.487**	.632**	.636**	.009	.641**	_	086	.382**	.593**	.433**	.597**	.634**
7.ASI-alc	202	.090	020	.041	.107	.025	_	.036	061	$165^{*}$	031	092
8.CES-D	.324*	.337**	.372**	070	.389**	.420**	.107	_	.679**	.227**	.350**	.500**
9.PSIpd	.340**	.397**	.435**	076	.473**	.388**	.098	.673**	-	.469**	.495**	.822**
10.PSIpcdi	.407**	.484**	.489**	098	.537**	.425**	.232	.381**	.688**	_	.584**	.790**
11.PSIdc	.442**	.647**	.605**	198	.595**	.560**	.158	.283**	.515**	.652**	_	.846**
12.PSItot	.441**	.572**	.571**	122	.626**	.477**	.191	.489**	.850**	.902**	.822**	-

Correlations for the EC-SOC are provided in the top of the table and correlations for the SA-SOC are provided in the bottom of the table

CBCL-I Child Behavior Checklist-Internalizing Scale, CBCL-E Child Behavior Checklist-Externalizing Scale, CBCL-T Child Behavior Checklist-Total Problem Behaviors Scale, TESI Traumatic Events Screening Inventory, CIS Columbia Impairment Scale, CGSQ-O Caregiver Strain Questionnaire-Objective Strain Scale, ASI Addiction Severity Index, CES-D Center for Epidemiologic Studies-Depression Scale, PSI-PD Parenting Stress Index-Parental Distress Scale, PSI-PCDI Parenting Stress Index-Parent-Child Dysfunctional Interaction Scale, PSI-DC Parenting Stress Index-Difficult Child Scale, PSI-T Parenting Stress Index-Total Score

<sup>\*</sup>p < 0.05 \*\*p < 0.01

strain across all subscales. Although a non-significant reduction, caregiver report of depressive symptoms at follow up fell below the clinically significant level. Mean differences in symptom scores between enrollment and follow up can be found in Table 3.

### **Discussion**

This study aimed to examine how children and families present to SOCs and to provide an initial comparison of the extent to which risk factors, symptoms, and sixmonth outcomes vary between early childhood and school-aged populations enrolled in SOCs. To date, most research has focused on school-aged populations, and little is known about how needs may be different for very young children. Results of this study identify areas of similarity and difference between families presenting for an EC-SOC and SA-SOC. Overall, children and families who present to SOCs at any age experience numerous risk factors and symptoms that contribute to their need for SOC services. Yet, there were distinctions between age groups, particularly regarding child and caregiver symptoms, suggesting that younger children experience greater behavioral problems and caregivers report more stress and strain related to parenting these children. Further, trauma and child and caregiver symptoms are more strongly associated among younger children compared to older children. These findings highlight the importance of continuing to provide services to families with young children to ameliorate these difficulties early in life.

Across SOCs, children were exposed to significant levels of risk at presentation to care. Approximately one third of children lived with a caregiver who had a mental illness, one third of children had been exposed to family violence, and approximately 30% of children in both SOCs lived with an individual who had a substance abuse problem. Although these rates represent significant risk that is associated with impairments in functioning, they are lower than rates observed in larger evaluations of SOCs (SAMHSA 2015). It is possible that this reflects the northeastern communities in which these SOCs were implemented. Children in the EC-SOC were also more likely to be in foster care at enrollment, which may reflect the increased risk of child maltreatment among young children and the overrepresentation of youth under age five in the child welfare system (U.S. DHHS 2018). There were also more younger children living with individuals with a criminal history. Previous research has demonstrated that over half of children with incarcerated parents are under the age of 10, with younger children demonstrating emotional and behavioral problems (Parke and Clarke-Stewart 2002). It is possible that these symptoms, observed more frequently among younger children, may contribute to their SOC participation. Similarly, as expected based on the increased opportunity for exposure among older children, those in the SA-SOC had been exposed to significantly more trauma and more children had experienced lifetime child sexual abuse. Children enrolled in both SOCs were exposed to significant levels of trauma, highlighting the importance of providing trauma-informed services to all families regardless of child age.

Across both SOCs, caregivers identified significant concerns related to their child's symptoms and impairment. However, there were several differences between SOCs that highlighted distinctions between age groups. Children in the EC-SOC presented to care with greater levels of externalizing behavior problems compared to those in the SA-SOC. This is consistent with literature suggesting that young children tend to

display greater levels of externalizing behavior problems than older children, and these symptoms tend to be what drive referrals to treatment (e.g., Fanti and Henrich 2010). There were also significant findings related to caregiver symptommatology. Caregivers in the EC-SOC demonstrated higher scores related to parenting strain and parenting stress at enrollment. Parents of younger children (Skreden et al. 2012) and children with behavior problems (Neece et al. 2012) tend to experience higher levels of stress, perhaps related to the increased caregiving demands required by these children. Interestingly, and contrary to expectations, caregivers in the SA-SOC had significantly higher caregiver depression, though this difference did not persist over time.

There were also significant differences in the association between trauma, child symptoms, and parenting stress between SOCs. For example, trauma exposure among younger children was significantly associated with externalizing behavior problems, caregiver strain, and parenting stress, but these associations were not observed among older children. Some research has suggested that while trauma impacts all children, younger children may be particularly vulnerable to related distress and confusion, leading to increased externalizing symptoms and difficulty with emotion regulation (e.g., van der Kolk 2005). It is also possible that trauma, child symptoms, and caregiver symptoms interact, consistent with previous research finding that children who experience greater negative outcomes following trauma exposure tend to have caregivers who experience more significant symptoms (e.g., Scheeringa et al. 2015; Scheeringa and Zeanah 2001). An examination of these interactions across age ranges within SOCs is beyond the scope of this study, but should be explored in subsequent research.

Findings also suggest that SOCs are effective in improving child functioning over time, regardless of the age at which children enter care. For example, caregivers report of child impairment significantly decreased over time for both SOCs, such that children no longer had clinically significant symptoms. However, we generally found support for our hypothesis that greater change would be observed in the EC-SOC. The younger group experienced a significant reduction in externalizing symptoms over the follow-up period, such that there was no longer a significant difference between groups. Interestingly, children in the SA-SOC demonstrated significant reductions only in total behavior problems from baseline to follow-up, whereas children in the EC-SOC demonstrated significant reductions across all three symptom domains—internalizing, externalizing, and total problems. This may reflect the fact that children in the EC-SOC presented with greater symptoms, which provided more opportunity for impact. However, there was not a significant difference between the early childhood and SA-SOCs in internalizing symptoms, yet the EC-SOC group demonstrated a significant decrease in symptoms while the SA-SOC did not. While this may suggest the increased potential for impact with early intervention (Campbell et al. 2006; Crijnen et al. 1997), it may also be explained by findings related to dosage at follow-up indicating that children in the EC-SOC received more total SOC services, more wraparound services, and more non-SOC community services. This increased service usage by younger children is a notable result in and of itself that perhaps indicates greater opportunity for engagement among families with younger children. This potentially reflects the different contexts in which services are provided between the two SOCs. For example, the EC-SOC occurred in-home, which may offer a unique opportunity to provide more intensive

interventions, whereas the SOC for school-aged children may have more limited opportunity to provide a broad range of interventions. This may then reflect significant differences in the ability of each SOC to effect change through participation in services. It is important to note that there was attrition from baseline to follow up for both groups, with attrition rates of nearly 15% for the EC- sample and 40% for the SA- sample in the six-month follow-up for the longitudinal outcome study. Differential attrition rates may be a potential explanation for these patterns of findings. It is possible that the higher dosage and potential engagement observed among families of young children who received in-home services may have contributed to higher retention rates. The higher attrition rate observed among the SA- sample may also reflect qualitatively different service needs and patterns of use among this older group of youth, which should be explored in future research.

There was also a significant difference between the EC- and SA- samples based on referral source, such that youth in the EC sample were predominantly self-referred while youth in the SA sample were predominately referred by the school. This difference may reflect a similar pattern, whereby the motivation to engage in treatment may explain the disparate dosages received. Specifically, caregivers of young children who self-referred to SOC services may be more motivated to engage in intervention services, thus leading to increased dosage and subsequent positive outcomes, while youth referred by the school may not have caregivers as motivated to engage in services. Previous literature has not identified age or caregiver functioning as significantly associated with engagement, though caregiver demographic factors have been linked (Fawley-King et al. 2012; Haine-Schlagel and Walsh 2015). Future research should examine these components of EC- and SA-SOCs, in addition to other contextual variables, that may contribute to differences in program engagement.

Further, symptoms of depression significantly increased for caregivers in the EC-SOC, though remained under the clinically significant threshold. There are several potential explanations for this pattern that merit additional study in future research. First, over time, caregivers may be initially hesitant to report symptoms of depression and become more comfortable over time, particularly within the context of the SOC model that focuses on family-driven care with comprehensive, wraparound services. However, this pattern was only observed in the EC-SOC. It is possible that this reflects a difference in caregivers of younger children compared to older children. Perhaps caregivers of younger children are focused more specifically on addressing their children's needs rather than their own needs initially, whereas parents of older children are more accustomed to their child's needs and can acknowledge their own symptoms simultaneously. It may also be attributed to the fact that families in the EC-SOC engaged in more services, leading them to feel more comfortable to report increased symptoms.

Finally, more school-aged children had symptoms that impacted school attendance, though children in the EC-SOC had attended significantly more schools than children in the SA-SOC. Research has found higher rates of preschool expulsion when compared to the rate for K-12 students, in part because K-12 schools tend to rely on suspension rather than expulsion to comply with educational requirements put forth by the federal government (Gilliam and Shahar 2006). Thus, it is likely that younger children with behavioral disorders enter care having experienced numerous

preschool transitions, while older children's school attendance is likely impacted by increased suspensions. Interestingly, significant differences across SOCs in terms of school mobility did not change over time, with younger children continuing to attend significantly more schools than older children, though older children had more attendance issues related to their symptoms. Future research should continue to evaluate the need for and use of targeted SOC services to address school functioning.

## **Strengths and Limitations**

To our knowledge, this study is the first to compare SOCs primarily serving different age ranges. Although these results contribute to the literature on SOCs, there are some notable limitations to address. First, these findings are descriptive in nature. While simplistic, no previous research has compared EC- and SA-SOCs on family risk, symptom presentation, or outcomes, so this paper sought to provide an initial examination of these data. Future research should explore SOCs using more advanced analyses to better understand how families respond to SOC services over time. In addition, this study relied on caregiver reported data. Although it is not possible to collect reliable youth-reported data in an EC population, future studies should incorporate data from SOC staff involved in service provision. Further, it is important to note the context within which these evaluations occurred. Although both programs operated in similar communities within the northeast, were funded in the same SAMHSA cohort of comprehensive community mental health programs (Crusto et al. 2012; Kaufman and Griffin 2012), and relied on the same data collection procedures, findings may be due to contextual differences rather than the impact of the SOC itself. For example, there were significant differences in income distribution between sites at enrollment, which could impact findings. Finally, no information was available related to dosage of services received or the extent to which SOC services were implemented with fidelity. These factors may have impacted results at follow-up and could potentially explain the improvement in symptoms over the follow-up period. Similarly, each group received different services implemented by different organizations, so staff selection and training may also have varied based on SOC context. It is also important to acknowledge that wraparound, as a model, was less well-defined during the 2005 SAMHSA cohort, compared to today's understanding of wraparound and its implementation and fidelity. Although system-wide efforts were made to ensure that staff were trained and providers were delivering wraparound services consistent with the model, it is possible that there was variation in the delivery of wraparound services, which could also account for differences between cohorts. Future research should continue to assess the extent to which SOCs are effective for different populations, in addition to including longer follow-up periods to assess whether these patterns persist over time.

Overall, results of this study suggest that while children and families who present to SOCs at any age experience numerous risk factors and psychological symptoms, there are notable distinctions between the age groups. Further research is needed to evaluate SOC services in early childhood populations to enhance prevention efforts, given our findings highlighting the potential to observe greater effects when intervention programs are implemented early in life. Future research should also continue to assess the provision of support and services to children as they age to maximize the outcomes and benefits of early intervention.

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### **Author Contributions**

AS: designed and executed the study, analyzed the data, and wrote the paper. JSK: designed and executed the study and collaborated in the writing and editing of the manuscript. CAC: designed and executed the study and collaborated in the writing and editing of the manuscript.

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