Trauma Symptoms and Relationship With Child and Family Team Meeting Characteristics and Outcomes in a Statewide System of Care

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Abstract

Systems of care (SOCs) are comprehensive, community-based services for youth with emotional and behavioral disorders. For these youth, little is known about how trauma symptoms influence participation in SOC care coordination through the Child and Family Team (CFT) meeting. The current study assessed the extent to which exposure to potentially traumatic events (PTEs) and trauma symptoms were associated with participation in CFTs and youth and family outcomes. Participants were 464 youth (M_{age} = 11.02, SD = 3.72) and their caregivers. Families completed measures of youth and caregiver functioning, PTEs, and trauma symptoms at enrollment and 6-month follow-up. Care coordinators completed surveys assessing CFT characteristics following each meeting and assessments of youth functioning. Moderated multiple regression analyses tested the conditional effects of youth trauma symptoms on the relationships between CFT characteristics and youth and caregiver outcomes. Trauma symptoms moderated the relationship between the number of days to the first CFT meeting and youth impairment and the relationship between CFT meeting duration and youth impairment. Results suggest the presence of trauma and other contextual factors contributed to difficulty in initiating services and to changes in youth impairment. Implications for the provision of trauma-informed SOC services are discussed.

Keywords

mental health, child, wraparound, services, of care, system(s), violence

Systems of care (SOCs) were developed in the 1980s to provide comprehensive, community-based services for youth with serious emotional and behavioral problems (Stroul & Friedman, 1986). The wraparound care process is the practice model through which SOCs individualize community-based services for youth and families (Bruns et al., 2004; Coldiron et al., 2017; Cook & Kilmer, 2012; Stroul, 2002). SOCs have been developed and implemented in various settings, including juvenile justice, schools, communities, and child welfare (Cook & Kilmer, 2012). A significant body of literature has demonstrated that SOCs and wraparound care improve youth and family outcomes (Coldiron et al., 2017; Substance Abuse and Mental Health Services Administration [SAMHSA], 2015; U.S. Department of Health and Human Services, 2003).

Across fields, there has been a push to ensure that services provided to youth with emotional and behavioral disorders are trauma informed (Fallot & Harris, 2008; Hanson & Lang, 2016; Ko et al., 2008). Ko et al. (2008) describe the need for providers to be knowledgeable about trauma and skilled in working with youth exposed to

trauma, in the context of a system or organization that is committed to addressing the impact of trauma to improve outcomes for children and families. In 2014, SAMHSA published a framework intended to guide trauma-informed approaches across service systems. This framework identified four key assumptions of a trauma-informed approach: a realization of the impact of trauma, recognition of the signs and symptoms of trauma, a response that

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applies trauma-informed principles, and staff that resist retraumatization through the organizational environment of the system (SAMHSA, 2014).

Within SOCs, trauma-informed care has primarily been implemented within the child welfare system, where youth's mental health needs are compounded by both exposure to abuse and neglect, and to stress associated with removal from their homes and separation from caregivers (Burns et al., 2004; Sieracki et al., 2008). The goals of trauma-informed care in child welfare are largely to prevent out-of-home placement by utilizing existing community supports to enhance service access and delivery (Bartlett et al., 2016; Detlaff & Rycraft, 2009; Kim et al., 2016; Lang et al., 2016; Sieracki et al., 2008; Snyder et al., 2012). Kim et al. (2016) found poorer outcomes for welfare-involved youth, as logistical barriers increased challenges for family engagement in services.

Outside of the context of child welfare, estimates have suggested that between 25% and 68% of community youth have been exposed to a potentially traumatic event (PTE; Costello et al., 2002; Finkelhor et al., 2015). Youth who have been exposed to trauma are significantly more likely to receive mental health services when compared with youth who have not had such exposure (Briggs et al., 2013). Thus, youth enrolled in SOC with serious emotional and behavioral health problems are disproportionately more likely to have been exposed to trauma. Although some literature has examined the impact of trauma on service use (Briggs et al., 2013; Gopalan et al., 2010; Schreier, Champine, & Kaufman, 2019), little is known about how exposure to trauma may influence participation in specific components of SOCs and wraparound care in community settings.

A core component of wraparound care in SOCs is the Child and Family Team (CFT) meeting. The CFT is the mechanism through which SOCs develop, implement, and monitor individualized plans of care (Bruns et al., 2004; Bruns & Walker, 2010; Walker et al., 2008). It is intended to be a collaborative process steered by youth and family strengths and through which youth and families guide their own plan of care (Bruns & Walker, 2010; Walker et al., 2008). Although CFTs are individualized based on family goals and need, the care coordination process within the CFT is guided by Practice Standards published by the National Wraparound Initiative (NWI; Coldiron et al., 2016). The Practice Standards state that youth and families, care coordinators, and other individuals who provide care and support should collaboratively develop a plan of care that drives meeting content and activities between meetings. The Practice Standards also suggest that the first meeting should occur within 30 days of enrollment to the SOC and approximately once per month through the duration of enrollment. There are no specific guidelines for duration of enrollment in wraparound or duration of the CFT meeting.

While much literature has demonstrated the effectiveness of the wraparound model (Coldiron et al., 2017; Suter & Bruns, 2009), to date, only one study has examined the relationship between specific CFT practice elements or characteristics and youth and family outcomes (Schreier, Horwitz, et al., 2019). Schreier, Horwitz, and colleagues found that families with poorer outcomes, including higher caregiver ratings of youth problem behaviors, lower caregiver ratings of youth functioning, higher caregiver ratings of youth impairment, and higher ratings across dimensions of caregiver strain, tended to have more CFT meetings. Similar patterns were found for duration of CFT meetings and the number of days to the first CFT, such that longer meetings and more days to the first meeting were associated with poorer outcomes. This article hypothesized that these characteristics could reflect a higher level of family need, in that families experiencing elevated stress may struggle to schedule and attend appointments (Schreier, Horwitz, et al., 2019). Consistent with previous research demonstrating that exposure to trauma and its sequelae may be barriers to service seeking (Gopalan et al., 2010), it is possible that these relationships may be driven by the increased needs and stress in families of youth experiencing significant trauma symptoms. Research is needed to further delineate the extent to which these findings are explained by contextual risk factors such as youth exposure to PTEs and subsequent trauma symptoms.

Current Study

The current study sought to address this gap in the literature by (a) identifying the rates of youth exposure to PTEs and trauma symptoms among individuals enrolled in a statewide SOC, (b) measuring the extent to which youth exposure to PTEs and trauma symptoms were associated with characteristics of participation in CFT meetings, and (c) testing the proposed conditional effects of PTE exposure and caregiver ratings of youth trauma symptoms on the relationships between characteristics of participation in CFT meetings and youth and caregiver outcomes.

Consistent with previous research on youth in community-based care settings (e.g., Macro International, 2007; Whitson et al., 2012), we expected significant levels of youth exposure to PTEs and trauma symptoms among this sample. We also expected that there would be significant relationships between youth exposure to PTEs, youth trauma symptoms, and characteristics of CFT meetings (i.e., number of CFT meetings, number of days to the first CFT, and duration of CFT meetings), based on previous literature identifying relationships between trauma and service participation (e.g., Briggs et al., 2013; Gopalan et al., 2010). Finally, we expected that youth exposure to PTEs and trauma symptoms would moderate the previously established relationships between CFT and youth and family outcomes (Schreier, Horwitz, et al., 2019).

Method

Procedure

The Connecticut Network of Care Transformation (CONNECT) is a statewide SOC for children and youth with serious emotional and behavioral difficulties. CONNECT's development and implementation has been funded by SAMHSA since 2013. Funding through the SAMHSA SOC Expansion Implementation Cooperative Agreement enabled the state to expand care coordination and to systematize the collection of a comprehensive set of process and outcome measures for the statewide care coordination program. Care coordination has been an integral component of the Connecticut SOC, including training and coaching provided to care coordinators by Connecticut's Wraparound workforce development initiative. Data on CFT characteristics within the Connecticut SOC are reported in Schreier, Horwitz, et al. (2019).

Data were collected as part of an evaluation of a statewide SOC implemented in Connecticut between November 2016 and July 2018. Primary caregivers and youth aged 11 years and older completed demographic and outcome measures at intake and either 6-month follow-up or discharge. Care coordinators collected data as part of the service delivery process. To account for literacy-related issues, all measures were read aloud to both caregivers and youth, and visual aids (e.g., Likert-type scales corresponding to specific questionnaires) were used. Study oversight was provided by the Yale School of Medicine Human Research Protection Program.

Participants

A total of 1,484 families enrolled in the statewide SOC and completed outcome measures at baseline. Of those families, 464 with complete CFT data and a completed 6-month follow-up or discharge assessment within the target window were included in this study. At enrollment, youth ranged in age from 3.07 to 18.64 years ($M = 11.02$, $SD = 3.72$). Nearly two thirds of youth were male ($n = 299$, 64.4%), and more than half of the youth were White ($n = 273$, 58.8%) and non-Hispanic/Latino ($n = 261$, 56.3%).

Analyses compared the 464 families with complete data with the 1,020 families with incomplete data. Youth with complete data were younger, $M_{age} = 11.02$ (3.72), than youth with incomplete data, $M_{age} = 12.11$ (5.27), $t(1482) = 4.596$, $p < .001$. There was also a significant difference with regard to youth identifying as Black, $\chi^2(1) = 5.430$, $p = .020$, and White, $\chi^2(1) = 6.138$, $p = .013$.

Measures

Demographic information and baseline data were collected at enrollment. Outcome data were collected at 6-month follow-up or discharge within the target window. Care coordination data were recorded after each CFT by the care coordinator.

Child Trauma Screen (CTS). Caregivers and youth completed the CTS, which is a brief screening measure that assesses youth exposure to PTEs and trauma symptoms (Lang & Connell, 2017). The CTS has been well validated for youth populations (Lang & Connell, 2017, 2018). Four items assessing exposure to PTEs are rated dichotomously, and ask whether the youth had ever (a) seen violence, (b) been a victim of violence, (c) been a victim of sexual abuse, or (d) been exposed to "anything else very upsetting or scary." The fourth item was open ended and provided opportunity for the youth and caregiver to describe each upsetting and scary event. The first and last author conducted a brief thematic analysis (Braun & Clarke, 2006) of these responses to appropriately assign reported trauma events to categories. For example, some individuals responded "no" to having been a victim of violence but described having been a victim of violence in the fourth item. These responses were recoded to accurately reflect PTE exposure. Because there is a restricted range of PTE type, the number of youth with exposure to any PTE is reported. The CTS also includes six items assessing trauma symptoms (e.g., physiological reactions, avoidance, sleep disturbance), rated on a four-point Likert-type scale ranging from *never/rarely* (0) to *3+ times per week* (3). Trauma symptom scores are summed to create an overall score, ranging from 0 to 18. Total symptom scores of 6 or above on the youth rating form and 8 or above on the caregiver rating form indicate clinically significant post-traumatic stress disorder (PTSD) symptoms (Lang & Connell, 2017). Trauma symptom scores demonstrated adequate to good reliability at baseline (caregiver α = .794, youth α = .823) and good reliability at 6-month follow-up (caregiver α = .805, youth α = .818).

Caregiver Strain Questionnaire (CGSQ). The CGSQ comprised 21 items assessing strain experienced by caregivers related to the care of their children (Brannan et al., 1997). The CGSQ is a commonly used measure in evaluations of SOC and has been well validated (Brannan et al., 1997). Items are rated on a five-point Likert-type scale ranging from *not at all* (1) to *very much* (5). This study employed a modified 13-item version of the CGSQ per the direction of the national evaluation team for the SAMHSA SOC grantees. Three subscale scores are derived: Objective Strain, or tangible disruptions and negative consequences that result from the child's problems (e.g., financial strain), Subjective Internalizing Strain, or emotions experienced by the caregiver (e.g., worry, guilt), and Subjective Externalizing Strain, or negative feelings about the child's problems (e.g., anger, embarrassment). Items within each subscale are

meaned with higher scores indicating greater strain. The three mean subscale scores are then summed to create a Global Strain score. Scores demonstrated good reliability at baseline (α = .870) and excellent reliability at 6-month follow-up (α = .908).

Columbia Impairment Scale (CIS). The CIS comprised 13 items assessing a child's impairment in functioning (Bird et al., 1993). The CIS has been well-validated for youth populations (Bird et al., 1993). 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, with total scores of 15 or above suggesting clinically significant impairment. Total scores demonstrated acceptable reliability at baseline (α = .786) and good reliability at follow-up (α = .869).

Ohio Scales for Youth. The Ohio Scales is a commonly used measure and consists of a 20-item Problem Scale that assesses common problems reported by youth who receive behavioral health services and a 20-item Functioning Scale that measures the youth's level of functioning in daily activity (Ogles et al., 1999). Items on the Problem Scale are rated on a six-point Likert-type scale ranging from *not at all* (0) to *all the time* (5) and are summed with higher scores indicating more severe or frequent problems. Items on the Functioning Scale are rated on a five-point Likert-type scale ranging from *extreme troubles* (0) to *doing very well* (4) and are summed with higher scores indicating better functioning. There is a separate form for each respondent: caregivers, youth (aged 11 years and older), and care coordinators. Caregiver and youth report forms also include a four-item scale assessing satisfaction with behavioral health services and hopefulness about parenting or the future. Both scales are rated on six-point Likert-type scales and summed, with lower scores indicating greater satisfaction and more hopefulness. Scores of 25 and above on the Problems Scale indicate clinical impairment and scores between 17 and 24 indicate borderline impairment. Scores of 44 and below on the Functioning Scale indicate clinical impairment, and scores between 45 and 52 indicate borderline impairment. Change of eight or more points across administrations indicates clinically significant improvement. Across scales and respondents, the Ohio Scales demonstrated good to excellent reliability at baseline (α = .853–.909) and at follow-up (α = .878–.945).

Care coordination survey. A care coordination survey was developed to assess CFT implementation within this statewide SOC where CFTs are guided by a set of Practice Standards (Coldiron et al., 2016). While CFTs are individualized to meet a family's goals and needs, all care coordination teams follow the same broad parameters. Care coordinators completed the survey following each CFT. The following

variables were used in the current study: number of CFTs, number of days to the first CFT, and duration of the meeting in minutes. Days to the first CFT meeting was measured as the number of days between enrollment in the SOC and the date of the first CFT. Duration of meeting in minutes was indexed as the mean number of minutes across meetings for each individual.

Data Analyses

Descriptive analyses were conducted by calculating frequencies of exposure to PTEs by trauma type and means of trauma symptoms. Paired *t* tests assessed the change in trauma symptoms from baseline to follow-up. Multiple regression analyses and analyses of covariance (ANCOVAs) were conducted to assess the association between caregiver rating of youth exposure to PTEs or trauma symptoms and CFT characteristics (i.e., number of CFTs completed, number of days to the first CFT, mean CFT duration). Multiple regression analyses were used for the two continuous variables: caregiver rating of the number of types of PTEs experienced and caregiver rating of youth trauma symptoms. ANCOVA was used for the dichotomous variables measuring exposure to specific PTE types. Child age at enrollment was included in these models as a covariate. In this sample, 64 families were missing trauma data. There were no significant differences between families with or without trauma data on any demographic variables; thus, these families were excluded from all analyses leading to a sample of 400. The PROCESS macro for SPSS was used to conduct moderated multiple regression analyses to test the conditional effects of youth trauma symptoms on the previously established relationships (Schreier, Horwitz, et al., 2019) between CFT characteristics and youth and caregiver outcomes (Hayes, 2012, 2013; Model 1). Because rates of trauma exposure were so high in this sample, the decision was made to examine only trauma symptoms as a moderator, rather than exposure to PTEs overall. Variables were mean centered for interactions. Significance was determined through 95% bias-corrected bootstrapped confidence intervals (CIs) based on 5,000 bootstrapped samples. CIs that do not contain zero are statistically significant (at *p* < .05). Child age at enrollment and baseline score on each outcome measure were included in these models as covariates. All analyses were performed using SPSS Version 24.

Results

Trauma Exposure and Symptoms

Approximately 63% of caregivers reported that their child had experienced at least one type of PTE prior to enrollment in the SOC. Youth aged 11 years and older also reported on their own exposure to PTEs with more than 75% of youth

Table 1. Exposure to Potentially Traumatic Events.

Potentially Traumatic Event Type	Caregiver report, n (%)	Youth report, n (%)
Witnessed violence	188 (47.0)	114 (66.7)
Physical violence	114 (28.4)	78 (46.4)
Sexual violence	60 (15.0)	31 (18.2)
Any other traumatic event	108 (29.2)	30 (19.9)
Overall trauma exposure	254 (63.3)	131 (76.6)

reporting exposure to at least one PTE type prior to enrollment in the SOC. See Table 1 for caregiver and youth report of exposure to specific PTE types.

At enrollment, caregivers reported that their child was experiencing multiple trauma symptoms, on average (M = 6.36, SD = 4.66). Approximately 37% of caregivers reported that their child was experiencing symptoms above the clinical cutoff of eight. Youth also reported significant trauma symptoms at enrollment, on average (M = 6.09, SD = 4.86). Approximately 49% of youth reported experiencing symptoms above the clinical cutoff of six. At follow-up, 21.3% of caregivers (M = 4.55, SD = 4.25) and 33.6% of youth reported symptoms above the clinical cutoff (M = 4.21, SD = 4.16). Statistically significant decreases in trauma symptoms were observed from enrollment to follow-up among caregiver, $t(319)$ = 7.22, $p <$ .001, Cohen's d = .41, and youth report, $t(125)$ = 4.39, $p <$ .001, Cohen's d = .42.

Trauma and CFT Characteristics

Multiple regression analyses were conducted with caregiver report of exposure to PTEs and trauma symptoms predicting CFT characteristics, controlling for youth age at intake. Caregiver report of the number of types of PTEs their child was exposed to significantly predicted days to the first CFT; although the model itself accounted for only a small amount of variance, R^2 = .014, $F(2, 398)$ = 2.883, p = .057; B = −2.91, p = .035, 95% CI = [−5.62, −0.20], it did not significantly predict the number of CFTs or CFT duration. Tests of multicollinearity were conducted, and all variance inflation factor (VIF) values fell between 1 and 10 and all tolerance values were >.20, indicating no multicollinearity symptoms. Caregiver rating of trauma symptoms was not predictive of any CFT characteristics.

ANCOVA analyses were conducted with caregiver report of exposure to specific types of PTEs predicting CFT characteristics, controlling for youth age at intake (see Table 2). The number of CFTs, $F(1, 398)$ = 3.94, p = .05, partial eta squared = .010, and the number of days to the first CFT, $F(1, 398)$ = 5.11, p = .02, partial eta squared = .013, were significantly associated with caregiver report of youth having been victims of violence. The number of days to the first CFT, $F(1, 396)$ = 4.34, p = .04, partial eta

squared = .011, was significantly associated with caregiver report of youth having been victims of sexual violence.

Conditional Effects of Trauma

Three conditional effects were observed (see Table 3). The first model tested the proposed conditional effect of youth trauma symptoms on the relationship between the number of CFT meetings and caregiver rating of youth problem behaviors. This model accounted for a significant amount of the variance in caregiver rating of youth problem behaviors, R^2 = .332, $F(4, 285)$ = 28.24, $p <$ .001, and the interaction was marginally significant, ΔR^2 = .01, $F(1, 284)$ = 3.63, p = .056. As shown in Figure 1, there was a significant, positive association between caregiver rating of youth problem behaviors and the number of CFT meetings for youth with high levels of trauma symptoms (+1 SD; b = 1.39, SE = 0.57, p = .016, 95% CI = [0.27, 2.51]). This association was not observed for youth with low (−1 SD; b = −0.17, SE = 0.59, p = .768, 95% CI = [−1.33, 0.99]) or average (mean; b = 0.61, SE = 0.41, p = .141, 95% CI = [−0.20, 1.41]) levels of trauma symptoms.

The second model tested the proposed conditional effect of trauma on the relationship between caregiver rating of youth impairment and number of days to the first CFT meeting. This model accounted for a significant amount of the variance in caregiver rating of youth impairment, R^2 = .25, $F(4, 323)$ = 30.99, $p <$ .001, and the interaction was also significant, ΔR^2 = .01, $F(1, 322)$ = 4.26, p = .040. Figure 2 provides a graphic representation of this interaction. There was a significant, positive association between caregiver rating of youth impairment and the number of days to the first CFT for youth with low levels of trauma symptoms (−1 SD; b = 0.06, SE = 0.02, p = .002, 95% CI = [0.02, 0.10]). This association was not observed for youth with high (+1 SD; b = −0.001, SE = 0.02, p = .960, 95% CI = [−0.05, 0.04]) and average (mean; b = −0.03, SE = 0.02, p = .056, 95% CI = [−0.00, 0.06]) levels of trauma symptoms.

The third model tested the proposed conditional effect of trauma on the relationship between caregiver rating of youth impairment and CFT meeting duration in minutes. This model accounted for a significant amount of the variance in caregiver rating of youth impairment, R^2 = .31, $F(4, 322)$ = 29.21,

Table 2. Relationships Between Exposure to Trauma Type and CFT Characteristics.

|	Yes	No	Analysis	
	M (SD)	*M (SD)*	*F (df)*	*p* value
CTS-C: seen violence				
No. of CFTs	3.33 (1.60)	3.20 (1.67)	0.77 (1, 397)	.381
Days to 1st CFT	49.56 (28.76)	53.05 (34.99)	1.39 (1, 397)	.238
CFT duration	68.80 (18.13)	68.63 (17.38)	0.22 (1, 395)	.641
CTS-C: victim of violence				
No. of CFTs	3.52 (1.72)	3.17 (1.60)	3.94 (1, 398)	.048*
Days to 1st CFT	45.77 (30.78)	53.63 (32.50)	5.11 (1, 398)	.024*
CFT duration	68.95 (14.15)	69.21 (18.96)	0.05 (1, 396)	.826
CTS-C: victim of sexual violence				
No. of CFTs	3.28 (1.60)	3.27 (1.65)	0.03 (1, 396)	.854
Days to 1st CFT	43.97 (27.37)	52.76 (32.79)	4.34 (1, 396)	.038*
CFT duration	66.78 (14.50)	69.56 (18.27)	1.81 (1, 394)	.179
CTS-C: victim of other violence				
No. of CFTs	3.31 (1.53)	3.21 (1.68)	0.28 (1, 367)	.596
Days to 1st CFT	50.94 (29.49)	53.27 (33.98)	0.44 (1, 367)	.510
CFT duration	71.14 (20.75)	68.42 (16.52)	1.50 (1, 365)	.222
CTS-C: victim of any violence				
No. of CFTs	3.33 (1.64)	3.16 (1.64)	1.11 (1, 398)	.292
Days to 1st CFT	49.94 (30.54)	53.92 (34.79)	1.65 (1, 398)	.200
CFT duration	69.32 (17.72)	68.82 (18.54)	0.01 (1, 396)	.918

Note: CTS-C = Child Trauma Screen—Caregiver Report; CFT = Child and Family Team.
*$p < .05$.

Table 3. Results for Conditional Process Analyses.

| Outcome	*B (SE)*	*p* value	95% CI
OSP problem behaviors			
Intercept	6.89 (2.66)	.010	[1.65, 12.12]
No. of CFTs	0.61 (0.41)	.141	[−0.20, 1.41]
Trauma symptoms	−0.01 (0.15)	.952	[−0.31, 0.29]
No. of CFTs × Trauma symptoms	0.17 (0.09)	.058	[−0.006, 0.34]
CGSQ subjective externalizing strain			
Intercept	0.35 (0.44)	.422	[−0.51, 1.22]
No. of days to the first CFT	−0.00 (0.00)	.717	[−0.01, 0.01]
Trauma symptoms	−0.00 (0.03)	.872	[−0.06, 0.05]
No. of days to the first CFT × Trauma symptoms	0.00 (0.00)	.071	[−0.00, 0.00]
CIS total			
Intercept	4.69 (1.93)	.015	[0.90, 8.48]
No. of days to the first CFT	0.03 (0.02)	.056	[−0.00, 0.06]
Trauma symptoms	0.07 (0.11)	.521	[−0.14, 0.28]
No. of days to the first CFT × Trauma symptoms	−0.01 (0.003)	.040	[−0.01, −0.00]
CIS total			
Intercept	5.62 (1.98)	.005	[1.72, 9.51]
CFT duration	0.06 (0.03)	.049	[0.00, 0.12]
Trauma symptoms	0.07 (0.11)	.526	[−0.14, 0.28]
CFT duration × Trauma symptoms	−0.01 (0.01)	.042	[−0.02, −0.00]

Note: OSP = Ohio Scale—Parent Form; CGSQ = Caregiver Strain Questionnaire; CFT = Child and Family Team; CIS = Columbia Impairment Scale; CI = confidence interval.
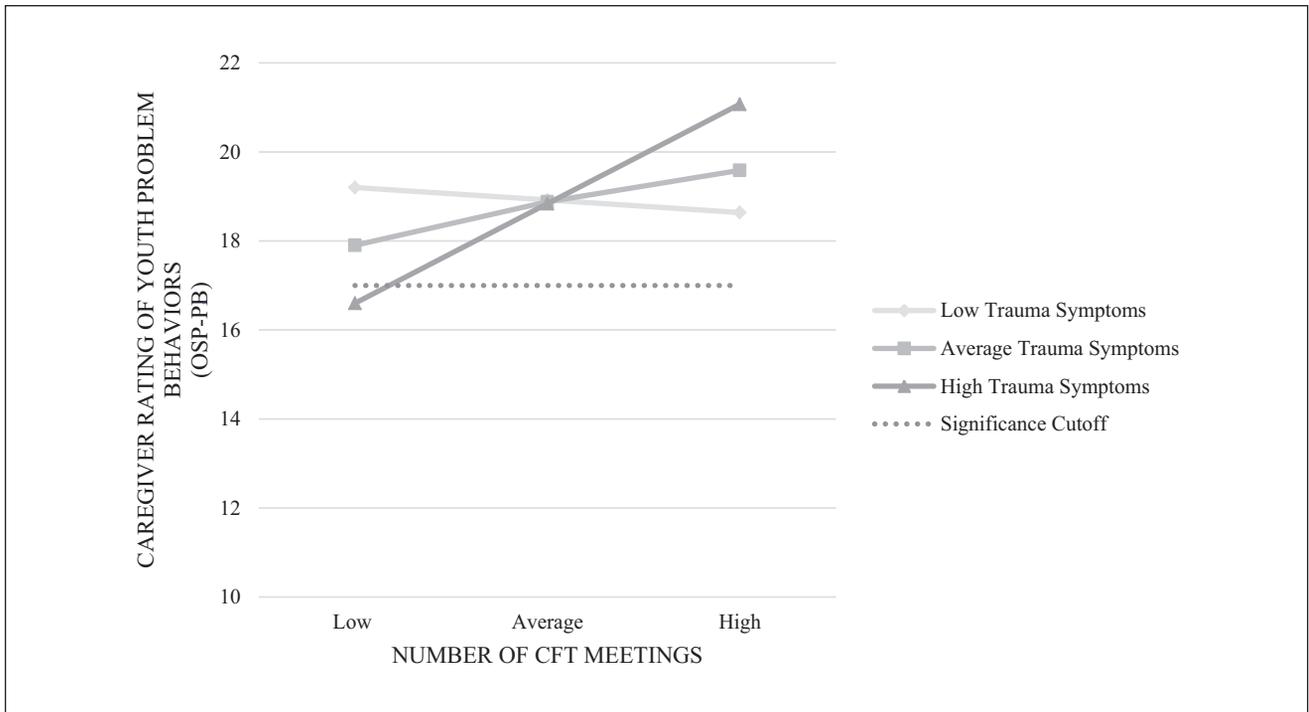
Figure 1. Number of CFTs predicting caregiver rating of youth problem behaviors at levels of youth trauma symptoms.
Note. CFTs = Child and Family Teams; OSP = Ohio Scale—Parent Form.
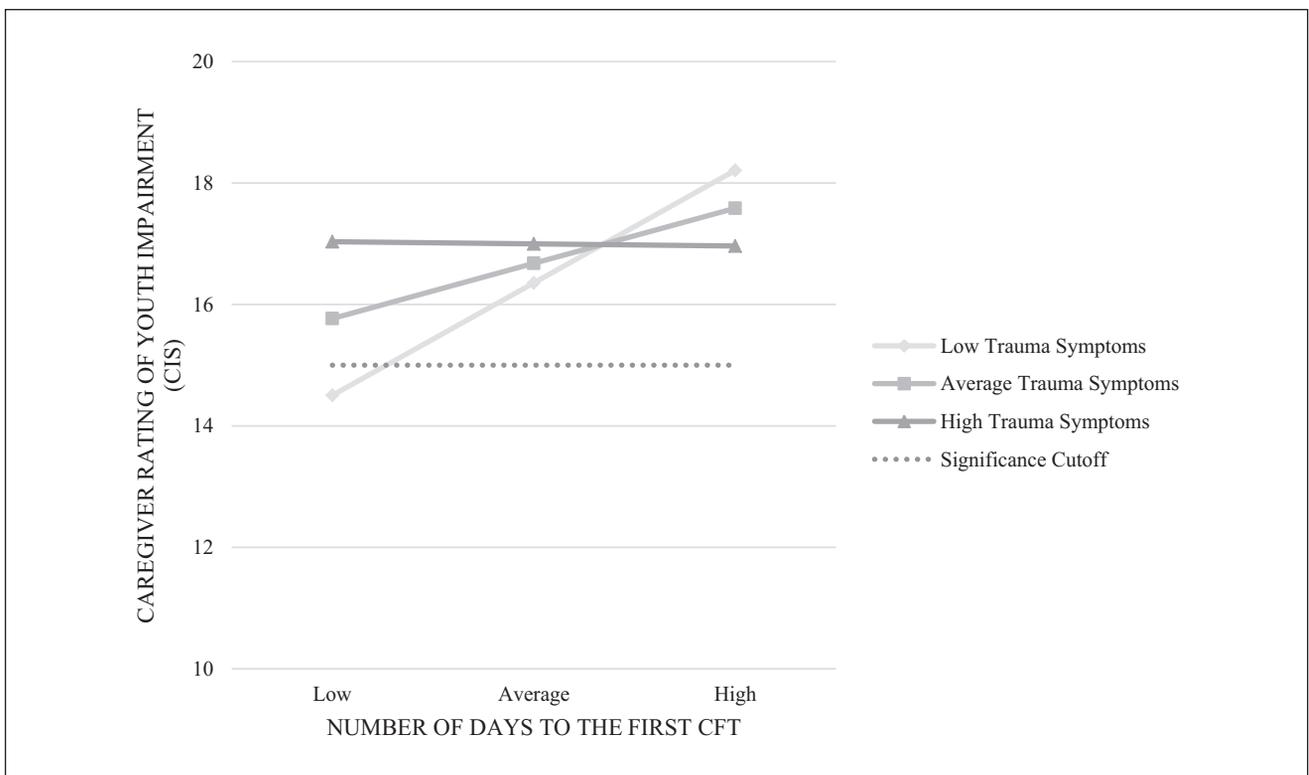
Figure 2. Number of days to the first CFT predicting caregiver rating of youth impairment at levels of youth trauma symptoms.
Note. CFT = Child and Family Team; CIS = Columbia Impairment Scale.
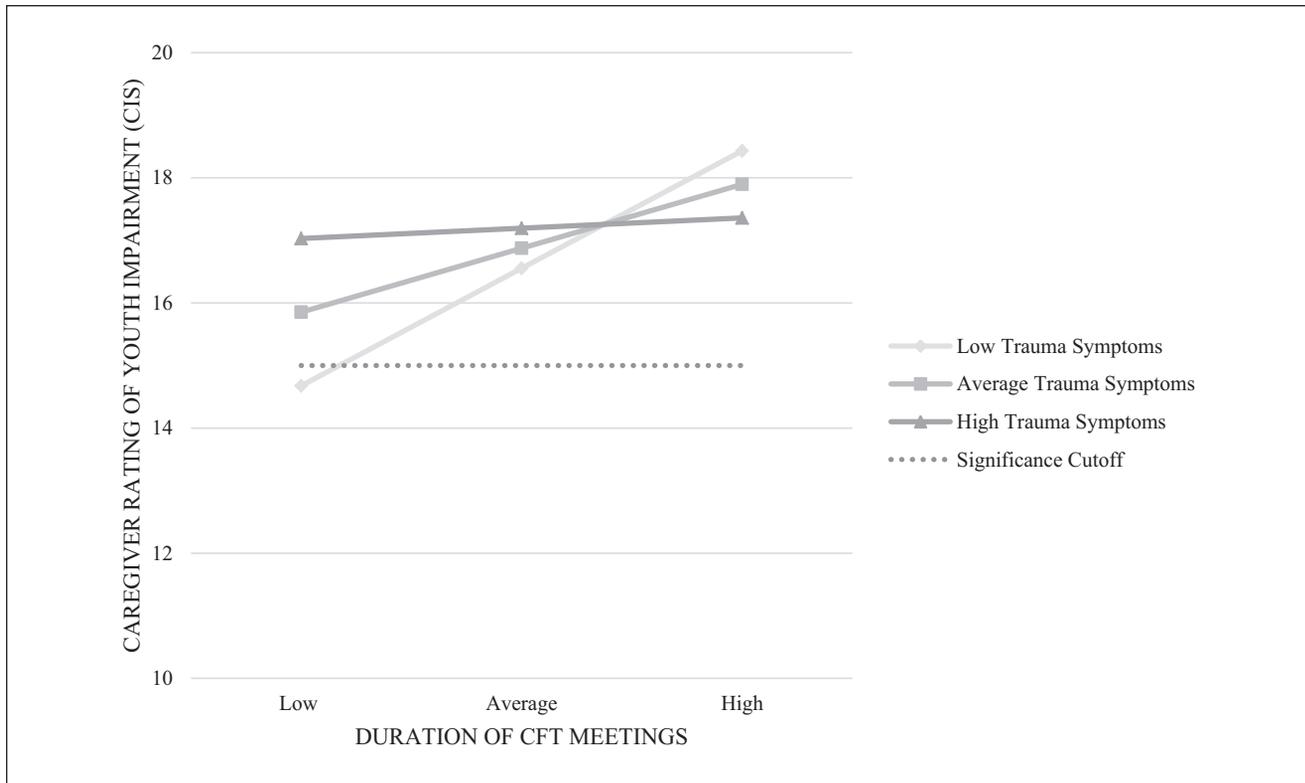
Figure 3. CFT duration in minutes predicting caregiver rating of youth impairment at levels of youth trauma symptoms.
Note. CFT = Child and Family Team; CIS = Columbia Impairment Scale.

$p < .001$, and the interaction was significant, $\Delta R^2 = .01$, $F(1, 321) = 4.17$, $p = .042$. As seen in Figure 3, there was a significant, positive association between caregiver rating of youth impairment and CFT meeting duration in minutes for youth with low (-1 *SD*; $b = 0.11$, *SE* = 0.05, $p = .017$, 95% CI = [0.02, 0.20]) and average levels of trauma symptoms (mean; $b = 0.06$, *SE* = 0.03, $p = .049$, 95% CI = [0.00, 0.12]). This association was not observed for youth with high levels of trauma symptoms ($+1$ *SD*; $b = 0.01$, *SE* = 0.03, $p = .753$, 95% CI = [-0.05, 0.07]).

There were no conditional effects of youth trauma symptoms for any of the three independent variables (number of CFTs, number of days to the first CFT, and CFT duration in minutes) on the following outcomes: caregiver rating of youth functioning, care coordinator rating of youth problem behaviors or youth functioning, caregiver rating of strain across all dimensions (all $p > .05$). There were also no conditional effects of youth trauma symptoms for the number of days to the first CFT or CFT duration on caregiver rating of youth problem behaviors or the number of CFTs on caregiver rating of youth impairment (all $p > .05$).

Discussion

This article aimed to identify the rate of exposure to PTEs and trauma symptoms in youth with serious emotional and

behavioral disorders enrolled in a statewide SOC, to measure the extent to which youth exposure to PTEs and trauma symptoms were associated with characteristics of participation in CFT meetings, and to test the proposed conditional effects of youth trauma symptoms on the relationships between characteristics of participation in CFT meetings and youth and caregiver outcomes. Results enhance knowledge about the extent to which exposure to PTEs and youth trauma symptoms moderate the relationship between CFT participation and outcomes. These findings support a continued focus on the provision of trauma-informed care and provide guidance for communities working to improve their ability to individualize services for children and youth with serious emotional and behavioral difficulties.

First, we identified high rates of exposure to PTEs and trauma symptoms among youth enrolled in this SOC, with findings suggesting that 60% to 75% of the sample was exposed to PTEs. This result was consistent with our hypotheses and with previous research that identified high rates of trauma exposure among youth enrolled in behavioral health SOC (Walrath et al., 2006). As expected, overall rates of exposure were higher than those observed in the general population of youth, where research has identified rates of between 25% and 68% (Costello et al., 2002; Finkelhor et al., 2015). Rates of exposure to specific PTE types were also slightly higher than those previously

reported (Walrath et al., 2006; Whitson et al., 2012), with more than 25% of youth having been victims of physical violence and approximately 15% of youth having been victims of sexual violence. Consistent with previous research (e.g., Smith Stover et al., 2010), we also found discrepancies between caregiver and youth report of exposure to PTEs, with youth identifying higher rates of exposure than their caregivers. These findings may provide direction for care coordinators in helping facilitate conversations about trauma between caregivers and youth, and for engaging caregivers in providing support for youth with PTE exposure. We also found that between one third and one half of the youth were experiencing clinically significant trauma symptoms at enrollment into the SOC, but those trauma symptoms significantly decreased after receiving SOC and care coordination services.

Given the high rates of exposure to PTEs and the high rate of trauma symptoms at enrollment, findings continue to support the need to provide trauma-informed care to these youth and families. Results demonstrating a significant decrease in trauma symptoms suggest that this SOC may have been appropriately addressing trauma-related symptoms and stressors. A recent study examining trauma-informed care in a mental health context identified that consistency with trauma-informed care and dissemination of trauma-informed mental health services was associated with improved child outcomes, including a reduction in trauma symptoms (Bartlett et al., 2016). However, provision of trauma-informed services and connection to trauma-informed mental health services were not explicitly measured in this study, so results could also reflect overall improvement through care coordination services in the absence of any trauma-informed service provision. Future research should seek to measure the extent to which services provided are trauma informed to determine whether larger effects could be seen with greater fidelity to a trauma-informed model.

Consistent with our hypotheses, we also found significant associations between exposure to PTEs and participation in care coordination as measured by CFT characteristics. Our results indicated that the number of PTE types was negatively associated with the number of days to the first CFT. Specifically, for each additional type of PTE, CFT meetings were held 2.91 days sooner. These patterns were also observed with regard to exposure to specific PTE types. Youth who were victims of physical violence had their first CFT approximately 8 days sooner, on average, compared with youth who were not victims of physical violence, and youth who were victims of sexual violence had their first CFT approximately 9 days sooner, on average, compared with youth who were not victims of sexual violence. However, contrary to our hypothesis, we did not find significant relationships between youth trauma symptoms and CFT characteristics.

Our final research question tested the conditional effects of trauma symptoms on the relationships between CFT characteristics and youth and family outcomes at follow-up. We hypothesized that trauma symptoms would significantly moderate many of the previously established relationships between the number of CFTs, days to the first CFT, CFT duration, and outcomes (Schreier, Horwitz, et al., 2019). Contrary to expectations, trauma symptoms significantly moderated only two relationships involving caregiver report of youth impairment. Trauma symptoms significantly moderated the relationship between caregiver rating of youth impairment and the number of days to the first CFT. Among youth with low levels of trauma symptoms, there was a significant positive relationship between caregiver rating of youth impairment and the number of days to the first CFT. For youth with low trauma symptoms at intake, caregiver ratings of youth impairment at follow-up increase as the number of days to the first CFT increases. For families with high trauma symptoms, caregiver ratings of youth impairment at follow-up were similar, regardless of the number of days to the first CFT. We found a similar significant relationship between duration of CFT meetings and caregiver rating of youth impairment, at both low and average levels of trauma symptoms. Thus, for families with low or average trauma symptoms, rating of youth impairment at follow-up significantly increased as meeting duration increased.

It was hypothesized that the association between these CFT characteristics and youth impairment might reflect the elevated stress and difficulty experienced by families of trauma-exposed youth (Schreier, Horwitz, et al., 2019). Our findings suggest that for youth with high levels of trauma symptoms, the level of impairment at follow-up remains consistently above the clinical threshold, regardless of the number of days to the first meeting or duration of meetings. For these youth, it is possible that trauma-associated needs are compounded by other co-occurring risk factors, such that even those who are able to initiate services early and who have longer meetings, and perhaps a greater dosage of care coordination, maintain high levels of impairment at follow-up. Because nearly 50% of youth in this study reported trauma symptoms above the clinical cutoff at intake, significant efforts are needed to better serve these youth. These results suggest a need for SOCs to more intentionally address trauma and its related symptoms and challenges to improve the outcomes of youth receiving the wraparound services.

For youth with low levels of trauma symptoms, higher impairment at follow-up was associated with a greater number of days to the first CFT. This indicates that SOCs should continue to support efforts to engage families in services as soon as possible and to consider strategies to target barriers to engagement. Similarly, longer meetings were associated with higher impairment at follow-up among youth with low trauma symptoms, which likely reflects that youth with more complex difficulties have more to discuss at CFTs,

and thus have longer meetings. These results demonstrate a clear need to identify other contextual factors that may explain the difficulty engaging in services and in the need for longer meetings.

Overall, these findings highlight the significance of trauma both in regard to participation in CFTs and subsequent outcomes. Furthermore, results suggest the need to ensure consistency with trauma-informed care in SOCs, to assist care coordination staff in understanding the significance and role of trauma symptoms in the lives of youth, and to actively measure and monitor trauma symptoms (Ko et al., 2008; SAMHSA, 2014). These findings also indicate the importance of identifying other youth and family characteristics or contextual risk factors that may further delineate how SOCs, and care coordination in particular, are effective for families presenting with a variety of needs. Future research should also consider the extent to which other components of CFT participation, including whether CFTs are family led, occur in the family's home environment, include an explicit review of the individualized plan of care, and contribute to improved outcomes and reduced trauma symptoms.

Strengths and Limitations

This study contributes to the literature on SOCs by examining the associations between trauma, CFT characteristics, and youth and family outcomes. There continues to be a paucity of research on the potential mechanism through which SOCs, and the specific CFT component of wraparound care, contribute to outcomes. This study is a step toward delineating how care coordination works for families with different presenting needs, and which contextual factors may be contributing to these processes. Related to trauma-informed care, specifically, the majority of research to date has focused on child welfare systems. To our knowledge, this is the first study to begin to evaluate the extent to which trauma exposure and symptoms are related to service provision in the context of a behavioral health SOC. However, this study has several limitations. First, no additional caregiver or family demographic information (e.g., income) was available, limiting the ability to control for other factors that may explain these findings. Similarly, the trauma screener assessed a limited range of trauma types and did not include an assessment of the full extent of exposure to PTEs that a youth may have experienced. In addition, the lack of significant conditional effects across most youth and family outcomes suggests that these patterns may be driven by additional contextual factors not measured in this study (e.g., family risk factors). Furthermore, data were not collected to enable an assessment of fidelity to either the wraparound process in general or the provision of trauma-informed care, including whether staff are skilled in working with traumatized youth and whether the system itself is committed to addressing trauma. Finally, this study did not include any data reflecting caregiver and youth voice with regard to how trauma symptoms may be influencing their participation in services. This should be included in future research to provide additional context, as well as to explicitly include family and youth voice.

Conclusion

For the past decade, there has been a significant effort to ensure that child-serving systems are providing trauma-informed care. These efforts have primarily occurred within specific trauma-related contexts, such as child welfare, but are currently being implemented across other service sectors. This study examined the extent to which trauma symptoms moderate the relationship between characteristics of CFT participation and outcomes for youth with emotional and behavioral difficulties in a statewide SOC. Findings highlight the importance of providing trauma-informed care in the context of a behavioral health SOC and provide direction for communities working to improve their ability to individualize services for children and youth with serious emotional and behavioral difficulties. Future research should continue to identify the factors that make SOCs and the care coordination process effective for each family.

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