

# Predictors of Treatment Initiation, Completion, and Selection Among Youth Offered Trauma-Informed Care

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**Objective:** Few studies have investigated determinants of trauma-informed care (TIC) in vulnerable youth populations. The purpose of the present study was to investigate factors associated with initiation, completion, and selection of type of TIC treatment among a sample of 128 treatment-seeking youth who experienced crime or violence. **Method:** This retrospective medical record review study used data collected through routine clinical care at an outpatient, no-cost community mental health clinic. **Results:** We found that 69.5% of treatment-seeking youth ( $n = 89$ ) initiated treatment, defined as attending at least 1 TIC session. Among youth who initiated treatment, 61.8% ( $n = 55$ ) completed a TIC treatment. Predisposing and need characteristics were not significantly associated with initiating or completing treatment in adjusted models. Youth assigned to trauma-focused cognitive-behavioral therapy (TF-CBT) were more likely to complete treatment compared with those assigned to child-centered therapy (CCT) approaches (odds ratio [OR] = 4.48, 95% CI [1.35, 14.91],  $p = .014$ ). Logistic regression analyses suggested therapists were less likely to select TF-CBT for children with higher externalizing symptoms (OR = 0.92, 95% CI [0.85, 0.99],  $p = .035$ ). **Conclusions:** Findings suggest among youth who called in for treatment, many successfully initiated treatment, and of those who initiated, most completed treatment. Empirically supported treatments such as TF-CBT may further promote treatment completion.

**Keywords:** treatment, youth, crime, violence, trauma-informed care

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Victimization by crime and violence during childhood is a major public health issue that contributes to child mortality, morbidity, and long-term effects on mental health including alcohol and drug misuse, posttraumatic stress disorder (PTSD), somatic difficulties, and depression (Gilbert et al., 2012). Compared with adults, children in the United States are more than twice as likely to be exposed to violence and crime (Finkelhor, Turner, Ormrod, & Hamby, 2009). Moreover, up to 80% of low-income, racially, and ethnically diverse inner-city youth report exposure to violence (Child

and Adolescent Measurement Initiative [CAMI], 2014). Trauma-informed care (TIC) is the incorporation of knowledge about trauma in the provision of child services (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). It may help address the mental health needs of low-income, trauma-exposed youth, however, these populations often have difficulty initiating and engaging in mental health treatment (CAMI, 2014). Several factors may contribute to gaps in service delivery for low-income, trauma-exposed youth, including limited use of empirically supported treatments (ESTs; Henderson, Chaim, & Brownlie, 2017). Despite urgency to integrating ESTs into real-world clinical practice (CAMI, 2014), little research has been conducted on determinants of TIC. The current study investigated factors associated with treatment initiation (attendance at first TIC therapy appointment), treatment completion (completion of at least 8 TIC treatment sessions), and treatment selection (type of therapy clinicians selected for youth) in a treatment-seeking sample of youth.

The expanded behavioral model of health service use among vulnerable populations (EBMVP), is a theoretical model based on Anderson's original behavioral model (Andersen, 1968) and is widely used for investigating health service use (Gelberg, Andersen, & Leake, 2000). Anderson's original behavioral model incorporates both individual and contextual determinants of health service use, with a focus on factors that facilitate or are a detriment to service utilization. The original model describes predisposing

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(e.g., demographics), enabling (e.g., resources) and need (e.g., self-perceived need, clinical evaluations) factors. EBMVP also describes vulnerable predictors of mental health service utilization (e.g., type of violence and perceived mental health). EBMVP posits that mental health service use may have low priority for vulnerable populations (e.g., immigrants, those with mental health diagnoses, victims of violence, impoverished persons) as these groups tend to experience additional life stressors that serve as barriers to care and treatment utilization. Prior research has found that the EBMVP has successfully helped explain service utilization in vulnerable populations (e.g., the homeless) with perceived importance indicated as a key indicator of effective utilization (Gelberg et al., 2000).

Although prior work has investigated determinants of mental health service utilization in youth, few studies have focused specifically on trauma-exposed youth in real-world settings. Of this work, prior research has suggested girls tend to attend more treatment sessions than boys (Rodriguez et al., 2013), while ethnic and racial minority youth tend to be less likely to initiate treatment and more likely to drop out of treatment compared with White Americans (Atdjian & Vega, 2005). Youth with greater externalizing problems (e.g., oppositional, aggressive, and disruptive behaviors) tend to use more mental health services compared with youth with internalizing problems (e.g., depression; Miller, Southam-Gerow, & Allin, 2008). Yet other research has found that higher symptomology was not a significant predictor of treatment access or participation rates (Rodriguez et al., 2013). Type of trauma (i.e., physical and sexual abuse) has been associated with more sessions of outpatient therapy attended compared with children with no reported history of child abuse (Walrath, Ybarra, Sheehan, Holden, & Burns, 2006). Previous studies also estimate that between 20 and 75% of children terminate from therapy prior to receiving the recommended dose of eight or more sessions (Cohen, Mannarino, & Iyengar, 2011; Olfson et al., 2009); yet specific determinants of early termination from mental health services remain unclear.

TIC interventions include components specific to targeting trauma exposure and related symptomatology (SAMHSA, 2014). Such programs generally include inclusion of the victim's need to be respected, informed, connected, and hopeful regarding treatment; a focus on the interrelation between trauma and other presenting issues; and collaborative and empowering work with the victim and others (SAMHSA, 2014). Several TIC interventions for trauma-exposed youth exist (Cohen, Mannarino, & Deblinger, 2006), including trauma-focused cognitive-behavioral therapy (TF-CBT; Cohen et al., 2006). Yet TF-CBT is often not the standard intervention provided to youth in community-based mental health settings (American Psychological Association Task Force on Evidence-Based Practice for Children and Adolescents, 2008). Given the consequences of trauma exposure, it is important to further understand actual TIC interventions being offered in community service agencies.

The current study sought to examine two treatments offered in a community service agency: TF-CBT and child-centered therapy (CCT; Gillies et al., 2016). TF-CBT is one of the most widely disseminated TIC interventions (Allen & Johnson, 2012). Yet therapists often offer CCT rather than TF-CBT at community mental health centers since it requires little training, no manual, and no adherence to a particular treatment protocol or structure (Barker-Collo & Read, 2003). Extensive empirical evidence sug-

gests TF-CBT is effective in treating trauma-related symptoms in youth (Cary & McMillen, 2012; Cohen et al., 2010) and thus it is considered an EST for trauma-exposed youth. Although CCT is considered a type of TIC, it lacks the empirical evidence necessary for it to be an EST (Lucio & Nelson, 2016). Indeed, past studies have found TF-CBT superior to CCT for improving traumatic distress in children exposed to sexual abuse (Cohen, Deblinger, Mannarino, & Steer, 2004; Cohen et al., 2011) and domestic violence (Cohen et al., 2011). However, many individuals, particularly those who are low income and seek services in community mental health centers, do not access or complete TF-CBT (Wamser-Nanney & Steinzor, 2017). Existing research suggests one of the challenges relative to the selection and implementation of ESTs such as TF-CBT is clinician training and perceived competence (McHugh & Barlow, 2010). Clinicians who are trained in ESTs are favorable toward ESTs and tend to implement TF-CBT as a first-line treatment to patients (Hundt, Harik, Barrera, Cully, & Stanley, 2016). While a few past studies using adults have examined the relationship between patient characteristics and treatment selection (Hundt et al., 2016; Mott et al., 2014; Raza & Holohan, 2015), this relationship has not been explored in trauma-exposed youth. No study to date has investigated whether predictors of treatment selection for youth who are offered TF-CBT compared with CCT differ.

We sought to utilize the EBMVP to understand predictors of treatment initiation, completion, and selection among impoverished youth who experienced a traumatic event (e.g., crime, violence) and were offered a TIC intervention. Both initiation and completion of treatment are critical to consider as each represents a distinct form of service engagement (Rodriguez et al., 2013; Staudt, 2007). Drawing from prior research, we explored the following questions: (a) are predisposing factors, specifically age (older), sex (female), race/ethnicity (White), and trauma characteristics (physical and sexual abuse), or need factors, such as symptom severity, associated with initiation of TIC treatment? (b) Are predisposing factors, specifically age (older), sex (female), race/ethnicity (White), and trauma characteristics (physical and sexual abuse), or need factors, such as symptom severity, associated with completion of TIC treatment? (c) Is there a significant relationship between predisposing and need characteristics and type of treatment (TF-CBT or CCT) youth were offered?

## Method

The current retrospective medical record review study included data collected through routine clinical care of youth, Ages 4–17, who contacted the Long Beach Trauma Recovery Center (LBTRC) for mental health treatment related to victimization by crime or violence. The LBTRC is a community-based mental health center offering no-cost evidence-based services (including transportation vouchers) for victims of crime and violence in Southern California.

## Participants

The current study extracted data from medical records of youth who contacted the LBTRC between April 2014 and August 2017 for mental health services. Inclusion criteria for the dataset for the current study included being under 18 years of age, being a victim of crime or violence, having contact with an LBTRC staff member

for screening/consultation related to victimization, and completion of a baseline set of questionnaires. Exclusion criteria included being actively psychotic or reporting brain injury or impaired cognitive functioning. One hundred forty-two youth attended the initial consultation appointment and completed baseline questionnaires (see Figure 1 in the online supplemental materials). Ten youth were referred out after the screening/consultation appointment due to cognitive impairment that precluded their ability to participate in TIC therapy. Four youth received therapy (primarily narrative) other than TF-CBT or CCT and were excluded from the study due to inadequate sample size for analyses. The final sample size ( $N = 128$ ) was determined by youth who met inclusion/exclusion criteria for the current dataset.

## Procedure

All dataset collection procedures were approved by the California State University Long Beach Institutional Review Board and were part of standard clinical care at the LBTRC. An initial phone screening questionnaire obtained basic demographic information, referral source, index crime/violence experienced, and contact information. If the youth had experienced crime/violence he or she was invited for an initial screening/consultation appointment. All youth and/or their parents or caregivers were administered a baseline set of questionnaires upon check in for their initial screening/consultation appointment as part of routine clinical care. At the end of the screening/consultation appointment, youth were either invited to return to the LBTRC for an intake session or referred out to a different agency for services. After the intake session, youth were invited to return for the initial therapy appointment. If the youth missed the initial therapy appointment, three attempts were made to contact the individual by telephone. If the clinician was unable to reach the individual to return for the initial therapy appointment, a letter was sent to the youth asking him/her to contact the LBTRC to schedule an appointment for follow-up.

Demographic and clinical data gathered through the routine clinic screening/consultation assessment were collected and coded by the research team. Attendance at the screening/consultation appointment, intake appointment, initial therapy appointment, type of TIC intervention received, and the total number of subsequent therapy appointments were recorded in the electronic medical record (EMR) and extracted for study purposes.

Nine master's-level clinicians, masters in social work (MSW) or masters in marriage and family therapy (MFT), and 15 master's level student interns in MSW or MFT programs provided the therapy. All study therapists completed TF-CBT*Web*, a free online training in TF-CBT (Heck, Saunders, & Smith, 2015). They also received a 1-day training on CCT, a 1-day training on TF-CBT, and routine training on cultural competence during monthly staff meetings. The LBTRC clinicians met with the project director (BG) and with their clinical supervisor weekly for group supervision to review interventions utilized, client response, and next steps. During weekly supervision, case reviews provided an opportunity for clinicians to give weekly updates on their clients, present clinical challenges or therapeutic issues, and receive support and feedback on the implementation of the TF-CBT or CCT treatments.

## Interventions

In both the TF-CBT and CCT interventions, youth received 50-min individual therapy sessions weekly that focused on the traumatic event. The type of therapy received was determined by the clinician with consultation by the youth and/or parent and clinical supervisor. Youth were offered 8–12 sessions of therapy; however, some youth were offered additional sessions if needed and deemed appropriate by the clinician. At the intake appointment, a protocol was used that included explaining the selected treatment modality to the youth/parent and answering all questions regarding the modality. In addition, youth and/or parents were offered the ability to ask questions and discuss the modality, including concerns.

CCT was offered in a manner that included all of the recommendations by SAMSHA. The therapist worked with the client in a nondirective manner that addressed a focus on the trauma and other presenting issues in the child's life, a focus on empowering the victim, and a focus on the child's need to be respected, informed, connected, and hopeful regarding the treatment process. Therapists provided active listening, reflection, accurate empathy, and encouragement to talk about feelings (Cohen et al., 2011).

TF-CBT was offered over 8–12 sessions to accommodate the possible need for youth to have a shorter duration of therapy if needed (Cohen et al., 2011). The components of TF-CBT included: psychoeducation about trauma, developing individualized relaxation skills to manage stress, expressing and modulating upsetting feelings, and cognitive coping skills, developing a trauma narrative and correcting maladaptive cognitions in the narrative, in vivo exposure of trauma reminders, safety, and joint parent sessions (Cohen et al., 2011). The implementation of TF-CBT included developmentally appropriate strategies and techniques based on the ages and clinical presentation of youth (Cohen et al., 2006; Cohen et al., 2011).

## Measures

**Predisposing, enabling, and need variables.** A history form obtained predisposing and enabling characteristics including: income, age, sex, and race/ethnicity (White, Black [non-Hispanic], Latinx, other). The index trauma the participant was seeking therapy for (that is, sexual assault, domestic violence, physical assault, stabbing, shooting, vehicular assault, other crime, family member of victim of crime, traumatic loss, refugee/outside-United States trauma [torture, war trauma or gender-based violence], or human trafficking) was obtained via phone screen. Type of trauma was then collapsed into the following conceptually meaningful categories through an iterative process between lead authors: (a) sexual and physical assault (including human trafficking), (b) domestic violence, (c) other assault (including stabbing, shooting, vehicular assault, refugee/outside United States trauma, family of a crime victim), and (d) traumatic loss.

**Child emotional and behavior problems.** The Child Behavior Checklist (CBCL; Achenbach, 1991) is a 113-item parent-report measure that assesses a range of child emotional and behavioral problems. Items are rated on a 3-point Likert scale (0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*). The CBCL is a well-established measure of mental health problems in youth with good reliability and validity. It assesses a broad array of potential trauma-related symptoms, including those

not captured by a PTSD-specific measure. This broad scope helps capture the diverse effects of youth trauma and was useful because youth in this sample were not required to meet full PTSD diagnostic criteria for inclusion. The Internalizing and Externalizing scales of the CBCL were used to provide a measure of broadband symptom change over time. Raw scores were used in all analyses, as *T* scores can truncate the range of data and be less sensitive to gradual changes in symptom trajectories (Achenbach, 1991).

**Treatment initiation, completion, and selection variables.** The primary outcome measures were: treatment initiation (attendance at the first TIC therapy session), treatment completion (attendance of at least 8 therapy sessions), and treatment selection (TF-CBT or CCT). Data regarding attendance at all sessions and type of treatment offered by the therapist were extracted from the EMR by two trained research assistants (JR and SK) and were checked by the first author (BG).

## Data Analysis

Descriptive statistics were calculated for all key variables using SPSS 24.0. The prevalence rates of youth who initiated and completed TIC interventions were calculated. A series of chi-square and *t* tests examined bivariate associations between predisposing (i.e., age, sex, ethnicity, type of trauma) and need (i.e., externalizing and internalizing scores) factors and treatment initiation (0 = attendance at screening/consultation appointment and/or intake appointment only; 1 = initiated treatment by attendance at one or more TIC therapy sessions) and treatment completion (0 = 2–7 TIC sessions; 1 = 8 or more TIC sessions/completed treatment). Next, logistic regression analyses were implemented to examine relationships between independent variables (i.e., predisposing and need factors) and (a) treatment initiation, (b) treatment completion, and (c) treatment selection (TF-CBT; CCT). Independent variables and covariates were entered simultaneously, thus odds ratios (ORs) for each variable adjust for the relative contribution of the other variables in the models.

## Results

### Demographic Characteristics

The sample was primarily low income; 66.7% reported a household income under \$6,000.00/year, 26.7% of our sample reported an income of \$12,000.00–\$17,999.00/year, and 6.6% of our sample reported an income of \$18,000.00–\$35,999.00/year. The mean age of the youth in the sample was 11.53 ( $SD = 4.02$ , range = 4–17). The sample was 39.8% male ( $n = 51$ ). The sample primarily self-identified as Latinx (61.7%,  $n = 79$ ); 13.3% ( $n = 17$ ) were White, 9.4% ( $n = 12$ ) Black, 1.6% ( $n = 2$ ) Asian/Pacific Islander, and 14.1% ( $n = 18$ ) mixed race or other. In analyses, the Asian/Pacific Islander category was ultimately combined into the “other” category as well due to small sample size. Of the sample, 25.8% ( $n = 33$ ) reported sexual assault/physical assault, 36.7% ( $n = 47$ ) reported domestic violence, 22.7% ( $n = 29$ ) reported other assault, and 14.8% ( $n = 19$ ) reported a traumatic loss. Mean internalizing and externalizing symptom scores were 14.89 ( $SD = 10.25$ , range = 0–45) and 12.87 ( $SD = 9.93$ , range 0–48), respectively (Table 1).

### Treatment Initiation

Table 1 compares those individuals who did not initiate treatment and those who initiated treatment on predisposing and need characteristics. A total of 30.5% of youth ( $n = 39$ ) were categorized as part of the no treatment initiation group. A total of 69.5% of youth ( $n = 89$ ) were categorized as part of the treatment initiation group. No differences were found in age, sex, race/ethnicity, type of trauma, internalizing symptoms, and externalizing symptoms.

In covariate-adjusted logistic regression models examining predisposing and need characteristics as predictors of treatment initiation, no predisposing or need variables were associated with treatment initiation (see Table 1 in the online supplemental materials).

Table 1  
Summary of Predisposing and Need Characteristics by Treatment Initiation<sup>a</sup>

Characteristics	Whole sample ( $N = 128$ )	No treatment initiation ( $n = 39$ )	Treatment initiation ( $n = 89$ )	Difference between groups	<i>p</i>	Cohen's <i>d</i> or $\eta^2$
Age, <i>M</i> ( <i>SD</i> )	11.53 (4.02)	11.25 (3.94)	11.57 (3.98)	$t(126) = -.42$	.678	.10
Gender, <i>n</i> (%)						
Male	51 (39.8)	19 (37.3)	32 (62.7)			
Female	77 (60.2)	20 (26.0)	57 (74.0)	$\chi^2(1) = 1.84$	.175	.12
Race/ethnicity, <i>n</i> (%)						
White	17 (13.3)	8 (47.1)	9 (52.9)			
Black (non-Hispanic)	12 (9.4)	4 (33.3)	8 (66.7)			
Latinx	79 (61.7)	18 (22.8)	61 (77.2)			
Other	20 (15.6)	9 (45.0)	11 (55.0)	$\chi^2(3) = 6.45$	.092	.22
Type of trauma, <i>n</i> (%)						
Sexual assault/physical assault	33 (25.8)	8 (24.2)	25 (75.8)			
Domestic violence	47 (36.7)	12 (25.5)	35 (74.5)			
Other assault	29 (22.7)	11 (37.9)	18 (62.1)			
Traumatic loss	19 (14.8)	8 (42.1)	11 (57.9)	$\chi^2(3) = 3.12$	.373	.16
CBCL Internalizing, <i>M</i> ( <i>SD</i> )	14.89 (10.25)	15.80 (11.70)	14.54 (9.71)	$t(88) = .52$	.630	.16
CBCL Externalizing, <i>M</i> ( <i>SD</i> )	12.87 (9.93)	13.52 (10.60)	12.62 (9.70)	$t(88) = .39$	.700	.12

Note.  $N = 128$ . CBCL = Childhood Behavioral Checklist.

<sup>a</sup> 0 = no treatment initiation; 1 = initiated treatment.

## Treatment Completion

Table 2 compares youth who partially completed treatment and those who completed treatment on predisposing and need characteristics and type of therapy received. A total of 43.0% ( $n = 55$ ) of the total sample who completed baseline questionnaires at the screening/consultation appointment completed treatment. A total of 38.2% of youth ( $n = 34$ ) were categorized as part of the incomplete treatment group. A total 61.8% of youth ( $n = 55$ ) were categorized as part of the completed treatment group. Age, sex, race/ethnicity, type of trauma, internalizing symptoms, and externalizing symptoms were not found to be significantly associated with treatment completion (see Table 2). The mean number of sessions for youth who participated in TF-CBT was 10.84 ( $SD = 5.56$ , range = 2–26) while the mean number of sessions of youth who participated in CCT was 9.76 ( $SD = 6.32$ , range = 2–23). TF-CBT treatment was significantly associated with treatment completion ( $\chi^2(1) = 3.91$ ,  $p = .048$ ).

Logistic regression models for examining predisposing and need characteristics and TIC therapy type as predictors of treatment completion found that age, sex, race/ethnicity (race was collapsed due to small cell sizes and 100% treatment completion for Blacks; Latinx = 1; non-Latinx = 0), type of trauma, internalizing symptoms, externalizing symptoms, and were not significantly associated with treatment completion. However, type of TIC therapy was significantly associated with treatment completion: those in TF-CBT had greater odds of completing treatment:  $OR = 4.58$ , 95% CI [1.36, 15.41],  $p = .014$ .

## Treatment Selection

Potential predictors of type of TIC treatment were examined using predisposing and needs-based predictors. Trauma type did not predict type of treatment offered by the clinician, nor did age, sex, or internalizing symptoms. Compared with White youth,

Black youth were more likely to be offered TF-CBT ( $OR = 43.92$ , 95% CI [1.82, 1060.38],  $p = .020$ ) by their clinician. Children with higher externalizing symptoms were less likely to be offered TF-CBT ( $OR = 0.92$ , 95% CI [0.85, 0.99],  $p = .035$ ) by their clinician.

## Discussion

As efforts to disseminate and implement TIC interventions into real-world community-based settings increase, examining factors associated with engagement of trauma-exposed youth into specialized care becomes increasingly important. This study used the EBMVP model to examine treatment initiation, completion, and selection in low-income youth seeking mental health care from a community mental health clinic. Results, although preliminary in nature, suggest how this model might be applied to understand factors that contribute to mental health service utilization (including treatment initiation and completion) among trauma-exposed youth who are at high risk for long-term mental health problems after trauma exposure.

Of the sample, 69.5% ( $n = 89$ ) of the total sample who attended the screening/consultation appointment initiated treatment as defined by attending at least one TIC session and 43.0% ( $n = 55$ ) completed treatment. Among those who initiated treatment 61.8% ( $n = 55$ ) completed a TIC treatment. Findings suggest that use of TF-CBT was associated with increased likelihood of treatment completion and some patient characteristics predicted selection of treatment type by therapists. Predisposing and need factors did not predict treatment initiation or treatment completion. The current study is an important preliminary step in exploring factors associated with treatment engagement in TIC. Future research should extrapolate on these findings using larger and more diverse samples.

Table 2

Summary of Predisposing, Need and Therapy Type Characteristics by Treatment Completion<sup>a</sup>

Characteristics	Incomplete treatment ( $n = 34$ )	Completed treatment ( $n = 55$ )	Differences between groups	$p$	Cohen's $d$
Age, $M$ ( $SD$ )	11.94 (4.12)	11.34 (3.91)	$t(87) = .68$	.500	.16
Gender, $n$ (%)					
Male	13 (40.6)	19 (59.4)			
Female	21 (36.8)	36 (63.2)	$\chi^2(1) = .12$	.821	.04
Race/ethnicity, $n$ (%)					
White	5 (55.6)	4 (44.4)			
Black (non-Hispanic)	0 (0)	8 (100.0)			
Latinx	26 (42.6)	35 (57.4)			
Other	3 (27.3)	8 (72.7)	$\chi^2(3) = 7.16$	.067	.28
Type of trauma, $n$ (%)					
Sexual assault/physical assault	11 (44.0)	14 (56.0)			
Domestic violence	12 (34.3)	23 (65.7)			
Other assault	8 (44.4)	10 (55.6)			
Traumatic loss	3 (27.3)	8 (72.7)	$\chi^2(3) = 1.44$	.697	.13
CBCL Internalizing, $M$ ( $SD$ )	13.78 (10.49)	14.95 (9.37)	$t(63) = -.46$	.650	.14
CBCL Externalizing, $M$ ( $SD$ )	13.39 (9.34)	12.19 (9.98)	$t(63) = .47$	.640	.14
Type of therapy (%)					
CCT	19 (50.0)	19 (50.0)			
TF-CBT	15 (29.4)	36 (70.6)	$\chi^2(1) = 3.91$	.048	.21

Note.  $N = 89$ . CBCL = Childhood Behavioral Checklist; CCT = child-centered therapy; TF-CBT = trauma-focused cognitive-behavioral therapy.

<sup>a</sup> 0 = incomplete treatment (2–7 sessions); 1 = completed treatment (8 or more sessions).

## Treatment Initiation and Treatment Completion

The current study found rates of treatment initiation and completion that were generally consistent with past research. Only 43.0% of the total sample of youth actually completed treatment, consistent with research suggesting between 20 and 75% of youth prematurely drop out of therapy (Olfson et al., 2009; Wamser-Nanney & Steinzor, 2017). Previous studies found treatment initiation rates among low-income, urban populations ranging from 72% (McKay, Lynn, & Bannon, 2005) to 95% (Rodriguez et al., 2013) and treatment completion rates of 59% (McKay et al., 2005). Several plausible explanations for high rates of initiation and completion among those who initiated our TIC interventions exist. First, the removal of known barriers, such as cost and transportation, to mental health service use in vulnerable populations may have improved initiation and completion. Second, engagement skills of the therapists, who utilized a protocol that involved explaining the treatment modality to the child and his or her parent during the intake appointment and a protocol for reaching out multiple times to families of youth who may have missed their first therapy appointment, may have contributed to high rates of initiation and completion of treatment (Dorsey et al., 2014; Shivack & Sullivan, 1989). This is consistent with research that suggests systematic telephone and first interview engagement strategies implemented with youth and their families help increase mental health service utilization (McKay et al., 2005). Importantly, the sample was comprised of only those individuals willing to call in and show up for an initial visit, in line with the EBMVP model that suggests perceived importance is a key predictor of service utilization (Gelberg et al., 2000). The high level of dropout prior to treatment completion highlights the concern that without access to a TIC intervention youth may continue to exhibit distressing symptoms that impact their functioning.

## Predisposing and Need Factors

Predisposing and need factors identified in the EBMVP model were not associated with treatment initiation or treatment completion in our sample. Our results are partially consistent with a past study that found demographic variables added only a small amount variance that explained pretreatment show rates and dose in a sample of trauma-exposed youth offered TIC interventions (Rodriguez et al., 2013). Our results contradict the literature that suggests greater symptom severity or greater need is an important predictor of mental health service use (Miller et al., 2008). Moreover, according to the EMBVP model, in equitable access to care, level of need should be the strongest predictor of treatment engagement (Solorio, Milburn, Andersen, Trifskin, & Gelberg, 2006). A potential reason for this finding may be that urban, low-income families often face multiple barriers both within and outside of the family, such as low mental health literacy, stigma, and poverty, that may interfere with initiation and continued engagement with mental health treatment regardless of need for mental health services (Ghafoori, Fisher, Koresteleva, & Hong, 2014; McKay et al., 2005). Other possible reasons for lack of associations found in the current study may include the method by which need was assessed (intake interview), relatively small sample size, and truncated range (e.g., majority Latinx, very low income). Future research using a clinical interview and a larger

sample may further elucidate potential factors associated with initiation and completion of treatment in trauma-exposed youth.

## Type of Trauma-Informed Care

The current study found that participation in TF-CBT was significantly associated with treatment completion. A total of 70.6% ( $n = 36$ ) of youth completed TF-CBT compared with 50.0% ( $n = 19$ ) of youth who completed CCT. Only two other studies to date have examined treatment completion of TF-CBT in a community sample (Celano, NeMoyer, Stagg, & Scott, 2018; Wamser-Nanney & Steinzor, 2017); neither included a comparison group. Our completion rates of TF-CBT among those who initiated treatment are similar to those reported by Celano and colleagues (68.8%; Celano et al., 2018). It is possible that TF-CBT, a well-established EST, provides a good fit for low-income, trauma-exposed, treatment-seeking youth since it is designed to address trauma-related symptoms and behavioral issues (Dorsey et al., 2014). Specifically, youth or families may have observed benefits arising from the exposure and cognitive processing elements of TF-CBT, which may have led to increased desire to continue treatment. It is also possible that individuals receiving the CCT intervention may have experienced delayed benefits of therapy, such as the development of coping skills, which may have contributed to treatment burden and greater attrition (Celano et al., 2018). Therapist factors, such as therapist training, therapeutic alliance, or race/ethnicity of the therapist may have contributed to higher completion of the TF-CBT intervention. Yet an in-depth assessment of treatment outcome by type of TIC intervention or therapist factors was beyond the scope of the present study. Systematic research on factors associated with treatment engagement in victims of crime and violence is still emerging (Dorsey et al., 2014), and future research that examines the engagement strategies associated with the dissemination and implementation of TIC is necessary to further understand factors that may impact treatment completion.

There are few previous studies with which to compare our findings with respect to treatment selection. To our knowledge, the current study was the first to investigate the relationship between predisposing and need factors and type of treatment clinicians selected for youth exposed to crime and violence. Results suggest that compared with White youth, Black youth were more likely to be offered the TF-CBT intervention. Over 14 randomized controlled trials have investigated the efficacy of TF-CBT for youth, and efficacy data suggests no significant differences by race/ethnicity (Cohen et al., 2004). In the current study the therapist, based on a clinical formulation and consultation with the supervisor, made the decision with respect to type of TIC that was offered to the client. It is possible that therapist matching or therapist training, competence, and comfort with TF-CBT may have influenced the therapist's decision to offer TF-CBT to Black youth; however, these factors were not assessed in the current study. Also, the very small sample size of Black youth may have biased the results. Additional research is necessary to further understand racial/ethnic differences in treatment selection of TIC.

The current study also found that youth with higher externalizing symptoms were less likely to be offered TF-CBT. Although there has been considerable research on the effectiveness of TF-CBT (Cohen et al., 2004; Deblinger, Mannarino, Cohen, Runyon,

& Steer, 2011; Dorsey, Briggs, & Woods, 2011), prior research has not adequately investigated need factors associated with the type of TIC treatment therapists select to utilize with youth who have experienced crime or violence. Considering the research that suggests TF-CBT is beneficial for youth with externalizing symptoms (Salloum et al., 2016), it appears counterintuitive that youth with higher externalizing symptoms were less likely to be assigned to this treatment. The current study did not assess therapist factors, including implicit bias, that may have influenced who was offered TF-CBT compared with CCT in this study. One possible explanation for our finding may be that many trauma-exposed youth present to community mental health clinics due to disruptive behavior problems, and therapists may feel the need to meet the client where they indicate they need help (i.e., the disruptive behavior), which may influence choosing CCT over TF-CBT as a starting point (Cochran & Cochran, 2017). CCT, which focuses on utilizing empathy and positive regard to increase a child's awareness and processing of experiences, is commonly used by therapists to decrease disruptive behavior in youth and some studies suggest it is an effective intervention for disruptive behaviors (Cochran & Cochran, 2017). Additional research that includes the role of the therapist, including how implicit bias may have impacted their choices, is necessary.

### Limitations and Future Directions

The current study had several limitations. Psychiatric issues were assessed retrospectively by self-report and parent-report instruments rather than a clinical interview. The study assessed traumatic event exposure as part of a screening instrument and did not include a standard trauma assessment. Our small sample may have limited our ability to detect small effects. Considering the fact that only 55 of the 128 youth who initiated treatment actually completed treatment, dropout rates were significant. We were unable to examine characteristics related to dropout. The study did not have a formal mechanism to assess fidelity to the TIC treatments. Although the clinicians in the current study were trained in the provision of TF-CBT and CCT at the site, they may have had different levels of experience, education, and exposure to the treatment modalities prior to beginning their training/work at the site that may have contributed to clinical differences in the provision of the interventions as well as dropout. The clinicians in the current study did not have training in implicit bias, and it is unclear how implicit bias may have impacted treatment selection. The current study only focused on TF-CBT and CCT, and other ESTs have been identified in the literature that are effective and should be explored in future research. As such, the results of this study are preliminary, rather than definitive, and need to be replicated in future studies that include more precise indicators of mental health status, access, and completion of mental health services with a wide range of EBPs. There are likely other variables, such as social support, patient readiness toward treatment, therapist racial/ethnic match, therapist bias, supervisor bias, and medical conditions that may impact treatment initiation, completion, and dropout that were not assessed in the current study. Future research might examine therapist characteristics on treatment initiation, completion, and selection.

The current study highlights the need for additional research that examines predictors of TIC treatment initiation and completion.

TF-CBT was associated with higher completion rates in our study, however, future research is necessary to understand the mechanism of action in this association. The specific components of TF-CBT compared with CCT need further investigation. Moreover, research that focuses on therapist factors associated with the treatment selection process and therapist training is necessary. Examination of timing of dropout and therapy outcomes may inform strategies to decrease attrition during TIC. Our study suggests clinicians may be able to effectively engage low-income youth victims of crime and violence by removing the multiple structural barriers to attendance (e.g., money or transportation) that are relevant when seeking mental health care. Educating clinicians and patients about the suitability and benefits of TIC treatments appears necessary in order to promote wider implementation of these treatments for youth who have experienced crime or violence.

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