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RESEARCH ARTICLE

Dropout from evidence-based trauma treatment in a community mental health clinic serving victims of interpersonal violence

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Abstract

Trauma-focused psychotherapies are increasingly offered in community-based mental health centers, but little is known about treatment dropout in these settings. The current study explored dropout at different stages of treatment in a treatment-seeking sample of 1,186 adults who experienced interpersonal violence and were offered trauma-focused and non–trauma-focused therapies. A total of 31.6% of participants dropped out before treatment initiation, 28.0% dropped out after treatment initiation and completed a mean of 4.02 ($SD = 2.41$) sessions, and 40.4% completed a full course of PTSD treatment. Being unemployed, $p < .001$, and scoring lower on measures of environment factors, $p = .045$, were significant predictors of pretreatment dropout. Being female, $p < .001$; Latinx, $p = .032$; and scoring higher on a measure of social relationships, $p = .024$, were independent predictors of postinitiation dropout. Individuals who completed nine sessions of treatment displayed significantly lower levels of posttraumatic stress disorder, depression, and anxiety symptoms. The present study provides preliminary evidence that survivors of interpersonal violence who seek therapy tend to drop out early during treatment, and most who complete treatment attain symptom reduction.

Individuals who have experienced interpersonal violence, defined as physical, emotional, or sexual violence in childhood or adulthood, tend to have a high risk for posttraumatic stress disorder (PTSD) as well as other mental health impairments (Maclsaac et al., 2018). Several trauma-focused interventions, such as cognitive processing therapy (CPT; Resick et al., 2017) and prolonged exposure therapy (PE; Foa et al., 2019), have been found to be effective for treating PTSD related to interpersonal violence (American Psychological Association [APA], 2017; Ehlers et al., 2013). However, these types of therapies are often not offered to individuals in community settings due to concerns regarding dropout (Imel et al., 2013). Dropout is defined as not attending a specific number of sessions (Gros et al, 2011), a loss of contact with participants, or voluntary termination (Erbes et al., 2009; Szafranski et al., 2016). Meta-analyses of trauma treatment suggest that 16%–65% of individuals who start an evidence-based treatment for traumatic distress drop out of treatment (Bradley et al., 2005; Goetter et al., 2015; Hembree et al., 2003; Imel et al., 2013; Lewis et al., 2020), and in naturalistic clinical settings that serve diverse low-income populations, dropout may be higher than in research trials due to an inability to fund engagement and retention efforts (Goetter et al., 2015). Dropout from PTSD treatment is typically considered a negative outcome because individuals may not be getting the optimal therapeutic dose for symptom and functional improvement; however, recent studies have suggested that some individuals who receive evidence-based trauma treatments may be dropping out when symptoms improve

(Ghafoori et al. 2019; Szafranski et al., 2017). Little is known about dropout from trauma-focused treatment among survivors of interpersonal violence who are offered mental health treatment in community-based clinics. This is particularly important considering that research is mixed regarding which client populations or individual client characteristics may predispose an individualto complete or not complete an adequate dose of therapy. Some research suggests that common primary symptoms among survivors of interpersonal violence, including shame, guilt, and anger (Badour et al., 2017), may not respond well to trauma-focused treatments, contributing to dropout in this population (Gilliss et al., 2001). However, symptom characteristics predict dropout inconsistently across studies (Kline et al., 2021), and some research suggests that symptoms such as shame, guilt, and anger do not predict dropout from trauma-focused treatments (Kehle-Forbes et al., 2016; Larsen et al., 2016). It is also unclear if certain risk factors may be associated with dropout at specific time points during the treatment process. The purpose of the present study was to further understand dropout among a sample of adults seeking treatment for symptoms related to interpersonal violence.

Anderson's (1968) expanded behavioral model of health service use among vulnerable populations (EBMVP) may be a theoretical framework that assists in understanding the potential predictors of dropout in low-income victims of interpersonal violence (Gelberg et al., 2000; Ghafoori et al., 2021). The original theoretical model of service utilization (Anderson, 1968) proposed a model that includes traditional predisposing factors (e.g., demographic factors, such as age, gender, and race/ethnicity), enabling factors (e.g., income, social support, environmental stress), and need factors (e.g., mental health symptoms such as PTSD, depression). However, the EBMVP distinguishes between *traditional* and *vulnerable* predisposing, enabling, and need factors by asserting that vulnerable populations, including low-income individuals, ethnic and racial minorities, and people who have experienced violence, may face additional stressors in their daily lives that make obtaining mental health services into a low priority (Gelberg et al., 2000). Vulnerable domains that may be relevant to victims of interpersonal violence seeking community-based mental health care for traumatic distress include the predisposing vulnerable domains of type and amount of victimization and attitudes toward treatment utilization (Gelberg et al., 2000). For example, an individual who has experienced more violence may be less likely to seek care, and a person who believes health services are an effective treatment for a condition may be more likely to seek care (Gelberg et al., 2000). According to the model, equitable access to care is driven by demographic characteristics and need, whereas inequitable access may be due to enabling characteristics such as low income; lack of support; or environmental or community factors, such as available health personnel and facilities, wait times for services, child care, and travel (Gelberg et al., 2000).

Several studies have utilized the EBMVP model to further understand treatment utilization (M. J. Davis et al., 2016; Ghafoori et al., 2021), and research on utilization of trauma-focused therapy has identified some predictors of dropout (Kline et al., 2019). Past findings have indicated that younger age (DeViva, 2014; Garcia et al., 2011; Kehle-Forbes et al., 2016) consistently predicts dropout, and some evidence has suggested that higher levels of PTSD symptom severity are a predictor of dropout (Garcia et al., 2011; Grubbs et al., 2015). Older age; female gender identification; self-identification as White; experiencing higher degrees of exposure to assaultive trauma; and higher self-reported PTSD, depression, anxiety symptoms, and global distress severity have been found to be associated with trauma-focused treatment use (Amstadter et al., 2008; Gavrilovic et al., 2005; Ghafoori et al., 2021). A small body of research has investigated the association between attitudes toward mental health care and trauma treatment utilization, with findings suggesting that more positive attitudes towards treatment-seeking have been associated with staying in treatment (Elhai & Simmons, 2007; Ghafoori et al., 2014; Maulik et al., 2010). What remains unclear is whether these predictors are associated with dropout or the completion of nine sessions of treatment, which is considered to be an adequate dose of treatment (APA, 2017), among individuals who have experienced interpersonal violence.

Past research suggests that identifying different types of patients who drop out of treatment may be a helpful way of further understanding risk factors for dropout at different points during the treatment process (Kline et al., 2020). Drawing from Anderson's (1968) model of health service utilization, Kline and colleagues (2020) used data from a double randomized preference trial comparing sertraline and PE for chronic PTSD to compare two types of participants who dropped out of treatment: those who dropped out before actually starting therapy (i.e., "nonstarters") and those who dropped out at some point during treatment (i.e., "treatment starters"). The authors found that participants who started PTSD treatment reported more severe baseline PTSD symptoms and more positive beliefs about the trauma treatment to which they were randomized compared to those who dropped out before starting therapy. This is consistent with research suggesting that dropout tends to occur early in treatment and may be associated with more negative attitudes towards treatment and lower levels of mental health symptom severity (J. J. Davis et al., 2013; Kehle-Forbes et al., 2016).

Treatment guidelines for PTSD, as well as findings from meta-analyses and reviews, support the efficacy of several trauma-focused cognitive behavioral therapy (CBT)–derived evidence-based psychotherapies (EBPs) for PTSD (APA, 2017). The APA guidelines strongly recommend several therapies for PTSD that include, but are not limited to, PE, CPT, and cognitive therapy for PTSD (CT-PTSD; Ehlers et al., 2013), and conditionally recommend narrative exposure therapy (NET; Schauer et al., 2011; APA, 2017). Although the APA guidelines do not currently recommend non–trauma-focused PTSD treatments, such as present-centered therapy (PCT; Schnurr et al., 2007), some evidence suggests that PCT may effectively reduce trauma-related distress (Ghafoori et al., 2021) and has demonstrated lower dropout rates compared to trauma-focused treatments (Imel et al., 2013). The literature with respect to dropout in trauma-focused compared with non–trauma-focused and eclectic therapies for PTSD has been mixed and has focused mostly on samples from randomized controlled trials or veteran and military samples. Some findings have suggested that psychological therapies with a trauma focus are significantly associated with higher rates of dropout compared to PCT (Lewis et al., 2020), whereas other studies have not observed associations between dropout and a focus on trauma during therapy (Goetter et al., 2015). When restricted to direct comparisons of active treatments, a meta-analysis by Imel and colleagues (2013) found no differences in dropout. Differences in trauma-focus between treatments in the same study did not predict dropout, but trauma-focused treatments resulted in higher dropout compared to PCT (Imel, 2013). Little is known about whether beginning these treatments may be associated with dropout or treatment completion among victims of interpersonal violence seeking services in a community-based setting.

A better understanding of characteristics that differentiate survivors of interpersonal violence who drop out of EBPs for PTSD and those who do not is important for improving treatment retention as well as treatment outcomes. The current study built upon research examining dropout at different stages of treatment (Gibbons et al., 2019; Kline et al., 2020) and aimed to extend past studies by identifying specific risk factors associated with dropout at different points in the treatment process in a sample of interpersonal violence victims receiving PE, CPT, CT-PTSD, NET, PCT, or other non–trauma-focused therapy in a community-based setting. The current study aimed to (a) explore whether traditional or vulnerable predisposing, enabling, and need variables were associated with pretreatment dropout, postinitiation dropout, or nine-session treatment completion; (b) explore whether treatment type was associated with postinitiation dropout or nine-session completion; and (c) analyze differences in symptom between baseline and nine-session treatment completion.

METHOD

Participants

The current study was a secondary data analysis and included data collected as part of routine clinical care from adult individuals seeking mental health services at the Long Beach Trauma Recovery Center (LBTRC), a community based mental health clinic in southern California, that offers no-cost mental health services to survivors of crime and violence. Adults who contacted the LBTRC between April 2014 and March 2020 for services were included in the dataset for the current study (see Supplementary Figure S1). Inclusion criteria for the current dataset included: being over 18 years of age; being a treatment-seeking survivor of interpersonal violence who experienced direct exposure (i.e., witnessed or experienced interpersonal violence); reporting PTSD or subthreshold PTSD symptoms, as assessed via a clinician-administered interview and defined as having witnessed or experienced a traumatic event or events that caused symptoms of reexperiencing, avoidance, hyperarousal, or negative alterations in mood or cognitions that did not meet the full PTSD criteria but was causing reported psychiatric impairment; having contact with an LBTRC staff member for screening or consultation related to victimization; and completion of a baseline set of questionnaires. Participants were not required to be out of an abusive relationship, and there was no minimum for the time elapsed since the last traumatic event. Exclusion criteria were being actively psychotic or self-reporting brain injury or impaired cognitive functioning, defined as a self-reported, diagnosable condition. The final sample size (N = 1,186) was determined by the scheduled closure of data collection.

The average participant age was 34.39 years (SD = 11.37), and 87.9% of the sample was female. Most participants self-identified as Latinx (56.9%), graduated from high school (HS; 67.8%), and reported being single (53.0%). Most participants reported an average annual household income under $12,000 (USD) per year (65.0%) and many were unemployed (46.2%). At the screening, participants were asked about their trauma history; many participants reported experiencing multiple traumatic events (M = 5.43, SD = 3.20) that met Criterion A in the PTSD diagnostic criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; APA, 2014). When asked to identify the primary trauma that led them to seek services, 48.1% of participants reported domestic violence (DV) as their primary trauma, 43.2% reported sexual assault (SA), and 8.7% reported sex trafficking (ST).

Participants generally screened positive PTSD (75.2%), depression (76.7%), and anxiety (73.1%) at the baseline assessment. Table 1 displays participant characteristics.

Procedure

The current study was approved by the California State University Long Beach Institutional Review Board. Participants referred for trauma treatment met with a clinician at the LBTRC for an initial screening/consultation appointment. During this appointment, individuals completed the baseline measures for the current study. At the end of the screening/consultation, participants were either invited to return to the LBTRC to complete the intake session or referred to a different agency for mental health services. Participants were informed during the screening/consultation appointment that a different therapist may be assigned to them for the intake and ongoing therapy depending on availability. After this session, participants were invited for an initial therapy appointment with their assigned intake therapist, who would also serve as the ongoing provider. If the participant missed the initial therapy appointment, three attempts were made to contact them by telephone. If the clinician was unable to reach the individual by telephone, a letter was sent asking the participant to contact the LBTRC to schedule an appointment for follow-up (see Supplementary Figure S1).

Treatment

Participants were assigned to receive PE, CPT, CT-PTSD, NET, PCT, or another treatment (i.e., "other") based on a collaborative decision by the participant, therapist, and the therapist's supervisor. Specifically, during the intake session, participants were informed about the EBT treatments available in the clinic, and literature was provided to further explain each EBT option. If the participant expressed a preference for a particular treatment, that treatment was typically offered to the participant. Some participants did not express a preference for a particular therapy, and, in some cases, the clinician and/or supervisor determined that a patient may benefit from a particular treatment approach. If the clinician used a non–trauma-focused or eclectic therapeutic approach in any of the nine sessions reviewed by the research assistant, they were placed in the "other" therapy modality group. If a patient's record indicated that a clinician changed therapeutic modalities during the course of therapy, this participant was grouped in the "other" treatment group. Therefore, the "other" treatment group included both participants who began in the group and those who coded into the group. Treatment was discontinued if the participant failed to attend two or more sessions. Some individuals in the current study who failed to attend two or more scheduled sessions of therapy were included in the posttreatment dropout group if they attended at least one but fewer than nine sessions of therapy and were included in the final analyses.

Clinicians delivering PE, CPT, CT-PTSD, NET, and PCT utilized treatment manuals, whereas individuals in the "other" treatment group did not receive a manualized therapy for PTSD, although they did receive psychological treatment for their presenting difficulties and may have received some components of a manualized treatment. All trauma-focused therapies and other treatments were delivered in 12 weekly sessions, each lasting 60–90-min. PE included psychoeducation about common reactions to trauma; breathing retraining; repeated imaginal exposure to the most distressing memory of the trauma during the therapy session; processing or discussing the content of the imaginal exposure during sessions; and repeated in vivo exposure to a list of avoided people, places, or situations (Foa et al., 2019). CPT included psychoeducation about PTSD, thoughts, and emotions; writing an impact statement to detail the impact of the trauma on the patient's beliefs about themselves others, and the world; and processing the trauma by identifying, understanding, challenging, and modifying unhelpful beliefs about the trauma (Resick et al., 2017). CT-PTSD (Clark & Ehlers, 2004) included a reevaluation of thinking patterns and assumptions to identify unhelpful patterns in thoughts, reconceptualization of the participant's understanding of traumatic experiences and the ability to cope, controlled exposure to the trauma narrative, and stress management. NET included psychoeducation regarding trauma; the development of a lifeline; and the construction of a chronicle narrative of the participant's life story, with a focus on traumatic experiences (Schauer et al., 2011). PCT included treatment rationale; psychoeducation; breathing retraining; and supportive, nondirective therapy by facilitating the disclosure and management of symptoms at the participant's own pace (Schnurr et al., 2007).

Therapist training and fidelity monitoring

Master's-level clinicians and master's-level student interns were trained to provide all the treatments. Each clinician participated in a 2-day, in-person training in PE, CPT, CT-PTSD, and NET and reviewed the PE, CPT, CT-PTSD, NET, and PCT treatment manuals during supervision. Clinicians received weekly individual and group supervision by supervisors trained in EBT models. Informal fidelity monitoring occurred via a review of each

TABLE 1 Sociodemographic, trauma-related, and mental health characterization of participants

	Total sample ($n = 1{,}186$)		Pretreatment dropout ($n = 375$)		Postinitiation dropout ($n = 332$)		Treatment completion ($n = 479$)			
	M	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	**Statistical test**	**Effect size η_p^2**
Age (years)	34.39	11.37	34.28	11.55	33.11	10.38	35.35	11.81	$F\,(2, 1{,}183) = 3.84^{*}$	.006
Total trauma types	5.43	3.20	5.68	3.37	5.35	3.29	5.28	2.99	$F\,(2, 1{,}183) = 1.70$	.003
	n	**%**	***n***	**%**	***n***	**%**	***n***	**%**	**Statistical test**	**Cramer's *V***
Gender									$\chi^2(4, N = 1{,}127) = 10.35^{*}$	.07
Male	129	11.5	52	16.2	34	10.3	43	9.0		
Female	991	87.9	267	83.2	293	89.1	431	90.4		
Other	7	0.6	2	0.6	2	0.6	3	0.6		
Country of Origin									$\chi^2(2, N = 1{,}160) = 15.63^{***}$	.12
United States	710	61.2	246	68.5	204	62.0	260	55.1		
Other	459	38.8	113	31.5	125	38.0	212	44.9		
Race/ethnicity									$\chi^2(8, N = 1{,}161) = 21.14^{**}$	.14
White	172	14.8	67	18.4	43	13.2	62	13.2		
Black (non-Hispanic)	143	12.3	57	15.7	43	13.2	43	9.1		
Latinx	661	56.9	179	49.2	197	16.4	285	60.5		
Asian	42	3.6	14	3.8	7	2.1	21	4.5		
Other	143	12.3	47	12.9	36	11.0	60	12.7		
Educational attainment									$\chi^2(2, N = 1, 169) = 2.89$	.05
Less than high school	376	32.2	118	32.0	117	35.6	141	29.9		
High school graduate or more	793	67.8	251	68.0	212	64.4	330	70.1		

(Continues)

TABLE 1 (Continued)

	Total sample (n = 1,186)		Pretreatment dropout (n = 375)		Postinitiation dropout (n = 332)		Treatment completion (n = 479)			
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	Statistical test	Effect size η_p^2
Marital Status									$\chi^2(4, N = 1, 177) = 8.49$	.06
Single	624	53.0	202 54.7		179 53.9		243 51.1			
Married or living with someone	260	22.1	79 19.0		65 19.6		125 26.3			
Separated/divorced/widowed	293	24.9	97 26.3		88 26.5		108 22.7			
Sexual Orientation									$\chi^2(2, N = 1,091) = 0.03$	.01
Heterosexual	805	73.8	247 73.5		232 74.1		326 73.8			
LGBTQ	286	26.3	89 26.5		81 25.9		116 26.2			
Employment									$\chi^2(4, N = 1,157) = 27.41^{***}$	.01
Employed	365	31.5	101 27.8		96 29.4		168 35.9			
Unemployed/retired	534	46.2	204 56.2		147 54.1		183 39.1			
Student	258	22.3	58 16.0		83 25.5		117 25.0			
Income (USD)									$\chi^2(4, N = 1,120) = 6.16$	.05
< $11,999	728	65.0	288	66.7	217	67.8	277	61.7		
$12,000–$17,999	143	12.8	42	12.0	38	11.9	63	14.0		
$18,000–$35,999	164	14.6	48	13.7	63	14.0	73	16.3		
≥ $36,000	85	7.6	22	7.7	22	16.9	36	8.0		
Trauma type									$\chi^2(4, N = 1,186) = 15.66^{**}$	.08
Sexual assault	512	43.2	143	38.1	137	41.3	232	48.4		
Domestic violence	571	48.1	187	49.9	173	52.1	211	44.1		
Sex trafficking	103	8.7	45	12.0	22	6.6	36	7.5		

(Continues)

TABLE 1 (Continued)

	Total sample (n = 1,186)		Pretreatment dropout (n = 375)		Postinitiation dropout (n = 332)		Treatment completion (n = 479)			
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	Statistical test	Effect size η_p^2
Psychopathology at baseline										
PTSD	890	75.2	276	74.0	252	75.9	362	75.6	$\chi^2(4, N = 1{,}186) = 0.41$	.02
Depression	841	76.7	255	76.8	242	76.3	344	77.0	$\chi^2(4, N = 1{,}186) = 0.04$	.01
Anxiety	802	73.1	245	73.4	224	70.7	333	74.7	$\chi^2(4, N = 1{,}186) = 1.52$	.04
Psychopathology at Session 9									-	-
PTSD							111	32.3		
Depression							139	41.5		
Anxiety							154	46.0		
Therapy Type									$\chi^2(8, N = 810) = 78.41^{***}$	.31
PCT	132	16.3			42	14.2	85	17.7		
PE	123	15.2			41	12.3	82	17.1		
NET	128	15.8			32	9.6	96	20.0		
CPT	124	15.3			36	10.8	88	18.4		
CT-PTSD	91	11.3			37	11.1	55	11.5		
Other therapy types	212	26.1			139	41.9	73	15.8		

Note: LGBTQ = lesbian, gay, bisexual, transgender, or queer/questioning; PTSD = posttraumatic stress disorder; PCT = present-centered therapy; PE = prolonged exposure therapy; NET = narrative exposure therapy; CPT = cognitive processing therapy; CT-PTSD = cognitive therapy for PTSD.

*$p < .05$; **$p < .01$; ***$p < .001$.

clinician note in the electronic medical record system by a trained research assistant. The research assistant classified each treatment session with respect to whether the clinician adhered to the PE, CPT, CT-PTSD, NET, or PCT manuals or utilized a different non–trauma-focused or eclectic therapeutic approach. If the session content matched the treatment protocol (i.e., yes/no) and at least 80% of the sessions matched the treatment manual, the data were included in the current study as one of the EBTs. If less than 80% of the session content matched an EBT treatment protocol, the treatment was labeled as "other".

Measures

Participants completed study measures at baseline and Session 9, for a total of two assessment points. Baseline refers to the questionnaires administered during the pretreatment screening/consultation appointment. For the current study, baseline assessments were used for pretreatment dropout, and Session 9 data were used for nine-session treatment completion data, as some participants did not continue therapy for 12 sessions and ended therapy at Session 9. Nine-session treatment completion was defined as having completed at least nine sessions of therapy. This definition of treatment completion is considered an adequate dose of treatment (APA, 2017) and consistent with previous studies (Kline et al., 2020; Zoellner et al., 2019). The total number of sessions attended after the intake session was used to determine if participants were in the postinitiation dropout group or the nine-session treatment completion group. Similar designs have been used to test the impact of treatment delivery in agency settings (Dauber et al., 2015; Verberg et al., 2004).

Predisposing characteristics

A history form was used to collect information on age, gender, race/ethnicity (White, Black non-Hispanic, Latinx, Asian, other), educational attainment (less than HS, HS graduate or more), marital status (single; married or living with someone; separated, divorced, or widowed), and employment status (employed, unemployed or retired, student). Race/ethnicity was dichotomized into Latinx (1) and non-Latinx (0). Information on the following vulnerable predisposing characteristics was also collected: total number of traumas reported, type of interpersonal violence exposure (SA, DV, ST), and attitudes toward mental health treatment were also gathered.

Lifetime trauma history

The Life Events Checklist (LEC; Weathers, Blake, et al., 2013) is a 17-item scale widely used to assess exposure to various types of common traumatic events over the life course. Participants were asked to report whether they had experienced each event, with response options of *happened to me*, *witnessed it*, *learned about it*, *not sure*, and *does not apply*. If a participant endorsed any of the questions with *happened to me*, they were considered to have a lifetime history of that trauma type. For this study, we also identified a trauma count reported by each participant.

Help-seeking

The Attitudes Toward Seeking Professional Psychological Help–Short Form (ATSPPH-SF; Fischer & Farina, 1995) was used to assess attitudes toward mental health treatment. The 10-item measure uses a response set of 0 (*disagree*) to 3 (*agree*) to represent the respondent's level of agreement with questions about perceptions regarding the use of formal services for mental health needs. A total score is based on the sum of all the items; five items are reverse-scored. Higher scores represent more positive attitudes toward treatment. The scale has demonstrated good reliability with similar profiles of trauma exposure in adult samples (Ghafoori et al., 2014). In the current sample, Cronbach's alpha was .58.

Enabling factors

Two enabling characteristics, quality of life (QOL) in social relationships and environmental factors, were assessed using the World Health Organization's (WHO) Quality of Life–Brief Scale (WHOQOL-BREF; WHOQOL Group, 1998). The WHOQOL-BREF is a 26-item, self-report questionnaire that is used to assess QOL in four domains: physical health (seven items), psychological health (six items), social relationships (three items), and environmental QOL (eight items). Participants were asked to rate items on a Likert scale ranging from 1 to 5, with domain scores ranging from 4 to 20. Higher scores indicated a better QOL in a particular domain. For the current study, we identified QOL in social relationships and environmental factors only. In the current sample, Cronbach's alpha for the full scale was .85.

Need factors

The need-related variables included in the current study were PTSD, anxiety, and depressive symptom severity.

PTSD symptoms

Symptoms of PTSD were measured using the PTSD Checklist for *DSM-5* (PCL-5; Weathers, Litz, et al., 2013), a 20-item, self-report PTSD symptom inventory that has demonstrated good internal consistency, strong correlations with other PTSD scales, and high diagnostic efficiency. Participants were asked to reflect on their most distressing traumatic event and rate the extent to which they had been bothered by each symptom, scoring responses on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). Items were summed to yield a total PTSD symptom severity score, and a score of 33 or above was used to indicate probable PTSD (Blevins et al., 2015). Scores below 33 were considered to be below the clinical cutoff. In the current sample, Cronbach's alpha was .82.

Depression and anxiety

Symptoms of depression and anxiety were measured using the Brief Symptom Inventory–18 (BSI-18; Derogatis, 2001), a self-report measure of psychological distress that has been widely used as a psychiatric screening tool. Participants reported how much each symptom distressed or bothered them during the past 2 weeks, with responses scored on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). For the present study, we used only the Depression and Anxiety subscales. Raw scores were converted to *T* scores using normative data from community samples, with *T* scores of 63 or higher indicative of clinical caseness (Derogatis, 2001) and *T* scores below 63 considered to be below the clinical cutoff. In the current sample, Cronbach's alpha values for the Depression and Anxiety subscales were .87 and .89, respectively.

Dropout

Participants could drop out of treatment at any point after completing the screening/consultation appointment. Pretreatment dropout was defined as dropping out of treatment after attending a screening/consultation and/or intake appointment but not attending any scheduled therapy sessions (Kline et al., 2020). Postinitiation dropout was defined as attending between one and eight sessions of therapy, as trauma treatment guidelines recommend nine to 12 sessions to be an adequate dose of trauma-focused CBT treatments (APA, 2017). Nine-session treatment completion was defined as having completed nine sessions or more and having completed the Session 9 assessment measures.

Data analysis

Data analysis was performed using SPSS (Version 27.0). We used descriptive and inferential statistics tests to characterize the total sample and the three groups: pretreatment dropout, postinitiation dropout, and nine-session treatment completion. To address our first research question (i.e., whether traditional or vulnerable predisposing, enabling, and need variables were associated with pretreatment dropout and/or postinitiation dropout), we used hierarchical logistic regression models. In Model 1, we considered predisposing characteristics (i.e., age, gender, race/ethnicity, educational attainment, employment status, trauma type, total traumas endorsed, and attitudes toward therapy). In Model 2, we added enabling factors (i.e., social relationships and environmental quality), and need factors (i.e., PTSD, depression, and anxiety) were added to Model 3. We also used hierarchical logistic regression models to explore whether treatment type was associated with postinitiation dropout or treatment completion) To perform this analysis, we used the variables described previously in Models 1, 2, and 3 and added therapy type in Model 4. To analyze differences between baseline and Session 9 symptom levels, we performed McNemar tests to analyze the differences in the proportion of participants who screened positive for PTSD, depression, and anxiety. We used paired *t* tests to analyze the within-subject differences in total scores between baseline and Session 9. Missing data were analyzed and considered missing completely at random. However, to guarantee the power of the analysis, the inferential statistics related to the predictive analysis and symptom change between baseline and Session 9 were performed with participants without missing values.

RESULTS

Among the 1,186 participants, 31.6% ($n = 375$) dropped out before treatment initiation and comprised the pretreatment dropout group. A total of 28.0% ($n = 332$) of the sample dropped out after treatment initiation, comprising the postinitiation dropout group. These individuals completed a mean of 4.02 ($SD = 2.41$) sessions (range: 1–8). Finally, 40.4% ($n = 479$) completed at least nine sessions of therapy and comprised the nine-session treatment completion group. Table 1 shows a detailed description of the three groups, with statistically significant differences noted with regard to demographic factors, number and type of trauma experiences, and psychopathology.

Compared with the other groups, the pretreatment dropout group had a higher proportion of male participants, those from the United States, individuals who

endorsed White or Black race/ethnicity, and those who were unemployed. The postinitiation dropout group was significantly younger and had a higher proportion of participants with a high school education or less and had experienced DV compared with pretreatment dropout and treatment completion groups. The treatment completer group had a higher proportion of female participants, those who were from outside of the United States, those who were Latinx, employed participants, and those who experienced SA.

Predisposing, enabling, and need factors associated with pretreatment versus postinitiation dropout

Table 2 shows the predictive model that tested the variables associated with pretreatment dropout versus postinitiation dropout. Model 3, which included predisposing characteristics, enabling factors, and need factors, was significant, $\chi^2(15, N = 599) = 77.72$, $p < .001$, Nagelkerke $R^2 = .163$. Being unemployed, $B = -0.64$, Wald = 10.79, $p = .001$, and scoring lower on the measure of environmental QOL, $B = -0.07$, Wald = 3.69, $p = .045$, were significant predictors of pretreatment dropout. Being female, $B = 1.55$, Wald = 37.02, $p < .001$; Latinx, $B = 0.43$, Wald = 4.54, $p = .032$; and scoring higher on the measure of social relationships, $B = 0.03$, Wald = 8.88, $p = .024$, were independent predictors of postinitiation dropout.

Associations between treatment type and postinitiation dropout versus nine-session treatment completion

Table 3 shows the predictive model constructed to test the variables associated with nine-session treatment completion. Model 3, which included predisposing characteristics, enabling factors, need factors, and therapy type, was significant, $\chi^2(21, N = 678) = 97.58$, $p < .001$, Nagelkerke $R^2 = .18$. Older age, $B = 0.02$, Wald = 7.06, $p = .010$; being married, $B = 0.51$, Wald = 5.69, $p = .023$; having a higher baseline anxiety symptom score, $B = 0.02$, Wald = 5.03, $p = .03$; and receiving PCT, $B = 1.36$, Wald = 23.35, $p < .001$; PE, $B = 1.44$, Wald = 23.65, $p < .001$; NET, $B = 1.91$, Wald = 36.52, $p < .001$; CPT, $B = 1.76$, Wald = 33.38, $p < .001$; or CT-PTSD, $B = 1.09$, Wald = 12.22, $p < .001$, were independent predictors of therapy completion. Being in the "other" therapy group was not associated with nine-session therapy completion or postinitiation dropout. Higher scores in social relationships were a significant predictor of postinitiation dropout, $B = -0.05$, Wald = 4.01, $p = .045$.

Symptom change between baseline and Session 9

The results of psychopathology symptoms in the total sample at Session 9 are described in Table 1. Among participants who completed PTSD symptom assessments at baseline and Session 9 ($n = 343$), 72.6% ($n = 249$) met the clinical cutoff for PTSD at baseline, whereas 32.2% ($n = 111$) met the criteria at Session 9, $\chi^2(1, N = 339) = 22.42$, $p < .001$. There was a significant difference in PTSD symptom scores at baseline ($M = 44.46$, $SD = 17.68$) versus Session 9 ($M = 26.55$, $SD = 16.48$), $t(342) = 18.11$, $p < .001$. Among participants who completed depressive symptom assessments at baseline and Session 9 ($n = 334$), 68.6% ($n = 229$) met the criteria for depression at baseline compared with 41.6% ($n = 139$) at Session 9, $\chi^2(1, N = 321) = 42.99$, $p < .001$. There was a significant difference in depressive symptom severity at baseline ($M = 66.92$, $SD = 10.52$) versus Session 9 ($M = 59.62$, $SD = 10.52$), $t(333) = 12.68$, $p < .001$. Among participants who completed anxiety symptom questionnaires at baseline and Session 9 ($n = 334$), 68.3% ($n = 228$) screened positive for anxiety at baseline compared with 46.1% ($n = 154$) at Session 9, $\chi^2(1, N = 321) = 44.16$, $p < .001$. There was a significant difference in anxiety symptoms at baseline ($M = 67.43$, $SD = 12.44$) compared with Session 9 ($M = 59.23$, $SD = 12.52$), $t(333) = 12.22$, $p < .001$.

DISCUSSION

A major challenge in the treatment of traumatic distress is patient retention in mental health therapies (Rothbaum & McSweeney, 2019). In particular, low-income survivors of violence, often have a difficult time engaging and remaining in mental health treatment (Boccellari et al., 2007). Consequently, it is critical to understand the implications of treatment dropout and completion in this population. To this end, the current study complements previous research investigating dropout and provides preliminary evidence of factors associated with dropout and nine-session treatment completion in a diverse sample of treatment-seeking victims of interpersonal violence initiating community-based care.

Consistent with past research, study results suggest that most dropout occurs early in treatment (J. J. Davis et al., 2013; Garcia et al., 2011; Gutner et al., 2016; Kehle-Forbes et al., 2016; Mott et al., 2014; Niles et al., 2017; Walter et al., 2013). The present findings study suggest that 31.6% of participants dropped out before treatment initiation; 28.0% dropped out after treatment initiation and attended, on average, approximately four therapy sessions; and 40.4% completed a full course of PTSD treatment. This pattern of treatment attrition before or at the beginning of treatment

TABLE 2 Predisposing, enabling, and need factors associated with pretreatment versus postinitiation dropout

	Model 1			Model 2			Model 3		
Variable[a]	**Wald**	**Exp. *B***	**95% CI**	**Wald**	**Exp. *B***	**95% CI**	**Wald**	**Exp. *B***	**95% CI**
Predisposing characteristic[b]									
Age	0.00	1.00	[0.98, 1.02]	0.00	1.00	[0.98, 1.02]	0.05	1.00	[0.98, 1.02]
Gender	39.70***	4.69	[2.90, 7.58]	39.87***	4.77	[2.94, 7.74]	39.02***	4.70	[2.89, 7.65]
Latinx	3.78*	1.47	[1.00, 2.15]	3.88*	1.48	[1.00, 2.18]	4.54*	1.53	[1.04, 2.27]
Education level	1.23	0.79	[0.53, 1.19]	0.71	0.84	[0.55, 1.27]	0.83	0.83	[0.55, 1.25]
Employment status	11.08**	0.53	[0.36, 0.77]	11.38**	0.52	[0.35, 0.76]	10.79**	0.53	[0.36, 0.77]
Marital status	0.00	1.01	[0.64, 1.58]	0.01	1.03	[0.65, 1.61]	0.00	1.01	[0.64, 1.60]
Domestic violence	0.63	1.31	[0.67, 2.54]	1.20	1.46	[0.74, 2.87]	1.15	1.45	[0.73, 2.88]
Sexual assault	0.43	1.25	[0.64, 2.46]	1.21	1.47	[0.74, 2.95]	1.22	1.49	[0.74, 3.01]
Total traumas	0.00	1.00	[0.95, 1.06]	0.02	1.00	[0.95, 1.06]	0.02	1.00	[0.94, 1.06]
Attitudes toward therapy	0.15	1.01	[0.97, 1.05]	0.24	1.01	[0.97, 1.05]	0.27	1.01	[0.97, 1.05]
Enabling factors									
Social relationships				8.10*	1.08	[1.02, 1.13]	8.88*	1.08	[1.03, 1.14]
Environment				3.16	0.94	[0.87, 1.01]	3.69*	0.93	[0.86, 1.00]
Need factors									
PTSD							1.85	1.01	[1.00, 1.03]
Depression							0.11	1.00	[0.98, 1.03]
Anxiety							2.77	0.98	[0.96, 1.00]
Constant	3.47	0.28		3.68	0.21		0.80	0.35	
χ^2	$\chi^2(10,599) = 66.04$, $p < .001$			$\chi^2(12,599) = 74.45$, $p < .001$			$\chi^2(15,599) = 77.72$, $p < .001$		
Nagelkerke R^2	.139			.156			.163		

Note: PTSD = posttraumatic stress disorder.

[a]The dependent variable was pretreatment dropout, coded as 0 (posttreatment dropout = 1). [b]Independent variables: gender: male = 0, female = 1; ethnicity: other = 0, Latinx = 1; educational attainment: less than high school = 0, high school graduate or more = 1; employment status: employed or student = 0, unemployed/retired = 1; marital status: single or separated/divorced/widowed = 0, married or living with someone = 1; trauma type: domestic violence or sexual assault = 0, sex trafficking = 1.

*$p < .05$; **$p < .01$; ***$p < .001$.

TABLE 3 Type of treatment associated with postinitiation dropout versus nine-session treatment completion group

	Model 1			Model 2			Model 3			Model 4		
Variable[a]	**Wald**	**Exp. *B***	**95% CI**	**Wald**	**Exp. *B***	**95% CI**	**Wald**	**Exp. *B***	**95% CI**	**Wald**	**Exp. *B***	**95% CI**
Predisposing characteristics[b]												
Age	11.97***	1.03	[1.01, 1.05]	11.12**	1.03	[1.01, 1.05]	9.02**	1.03	[1.01, 1.04]	7.06**	1.02	[1.01, 1.04]
Gender	0.27	1.15	[0.68, 1.94]	0.13	1.10	[0.65, 1.87]	0.08	1.08	[0.63, 1.84]	0.13	1.11	[0.63, 1.97]
Latinx	0.00	1.01	[0.71, 1.45]	0.04	1.04	[0.72, 1.49]	0.00	1.01	[0.70, 1.45]	0.09	0.94	[0.64, 1.39]
Educational attainment	3.15	1.43	[0.96, 2.12]	2.74	1.40	[0.94, 2.07]	2.98	1.42	[0.95, 2.11]	2.55	1.41	[0.93, 2.13]
Employment status	5.17*	0.66	[0.47, 0.95]	4.22*	0.69	[0.48, 0.98]	3.55	0.71	[0.49, 1.01]	2.43	0.74	[0.50, 1.08]
Marital status	3.95*	1.49	[1.01, 2.21]	4.15*	1.51	[1.02, 2.24]	4.66*	1.55	[1.04, 2.31]	5.69*	1.67	[1.10, 2.53]
Domestic violence	1.76	0.64	[0.33, 1.24]	2.07	0.61	[0.31, 1.20]	2.25	0.59	[0.30, 1.17]	1.77	0.61	[0.30, 1.26]
Sexual assault	0.27	0.84	[0.43, 1.63]	0.52	0.78	[0.40, 1.53]	0.50	0.78	[0.39, 1.55]	1.23	0.66	[0.32, 1.37]
Total traumas	0.20	0.99	[0.94, 1.04]	0.07	0.99	[0.94, 1.05]	0.04	0.99	[0.94, 1.05]	0.15	1.01	[0.95, 1.08]
Attitudes toward therapy	0.11	0.99	[0.96, 1.03]	0.24	0.99	[0.96, 1.03]	0.43	0.99	[0.95, 1.02]	2.14	0.97	[0.94, 1.01]
Enabling factors												
Social relationships			2.15	0.97	[0.92, 1.01]	3.51	0.95	[0.91, 1.00]	4.01*	0.95	[0.90, 1.00]	
Environment			3.42*	1.07	[1.00, 1.14]	3.67*	1.07	[1.00, 1.15]	2.92	1.07	[0.99, 1.15]	

(Continues)

TABLE 3 (Continued)

Variable[a]	Model 1			Model 2			Model 3			Model 4		
	Wald	Exp. *B*	95% CI	Wald	Exp. *B*	95% CI	Wald	Exp. *B*	95% CI	Wald	Exp. *B*	95% CI
Need factors												
PTSD						0.56	1.00	[0.98, 1.01]	0.47	1.00	[0.98, 1.01]	
Depression						2.87	0.98	[0.96, 1.00]	2.38	0.98	[0.96, 1.01]	
Anxiety						4.98*	1.02	[1.00, 1.05]	5.03*	1.03	[1.00, 1.05]	
Therapy type												
PCT										23.35***	3.90	[2.24, 6.77]
PE										23.65***	4.20	[2.36, 7.49]
NET										36.52***	6.73	[3.63, 12.50]
CPT										33.38***	5.82	[3.20, 10.58]
CT-PTSD										12.22***	2.98	[1.62, 5.49]
Other therapy types										1.85	1.65	[0.80, 3.38]
Constant	1.28	0.47		1.69	0.37		0.43	0.50		1.71	0.23	
χ^2	χ^2 (10,678) = 26.68, p = .003			χ^2 (12,678) = 30.61, p = .002			χ^2 (15,678) = 36.19, p = .002			χ^2 (21,678) = 97.54, p < .001		
Nagelkerke R^2	.052			.060			.070			.181		

Note: PTSD = posttraumatic stress disorder; PCT = present centered therapy; PE = prolonged exposure therapy; NET = narrative exposure therapy; CPT = cognitive processing therapy; CT-PTSD = cognitive therapy for PTSD.

[a]Dependent variable: postinitiation dropout = 0, therapy initiation = 1. [b]Independent variables: gender: male = 0, female = 1; ethnicity: other = 0; Latinx = 1; educational attainment: less than high school = 0, high school graduate or more = 1; employment status: employed or student = 0, unemployed/retired = 1; marital status: single or separated/divorced/widowed = 0, married or living with someone = 1; trauma type: domestic violence or sexual assault = 0, sex trafficking = 1; therapy type: PCT: no = 0, yes = 1; PE: no = 0, yes = 1; NET: no = 0, yes = 1; CPT: no = 0, yes = 1; CT-PTSD: no = 0, yes = 1; other therapy types: no = 0, yes = 1

*p < .05; **p < .01; ***p < .001.

is consistent with prior research (e.g., Imel et al., 2013). The findings suggest that being unemployed and scoring lower measures of environmental QOL were predictive of pretreatment dropout, and self-identifying as female and Latinx and scoring higher on a measure of social relationships were predictive of postinitiation dropout. These results are consistent with research demonstrating that impoverished individuals who live in communities exposed to violence and have less access to basic needs, including employment and safety, do not routinely access or engage in mental health care (Alcantará et al., 2013; Gillespie et al., 2009). Most participants who dropped out of the current study were Latina women who experienced DV. Unemployment could have impacted the ability to provide basic needs for family members, which may have lowered these individuals' prioritization of personal mental health needs (Boushey, 2009). It is challenging to disentangle the finding that lower environmental QOL was associated with higher pretreatment dropout, whereas higher social relationship QOL was associated with higher postinitiation dropout. In the wider mental health literature, social support has been found to be associated with delaying or stopping mental health services (Stein et al., 2003). Perhaps for the racially or ethnically diverse, low-income, victims of interpersonal violence in the current sample, higher perceived social support coupled with factors such as unsafe living conditions and a lack of income contributed to postinitiation dropout for some participants. It is also possible that multiple factors not measured in the current study influenced both pretreatment and postinitiation dropout, including various life demands (i.e., child care), stigma, shame, and possible initial reactions to the clinician and clinical setting. Some participants may have also dropped out due to spontaneous improvements in mental health (Szafranski et al., 2019). However, the current study did not assess mental health at the point of dropout. Future research that includes factors that unfold during the course of therapy is necessary to understand the complex associations between the impact of community and social support and reasons for treatment dropout.

We explored whether treatment type was associated with postinitiation dropout or nine-session treatment completion in this sample of victims of interpersonal violence. Several evidence-based PTSD treatments, including PE, CPT, and CT-PTSD, all of which past research has shown to have notably high dropout rates (Imel et al., 2013; Kline et al., 2018), were examined along with PTSD treatments such as NET, PCT, and other non–trauma-focused or eclectic treatments. We found that all the EBTs for PTSD endorsed by the APA clinical practice guidelines that had a trauma focus, as well as PCT, which does not have a trauma focus, were predictive of therapy completion as compared to other non–trauma-focused or eclectic treatments. Moreover, factors such as being older, being married, and having higher baseline levels of anxiety symptoms were associated with nine-session treatment completion. Only a small number of meta-analyses to date have compared dropout rates across different PTSD treatment modalities (Bradley et al., 2005; Goetter et al., 2015; Hembree et al., 2003; Imel et al., 2013). The present results are consistent with a previous meta-analysis that suggested differences in trauma focus between treatments in the same study did not predict dropout (Imel et al., 2013). This may suggest that confronting a trauma memory during therapy does not result in higher dropout rates among treatment-seeking victims of interpersonal violence. Moreover, we did not find that eclectic or non–trauma-focused approaches to therapy were associated with treatment completion. This is an important finding considering data suggesting that therapist concerns about tolerability and dropout are among the reasons some therapists choose not to offer trauma-focused therapies (Becker et al., 2004).

The current study also investigated differences in symptoms at baseline and Session 9 among treatment-seeking victims of interpersonal violence. Significant differences were found with regard to symptoms of PTSD, depression, and anxiety. These findings suggest that most individuals who completed at least nine treatment sessions reported symptom improvement. This is consistent with literature indicating that trauma-focused treatments are effective for reducing symptoms of PTSD and other trauma-related distress (Rauch et al., 2012). These results add to the literature on survivors of interpersonal violence by suggesting that if this population can engage in and attend at least nine sessions of treatment, symptoms may improve. Additional research is necessary to further understand factors associated with treatment engagement among survivors of interpersonal violence.

Consistent with past studies, we found that a higher number of reported lifetime traumatic events was associated with higher levels of PTSD, depressive, and anxiety symptoms at treatment completion. Older age, higher educational attainment, and identifying SA as the primary trauma were also associated with higher PTSD symptom levels at treatment completion. Considering that participants in this sample experienced an average of approximately five traumatic events before starting treatment, the present results highlight the importance of early assessment of individuals who have experienced interpersonal violence. Although little progress has been made in preventing trauma survivors from developing PTSD, the early treatment of PTSD has been associated

with decreased long-term impairment (Kearns et al., 2012). We also found that higher environmental QOL was associated with lower PTSD, depressive, and anxiety symptoms at treatment completion. This is consistent with research suggesting associations between a perceived facilitative environment and improved mental health outcomes, including PTSD (Aragona et al., 2012), among treatment-seeking individuals. An environment that allows access to safety and resources may aid in promoting psychological well-being. The associations between trauma exposure and mental health among survivors of interpersonal violence are complex, and future research is necessary to further understand the role of the environment in this population

Several study characteristics limit the interpretation of the findings. The data available did not include important variables that may have been related to dropout and treatment completion, such as comorbid diagnoses, the time elapsed between the screening/consultation appointment and first session, client treatment readiness, details of the therapeutic relationship, the severity of interpersonal violence, the recency of the last traumatic experience, and objective measures of adherence to EBT manuals. The current study did not examine whether certain treatments were delivered more often by certain providers, and this is important considering that a therapist's affinity for a certain therapeutic model may serve as a confounding variable that can influence therapy outcome. We also did not assess how long participants took to reach Session 9. Additionally, the screening/consultation appointments were generally not conducted by the same individual who ultimately served as the participant's clinician. Psychiatric issues were assessed by self-report screening instruments rather than a diagnostic interview, and participants were not randomized to treatments, which may have confounded the results. The strengths of the present study include the variety of different treatment conditions and a large sample of participants.

The present findings provide preliminary evidence that survivors of interpersonal violence who seek therapy tend to drop out early during treatment, but most who complete treatment attain symptom reduction. Considering the importance of retention in treatment for short- and long-term gains, it is essential to understand the risk factors for dropout and develop strategies to improve treatment engagement. The findings suggest that environmental QOL, including access to basic needs (e.g., safety, food, shelter, and employment), may be important to address to prevent treatment dropout. Case management may play an integral part in assisting patients with access to these types of basic needs, ultimately decreasing dropout and improving mental health outcomes.

OPEN PRACTICES STATEMENT

The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available on a permanent third-party archive. Requests for the data or materials can be sent via email to the lead author at: Bita.G hafoori@csulb.edu

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