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The Impact of Patient Barriers and Organizational Factors on Treatment Dropout in Posttraumatic Stress Disorder Specialty Care

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Many veterans who begin evidence-based therapies for posttraumatic stress disorder (PTSD) discontinue care prior to treatment completion. Examination of individual-level factors as predictors of dropout has been inconclusive, and it may be important to examine organizational factors as predictors. The present study investigates the role of both individual variables (i.e., gender identity, age, racial background, ethnicity, perceived barriers to treatment) and organizational variables (i.e., time from evaluation to individual treatment, number of preparatory sessions, and inclusion of family in an informational session) in predicting treatment discontinuation. Participants consisted of 557 veterans who presented to a Veterans Affairs PTSD specialty clinic and began trauma-focused treatment (86.89% male, 50.99% White, 47.94% Operation Iraqi Freedom/Operation Enduring Freedom). Most veterans reported at least one barrier to treatment (85.10%). A total of 53.32% of veterans completed a course of evidence-based trauma-focused therapy, while 46.68% discontinued. In a series of logistic regression models, older age significantly predicted treatment completion ($OR = 1.017$, $p = .007$), and longer time from evaluation to treatment initiation significantly predicted treatment discontinuation ($OR = 0.992$, $p = .045$). Findings highlight older age as a reliable predictor of treatment completion among veterans. Findings add to the existing literature by demonstrating that improving organizational-level variables (i.e., reducing wait time from evaluation to treatment initiation) may be particularly helpful in facilitating treatment completion across demographic groups, even in the presence of barriers to treatment.

Public Significance Statement
This study investigated the impact of individual and organizational factors on dropout from trauma-focused treatments for posttraumatic stress disorder in a clinical setting. Treatment dropout rates are a significant concern, and identifying influences that are amenable to intervention is needed to enhance treatment effectiveness. These results underscore the importance of ensuring timely initiation of treatment within the treatment setting to reduce the likelihood of dropout.

Keywords: treatment dropout, treatment discontinuation, organizational factors, posttraumatic stress disorder, barriers

Several clinical practice guidelines (American Psychological Association, 2017; National Institute for Health and Care Excellence, 2018; Department of Veterans Affairs/Department of Defense, 2023) have confirmed the strength of evidence supporting trauma-focused psychotherapies for the treatment of posttraumatic stress disorder (PTSD). Despite the demonstrated efficacy of these treatments, reported rates of treatment discontinuation (i.e., dropout) raise concerns regarding the provision of these treatments in clinical care. In particular, a systematic review of randomized controlled trials of only treatments recommended by clinical practice guidelines found

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an average dropout rate of 20.9% (Varker et al., 2021), and others have found that dropout is higher in clinical than in research samples (Goetter et al., 2015). The issue of dropout from treatment is complex, and our understanding is dependent on clearly defining the concept of dropout and identifying factors impacting treatment completion. There are currently discrepancies in our understanding of the impact of dropout, as some have argued that discontinuing a treatment suggests issues with real-word feasibility of certain treatments (Najavits, 2015), while others note that discontinuation may not necessarily represent a negative outcome (Szafranski et al., 2017) and may possibly indicate that some discontinuation is due to reaching "good-enough" results (Falkenström et al., 2016; Larsen et al., 2023). Finally, the results from both randomized controlled trials and evaluations in clinical practice suggest a variety of factors that may influence retention in treatment and dropout, warranting continued investigation, particularly to identify factors beyond individual-level and demographic predictors.

Investigations of predictors of treatment dropout across various populations have yielded primarily mixed findings. To date, the only consistent predictor of dropout is an individual-level variable: younger age (which is of course nonmodifiable; Goetter et al., 2015; Imel et al., 2013; Kehle-Forbes et al., 2016; Maguen et al., 2019). Nearly every other predictor variable has mixed findings: population (civilian vs. military), treatment modality (group vs. individual; in-person vs. telehealth), number of sessions, presence of comorbidities, and importantly trauma-focused versus non-trauma-focused treatment (Edwards-Stewart et al., 2021; Goetter et al., 2015; Imel et al., 2013; Lewis et al., 2020; Varker et al., 2021).

Recently, Rozek et al. (2023) summarized veteran-reported barriers that may impact engagement in PTSD specialty care including personal, logistical, and institutional domains. They found the majority of veterans reported experiencing multiple barriers, with the most commonly reported including difficulty interacting with others, difficulty being in public, work, and finances. The study included only veterans who were seeking treatment and had attended an initial visit but had not yet started treatment, and therefore, conclusions regarding the impact of barriers on dropout were not evaluated.

Although much previous focus has been directed to patient-level and treatment characteristics as possible barriers to treatment, this focus is likely to miss other levels of analysis that significantly influence treatment dropout, including the setting in which treatment is provided. The organizational context may also have an impact on treatment dropout since context has been identified as key to successful integration and sustainability of access to trauma-focused treatments for PTSD in clinical practice (Sayer et al., 2017). For instance, in one study, veterans endorsed several organizational barriers to treatment access, including bureaucratic inefficiencies and delays in obtaining care, negative experiences with staff, discomfort with the treatment environment, and difficulty navigating the system (Bovin et al., 2019).

Certain aspects of program design and policy may also influence engagement and retention in treatment. For instance, directors of Veterans Health Administration (VHA) PTSD specialty programs (Hamblen et al., 2015) shared that in almost all cases, their programs were designed to include clinical activities to "prepare" veterans for treatment (typically groups; ranging from 1 to 12 sessions) to improve treatment engagement and retention. Some of the briefer efforts focused on orienting people to services and providing education. Interestingly, there is little evidence supporting these preparatory activities, and some have argued that such preparatory activities may discourage patients by delaying treatment that gets to the heart of their concerns (De Jongh et al., 2016).

Additional programmatic efforts to improve both engagement and retention center on activities including the family in the treatment process, as this involvement has shown a potential positive impact. For instance, in interviews, veterans screening positive for PTSD indicated that input from family and friends impacted their decision to initiate treatment (Hundt et al., 2018). Likewise, a large survey ($N = 7{,}645$) found that the odds of initiating mental health care were greater for veterans with PTSD who were encouraged by friends and family (Spoont et al., 2014). There is also some indication that family support can influence staying in treatment. For instance, Hundt et al. (2017) interviewed treatment completers who indicated adherence was encouraged by, among other things, commitment to finishing and therapist and family support. Meis et al. (2019) interviewed dyads of veterans and their loved ones about specific efforts to encourage the veteran and found that veterans whose loved ones encouraged them to stay in treatment and face distress were twice as likely to remain in treatment. Likewise, in a study of veteran PTSD treatment completers and noncompleters (Kehle-Forbes et al., 2022), those who completed treatment were more likely to have friends and family who provided specific help to them in getting to treatment, staying engaged in, and ultimately completing treatment. On the other hand, those who did not complete treatment had family or friends who offered general emotional support but not necessarily support to complete treatment. Results from a recent randomized controlled trial (Thompson-Hollands et al., 2021) demonstrated that veterans whose family members received a brief family intervention (adjunct to trauma-focused treatment) had a lower dropout rate in trauma-focused treatment (20%) compared to those without the family intervention (40%) and may serve as an example of an approach to integrate into clinical settings. Taken together, programmatic services designed to enhance family involvement may play an important role in improving engagement in care.

Finally, another important organizational factor may be delays in care. Mental health programs within the VHA have standards for accessing care (Veteran Affairs [VA], 2023a, 2023b), which include the expectation of evaluation and treatment planning prior to treatment initiation. While there are clear expectations regarding the timing of this evaluation following referral to specialty mental health (i.e., PTSD specialty care), the timing between evaluation and when treatment is initiated may be influenced by factors such as the availability of resources to meet veteran preferences (i.e., treatment type, provider characteristics, logistical issues). To date, organizational factors have been examined in a limited way regarding treatment initiation and not at all regarding treatment dropout.

Purpose of the Present Study

The purpose of the present study was to examine how factors at both the individual and organizational levels impact treatment dropout from individual evidence-based psychotherapy (EBPs) for PTSD in a clinical sample of veterans. Specifically, the study aimed to evaluate whether individual-level demographics and barriers predicted treatment completion. A second aim of the study was to evaluate the impact of organizational factors, specifically timing of treatment (i.e., time from evaluation to individual treatment),

number of preparatory sessions, and inclusion of family in treatment planning on treatment completion.

Method

Study Design

The present study is an archival review of deidentified clinical data collected as part of routine clinical care, outcome monitoring, and quality improvement in a PTSD Clinical Team (PCT) at a large VA hospital. It was approved by the Edward J. Hines Jr. Hospital Research and Development Committee as a retrospective study, and it was granted expedited review by the Hines Institutional Review Board.

Participants and Procedure

Data were collected from a total of 1,112 veterans who presented to the Hines VA PCT between May 2014 and March 2020. The Hines VA PCT is a specialty outpatient PTSD program focused on providing time-limited, evidence-based treatment for PTSD. All veterans who presented to the PCT reported experiencing at least one lifetime traumatic event consistent with the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.) PTSD Criterion A (American Psychiatric Association, 2022), reported clinically significant trauma-related symptoms, completed self-report measures, and participated in treatment planning. Data from self-report measures and clinician reports of treatment engagement were entered into an archival clinical database.

The Hines VA PCT clinic enrollment process underwent two distinct procedural changes during the study's time period from 2014 to 2020. Each procedural change was implemented in order to best facilitate access to PTSD treatment, consistent with the VA/Department of Defense Clinical Practice Guidelines (Department of Veterans Affairs/Department of Defense, 2023). Across both enrollment phases, all veterans who presented to the clinic received introductory psychoeducational information about PTSD symptoms and treatment options available in the clinic. Veterans then met individually with a provider to engage in further evaluation focused on background information, diagnostic assessment including the Clinician-Administered PTSD Scale for the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; Weathers et al., 2013), self-report symptom measures, and treatment planning. During the treatment planning discussion, the recovery model was defined, treatment options were reviewed, and the discussion focused on shared decision making (Elwyn et al., 2012) to facilitate treatment selection and enrollment. The two enrollment phases differed in the modality of initial psychoeducation and in the treatment options offered. During the first enrollment phase, from 2014 to 2018, veterans received psychoeducation in a group format and then proceeded to complete individual evaluation, treatment planning, and shared decision-making discussions. Treatment options during this phase included non-trauma-focused skills-based groups (e.g., anger management, coping skills, emotion regulation) and individual EBPs for PTSD (e.g., cognitive processing therapy, prolonged exposure). Veterans could attend up to three groups after which the expectation was to begin an individual EBP or be referred to another program for preferred clinical services. During the second enrollment phase, from 2018 to 2020, veterans completed all psychoeducation, evaluation, treatment planning, and shared decision making individually with a provider. Treatment options during this phase included referral to another VA mental health clinic for non-trauma-focused interventions or enrollment in the PCT for individual EBPs for PTSD. Veterans were offered treatment consistent with their presenting symptoms and were then scheduled for treatment sessions based on their preferred treatment approach. During both phases, the clinic expected all clinicians to offer all veterans requesting individual treatment the option for a family pretreatment session that included psychoeducation regarding the treatment offered and recommendations for how best to support the veteran during their episode of care. Additionally, during both phases, the expectation was that providers would have up to approximately four individual pretreatment sessions (not including the family session) to prepare for individual treatment. Preparation session content was not prescribed but typically included rapport building, additional evaluation of information pertinent to tailoring the treatment plan, and addressing any barriers to treatment engagement. If the veteran was not willing to initiate treatment after four sessions, providers could extend to more sessions; however, the majority provided less rather than more pretreatment sessions.

The final sample consisted of 557 veterans across both enrollment phases who completed psychoeducation, evaluation, and shared decision making and went on to initiate a PTSD EBP. Preliminary chi-squared analyses showed no significant differences between phases across gender, racial background, experience of at least one barrier to treatment, family information session attendance, or treatment completion. A series of *t* tests showed no significant differences between phases across age, total number of barriers reported, or number of pretreatment sessions. However, *t* tests showed a significant difference between phases on the number of days from evaluation to treatment initiation, $t(297.74) = 8.537$, $p = .000$, with veterans in the first phase waiting more days on average to begin individual treatment ($M = 41.028$) than veterans in the second phase ($M = 22.563$). The differences in wait between the phases are likely due to the option to engage in group treatments prior to individual EBP in Phase 1. Although veterans in Phase 2 waited fewer days on average to begin individual treatment, there was still a wait time present in both phases, and factors other than phase (e.g., veteran availability and treatment preferences, clinic staffing) may have also impacted wait time. Therefore, we decided to retain the variable of time from evaluation to treatment initiation across both phases. Given the similarities in the content covered during each phase's initial session and the lack of significant differences between phases on all other variables in the model, we combined data from both phases into the final sample. Participants reported an average age of 48.55 ($SD = 15.08$) and were predominantly male ($n = 484$, 86.89%). Most participants identified as White American ($n = 284$, 50.99%), and most served during Operation Iraqi Freedom, Operation Enduring Freedom, and/or Operation New Dawn ($n = 267$, 47.94%). Demographic information for the full sample is presented in Table 1.

Measures

As part of a national program evaluation, the Northeast Program Evaluation Center collects the PTSD Status Form for all veterans with at least one visit to a PTSD specialty program. This form includes self-reported information about age, gender identification, racial background, ethnicity, service era, and perceived barriers to accessing care. Veterans self-reported their age and selected their gender identification, racial background, ethnic background, and

Table 1
Demographic Data

Demographic	*N*	%
Age	*M* = 48.55, *SD* = 15.08	Range = 23–86
Gender		
Male	484	86.89
Female	73	13.11
Racial background		
White	284	50.99
Black or African American	148	26.57
Hispanic or Latinx White	83	14.90
Hispanic or Latinx Black	12	2.15
Native American	6	1.08
Asian	11	1.97
Pacific Islander	3	.54
Unknown/other identified race	10	1.80
Service era		
Pre-Vietnam	5	.90
Vietnam	128	22.98
Post-Vietnam	63	11.31
Persian Gulf	94	16.88
OEF/OIF/OND	267	47.94

Note. *N* = 557. OEF/OIF/OND = Operation Enduring Freedom, Operation Iraqi Freedom, and/or Operation New Dawn.

service era from categories listed on the form. Categories included an option to select "other" for veterans whose identity variables were not described within the categories provided. The barriers-to-care options included none, work, school, volunteer work schedule, childcare, custody issues, concerns about finances, concerns about employment, concerns about housing, transportation difficulties, mistrust of the VHA, not getting along with family, not getting along with friends, difficulty getting out of bed, difficulty being in public, difficulty interacting with others, and criminal justice concerns. Veterans were asked to identify all barrier(s) to treatment that were applicable for them, and the total number of barriers for each veteran was calculated.

The program collected treatment information from clinical staff in order to track treatment progress from initial evaluation through completion. The provider completed a brief form summarizing key treatment information including initial evaluation date, number of preparatory treatment sessions, family involvement, date treatment initiated (attended the first session), date treatment completed or was discontinued, and treatment completion status. The number of preparatory sessions prior to beginning an EBP (e.g., prolonged exposure, cognitive processing therapy) was recorded. Family involvement during pretreatment was defined as whether or not family members attended an introductory psychoeducational session. Time from evaluation to the initial treatment session was calculated from the dates provided and recorded as a number of calendar days. Finally, treatment completion status was recorded as either (a) treatment discontinuation prior to treatment completion or (b) treatment completion. The treatment completion status was indicated by the provider, along with the number of sessions completed. Variable treatment schedules were optional within the program, and therefore, veterans with fewer or more treatment sessions than standard protocols (early or late completion) could be submitted as treatment completers. Treatment variables for the full sample are presented in Table 2.

Table 2
Barriers and Treatment Variables

Barrier and treatment variable	*N*	%
Barriers to treatment		
Difficulty with people	275	49.37
Difficulty in public	217	38.96
Work barriers	198	35.55
Financial barriers	164	29.44
Difficulty getting out of bed	154	27.65
Family problems	142	25.49
Employment barriers	114	20.47
Barriers related to mistrust	94	16.88
Childcare barriers	93	16.70
Friend problems	92	16.52
Transportation barriers	78	14.00
Housing barriers	63	11.31
School barriers	36	6.46
Court barriers	33	5.92
Volunteering barriers	19	3.41
Custody barriers	13	2.33
Endorsement of at least one barrier	474	85.10
Average number of barriers endorsed	*M* = 3.21, *SD* = 2.55	Range = 0–12
Pretreatment variables		
Number of preparatory sessions	*M* = 0.86, *SD* = 1.30	Range = 0–9
Family attended psychoeducational session	113	20.29
Time from evaluation to initiation (days)	*M* = 28.50, *SD* = 23.90	Range = 0–139
Treatment completion status variables		
Started but did not complete TFT	260	46.68
Completed TFT	297	53.32

Note. *N* = 557. TFT = trauma-focused treatment.

Data Analysis

Preliminary analyses included calculating frequencies and descriptive information for demographic variables, barriers, and treatment variables. A series of logistical regression models was then fit to examine the study hypotheses. Missing data were examined and handled by listwise deletion. Models were fit to all available participant data across the dichotomous treatment completion outcome variable for all participants who began treatment in the PCT ($n = 557$).

A series of three models were fit to the data. First, a null model (Model 1) was fit in order to assess the overall variation in treatment completion status for all participants who began treatment in the PCT. Next, a model with individual-level predictors entered simultaneously (i.e., gender, age, racial background, and total number of barriers) was fit in order to assess the impact of demographic factors and perceived barriers on treatment completion status (Model 2). Last, a model with all individual predictors and organizational predictors (i.e., time from evaluation to treatment initiation, number of pretreatment sessions, and family inclusion) entered simultaneously was fit in order to assess the impact of demographic variables, perceived barriers, and organizational factors on treatment completion status (Model 3).

For these analyses, the gender variable had two levels (i.e., male, female). The racial background variable had eight levels, as specified on the demographic form (i.e., White American, Black or African American, White Hispanic or Latine, Black Hispanic or Afro-Latine, Native American, Asian or Asian American, Pacific Islander, and Other Unknown). The White American category included veterans who identified as White and did not identify as Hispanic or Latine. The Black or African American category included veterans who identified as Black or African American and did not identify as Hispanic or Latine. The White Hispanic or Latine category included veterans who identified as White and reported Hispanic or Latine background. The Black Hispanic or Afro-Latine category included veterans who identified as Black and reported Hispanic or Afro-Latine background. The Native American, Asian or Asian American, and Pacific Islander categories included veterans who identified as members of these racial and sociocultural groups. Finally, the "other" category included veterans whose racial and ethnic identity was not described by any of the categories listed on the demographic form. Veterans selected a single category that best described their identity, as the form did not allow for multiple categories to be selected. Categories were not combined, as each category was conceptualized as describing a unique identity variable. The family inclusion variable had two levels (i.e., attended the family psychoeducational session, did not attend the family psychoeducational session). Age, total barriers, days from evaluation to treatment initiation, and number of pretreatment sessions were continuous variables. All analyses were conducted using R 4.3.1.

Results

Preliminary analyses indicated that a majority of veterans presenting for trauma-focused treatment endorsed at least one barrier to treatment ($n = 474$, 85.10%). On average, veterans endorsed 3.21 barriers ($SD = 2.55$). The most frequently endorsed barriers were difficulty with people ($n = 275$, 49.37%), difficulty in public ($n = 217$, 38.96%), and work difficulties ($n = 198$, 35.55%). Barriers were conceptualized as unique from one another and were therefore not grouped into categories for the present analyses. After completing an initial evaluation, veterans waited an average of 28.50 days ($SD = 23.90$, range = 0–139) until treatment initiation and attended an average of 0.86 pretreatment sessions ($SD = 1.30$, range = 0–9). A total of 113 veterans (20.29%) had family members who participated in a family psychoeducational session. A total of 297 veterans (53.32%) completed a course of EBP, while 260 (46.68%) discontinued treatment prior to completion.

A series of three logistical regression models was fit to the data in order to examine predictors of treatment completion within the sample. First, a null model was fit to the data (Model 1; Akaike information criterion [AIC] = 771.71, McFadden's pseudo-R^2 = 0.00). Next, individual-level predictors including gender, age, racial background, and total number of barriers were added to the model (Model 2). Overall model fit indices indicate that individual-level predictors accounted for significant variance in treatment completion status, $\chi^2(10, N = 557) = 35.94$, $p = .000086$; AIC = 755.77; McFadden's pseudo-R^2 = 0.047, and improved model fit when compared with the null model, based on reductions in residual deviance and AIC, and increase in McFadden's pseudo-R^2. Age emerged as a significant predictor, with older age predicting a greater likelihood of treatment completion ($OR = 1.017$, $p = .009$).

Next, a third model was fit to the data (Model 3). This model included individual-level predictors and added organizational-level predictors including time from evaluation to treatment initiation, number of pretreatment sessions, and family participation in a psychoeducational session. The third model accounted for significant variance in treatment completion status, $\chi^2(13, N = 557) = 46.17$, $p = .000013$; AIC = 751.54; McFadden's pseudo-$R^2 = 0.060$, and improved model fit when compared with both the null and the individual-level model, based on further reductions in residual deviance and AIC and an increase in McFadden's pseudo-R^2. Age remained a significant predictor, with older age predicting a greater likelihood of treatment completion ($OR = 1.017$, $p = .007$). Time from evaluation to treatment initiation also emerged as a significant predictor, with longer wait time predicting a lower likelihood of treatment completion ($OR = 0.992$, $p = .045$). Number of pretreatment sessions approached but did not reach significance, with larger number of pretreatment sessions predicting a lower likelihood of treatment completion ($OR = 0.887$, $p = .086$). Data from all logistic models are presented in Table 3.

Discussion

Treatment discontinuation is a clinically important phenomenon, yet one that clinicians and researchers still struggle to predict. This evaluation of clinical data found that, although many veterans reported multiple barriers to treatment, such barriers as a whole did not predict whether they would complete treatment. Indeed, (older) age was the only individual-level factor to predict treatment completion in this sample. However, when organization-level factors were added to the model, longer wait times from evaluation to treatment initiation also predicted a greater likelihood of treatment discontinuation. Number of pretreatment sessions only approached significance, and family participation did not emerge as significant.

Based on these findings, working to identify and address factors contributing to the wait time between evaluation and treatment may be the most impactful organizational change that clinics can make in order to support treatment completion. There are likely both

Table 3
Logistic Models

Model	Estimate	*SE*	z	*p*	Odds ratio	95% CI
Null model (Model 1)						
Intercept	0.133	0.085	1.567	.117	1.142	[0.967, 1.349]
Individual model (Model 2)						
Intercept	−0.472	0.373	−1.263	.207	0.624	[0.300, 1.297]
Female	0.228	0.266	0.855	.393	1.256	[0.745, 2.115]
Age	0.016	0.006	2.619	.009**	1.017	[1.004, 1.029]
Black	−0.144	0.209	−0.686	.492	0.866	[0.575, 1.305]
Latinx White	−0.273	0.260	−1.050	.294	0.761	[0.457, 1.268]
Latinx Black	−0.804	0.630	−1.278	.201	0.447	[0.130, 1.537]
Native American	0.610	0.897	0.680	.496	1.840	[0.317, 10.667]
Asian	16.512	703.761	0.023	.981	14810729.419	[−1362.835, 1395.856]
Pacific Islander	16.386	1371.42	0.012	.990	13066336.784	[−2671.557, 2704.328]
Unknown racial background	0.412	0.663	−1.620	.105	1.509	[0.411, 5.537]
Total barriers	−0.058	0.036	−1.620	.105	0.944	[0.879, 1.012]
Full model (Model 3)						
Intercept	−0.331	0.392	−0.846	.397	0.718	[−1.099, 0.436]
Female	0.291	0.271	1.067	.282	1.338	[−0.239, 8.22]
Age	0.017	0.006	2.700	.007**	1.017	[0.004, 0.030]
Black	−0.088	0.213	−0.411	.681	0.916	[−0.505, 0.330]
Latinx White	−0.237	0.264	−0.898	.369	0.789	[−0.756, 0.281]
Latinx Black	−0.685	0.634	−1.081	.280	0.504	[−1.927, 0.557]
Native American	0.580	0.925	0.627	.531	1.786	[−1.234, 2.393]
Asian	16.563	696.466	0.024	.981	15599262.283	[−1348.486, 1381.612]
Pacific Islander	16.418	1376.76	0.012	.990	13491266.172	[−2681.981, 2714.816]
Unknown racial background	0.448	0.674	0.664	.506	1.565	[−0.873, 1.769]
Total barriers	−0.043	0.036	−1.183	.237	0.958	[−0.114, 0.028]
Time from evaluation to treatment	−0.008	0.004	−2.005	.045*	0.992	[−0.015, 0.000]
Pretreatment sessions	−0.120	0.070	−1.720	.086	0.887	[−0.256, 0.017]
Family information session	0.328	0.226	1.453	.146	1.389	[−0.114, 0.771]

Note. Reference categories for all analyses were male gender, White racial background, no barriers, and no family information session. Age, time from evaluation to treatment initiation, and number of pretreatment sessions were continuous variables without a reference category. *SE* = standard error; CI = confidence interval.
* $p < .05$. ** $p < .01$.

organizational and veteran-specific factors that may contribute to the wait, and they could also interact. For example, a veteran's wait for treatment will likely be increased the more specific their preferences for treatment (i.e., provider gender, treatment type), as well as dependent upon the availability of staff within the clinic to meet those needs. The course of a veteran's treatment within the program may also have an impact on wait. Programs designed to provide evidence-based care for PTSD may offer a variety of treatments in addition to individual EBPs, which may also impact wait. If the program goal is to provide individual EBPs, the addition of other services prior to an EBP may have an impact on the completion of the intervention targeting PTSD. Our findings are consistent with Kline et al. (2024), whose recent clinical trial results also show that more time from assessment to treatment initiation is related to dropout. These results imply that once a veteran has made the decision to initiate care, there may be an optimal window within which to start it, after which perhaps motivation wanes or other barriers become more prominent.

There have been limited studies on the related question of whether providing pretreatment sessions before a PTSD EBP improves or harms treatment completion, though clinicians often feel that such pretreatment sessions may be needed (Hamblen et al., 2015). Existing studies have entailed nonrandomized program evaluation studies, all of which found that preparatory treatments were associated with no difference in EBP completion (Dedert et al., 2021; DeViva et al., 2017; Wiedeman et al., 2020), with one study finding worse outcomes in terms of symptom change (Dedert et al., 2021). One study found that veterans who attended preparatory groups had increased EBP initiation without increases in completion (DeViva et al., 2017). In the present study, time from evaluation to initiation was associated with dropout, whereas preparatory sessions were only marginally related. It is possible that this is because there was a restricted range of preparatory sessions offered (mean number of preparatory sessions = 0.86 in this sample), and thus further investigation is warranted to better understand the impact of longer preparatory periods and possible correlations with treatment delays. Regardless, our findings speak to the need for access to timely, effective care.

In this sample, individual-level factors including gender identity, race, and ethnicity did not relate to treatment completion, indicating that veterans across diverse backgrounds were able to complete treatment at similar rates. However, older age was related to completion. This is now perhaps the most consistent predictor of dropout given that multiple studies have found that older veterans are more likely to complete PTSD treatment than younger veterans (Berke et al., 2019; Garcia et al., 2011; Gros et al., 2011; Jeffreys et al., 2014; Kehle-Forbes et al., 2016; Mott et al., 2014). That said, there has been only speculation as to the cause of this association, which may be related to higher treatment stigma and more adherence to masculine norms among younger veterans (Garcia et al., 2011), more demands on time and responsibilities, or other as-yet unstudied

factors. Given one of the top three reported barriers was work, it is possible that older veterans may have fewer work-related barriers due to retirement or possibly more options for leave to attend treatment later in their careers.

In this sample, individually reported barriers did not predict treatment completion. Specifically, the total number of barriers that veterans experienced did not predict treatment completion. It is possible that the impact of self-reported barriers on treatment completion is lessened when veterans experience motivation for treatment and timely access to EBPs. However, it is also possible that we were unable to tease apart the importance of barriers given a restriction of range. In our sample, barriers were almost universally experienced, and veterans reported an average of 3.21 barriers. It is possible that the impact of barriers on treatment completion is more nuanced. Rather than the presence of barriers or the total number of barriers, future research efforts may benefit from investigating the specific type of barrier and its interaction with other variables related to treatment completion. Prior research identified similar frequently cited barriers and further investigated how barriers present across different demographic veteran groups. They found differences in reporting barriers by era of service, gender, and race (Rozek et al., 2023), suggesting that different groups may uniquely experience barriers to care and would benefit from individualized approaches that are culturally responsive to mitigate the impact of those barriers. Interestingly, the more frequently cited barriers (difficulty with people and the public) are quite possibly functional impairments secondary to their PTSD and would therefore be addressed within the course of an EBP for PTSD. This further underscores the importance of reducing delays to beginning treatment, as timely treatment may be an important strategy to mitigate symptom related barriers. Finally, it will be important to determine to what extent barriers for individuals presenting for care can be overcome versus a significant barrier that cannot easily be overcome. This study only assessed barriers prior to treatment, and ongoing assessment will be key to understanding the intractability of certain barriers overtime.

Our study did not find that family involvement in a psychoeducational family session made a difference in treatment completion. However, it may be that a single educational session did not provide enough opportunity to encourage family involvement and support throughout the treatment process. Previous studies have found that family involvement and encouragement can be crucial to treatment engagement (Meis et al., 2019; Spoont et al., 2014; Thompson-Hollands et al., 2021), and that this family involvement can be more meaningful with more purposeful engagement of family members. Qualitative studies have shown that family support for attending appointments and completing treatment-related tasks is particularly helpful in facilitating treatment completion, and that broader family emotional support, while still important, may be less helpful (Kehle-Forbes et al., 2022). Some researchers are now designing interventions that specifically address how family members can be helpful (Thompson-Hollands et al., 2021). There may, for instance, need to be a focus on how family members can either hurt (accommodation) or help (encouragement) a veteran's engagement in PTSD treatment. Future research will be needed that compares different models of family involvement in order to better understand how loved ones can support the treatment process and inform the utility of inclusion in clinical settings.

The present study has several limitations, as mentioned above (i.e., family involvement was measured dichotomously). Like other program evaluations, there are no randomized assignments to different number of sessions or time between treatments, limiting our ability to make causal inferences. Likewise, our population is restricted to mostly male and mostly White veterans, and veterans with biracial or multiracial identities may have been particularly underrepresented. Similarly, we did not assess ways in which trauma type may relate to treatment completion. In a larger sample, it would be valuable to examine the effect of individual barriers since it is possible that some barriers may predict completion and others would not. Ideally, we would be able to look at the number of preparatory sessions across multiple clinics; given that this clinic design emphasized fewer than four sessions of pretreatment, the lack of range may have impacted its utility as a predictor in this sample. Finally, there are likely other variables that predict treatment completion that would have affected our results if included.

Overall, this study adds to the existing literature on dropout by encouraging a focus on organization-level factors rather than solely individual factors. Treatment access, initiation, and retention will continue to be an important area of study. Our findings support the consideration of tailoring and improving clinical offerings, as well as other organizational factors to support timely enrollment and completion among veterans—specifically, working to reduce wait times from evaluation to active treatment. Another area of study that may suggest promise, given the findings of this study, is the implementation of a model of accelerated service delivery of EBPs. These models condense the duration of treatment from weekly to at a minimum three times per week, and early evaluations have demonstrated significantly lower discontinuation rates in clinical practice (Yamokoski et al., 2023). This shortened duration of treatment in this model of care provides a smaller window for barriers and PTSD symptoms (i.e., avoidance) to negatively impact treatment and thus may improve a veteran's likelihood to complete. Another implication of our study is that it may be helpful for clinics to consider not only how quickly they can enroll participants but also how quickly they can start them on active treatment. Future research will be needed to continue to understand the causes and implications of treatment dropout.

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