

Feasibility of an Intensive Outpatient Treatment Program for Posttraumatic Stress Disorder Within the Veterans Health Care Administration

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Trauma-focused treatments for posttraumatic stress disorder (PTSD), such as Prolonged Exposure (PE) therapy and Cognitive Processing Therapy (CPT), are effective and supported by various Clinical Practice Guidelines; however, drop-out rates for the treatments are as high as 40% within clinical programs. One promising solution is delivering the evidence-based psychotherapies (EBPs) three or more times per week within an intensive outpatient program (IOP) for PTSD. The present study examined the feasibility and effectiveness of a relatively low-resourced PTSD IOP within a larger PTSD program at the Veterans Healthcare Administration. The intensive program offers two tracks (2 week or 4 week) grounded in the massed delivery of PE and CPT. Over a 12-month period, 351 veterans completed an assessment for PTSD and 172 started within one of the local PTSD programs (e.g., weekly, IOP, or residential). Results of the study demonstrated that the IOP is an acceptable (i.e., 87.3% completion rate) and effective (e.g., PTSD Checklist for Diagnostic and Statistical Manual [DSM-5] [PCL-5] decrease effect size $d = 1.80$) treatment option. There was also adequate demand for the program (e.g., 37.2% of patients engaged in care with the PTSD programs started the IOP), and the program was implemented with fidelity to the design. Taken together, the results of this study demonstrate that this low-resource IOP model is a promising approach to improve completion rates within the continuum of care for the treatment of PTSD.

Impact Statement

PTSD IOPs based on more frequent delivery of EBPs are feasible and effective options to improve retention and can be implemented within VHA using low staffing resources.

Keywords: posttraumatic stress, Veterans, intensive outpatient programs

Background

Trauma-focused psychotherapy is strongly supported for the treatment of posttraumatic stress disorder (PTSD) within multiple clinical practice guidelines (e.g., Hamblen et al., 2019). Despite the support for the effectiveness of trauma-focused treatments for PTSD, there are numerous patient-, provider-, and system-driven barriers and challenges to delivery of care (Finch et al., 2020). Drop-out rates for the interventions range from 20% to 40%, and the drop-out rates from within clinical treatment programs (versus clinical trials) are likely even higher (e.g., Imel et al., 2013; Kehle-Forbes et al., 2016; Szafranski et al., 2017). Numerous patient-level factors are believed to contribute to these rates. These include the following:

The lack of social support and specific encouragement to continue in treatment when avoidance is growing (e.g., Meis et al., 2019), stigma (e.g., Vogt et al., 2014), logistical concerns (e.g., family demands, employment, and transportation), avoidance, and diminished self-esteem that may impact personal efficacy regarding the patient's ability to successfully manage the challenging emotions that are evoked through treatment. Along with the challenges for the patient, there are several therapist-driven concerns related to engagement in EBPs for PTSD, including perceptions that patients are not ready and cannot manage the distress (i.e., Cook et al., 2014; Hamblen et al., 2015) and institutional constraints and barriers, such as scheduling issues (e.g., Finch et al., 2020; Finley et al., 2020; Sayer et al., 2017).

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In summary, barriers to treatment completion, or even initial engagement, are prevalent and may come from patients and treatment providers. Due to these concerns, alternate models of administering these specific interventions are being explored. Increasing research demonstrates that delivering evidence-based psychotherapies (EBPs) for PTSD more frequently, often referred to as massed delivery, is effective and a potential solution to improve completion rates and outcomes when part of a larger intensive treatment program or as a stand-alone intervention (e.g., Bryan et al., 2018; Ehlers et al., 2014; Foa et al., 2018; Harvey et al., 2017; Held et al., 2020; Wachen et al., 2019; Zalta et al., 2018). As a stand-alone treatment, a randomized clinical trial (Foa et al., 2018) compared 10 sessions of Prolonged Exposure (PE) therapy delivered daily, 10 PE sessions over 8 weeks, 10 non-trauma-focused sessions over 8 weeks, and a minimal contact control group with 4 weekly telephone calls. The conclusions were that participants could manage the distress and emotional content of daily PE, massed delivery, and spaced/weekly PE resulted in similar improvements, and the gains from daily PE were maintained over time.

When delivered as part of a larger treatment program, research supports a significantly higher rate of retention/completion when patients with PTSD participated in massed EBPs for PTSD (e.g., 95% completion; Harvey et al., 2017; Rauch, Rothbaum, et al., 2020; Sciarrino et al., 2020; Wachen et al., 2019) as compared to traditional weekly EBPs for PTSD (approximately 65%–70% complete; e.g., Kehle-Forbes et al., 2016). Treatment gains from programs based on massed EBP delivery were maintained in follow-up studies (e.g., Held et al., 2020). The rapid delivery may have additional benefits over weekly EBP treatment including less time and opportunity for avoidance, fewer psychosocial stressors that could result in dropout in weekly treatment, and the opportunity for additional supports within the larger treatment program. Yasinski et al. (2017) suggest that massed delivery models may reduce the likelihood of avoidance as patients may see improvements sooner and have more frequent contact with service providers who can help them label and effectively counter avoidant tendencies. For those with low efficacy regarding their ability to manage distressing emotions, the more rapid completion of treatment may be helpful. In addition, less time between EBP sessions resulted in improved PTSD outcomes in a study involving women veterans participating in either PE or Cognitive Processing Therapy (CPT; Gutner et al., 2016).

With research supporting the effectiveness of more intensive treatment programs utilizing massed EBPs, it is important to determine if these programs are feasible. More specifically, feasibility studies include multiple areas of focus (i.e., acceptability, demand, implementation, practicality, adaptation, integration, expansion, limited effectiveness/efficacy testing), to determine if a particular intervention is “relevant and sustainable” (Bowen et al., 2009). Held et al. (2020) examined several aspects of feasibility in a 3-week Intensive Outpatient Program (IOP) for veterans with PTSD at a non-Veterans Affairs site and found that IOPs were of interest and acceptable options for individuals with PTSD. To date, there is no known study of the feasibility within a larger continuum of care that examines the flow, demand, and clinical decision-making regarding participation in an IOP. There is also no known study on the effectiveness and feasibility of this model within the Veterans Health Administration (VHA) or in settings or programs when resources are more constrained (i.e., “practicality” according to

Bowen and colleagues). For example, the majority of the PTSD IOPs studied to date involved several hours of case management, family programming, wellness education, skills classes, and/or complementary integrative health (CIH) programming per week (e.g., Harvey et al., 2017; Rauch, Yasinski, et al., 2020).

This study examined the feasibility (as outlined and defined by Bowen et al., 2009) of an IOP within a full continuum of PTSD care in a midwestern VHA, the clinical reasons for participation within the IOP, and the effectiveness in VHA. Specifically, we investigated the acceptability (defined as extent to which the program is perceived to be suitable and satisfying to participants), the demand for an IOP in the context of a full continuum of care for PTSD, and effectiveness of the IOP treatment modality in reducing symptoms of PTSD and depression in VHA. Further, we examined the extent to which the IOP can be implemented as planned.

Method

Procedure

Posttraumatic Stress Disorder Levels of Care Overview

The PTSD treatment section included three levels of care: weekly outpatient, IOP, and residential. Weekly outpatient provides primarily PE, Concurrent Treatment of PTSD and Substance Use Disorder Using PE (COPE; Back et al., 2015) for those with co-occurring substance use disorders (SUD), and CPT, the IOP is explained below, and the residential program is a 10-week integrated PTSD and SUD program that included PTSD EBP in addition to groups focusing on skills, SUD, CIH, and family involvement. All veterans are referred to the overall program from a mental health provider, and they participate in an intake with the PTSD program to confirm the diagnosis, assure no contraindications for care, and to engage in shared decision-making to determine the treatment recommendations and plan, including the level of care and specific interventions.

Intensive Outpatient Program Overview

The PTSD IOP offered a two- and 4-week option for the treatment of PTSD. Veterans participated in treatment as an outpatient or while admitted to a residential bed for the duration of programming. The veterans in a residential bed were either admitted specifically to participate in PTSD treatment, or they participated in the IOP while in a homeless program bed. Veterans admitted to a residential bed did not engage in additional treatment outside of the PTSD IOP aside from optional recreational activities in the evening or case management services within the homeless program. For this study, the veterans participating in the IOP while residing in a bed were considered “IOP” level of care and those admitted for the 10-week program were considered “residential.” For the IOP, each treatment day included approximately two total hours of group sessions plus the individual EBP session. Veterans in the 2-week option participated in programming 5 days per week over 10–12 treatment days (up to two and a half weeks), and 10–12 CPT or PE protocol sessions were offered based on clinical need. CPT modules were combined for a total of 10 sessions if veterans were demonstrating meaningful clinical changes. Veterans in the 4-week track participated in PTSD programming 3 days per week. The two options ran concurrently and held joint programming 3 days per week and both tracks

admitted veterans on a rolling basis. The total program capacity was approximately eight Veterans at a time.

Treatment days were scheduled from 8:15 a.m. to 3:30 p.m. Prior to beginning the IOP, veterans and their providers used shared decision-making to choose either PE or CPT. Veterans were scheduled a 60-min individual CPT session or 90-min PE session on each treatment day between 9:00 a.m. and 12:00 p.m. When not attending an individual session, veterans either attended an appointment with the psychiatrist or completed assignments. Veterans also participated in three check-in groups on each treatment day that occurred at the beginning (prior to their individual EBP session), middle (after their individual session), and end of the day (after working on homework assignments). These groups were only attended by the IOP participants, and the same therapist led all three groups on a specific treatment day for continuity. The primary purpose for the groups was to support the individual therapies, focus on reinforcing treatment rationales, answer questions about homework assignments, review progress on homework throughout the day, and identify and address barriers to treatment. There was no additional structured content to the groups, and the therapist was able to adjust the content to address the needs of the group members. Although other IOPs outside of VHA include this supportive element, the groups in this model did not include additional skills work and were intended to reinforce and to support the EBP work they were engaging in individually. Additional skills work or interventions were added to individual psychotherapy sessions only if deemed clinically necessary to successfully complete EBP treatment.

The program was designed to streamline services to assure that veterans can start an EBP immediately, to remove barriers to protocol completion, and to utilize minimal additional resources over and above weekly EBPs. Veterans worked on individual homework assignments between group sessions and discussed their progress at the following group. Group room space was available for the veterans to complete their assignments if needed. Veterans also participated in one to two therapeutic outings during their time in the program, dependent upon the length of their respective track. Outings included activities targeted at commonly avoided situations for individuals with PTSD, including going to a mall, local farmer's market, and memorial park dedicated to veterans. Those participating in PE used these as in vivo assignments and those in CPT were asked to complete worksheets on the stuck points activated during the experience. Psychiatry appointments were scheduled weekly for veterans in residential beds and were scheduled as clinically indicated for outpatients. Additional resources needed to offer this option included group room space three times per day, several hours per week of devoted administrative support (e.g., scheduling, preparing materials), approximately 15 min for clinical huddles for each individual therapist per day, and two to 3 hr per treatment day for one group therapist.

Evaluation and Eligibility

All veterans interested in specialty PTSD treatment levels of care were referred to the overall program. The flow within the overall program and outcomes were measured over a 12-month period. Referrals were placed by mental health providers from the medical center, affiliated outpatient clinics, or outside of the catchment area if no local programs were able to meet the needs for the veteran. Following a brief record review to screen for clear contraindications

(i.e., no symptoms of PTSD, active mania, need for inpatient hospitalization), veterans were offered a voluntary orientation session followed by an intake assessment or they were scheduled directly into an intake. During the intake, clinicians administered a semistructured interview (created within the clinic to assess for symptoms of PTSD) or the Clinician Administered PTSD Scale (CAPS-5; Weathers, Blake, et al., 2013) to confirm a diagnosis of PTSD, assessed for commonly co-occurring conditions, contraindications for PTSD EBPs, risk, and motivation and barriers for treatment, and engaged in shared decision-making to determine treatment plan/recommendations. If the veteran did not present with contraindications for PE or CPT (i.e., active mania, unstabilized psychosis, imminent risk of harm to self or others, current severe self-directed harm, need for medical detoxification, not willing to abstain from substance use during assignments), there were no additional exclusionary criteria for either the outpatient PTSD Clinical Team (PCT) level of care or the IOP. If PTSD was the primary presenting problem, veterans were not excluded due to active suicidal or homicidal ideation, substance use, psychosis with insight, personality disorder, medical concerns, or cognitive limitations. If veterans were recommended for the 10-week residential PTSD level of care (a separate program from the PTSD IOP), the veteran was then reviewed by the residential team for appropriateness for care. The IOP was recommended at the time of the intake or later in treatment if not responding to alternate level of care.

Upon agreement to participate in the IOP, veterans participated in a preadmission session to complete treatment agreements, review the structure of the program, and complete pretreatment measures for measurement-based care and program evaluation efforts. For the veterans in the IOP, all measures were collected; however, the veterans in weekly EBP only completed a subset of the measures during their first and last session with their therapist.

Measures

Demographics

All patients starting in the IOP completed the PTSD Status Form (PSF) at a preadmission session to gather relevant demographic information. The PSF was created by Northeast Program Evaluation Center (NEPEC) to gather and compile information about the veterans being served by VHA PTSD treatment programs. Select demographic information from those participating in weekly outpatient treatment was gathered from chart reviews.

PTSD Checklist for Diagnostic and Statistical Manual (DSM-5)

The past-week version of the PTSD Checklist for Diagnostic and Statistical Manual (DSM-5) (PCL-5) was administered during each individual session throughout IOP treatment to assess weekly change in PTSD symptoms and response to treatment. The PCL-5 was gathered at the first and final session for those in weekly outpatient treatment. The PCL-5 (Weathers, Litz, et al., 2013) is a 20-item self-report measure of PTSD corresponding with the *DSM-5* (American Psychiatric Association, 2013). Respondents rate how much they have been bothered by each symptom using a 5-point Likert-type scale ranging from 0 (*not at all*) to 4 (*extremely*). The PCL-5 has demonstrated excellent psychometric properties, including strong

internal and test–retest reliability (including for daily administration), convergent and discriminant validity, structural validity, diagnostic utility, and sensitivity to clinical change (Bovin et al., 2016; Foa et al., 2018). Internal reliability of the PCL-5 at preadmission was .85.

Patient Health Questionnaire

Veterans completed the Patient Health Questionnaire-9 (PHQ-9) during each individual treatment session within the IOP but there was no regular administration within weekly treatment. The PHQ-9 (Kroenke et al., 2001) is a 9-item self-report measure of depression. Respondents rate items using a 4-point Likert-type scale ranging from 0 (*not at all*) to 3 (*nearly every day*). Ratings are summed to yield a total severity score, in which higher score indicate a higher degree of depressive symptoms. The PHQ-9 has demonstrated good internal reliability and test–retest reliability (Kroenke et al., 2001). Internal reliability at preadmission was .79.

Veteran Expectancy Questionnaire

Patients in the IOP completed this form during the preadmission session after being provided an overview of the program. The Veteran Expectancy Questionnaire (VEQ) was created for this project in order to measure how veterans react to the IOP and the reasons for selecting this program. The VEQ was adapted from the Credibility/Expectancy Questionnaire, a measure of patient-rated credibility of treatment with demonstrated good internal consistency and test–retest reliability (Deville & Borkovec, 2000). On the VEQ, veterans rate their agreement (0–4 Likert scale; 0 = *lowest agreement* and 4 = *highest agreement*) on how logical the intervention seems, how successful the intervention will be in addressing symptoms of PTSD and additional personal problems, and how confident the veteran would be recommending the treatment to others. In addition, the VEQ included an open question inquiring about the patients' reasons for selecting the IOP.

Therapist End of Treatment Form

The questionnaire was created to gather program evaluation data on each patient that completed at least the preadmission session for the IOP. It was designed to capture key information regarding the episode of care including reasons for referral, summary of past treatment, preparation sessions required, additional diagnoses (as determined by the treating therapist based upon intake and medical chart review), significant treatment events, track off-protocol sessions, and additional skills work outside of the program structure. The individual therapist completed this form at the time of the final session based on a chart review of the past treatment and the current episode of care.

IOP Satisfaction Form

At the final IOP session for those who completed or who agreed to a final session prior to discontinuing care, the veterans were provided an anonymous feedback questionnaire ($n = 52$). They were encouraged to complete this voluntary form and either return directly to the PTSD manager, or they were offered a self-addressed stamped envelope to return to the manager. The questionnaire included eight Likert scale items (0 = *highly unsatisfied*, and 4 = *highly satisfied*) about their level of satisfaction with each element of the program (e.g., overall, groups, individual therapy). A total of 24

veterans (46.2% response rate) returned the anonymous satisfaction questionnaire.

Data Analysis

To determine whether the IOP was an acceptable treatment option for veterans, the Therapist End of Treatment form, VEQ, and Satisfaction measures were examined. Authors examined means, standard deviations, and the percentage of respondents who were *satisfied* or *highly satisfied* on the Satisfaction measures. Percentage of participants that dropped out or completed treatment were examined for the overall IOP, as well as for the 2-week and 4-week programs. A one-way analysis of variance (ANOVA) was conducted to determine differences in completion rates between those who engaged in the 2-week IOP, 4-week IOP, and those who completed weekly outpatient trauma processing. For ANOVAs, Tukey's Honestly Significant Difference (HSD) post hoc tests were run to examine pair-wise combinations of groups (Tukey, 1949). To determine the actual demand for an IOP in the context of a full continuum of care for PTSD was explored via an extensive chart review of local referrals to the PTSD Clinical Team. The data for the weekly participants were gathered through chart reviews and included limited demographic information, and pre/post-PCL-5 and PHQ-9. Data for residential program participants were not included as the local participants were only a subset of the total patients within the program. Therefore, comparisons were not possible between residential and IOP or weekly within this study.

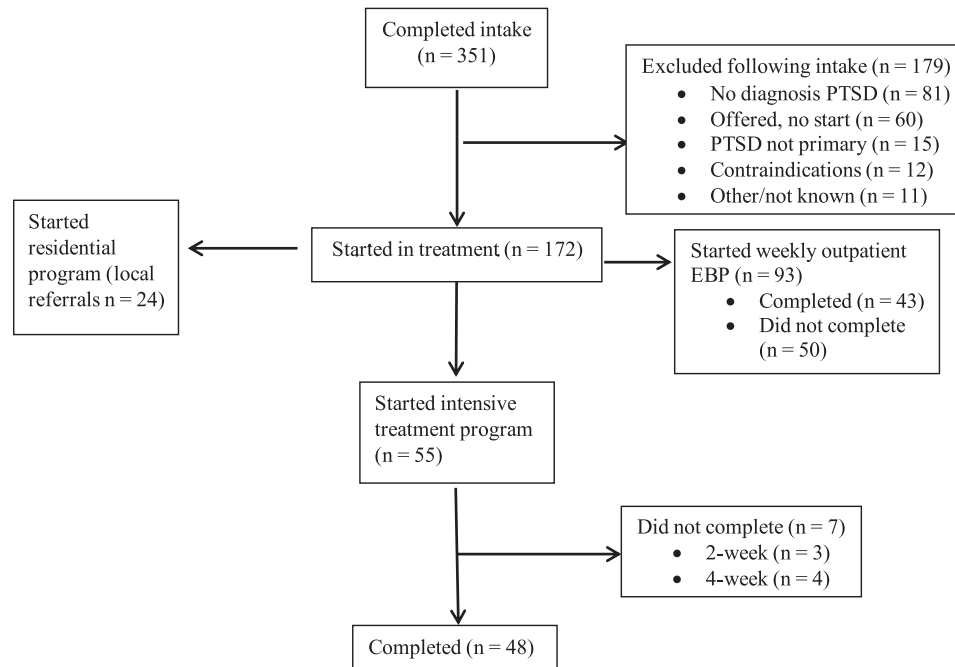
To evaluate the effectiveness of the IOP treatment modality in reducing symptoms of PTSD and depression in VHA, authors examined preadmission and posttreatment PCL-5 and PHQ-9 scores. To determine the effectiveness of the IOP in reducing symptoms of PTSD in veterans within VHA a one-way ANOVA was conducted and effect sizes for symptom reduction were calculated. In this study, Cohen's d was used to determine the effect size, which could be classified as small ($d = 0.2$), medium ($d = 0.5$), or large ($d \geq 0.8$; Cohen, 2013). T tests were also conducted to explore significant differences in preadmission PTSD and depression symptoms for those who completed treatment and those who did not. To determine the extent to which the IOP can be implemented as planned, authors examined the Therapist End of Treatment form. Specifically, means and standard deviations were calculated to determine the number of required preparation sessions, significant treatment events, off-protocol sessions, and additional skills work outside of the program structure.

Results

Demographics

During the 12-month period, 351 local veterans were assessed and a total of 172 veterans initiated treatment (i.e., attended at least one therapy session) across all levels of care (see Figure 1). Of the 172 veterans that initiated care, 24 started in the 10-week residential program, 93 in weekly EBPs, and 55 in the IOP. On average, the veterans in the IOP were 45.1 years old ($SD = 12.3$). The majority were male (80.4%), separated/divorced (69.6%), unemployed (76.8%), served post-9/11 (57.1%), and sought treatment for a military-related index event (i.e., 51.8% combat; 26.8% military sexual trauma). Additional demographic characteristics for the IOP

Figure 1
Flow of Patients Through the PTSD Clinic Over 12-Month Period



Note. PTSD = posttraumatic stress disorder.

participants are summarized in Table 1. For those starting in weekly EBPs, the majority were male (86.1%), served post-9/11 (43.0%), and sought treatment for a military-related index event (69.9% combat; 12.9% military sexual trauma). There were significant differences in the following demographic characteristics between the IOP and weekly EBP: Sex, service era, and index trauma (Table 1). More veterans participated in CPT within weekly treatment versus IOP (i.e., 67.7% in weekly and 37.5% in IOP); and more participated in PE within the IOP (i.e., 30.1% in weekly versus 62.5% in IOP). Veterans who opted to participate in the IOP had the option of participating in treatment as an outpatient or while admitted to a residential bed (either within an ongoing program, such as for homelessness and/or substance use disorders, or admission specifically for PTSD care). The majority of veterans attended as an outpatient (63.6%; $n = 35$), and the remainder were either already in a residential bed for homelessness (21.8%; $n = 12$) or they were admitted to a residential bed short term specifically for the IOP (14.5%; $n = 8$).

Acceptability

The acceptability of the IOP as a treatment option (defined as extent to which the program is perceived to be suitable and satisfying to participants) was examined using VEQ completed at the time of admission in conjunction with the satisfaction scores collected at the end of treatment. Average scores on the VEQ (Likert scale 0–4) indicated that veterans found the IOP to be a logical treatment ($M = 3.3$; $SD = 0.8$), they expected the IOP to successfully reduce PTSD ($M = 2.8$; $SD = 0.8$) and “other issues” ($M = 2.7$; $SD = 1.0$), and

they reported confidence in recommending the IOP to others ($M = 3.1$; $SD = 0.9$). Overall, participants reported high level of satisfaction with the IOP. The average score on Likert scale of veteran satisfaction measure (0 = *highly unsatisfied* to 4 = *highly satisfied*) was 3.4 ($SD = 0.7$; range 1–4) and 95.8% of the 24 who responded reported being either satisfied or highly satisfied.

The suitability of the program was also examined through calculation of the completion rate. Overall, 87.3% ($n = 48$) of the IOP participants completed the treatment, as compared to 46.2% ($n = 43$) who engaged in weekly PE or CPT outside of the IOP in outpatient care over the same time period within this clinic. Eight of the 11 veterans (72.7%) that previously dropped out of an EBP or did not respond to past EBP attempts as measured by a 10-point PCL decrease completed the IOP. A one-way ANOVA was conducted to determine differences in completion rates between those who engaged in the 2-week IOP, 4-week IOP, and those who completed weekly outpatient trauma processing. Results indicated significant differences in completion rates by program length, $F(2, 134) = 13.2$, $p < .001$. Tukey HSD post hoc analyses showed that mean scores in completion rates for those who engaged in the 2-week ($M = 0.7$; $SD = 0.5$) and 4-week ($M = 0.9$; $SD = 0.4$) IOP were significantly higher compared to those who engaged in weekly outpatient EBPs ($M = 0.4$; $SD = 0.5$). There were no significant differences in completion rates between the 2-week and 4-week programs, and no difference between those who participated in PE or CPT ($t = -.8$; $p = .4$). Veterans in a residential treatment bed for the IOP (i.e., homelessness or admission specifically for this program) demonstrated a higher rate of completion (95.0%; $n = 19$) than those participating in the IOP as an outpatient (80.6%; $n = 29$; $t = -1.7$; $p < .10$).

Table 1
Veteran Demographics for IOP and Weekly Outpatient EBP

Variable	<i>M</i>	<i>SD</i>	Range	IOP <i>n</i>	IOP %	Weekly <i>n</i>	Weekly %
Gender ^a							
Male				45	80.4	80	86.0
Female				11	19.6	13	14.0
Race							
White				29	51.8		
Black				18	32.1		
Latino, Black				2	3.6		
Other/unknown				7	12.5		
Marital status							
Married				15	26.8		
Single				11	19.6		
Divorced				20	35.7		
Separated				8	14.3		
In a committed relationship				2	3.4		
Age	45.14	12.33	25–70				
Service era ^a							
Vietnam				4	7.1	23	24.7
Post-Vietnam				13	23.21	11	11.8
Persian Gulf				7	12.5	19	20.4
Post 9/11				32	57.1	40	43.0
Employment status							
Employed				13	23.2		
Looking				4	7.1		
Not looking, mental health				8	14.3		
Not looking, disabilities				22	39.3		
Not looking, other				4	7.1		
Housing status							
Own residence				38	67.9		
Unstable housing				4	7.1		
Homeless				4	7.1		
In a facility				8	14.3		
Primary trauma ^a							
Combat				29	51.8	65	69.9
Military sexual trauma (MST)				15	26.8	12	12.9
Adult physical assault				1	1.8	2	2.2
Child physical abuse				1	1.8	0	0
Child sexual abuse				5	7.1	1	1.01
Other				5	8.9	13	14.0
Treatment received ^a							
CPT				21	37.5	63	67.7
PE				35	62.5	28	30.1
Other EBP						2	2.2
Treatment modality							
Two-week IOP				15	26.8		
Four-week IOP				41	73.2		
Co-occurring disorders							
Depression				11	19.6		
Bipolar disorder				2	3.6		
Alcohol use disorder				15	26.8		
Stimulant use disorder				11	19.6		
Cannabis use disorder				9	16.1		
Opioid use disorder				6	10.7		
Schizophrenia/psychosis				1	1.8		
Obsessive compulsive D/O				1	1.8		
Personality disorder (severe)				3	5.4		
Previous admissions							
Inpatient psychiatric	.84	1.33	5.0				
Residential substance use	1.23	3.09	19.0				
Psychosocial residential rehabilitation treatment program	.21	.53	2.0				
Residential PTSD	.18	.43	2.0				

Note. Participants in the weekly option did not complete all measures. IOP = intensive outpatient program; EBP = evidence-based psychotherapy; CPT = Cognitive Processing Therapy; PE = Prolonged Exposure; PTSD = posttraumatic stress disorder.

^aSignificant difference at .01 level between weekly and IOP using Chi-square test.

Seven veterans did not complete the IOP after starting; however, two of these veterans reported clinically significant decreases in the PCL-5 prior to not returning (i.e., one veteran did not return after Session 6 but had a decrease in PCL-5 of 25, and another did not return after Session 8 but had a PCL5 decrease of 21). The veterans who dropped out ($n = 7$) completed an average of 4.3 sessions. Reasons for drop-out included (more than one option possible): Uncertainty about engaging in treatment (e.g., ambivalence, avoidance; $n = 3$), focusing on other issues ($n = 2$), moving ($n = 1$), or not known ($n = 2$).

Demand

The flow of veterans within the PTSD treatment section is demonstrated in Figure 1. Following an intake assessment for the overall PTSD program, there were 172 veterans that participated in treatment (i.e., attended at least one session), including 24 local referrals for a more intensive residential level of care (the program included additional out of area referrals that were not included in this flow due to fact that they were only being considered for residential). Of those appropriate for outpatient treatment who started in care ($n = 148$), the veterans were presented with the options for weekly therapy versus the IOP, and 37.2% ($n = 55$) started within the IOP and 62.8% ($n = 93$) within the weekly EBP option. The most common reasons for the shared decision to participate in the IOP compared to alternative treatment options included the need for increased structure (44.6%; $n = 25$), co-occurring substance use disorders (33.9%; $n = 19$), and the lack of success at a lower level (28.6%; $n = 16$; Table 2). On an open-ended question on the VEQ, the patient's reasons for selecting the IOP compared to other treatment options included the following: 29.1% ($n = 16$) reported

Table 2
Reasons for Participation Within the IOP

Response	<i>n</i>	(%)
Lack of success at weekly outpatient	16	28.6
Due to avoidance	10	17.9
Due to anticipatory anxiety	3	5.4
Due to attendance problems	1	1.8
Due to relapse	6	10.7
Due to difficulty completing assignments	3	5.4
Due to significant psychosocial stressors	5	8.9
Due to nonresponder	1	1.8
Other	1	1.8
Minimal coping skills	12	21.4
Comorbid mental health diagnoses	8	14.3
Comorbid substance use	19	33.9
Lack of support	13	23.2
Nonresponder to residential	2	3.6
Increased structure	25	44.6
Transportation barriers	7	12.5
Recommended residential, but refused	4	7.1
Not accepted to residential	5	8.9
Need to complete treatment rapidly	8	14.3
Other	5	8.9

Note. Multiple reasons for choosing the level of care were provided for most veterans ($n = 56$, included one veteran who attended preadmission but never started treatment). IOP = intensive outpatient program.

Table 3
Patient Reasons for Selecting the IOP Level of Care

Reason for choosing level of care	<i>n</i>	%
Scheduling needs (including need for shorter program)	16	29.1
Increase in symptoms/distress	12	21.8
Recommended by provider	9	16.4
Intensive format	4	7.3
Not accepted to or discharged from residential	3	5.5
"Seemed like the next logical step"	2	3.6
Completed residential previously	1	1.8
Court ordered	1	1.8
Timely access	1	1.8

Note. IOP = intensive outpatient program.

scheduling needs (including need for a shorter program) and 21.8% ($n = 12$) reported increased distress/symptoms (Table 3).

Effectiveness

To determine the effectiveness of the IOP in reducing symptoms of PTSD in veterans within VHA, a one-way ANOVA was conducted and effect sizes for symptom reduction were calculated. Results of one-way ANOVA indicated there were no significant differences in PTSD symptom reduction between 2-week IOP, 4-week IOP, or those who completed weekly outpatient trauma processing, $F(3, 68) = .6, p = .6$, but the veterans in the IOP had a significantly higher PCL-5 score preadmission ($t = 3.0, p < .01$). Veterans who completed the 2-week IOP experienced a 25.2-point mean decrease on the PCL-5 from preadmission to posttreatment and those who completed the 4-week IOP experienced a 23.8-point mean decrease ($t = 10.6; p < .001$). Veterans who completed weekly outpatient treatment experienced a 19.4-point decrease in PCL-5 scores. Further, effect size calculation revealed a large effect size ($d = 1.8$) for PTSD symptom reduction for those who completed the IOP and for those who completed weekly PTSD EBPs in outpatient ($d = 1.1$). There was no significant difference in PCL-5 reductions for those who participated within a residential bed or as an outpatient ($t = .09; p = .93$). In addition, for veterans who completed the IOP, 60.4% ($n = 30$) reported final scores on the PCL-5 below the recommended cutoff of 33 and 79.2% ($n = 39$) demonstrated a clinically meaningful decrease of 10 points on the PCL-5. For those who completed a weekly EBP, 55.8% ($n = 24$) reported final scores on the PCL-5 below the recommended cutoff of 33 and 69.8% ($n = 30$) demonstrated a clinically meaningful decreased of 10 points on the PCL-5.

Meaningful reductions were also demonstrated in depression scores for completers, demonstrated by a 6.0-point decrease in the PHQ-9 ($t = 8.0; p < .001$). A large effect size was also demonstrated in decreases in depression symptoms ($d = 1.1$) for completers in the IOP (similar data were not available for those in weekly PTSD EBPs for this sample). Results of t tests demonstrated that there were no significant differences in preadmission PTSD and depression symptoms for those who completed treatment and those who did not. There was also no significant difference for those who participated in the program in a residential bed or as an outpatient ($t = -.2; p = .9$). Suicidal ideation, as measured by PHQ-9 Item 9, also significantly decreased by 0.4 ($SD = 0.8$) for those who completed the IOP using paired-sample t test ($t = 3.4, p < .001$).

Implementation

The extent to which the IOP was implemented as designed and planned was assessed by calculating the number of off-protocol sessions and extent to which skills work and additional interventions were added to individual sessions (Table 4). First, the number of sessions that was deemed clinically necessary prior to the initiation of the IOP was calculated, and 92.9% ($n = 52$) of veterans required no pretreatment sessions following their intake, two required three sessions, and one veteran needed eight sessions prior to starting. The IOP was designed to not require additional skills work within the groups and providers were able to add additional skills only if needed within individual sessions to adjust to the veterans' specific needs. For the veterans participating in the IOP, 70.9% ($n = 39$) did not require additional skills work, and for those requiring additional work, the most common need was relapse prevention skills (12.7%). Finally, off-protocol sessions within individual EBP care were tracked and 69.1% ($n = 38$) of the veterans did not require any, and the average number of off-protocol sessions was 0.3 ($SD = 0.5$) per veteran (i.e., medical needs, death of family) and when needed, the mode was one. When an off-protocol session was needed, there was no EBP individual session for that day and if possible, the veteran was extended in the program an additional treatment day.

Discussion

The present study examines the feasibility of an IOP for PTSD based on massed EBPs within VHA as a potential strategy to increase completion rates using Bowen et al. (2009) model as a framework. Outside of VHA, IOPs for PTSD have been found to be effective and feasible (e.g., Held et al., 2020), but the prior programs studied include multiple additional hours of programming per day and additional resources are not always available. The IOP in this study included minimal added resources to implement and was the first to study if this model was feasible within VHA.

Several areas of feasibility were examined in this study, including acceptability, demand, effectiveness, and the degree to which the program was implemented as designed. Results demonstrated that

veterans were able to safely tolerate PTSD EBPs three to five times per week in this program that included no additional skills groups, and the veterans were highly satisfied. Completion rates were significantly higher for those participating in the IOP as compared to weekly treatment, and clinically and statistically meaningful improvements in PTSD, depression, and suicidal ideation were also reported for those in the IOP. Decreases in suicidal ideation are an important clinical outcome, and the increased support and structure of the IOP afford clinicians the opportunity to utilize team-based care for veterans with more complex clinical needs. Veterans were able to demonstrate similar clinically meaningful improvement in each of the modalities (e.g., weekly, 2-week IOP and 4-week IOP), and thus treatment preference and needs can still be met for those requiring different treatment episodes. However, the benefit of the massed IOP model is that more veterans completed treatment suggesting that some veterans who might otherwise select and not complete outpatient treatment could have better success within this model. This is further supported by the finding that the completion rate for those who previously dropped out or did not respond to past treatment attempts ($n = 11$) was 72.7%.

The demand of intensive treatment programs within the context of a full continuum of care for PTSD was examined. In the current sample, 37.2% ($n = 55$) started within the IOP and 62.8% ($n = 93$) within the weekly EBP option. This demonstrates that not only are IOPs effective treatment options, but there is also demand to participate even when other options are available. The most common reasons that veterans selected this program over other options were scheduling needs (including need for shorter program), and increased distress/symptoms, while therapists indicated that veterans were recommended due to need for increased structure, co-occurring substance use disorders, and the lack of coping skills to complete other levels of care. This was supported by the finding that the veterans participating in the IOP had higher PCL-5 preadmission scores than those engaging in weekly treatment. The therapists' recommendation for IOP due to lack of coping skills was noteworthy, as this IOP did not include additional programming related to skills development, but instead all groups focused on supporting and addressing barriers related to the work completed within individual EBP sessions. As additional IOPs are implemented and providers at sites with IOPs engage in shared decision-making with patients, care is needed to explore providers' expectancies of this model to mitigate the impact of biases that veterans are not "ready" or require more coping skills to successfully complete intensive treatment options. In this sample, there were differences in the sex, service era, and index trauma between IOP and weekly treatment. Follow-up on this finding would be helpful to better understand patient's preferences and needs.

Finally, the degree to which the IOP could be implemented as planned (i.e., no skills groups, EBP sessions three to five times per week, no preparation treatment) was studied. This model was effectively implemented as designed, as evidenced by requiring minimal additional skills content, and a low number of both off-protocol and preparation sessions prior to starting. This is especially noteworthy as the treatment program overall had few exclusions for those with PTSD as a primary diagnosis, and the IOP offered treatment to several veterans that were not accepted into residential care and/or were appropriate for residential treatment but refused this level of care (see Table 2). This IOP is predominately focused on individual treatment versus group psychotherapy. This structure

Table 4
Extent to Which Program Implemented as Planned ($n = 55$)

Program implementation components	<i>n</i>	%
Preparation sessions		
0	52	92.9
3	2	3.6
8	1	1.8
Additional skills		
Yes, at least one	16	29.1
Cognitive restructuring	2	3.6
Mindfulness/grounding	4	7.3
Motivational enhancement	2	3.6
Relapse prevention	7	12.7
Safety planning	1	1.8
Dialectical behavior therapy skills	1	1.8
No	39	70.9
Off-protocol sessions		
0	38	69.1
1	11	20.0
2	3	5.5
Unknown	2	3.6

results in less opportunities for disruptions related to co-occurring disorders, interpersonal challenges, and psychosocial stressors as compared to other intensive or residential options.

The results of this study demonstrate that this model is feasible and effective within the VHA and suggests that the opportunity for more intensive treatment options is possible even when there are fewer available resources. For administrators, the improvements in completion rate may be particularly appealing as completion of PTSD EBPs have been found to improve health care utilization costs (e.g., Meyers et al., 2013). In this study, there were no differences in completion rate or improvements in PCL for those engaged in either PE or CPT, or between the two- or 4-week options; therefore, care can be individualized to address the needs and interests of the veterans. There are also numerous options for the structure of the program based upon the resources available within various clinical settings (e.g., total days per week).

Limitations to this study include no randomization between treatment group due to data being collected as part of the normal clinical operations within a larger treatment program. On the other hand, results may be more generalizable to PTSD clinics within the VHA. Future research is recommended to determine if results can be replicated in additional programs and to assure there are no differences between benefits for patients of different racial or ethnic backgrounds, gender, and diagnostic presentations. It was also not always clear the reasons why veterans and providers selected a particular level of care; for example, all veterans and their providers engaged in shared decision-making, but providers reported that some veterans selected the 4-week program over the 2-week option due to quicker access. As a result, it was difficult to understand and evaluate the benefits and impact of length of time within the IOP. The active components of the IOP that resulted in improved completion rates also cannot be determined in this study. For example, the program offered additional support to veterans and structured time to complete homework assignments, and both of these elements may have contributed to completion rates rather than massed delivery of the EBP alone.

Future directions include examining additional areas for focus from Bowen et al. (2009) model of feasibility. This includes a focus on expansion (i.e., the ability to successfully implement an existing model within a new setting) and integration (i.e., studying the extent of system change needed to integrate within a new system/program). It will be important to determine if results can be replicated within additional treatment programs to better understand the feasibility of this model, and if this model is more effective than massed EBP alone. Finally, it is recommended that future research studies examine the question of which patients are more likely to benefit from intensive options versus weekly treatments, and better understand the role of additional interventions within intensive treatment programs for programs with additional resources available.

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