



Published in final edited form as:

Psychol Serv. 2021 November ; 18(4): 643–650. doi:10.1037/ser0000490.

Acceptability of a transdiagnostic behavior therapy in veterans with affective disorders

Mary O. Shapiro¹, Daniel F. Gros^{1,2}

¹Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina Charleston, SC

²Mental Health Service, Ralph H. Johnson Veterans Affairs Medical Center, Charleston, SC

Abstract

Transdiagnostic behavior therapy (TBT) has been found to lead to significant reductions in affective disorder symptoms. However, patient satisfaction and treatment fit for TBT has not been examined. Within a sample of veterans, the current study examined the acceptability of TBT in comparison to brief behavioral activation for depression (BA). Results found individuals in the TBT condition (compared to BA) were more satisfied with therapy $F(1, 48) = 6.68, p = .013$. In addition, they were more likely to say that they would recommend this treatment to a friend $F(1, 48) = 3.76, p = .058$ and that the TBT treatment helped them more effectively deal with problems $F(1, 48) = 3.29, p = .076$, although these effects were significant at trend level. Individuals in the TBT condition (compared to BA) completed significantly more homework $F(1, 65) = 4.95, p = .030$ and were more engaged in their homework $F(1, 65) = 3.98, p = .050$. These findings are the first of their kind and suggest high patient satisfaction and homework completion/participation in participants completing TBT. These results are promising and suggest the continued dissemination and implementation of transdiagnostic treatments.

Keywords

transdiagnostic; transdiagnostic treatment; affective disorders

Introduction

The term affective disorders refers to the *Diagnostic and Statistical Manual for Mental Disorders (DSM-5)* depressive disorders, anxiety disorders, trauma- and stressor-related conditions, and obsessive-compulsive and related disorders (5th ed.; American Psychiatric Association, 2013). Affective disorders are among the most prevalent psychiatric conditions, with 28% past year and 49% lifetime prevalence rate in the United States (Greenberg et al., 1999; Kessler, Berglund, et al., 2005; Kessler et al., 2005). Furthermore, affective disorders are the most common mental health disorders that United States veterans face (Hoge et al., 2004; Seal et al., 2007). Although the symptoms of affective disorders vary, these conditions

Corresponding Author Information: Mary O. Shapiro, Ph.D., Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, 67 President St, Charleston, SC 29425, shapimar@musc.edu, 843-792-0259.

This clinical trial was registered on [ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT01947647) (#NCT01947647).

are associated with significant individual distress and functional impairment (e.g., inability to work, low social engagement; Kroenke et al., 2007). These conditions are associated with considerable individual and societal burden, such as lower SES, marital discord, and increased healthcare related costs (Greenberg et al., 1999; Kessler et al., 2009; Kessler & Wang, 2002; Simon et al., 1995). In addition to the prevalence and burden, comorbidity among affective disorders is often the rule, not the exception. This is particularly true among veterans, with a large proportion of veterans with posttraumatic stress disorder (PTSD) also meeting criteria for an additional anxiety or depressive disorder (Ginzburg et al., 2010).

Effective treatments that aim to ameliorate these conditions are important. Luckily, with the creation and efficacy of cognitive behavioral therapy (CBT), such treatments exist. CBT is considered the “gold standard” treatment for affective disorders and a myriad of research has shown this umbrella of treatments to be effective across anxiety- and depression-related conditions (Chambless & Ollendick, 2001; Kaczurkin & Foa, 2015). However, despite the availability of efficacious treatments, fewer than half of individuals meeting criteria for a *DSM* condition actually seek treatment (Kessler et al., 2001; Kessler et al., 1999). This is particularly true for veterans, with findings showing that veterans are less likely to seek psychiatric treatment in comparison to those in the general population (Milliken et al., 2007). In addition to low treatment initiation rates (Kessler et al., 2001; Kessler et al., 1999), traditional CBT protocols typically aim to treat one psychiatric condition at a time. Therefore, groups of individuals with high rates of comorbidity, such as veteran samples (Ginzburg et al., 2010), may require a much longer course of treatment in order to see symptom reduction across their comorbid conditions when traditional disorder specific CBT protocols are used. In turn, requiring an increased number of treatment sessions may adversely affect treatment commencement and lead to lower rates of initiation among those individuals who need it the most. Fortunately, researchers have begun to address this problem with the creation and dissemination of transdiagnostic treatments.

Transdiagnostic treatments are relatively new and refer to “those that apply the same underlying treatment principles across mental disorders, without tailoring the protocol to specific diagnoses” (McEvoy et al., 2009). These treatments are based on the idea that many psychiatric conditions share underlying symptoms (e.g., negative affect, avoidance) and that many disorder-specific protocols contain overlapping intervention components (e.g., exposure, cognitive restructuring) (Barlow et al., 2004; Gros et al., 2016; Norton & Paulus, 2017). Broadly, the transdiagnostic treatment approach aims to simplify treatment for affective disorders by incorporating effective therapeutic techniques into a single treatment protocol aiming to address the overarching symptoms and functional impairment observed across these disorders (Gros et al., 2016). Given that transdiagnostic treatments aim to address symptoms that cut across the affective disorders, they may provide an effective and more parsimonious treatment for patients with comorbid disorders and symptoms.

One promising transdiagnostic treatment for affective disorders is transdiagnostic behavior therapy (TBT; Gros, 2014). TBT was designed for veterans with affective disorders and is an in-person protocol consisting of 12 weekly sessions. The primary components of TBT are psychoeducation, transdiagnostic exposure, and relapse prevention. Preliminary research across a variety of studies examining the efficacy of TBT has found it to lead to significant

reductions in affective disorder symptoms across time in veteran (Gros, 2014; Gros et al., 2017) and civilian (Gros et al., 2019) samples. These results are promising and suggest TBT as a potentially useful treatment for affective disorders in general, as well as for individuals with high rates of comorbidity among the affective disorders given that it aims to address the overarching symptoms of these conditions.

Unfortunately, to date, the question of patient satisfaction or treatment fit for transdiagnostic treatments for the affective disorders, such as TBT, has remained largely unanswered. Acceptability, or the extent to which patients view the treatment as helpful, reasonable, pleasant, and justified (Kazdin, 2000), is an important and often overlooked factor to consider when evaluating treatment efficacy. Although no research has investigated the acceptability of TBT in patients, preliminary findings suggest high acceptability rates for other transdiagnostic protocols. For example, in a study investigating the acceptability and feasibility of the Unified Protocol for Emotional Disorders (UP), results found equivalent satisfaction ratings across both study conditions (UP + pharmacotherapy versus pharmacotherapy alone; Ellard et al., 2017). Additionally, in a study testing the efficacy and acceptability of transdiagnostic group therapy for anxiety (Norton et al., 2008), the authors found therapeutic alliance and treatment credibility ratings were similar for the transdiagnostic group in comparison to those seen in diagnosis-specific treatment trials. Despite these encouraging results, little is known regarding the acceptability of TBT.

In sum, the literature points to a need for the examination of the acceptability of transdiagnostic protocols for affective disorders. This research will broaden our knowledge on the acceptability of transdiagnostic treatments in general, but also provide information on the acceptability and treatment compliance for TBT. Further, this work may help us better understand whether transdiagnostic treatments, such as TBT, help to eliminate some of the barriers (e.g., low acceptability ratings) associated with traditional disorder-specific treatment protocols. Within a sample of veterans, the current study examined the acceptability of TBT, in comparison to brief behavioral activation for depression (BA), a well-established treatment for affective disorders (Hopko et al., 2003; Lejuez et al., 2011). Given previous research suggesting their efficacy, we hypothesized that both TBT and BA would be associated with less impairment related to psychiatric symptoms across time. Regarding acceptability, we hypothesized that TBT would be rated as significantly more acceptable in comparison to BA. In addition to treatment acceptability, we were interested in whether “dose” (i.e., session attendance, treatment completion) and homework completion/engagement would significantly differ among the TBT and BA conditions given that previous research has found these factors to be important for long-term treatment outcomes (Glenn et al., 2013; Short, Fuller, Norr, & Schmidt, 2017). In terms of “dose,” we predicted that no significant differences would be found between the TBT and BA conditions. Finally, we hypothesized that TBT, in comparison to BA, would be associated with higher rates of homework completion and homework engagement.

Method

Study Design

The present investigation utilized data from a larger randomized control trial that examined the efficacy of TBT (active, $N=46$) versus BA psychotherapy (control, $N=47$) (citation redacted for double blind; [ClinicalTrials.gov](https://clinicaltrials.gov) # redacted for double blind)¹. Specifically, XXX and XXX (2019) found significant improvement across treatment for depression, anxiety, stress, PTSD symptoms, and impairment. Further, the authors found group differences (small effect) between the conditions in terms of symptom outcomes, with most findings favoring TBT in comparison to BA (see [redacted for double blind] for more details). In the current manuscript, acceptability and participation outcomes were analyzed at baseline and post-treatment. Participants were randomized to the active or control condition and then underwent 12 treatment sessions according to their assigned study intervention. Standardized questionnaires were administered at baseline and post-treatment. All procedures were approved by the local Veterans Affairs Medical Center (VAMC) Research and Development committee as well as the Institutional Review Board at the affiliated university.

Participants

Participants consisted of veterans requesting psychotherapy for symptoms of depression and anxiety at primary care and mental health clinics within a large Southeastern VAMC. Study inclusion criteria involved: 1) competence to complete study consent and procedures, 2) meeting *DSM-5* diagnostic criteria for a principal diagnosis of an affective disorder, including: panic disorder and/or agoraphobia (PD/AG), PTSD, social anxiety disorder (SOC), obsessive compulsive disorder (OCD), generalized anxiety disorder (GAD), specific phobia (SP), major depressive disorder (MDD), or persistent depressive disorder (PDD), and 3) participant age of 18 years or older. Study exclusion criteria involved: 1) recent history (< 2 months) of psychiatric hospitalization or a suicide attempt; 2) current diagnosis of substance use disorder; 3) acute, severe illness or medical condition that likely will require hospitalization and/or otherwise interfere with study procedures; 4) recent start of new psychiatric medication (< 4 weeks); or 5) diagnosis of schizophrenia, psychotic symptoms, personality disorder, and/or bipolar disorder.

Study Procedures

Participants for the present investigation were recruited from October 2014 to December 2017. The study was advertised to local providers in the Primary Care Mental Health Integration and General Outpatient Mental Health clinics within the VAMC. Interested participants were referred to project staff and scheduled for an intake appointment to complete informed consent documents, evaluate study inclusion and exclusion criteria, and complete diagnostic and self-report measures. If eligible, participants were randomly assigned (1:1) to one of the two study arms (TBT or BA) using a permuted block randomization procedure. Randomization was stratified by four principal diagnostic groups (MDD, PTSD, PD/AG, or other anxiety disorder) and block size varied to minimize the

¹Please see [redacted for double blind] for CONSORT details.

likelihood of unmasking. The project statistician developed the randomization assignment sequence. Following randomization, participants were assigned to a project therapist and completed 12 weekly sessions of psychotherapy. Participants repeated the diagnostic and self-report measures at post-treatment (one week after completion of session 12).

Treatment Conditions

TBT and BA were delivered in an individual psychotherapy format by masters- and doctoral-level project therapists that received extensive training in these treatments. All project therapists were responsible for delivering both treatment conditions and treatment sessions were approximately 45–60 minutes in duration.

Transdiagnostic Behavior Therapy.—TBT is streamlined behavioral intervention developed to educate on, prepare for, and practice and master four different types of exposure techniques for negative emotions (situational/in-vivo, physical/interoceptive, thought/imaginal, and [positive] emotional/behavioral activation). TBT aims to reduce transdiagnostic avoidance and lead to symptom remission. TBT has received initial support as an individual therapy and previous research has found TBT to be an efficacious treatment for affective disorders (Gros, 2014; Gros et al., 2017). Session topics include: psychoeducation regarding negative emotions and avoidance (session 1), an assessment of treatment goals and motivation (session 2), psychoeducation on avoidance and exposure exercises (session 3), how to get started with exposures (session 4), exposure practice – part one (session 5), exposure practice – part two (session 6), maintenance and modification of exposure practices (sessions 7–11), and review of treatment progress and relapse prevention strategies (session 12).

Behavioral Activation.—BA is a widely used evidence-based treatment that involves teaching patients to monitor their mood and daily activities with the goal of increasing pleasant, reinforcing activities (Hopko et al., 2003; Lejuez et al., 2011). BA has demonstrated reliable effectiveness across a variety of samples including university, community, civilian and veteran clinical samples with depression. In addition, BA has been shown to be effective in the treatment of PTSD and other related affective disorders (Gros & Haren, 2011; Jakupcak et al., 2006). In the present study, the BA condition followed a published manual available in the literature (Lejuez et al., 2011) and was provided in a format that was structurally equivalent to TBT with the same session length (45–60-minute), frequency of sessions (weekly), duration of treatment (12 sessions), and quantity of homework assigned. Although there was some overlap between the BA and TBT, the primary exposure component and multi-disorder focus of TBT is missing from BA.

Measures

Demographics.—A comprehensive questionnaire was administered at intake to assess demographic information such as age, race, ethnicity, gender, income, and disability status and percent (0 – 100% service connected).

Illness Intrusiveness Ratings Scale (IIRS).—The IIRS (Devins et al., 1984) is a 13-item questionnaire designed to measure the extent to which psychiatric symptoms interferes

with important domains of life (e.g., health, diet, work, and several others). Participants are asked to rate each item is rated on a 7-point Likert scale, ranging from 1 (*not very much*) to 7 (*very much*). In the present study, the total summed scale score was examined (Devins, 2010) at baseline and post-treatment. The IIRS has shown strong psychometric properties in the previous literature in participants with physical and/or emotional health concerns (Devins, 2010; Devins et al., 2001). In the current study, the IIRS demonstrated good internal consistency at both baseline and post-treatment (α s .88 - .95).

Satisfaction with Therapy and Therapist Scale-Revised (STTS-R).—The STTS-R (Oei & Green, 2008) is a 12-item questionnaire that assesses a patient’s satisfaction with the therapy provided as well as satisfaction with their therapist. The STTS-R is a revised version of the original STSS (Oei & Shuttlewood, 1999) and was modified to allow for mixed clinical groups with different clinical problems. Patients are asked to rate each item on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The STSS-R has two factors—Satisfaction with Therapy and Satisfaction with Therapist. In addition to these 12 items, the STTS-R has an additional question (labeled item 13 in the current study) that asks “*How much did this treatment help with the specific problem that led you to therapy*” and participants are asked to rate this item from 1 (“*Made things a lot better*”) to 5 (“*Made things a lot worse*”). For the current study, only the Satisfaction with Therapy factor was utilized. In addition to the Satisfaction with Therapy factor total score, certain items from the STSS-R were utilized. Specifically, STTS-R item 1 (“*I am satisfied with the quality of the therapy I received*”), STTS-R item 5 (“*I would recommend the program to a friend*”), STTS-R item 9 (“*I am now able to deal more effectively with my problems*”), and STTS-R item 13 (“*How much did this treatment help with the specific problem that led you to therapy*”). The STTS-R has demonstrated sound psychometric properties in previous research (Oei & Green, 2008) and the Satisfaction with Therapy factor had excellent reliability in the present investigation ($\alpha = .90$).

Post-Treatment Therapist Review (PTTR).—A questionnaire was created for the current study to measure a variety of outcomes at post-treatment. This questionnaire was completed at post-treatment (i.e., one week from session 12) by the therapist who treated each patient. This questionnaire inquired about a variety of posttreatment outcomes (e.g., session completion, homework adherence and engagement). The present study utilized PTTR item 1 (“total sessions attended”), PTTR item 2 (“number of no-shows”), PTTR item 3 (“number of cancellations”), PTTR item 4 (“total number of weeks in treatment”). In addition, PTTR item 8 (“weekly average percentage of homework completed”) and PTTR item 9 (“weekly average homework engagement”) were used. Therapists were asked to rate PTTR item 8 from 0 – 100% and PTTR item 9 from 0 (*none*) to 6 (*maximum*).

Results

Sample and Preliminary Analyses

For the current study, a total of 93 participants completed the baseline appointment (TBT $N = 46$, BA $N = 47$). Regarding follow-up, 43 participants did not have data (TBT $N = 17$, BA $N = 26$)². Baseline demographics were first compared across treatment condition (TBT = 1,

BA = 2). Correlation analyses found no significant relationships between condition in regard to age, disability percentage, and sex ($ps = .364 - .736$). To look at differences between condition in terms of race/ethnicity and income, two one-way ANOVAs were computed. Results found no significant differences between condition in terms of race/ethnicity $F(1, 92) = 1.49, p = .225$ and income $F(1, 92) = .06, p = .809$.

Primary Analyses

Treatment Improvement.—First, we were interested in determining whether TBT and BA, combined, demonstrated treatment improvement. Therefore, a paired samples t -test was conducted to determine if impairment related to psychiatric symptoms (as measured by the IIRS total score) would significantly reduce from Time 1 (baseline) to Time 2 (post-treatment) across both groups (TBT and BA combined). Results found a statistically significant reduction in impairment across both groups from Time 1 ($M = 50.09, SD = 15.71$) to Time 2 ($M = 32.80, SD = 19.60, t(47) = 6.29, p < .001$). These results suggest that both conditions lead to significant reductions in impairment related to psychiatric symptoms across time.

Satisfaction with Therapy.—Next, we examined whether condition was significantly associated with the STTS-R Satisfaction with Therapy factor total score (see Table 1 for means by condition). Results from a one-way ANOVA indicated that condition was also significantly associated with STTS-R Satisfaction with Therapy factor total score $F(1, 48) = 3.94, p = .050$, such that individuals in the TBT condition were more satisfied with therapy in general when compared to those in the BA condition. Following this, we were interested in understanding the relationship between condition and (TBT = 1, BA = 2) certain items from the STTS-R Satisfaction with Therapy factor. Specifically, four one-way ANOVAs were run to determine whether differences between condition would be found in regard to STTS-R item 1 (satisfaction), 5 (recommend to friend), 9 (more effectively deal with problems), and 13 (treatment help with specific problem). Results indicated that condition was significantly associated with STTS-R items 1 $F(1, 48) = 6.68, p = .013$, such that individuals in the TBT condition were more likely to say that they strongly agreed with this statement in comparison to those in the BA condition. Condition was also associated with STTS-R item 9 $F(1, 48) = 3.29, p = .076$ and item 5 $F(1, 48) = 3.76, p = .058$ at trend level. Further, condition was not significantly associated with STTS-R item 13 $F(1, 48) = 2.79, p = .102$. However, upon inspection of group means, individuals in the TBT condition rated this item higher in comparison to those in the BA condition.

Post-treatment Therapist Review.—Finally, in order to examine if condition was associated with different levels of treatment completion, four one-way ANOVAs were used (see Table 2 for means by condition). Specifically, we examined the relationship between condition (TBT = 1, BA = 2) and PTTR item 1 (“total sessions attended”), PTTR item 2 (“number of no-shows”), PTTR item 3 (“number of cancellations”), and PTTR item 4 (“total number of weeks in treatment”). Results found no significant differences between

²Treatment completers versus non-completers significantly differed in age at baseline, such that participants who had post-treatment data were older. No additional differences among key variables for the current manuscript were found. Further, the rate of attrition was not significantly different across groups. Please see [redacted for double blind] for more information.

condition and PTTR items 1 $F(1, 78) = 1.43, p = .236$, 2 $F(1, 78) = .07, p = .793$, 3 $F(1, 78) = .69, p = .409$, and 4 $F(1, 78) = .22, p = .643$. Next, we were interested in whether condition was significantly associated with differences in homework completion (PTTR item 8) and homework engagement (PTTR item 9). Results found that condition was significantly associated with PTTR items 8 $F(1, 65) = 4.95, p = .030$ and 9 $F(1, 65) = 3.98, p = .050$, suggesting that individuals in the TBT condition completed more homework and were more engaged in their homework, in comparison to those in the BA condition.

Discussion

The present study investigated self-reported treatment satisfaction and clinician-recorded patient participation during a treatment outcome study of TBT and BA in veterans with affective disorders. Findings suggest that TBT was associated with high participant satisfaction regarding the quality of the treatment (4.76 out of 5), likelihood to recommend the program to a friend (4.83 out of 5), and ability to deal more effectively with their problems (4.38 out of 5) on the STTS-R. STTS-R findings also supported the self-reported efficacy of TBT, with mean scores averaging between “made things a lot better” and “made things somewhat better” in the TBT group. In fact, the satisfaction with therapy scores for TBT in the present study ($M = 27.79; SD = 3.09$) were higher than other available STTS-R data in veterans receiving BA ($M = 24.51; SD = 3.09$) (Hershenberg et al., 2018) and a large outpatient sample of patients receiving CBT (M s ranged from 21.46 to 26.21; SD s ranged from 1.94 to 5.55) (Oei & Green, 2008). Together, these findings suggest that TBT was well-received by veterans with affective disorders in the present study.

In addition to investigating satisfaction in the TBT group, participants receiving BA also recorded their self-reported satisfaction and these scores were compared to the TBT group. Participants receiving TBT evidenced significantly higher satisfaction with therapy as compared to the BA group. As hypothesized, these findings may be explained in terms of the treatments' respective coverage of symptoms. For example, BA focuses on the symptoms of depression, TBT targets various symptoms common across the affective disorders. In addition, BA was designed to address the singular diagnosis of MDD, TBT was designed to target each of the affective disorders either as primary or secondary diagnoses as well as the symptoms of more than one diagnosis at a time. With that said, the vast majority of participants (83%; $n = 40$) endorsed symptoms consistent with at least two affective disorders. Of note, an alternative interpretation relates to the selection of BA as a comparison group. Although the majority of participants met criteria for MDD as a primary or secondary diagnosis (79%; $n = 38$), a minority of participants did not meet criteria for MDD and may have been less satisfied with the treatment match as a result. Fortunately, said participants were randomized across conditions, limiting their influence on the group findings. However, as reported earlier, BA has been shown to be effective across the affective disorders (Gros & Haren, 2011; Jakupcak et al., 2006).

Related to the noted differences in self-reported satisfaction, mean differences also were identified in therapist ratings of participant homework completion and homework engagement. Homework completion and engagement has been found to be an important predictor of treatment outcome in psychotherapy trials (Mausbach et al., 2010; Rees et al.,

2005). These findings may have interacted with the satisfaction findings in either direction in that higher satisfaction resulted in improved participation or improved participation resulted in higher satisfaction. Future research should monitor satisfaction and participation, as well as symptom change, over time to better understand their relations. Similar to the potential influence of the transdiagnostic approach on satisfaction, improved homework completion and participation may also be related to the better fit of TBT assignments to the symptom presentations as compared to the focus on a singular set of symptoms for depression.

Of note, results indicated no significant difference between TBT and BA in regard to session attendance and treatment helping with a specific problem (STTS-R item 13). These findings suggest that participants were equally likely to attend treatment sessions regardless of which treatment they received and is important given that session attendance is critical to treatment efficacy and fidelity. Although results did indicate significant differences between the conditions in terms of patients feeling like treatment helped them more effectively deal with problems, we did not find significant difference in terms of treatment helping with a specific problem. These findings suggest that TBT may have helped individuals broadly deal with problems better, but this did not translate to help with a specific problem. Given these somewhat discrepant findings, future work aiming understand client's satisfaction with therapy across TBT and BA will be important in order to generalize and expand up these findings.

The present findings add to the growing body of literature in support of the transdiagnostic psychotherapy approaches for the affective disorders (Andersen et al., 2016; Norton & Paulus, 2017). In addition to their comparable outcomes (Barlow et al., 2017; Norton & Barrera, 2012), the present findings support the notion that transdiagnostic treatments may be equally, if not better, tolerated by patients with affective disorders. Added benefits of easier dissemination and implementation of the transdiagnostic treatments also have been argued elsewhere (Gros et al., 2017). In combination, these findings highlight both the potential benefits of transdiagnostic approaches as well as the need for continued research on transdiagnostic approaches in order to more fully disseminate them.

This study contained a number of limitations that should be addressed in future research. The selection of BA as a control condition was based on the need to select one treatment that would benefit most/all of the patients with affective disorders; however, its selection also may have reduced the satisfaction ratings in some patients. The challenges associated with selecting control conditions in transdiagnostic studies has been detailed elsewhere (Gros, 2015). The attrition rate was high (48%) compared to other recent studies of psychotherapy with veterans (Gros et al., 2018), but within the reported range for reviews of the discontinuation literature (Goetter et al., 2015). Relatedly, no measures of satisfaction were recorded on participants that discontinued treatment. An additional limitation of the current study is that differences between TBT and BA in regard to "recommending treatment to a friend" (STTSR item 5) and "treatment helping to more effectively deal with problems" (STTSR item 9) were only statistically significant at trend level. Although the means observed across the conditions for these specific items were in favor of TBT, given that differences did not reach statistical significance these findings must be interpreted with caution. Future research aiming to disentangle these satisfaction ratings is crucial to enhance

the external validity of these findings. And finally, the study was limited to a mostly male veteran sample which may limit the generalizability of these findings.

The present findings demonstrated high patient satisfaction and homework completion/participation in participants with affective disorders completing TBT as compared to BA. The findings highlight the potential benefits of transdiagnostic treatments related to their coverage of multiple symptoms and/or disorders. Although additional research is needed to better understand the differences between transdiagnostic and disorder-specific treatments, preliminary findings for transdiagnostic treatments have been quite promising and argue for their continued dissemination and implementation.

Role of Funding

This study is partially supported by Department of Veteran Affairs Clinical Sciences Research and Development Career Development Award CX000845 (PI: Gros). The authors have no other role of funding sources to disclose. The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government. Manuscript analyses and preparation were partly supported by the PI's NIMH T32 postdoctoral fellowship (T32MH018869) at the Medical University of South Carolina.

References

- American Psychiatric Association. (2013). *The Diagnostic and Statistical Manual of Mental Disorders: DSM 5*: BookpointUS.
- Andersen P, Toner P, Bland M, & McMillan D (2016). Effectiveness of transdiagnostic cognitive behaviour therapy for anxiety and depression in adults: A systematic review and meta-analysis. *Behavioural and Cognitive Psychotherapy*, 44(6), 673–690. doi:10.1017/S1352465816000229 [PubMed: 27301967]
- Barlow DH, Allen LB, & Choate ML (2004). Toward a unified treatment for emotional disorders. *Behavior Therapy*, 35(2), 205–230. doi:10.1016/j.beth.2016.11.005
- Barlow DH, Farchione TJ, Bullis JR, Gallagher MW, Murray-Latin H, Sauer-Zavala S, Bentley KH, Thompson-Hollands J, Conklin LR, Boswell JF, Ametaj A, Carl JR, Boettcher HT, and Cassiello-Robbins C (2017). The unified protocol for transdiagnostic treatment of emotional disorders compared with diagnosis-specific protocols for anxiety disorders: A randomized clinical trial. *JAMA Psychiatry*, 74(9), 875–884. doi:10.1001/jamapsychiatry.2017.2164 [PubMed: 28768327]
- Chambless DL, & Ollendick TH (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology*, 52(1), 685–716. doi:10.1146/annurev.psych.52.1.685
- Devins GM, Binik YM, Hutchinson TA, Hollomby DJ, Barré PE, & Guttman RD (1984). The emotional impact of end-stage renal disease: Importance of patients' perceptions of intrusiveness and control. *The International Journal of Psychiatry in Medicine*, 13(4), 327–343. doi:<https://doi.org/10.2190%2F5DCP-25BV-U1G9-9G7C>
- Devins GM, Dion R, Pelletier LG, Shapiro CM, Abbey S, Raiz LR, Binik YM, McGowan P, Kutner N, Beanlands H, and Edworthy SM (2001). Structure of lifestyle disruptions in chronic disease: A confirmatory factor analysis of the Illness Intrusiveness Ratings Scale. *Medical Care*, 39(10), 1097–1104. doi:[jstor.org/stable/3767566?seq=1](https://www.jstor.org/stable/3767566?seq=1) [PubMed: 11567172]
- Devins GM (2010). Using the illness intrusiveness ratings scale to understand health-related quality of life in chronic disease. *Journal of Psychosomatic Research*, 68(6), 591–602. doi:10.1016/j.jpsychores.2009.05.006 [PubMed: 20488277]
- Ellard KK, Bernstein EE, Hearing C, Baek JH, Sylvia LG, Nierenberg AA, Barlow DH, and Deckersbach T (2017). Transdiagnostic treatment of bipolar disorder and comorbid anxiety using the Unified Protocol for Emotional Disorders: A pilot feasibility and acceptability trial. *Journal of Affective Disorders*, 219, 209–221. doi:10.1016/j.jad.2017.05.011 [PubMed: 28577505]

- Ginzburg K, Ein-Dor T, & Solomon Z (2010). Comorbidity of posttraumatic stress disorder, anxiety and depression: A 20-year longitudinal study of war veterans. *Journal of Affective Disorders*, 123(1–3), 249–257. doi:10.1016/j.jad.2009.08.006 [PubMed: 19765828]
- Glenn D, Golinelli D, Rose RD, Roy-Byrne P, Stein MB, Sullivan G, Bystritsky A, Sherbourne C, and Craske MG (2013). Who gets the most out of cognitive behavioral therapy for anxiety disorders? The role of treatment dose and patient engagement. *Journal of Consulting and Clinical Psychology*, 81(4), 639. doi:<https://psycnet.apa.org/doi/10.1037/a0033403> [PubMed: 23750465]
- Goetter EM, Bui E, Ojserkis RA, Zakarian RJ, Brendel RW, & Simon NM (2015). A systematic review of dropout from psychotherapy for posttraumatic stress disorder among Iraq and Afghanistan combat veterans. *Journal of Traumatic Stress*, 28(5), 401–409. doi:10.1002/jts.22038 [PubMed: 26375387]
- Greenberg PE, Sisitsky T, Kessler RC, Finkelstein SN, Berndt ER, Davidson JR, & Fyer AJ (1999). The economic burden of anxiety disorders in the 1990s. *The Journal of Clinical Psychiatry*, 60(7), 427–435. doi:<https://psycnet.apa.org/doi/10.4088/JCP.v60n0702> [PubMed: 10453795]
- Gros DF, & Haren WB (2011). Open trial of brief behavioral activation psychotherapy for depression in an integrated veterans affairs primary care setting. *The Primary Care Companion to CNS Disorders*, 13(4). doi:<https://dx.doi.org/10.4088%2FPPCC.11m01136>
- Gros DF (2014). Development and initial evaluation of Transdiagnostic Behavior Therapy (TBT) for veterans with affective disorders. *Psychiatry Research*, 220(1–2), 275–282. doi: 10.1016/j.psychres.2014.08.018 [PubMed: 25193379]
- Gros DF (2015). Design challenges in transdiagnostic psychotherapy research: Comparing Transdiagnostic Behavior Therapy (TBT) to existing evidence-based psychotherapy in veterans with affective disorders. *Contemporary Clinical Trials*, 43, 114–119. doi: 10.1016/j.cct.2015.05.011 [PubMed: 26003434]
- Gros DF, Allan NP, & Szafranski DD (2016). Movement towards transdiagnostic psychotherapeutic practices for the affective disorders. *Evidence-based Mental Health*, 19(3), e10–e12. doi:10.1136/eb-2015-102286 [PubMed: 27356982]
- Gros DF, Szafranski DD, & Shead SD (2017). A real world dissemination and implementation of Transdiagnostic Behavior Therapy (TBT) for veterans with affective disorders. *Journal of Anxiety Disorders*, 46, 72–77. doi:10.1016/j.janxdis.2016.04.010 [PubMed: 27158076]
- Gros DF, Allan NP, Lancaster CL, Szafranski DD, & Acierno R (2018). Predictors of treatment discontinuation during prolonged exposure for PTSD. *Behavioural and Cognitive Psychotherapy*, 46(1), 35–49. doi:10.1017/S135246581700039X [PubMed: 28669360]
- Gros DF, & Allan NP (2019). A randomized controlled trial comparing Transdiagnostic Behavior Therapy (TBT) and behavioral activation in veterans with affective disorders. *Psychiatry Research*, 281, 112541. doi:10.1016/j.psychres.2019.112541 [PubMed: 31514043]
- Gros DF, Merrifield C, Rowa K, Szafranski DD, Young L, & McCabe RE (2019). A naturalistic comparison of group Transdiagnostic Behaviour Therapy (TBT) and disorder-specific cognitive behavioural therapy groups for the affective disorders. *Behavioural and Cognitive Psychotherapy*, 47(1), 39–51. doi:10.1017/S1352465818000309 [PubMed: 29807553]
- Hershenberg R, Smith RV, Goodson JT, & Thase ME (2018). Activating veterans toward sources of reward: A pilot report on development, feasibility, and clinical outcomes of a 12-week behavioral activation group treatment. *Cognitive and Behavioral Practice*, 25(1), 57–69. doi:10.1016/j.cbpra.2017.04.001
- Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, & Koffman RL (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *New England Journal of Medicine*, 351(1), 13–22. doi:10.1056/NEJMoa040603 [PubMed: 15229303]
- Hopko DR, Lejuez C, Lepage JP, Hopko SD, & McNeil DW (2003). A brief behavioral activation treatment for depression: A randomized pilot trial within an inpatient psychiatric hospital. *Behavior Modification*, 27(4), 458–469. doi: <https://doi.org/10.1177%2F0145445503255489> [PubMed: 12971122]
- Jakupcak M, Roberts LJ, Martell C, Mulick P, Michael S, Reed R, Balsam KF, Yoshimoto D, and McFall M (2006). A pilot study of behavioral activation for veterans with posttraumatic stress disorder. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, 19(3), 387–391. doi:10.1002/jts.20125

- Kaczurkin AN, & Foa EB (2015). Cognitive-behavioral therapy for anxiety disorders: An update on the empirical evidence. *Dialogues in Clinical Neuroscience*, 17(3), 337. [PubMed: 26487814]
- Kazdin AE (2000). Perceived barriers to treatment participation and treatment acceptability among antisocial children and their families. *Journal of Child and Family Studies*, 9(2), 157–174. doi:10.1023/A:1009414904228
- Kessler RC, Zhao S, Katz SJ, Kouzis AC, Frank RG, Edlund M, & Leaf P (1999). Past-year use of outpatient services for psychiatric problems in the National Comorbidity Survey. *American Journal of Psychiatry*, 156(1), 115–123. doi:10.1176/ajp.156.1.115 [PubMed: 9892306]
- Kessler RC, Berglund PA, Bruce ML, Koch JR, Laska EM, Leaf PJ, Manderscheid RW, Rosenheck RA, Walters EE, and Wang PS (2001). The prevalence and correlates of untreated serious mental illness. *Health Services Research*, 36(6 Pt 1), 987. [PubMed: 11775672]
- Kessler RC, & Wang PS (2002). Epidemiology of depression. *Handbook of Depression*, 2, 5–22.
- Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, & Walters EE (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 593–602. doi:10.1001/archpsyc.62.6.593 [PubMed: 15939837]
- Kessler RC, Chiu WT, Demler O, & Walters EE (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 617–627. doi:10.1001/archpsyc.62.6.593 [PubMed: 15939839]
- Kessler RC, Ruscio AM, Shear K, & Wittchen H-U (2009). Epidemiology of anxiety disorders. In *Behavioral Neurobiology of Anxiety and its Treatment* (pp. 21–35): Springer. doi:10.1007/7854_2009_9
- Kroenke K, Spitzer RL, Williams JB, Monahan PO, & Löwe B (2007). Anxiety disorders in primary care: Prevalence, impairment, comorbidity, and detection. *Annals of Internal Medicine*, 146(5), 317–325. doi:10.7326/0003-4819-146-5-200703060-00004 [PubMed: 17339617]
- Lejuez C, Hopko DR, Acierno R, Daughters SB, & Pagoto SL (2011). Ten year revision of the brief behavioral activation treatment for depression: Revised treatment manual. *Behavior Modification*, 35(2), 111–161. doi:<https://doi.org/10.1177%2F0145445510390929> [PubMed: 21324944]
- Mausbach BT, Moore R, Roesch S, Cardenas V, & Patterson TL (2010). The relationship between homework compliance and therapy outcomes: An updated meta-analysis. *Cognitive Therapy and Research*, 34(5), 429–438. doi:10.1007/s10608-010-9297-z [PubMed: 20930925]
- McEvoy PM, Nathan P, & Norton PJ (2009). Efficacy of transdiagnostic treatments: A review of published outcome studies and future research directions. *Journal of Cognitive Psychotherapy*, 23(1), 20. doi:10.1891/0889-8391.23.1.20
- Milliken CS, Auchterlonie JL, & Hoge CW (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *JAMA*, 298(18), 2141–2148. doi:10.1001/jama.298.18.2141 [PubMed: 18000197]
- Norton PJ, Hayes SA, & Springer JR (2008). Transdiagnostic cognitive-behavioral group therapy for anxiety: Outcome and process. *International Journal of Cognitive Therapy*, 1(3), 266–279. doi:10.1521/ijct.2008.1.3.266
- Norton PJ, & Barrera TL (2012). Transdiagnostic versus diagnosis-specific CBT for anxiety disorders: A preliminary randomized controlled noninferiority trial. *Depression and Anxiety*, 29(10), 874–882. doi:10.1002/da.21974 [PubMed: 22767410]
- Norton PJ, & Paulus DJ (2017). Transdiagnostic models of anxiety disorder: Theoretical and empirical underpinnings. *Clinical Psychology Review*, 56, 122–137. doi:10.1016/j.cpr.2017.03.004 [PubMed: 28450042]
- Oei TP, & Shuttlewood GJ (1999). Development of a satisfaction with therapy and therapist scale. *Australian & New Zealand Journal of Psychiatry*, 33(5), 748–753. doi:<https://doi.org/10.1080%2Fj.1440-1614.1999.00628.x> [PubMed: 10545001]
- Oei TP, & Green AL (2008). The Satisfaction With Therapy and Therapist Scale--Revised (STTS-R) for group psychotherapy: Psychometric properties and confirmatory factor analysis. *Professional Psychology: Research and Practice*, 39(4), 435. doi:<https://psycnet.apa.org/doi/10.1037/0735-7028.39.4.435>

- Rees CS, McEvoy P, & Nathan PR (2005). Relationship between homework completion and outcome in cognitive behaviour therapy. *Cognitive Behaviour Therapy*, 34(4), 242–247. doi:10.1080/16506070510011548 [PubMed: 16319035]
- Seal KH, Bertenthal D, Miner CR, Sen S, & Marmar C (2007). Bringing the war back home: mental health disorders among 103,788 US veterans returning from Iraq and Afghanistan seen at Department of Veterans Affairs facilities. *Archives of Internal Medicine*, 167(5), 476–482. doi:10.1001/archinte.167.5.476 [PubMed: 17353495]
- Short NA, Fuller K, Norr AM, & Schmidt NB (2017). Acceptability of a brief computerized intervention targeting anxiety sensitivity. *Cognitive Behaviour Therapy*, 46(3), 250–264. doi:10.1080/16506073.2016.1232748 [PubMed: 27712458]
- Simon G, Ormel J, VonKorff M, & Barlow W (1995). Health care costs associated with depressive and anxiety disorders in primary care. *American Journal of Psychiatry*, 152(3), 352–357. [PubMed: 7864259]

Impact Statement:

The current study found high patient satisfaction and homework completion/participation among veterans with affective disorders completing a transdiagnostic behavioral treatment (TBT). These findings underscore the promising nature of TBT as a transdiagnostic therapy and highlight additional benefits of transdiagnostic treatments outside of significant symptom reductions. Given the promising nature of transdiagnostic treatments, the present investigation advocates for their continued dissemination and implementation.

Table 1

Means, standard deviations, and effect sizes for the STTS-R items across treatment condition.

Measure	TBT M	TBT SD	BA M	BA SD	F	df	p	d
STTSR_F1 <i>Factor 1 Total</i>	27.79	3.09	25.65	4.49	3.94	48	.050	.56
STTSR_1 <i>Satisfaction</i>	4.76	.44	4.30	.80	6.68	48	.013	.71
STTSR_5 <i>Recommend to friend</i>	4.83	.47	4.45	.89	3.76	48	.058	.53
STTSR_9 <i>Deal effectively</i>	4.38	.98	3.85	1.04	3.29	48	.076	.52
STTSR_13 <i>Help with problem</i>	1.50	.51	1.85	.93	2.79	48	.102	-.47

Note. TBT = Transdiagnostic Behavior Therapy condition; BA = Behavioral Activation condition; STTSR_F1 = Satisfaction with Therapy and Therapist Scale-Revised, Satisfaction with Therapy Factor; STTSR_1 = Satisfaction with Therapy and Therapist Scale-Revised, item 1; STTSR_5 = item 5; STTSR_9 = item 9; STTSR_13 = item 13.

Table 2

Means, standard deviations, and effect sizes for the PTTR items across treatment condition.

Measure	TBT	M	TBT	SD	BA	M	BA	SD	F	df	p	d
PTTR_1 <i>Total sessions</i>	9.73	4.14	8.62	4.23	1.43	78	.236	.27				
PTTR_2 <i>No-shows</i>	.75	1.10	.82	1.28	.07	78	.793	-.06				
PTTR_3 <i>Cancellations</i>	1.73	1.96	2.15	2.59	.69	78	.409	-.18				
PTTR_4 <i>Total number of weeks</i>	14.34	7.59	13.56	7.34	.22	78	.643	.10				
PTTR_8 <i>Homework completion</i>	56.76	28.36	40.94	29.44	4.95	65	.030	.55				
PTTR_8 <i>Homework engagement</i>	3.26	1.81	2.38	1.81	3.98	65	.050	.49				

Note. *TBT* = Transdiagnostic Behavior Therapy condition; *BA* = Behavioral Activation condition; *PTTR_1* = Post-Treatment Therapist Review, item 1; *PTTR_2* = item 2; *PTTR_3* = item 3; *PTTR_4* = item 4; *PTTR_8* = item 8; *PTTR_9* = item 9.