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Efficacy of transdiagnostic behavior therapy on transdiagnostic avoidance in veterans with emotional disorders

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Abstract

Objective: To date, transdiagnostic treatments have primarily investigated treatment outcomes of general psychiatric symptomatology, rather than the specific transdiagnostic symptoms implicated in their protocols. The present study sought to address this significant gap in the literature by investigating the effect of transdiagnostic behavior therapy (TBT) on transdiagnostic avoidance.

Method: Forty-four veterans diagnosed with various emotional disorders initiated TBT, and completed diagnostic and self-report measures at pre- and posttreatment.

Results: Participants demonstrated reliable treatment improvements in measures of situational, thought, and positive emotional avoidance, with moderate-to-large effect sizes, and in measures of physical/interoceptive avoidance with small-to-medium effect sizes.

Conclusions: The findings support the hypothesized effect of TBT in self-report measures of four types of transdiagnostic avoidance in participants diagnosed with various emotional disorders. These findings contribute to the growing literature on the potential benefits of the transdiagnostic approaches to address symptomatology across diagnoses.

Keywords

avoidance; comorbidity; emotional disorders; major depressive disorder; PTSD; transdiagnostic behavior therapy

1 | INTRODUCTION

Despite general acceptance and demonstration of effectiveness of disorder-specific evidence-based psychotherapies for the emotional disorders (Butler, Chapman, Forman, & Beck, 2006; Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012), several limitations

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CONFLICT OF INTERESTS

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have been identified for these approaches as well (Barlow, Allen, & Choate, 2004; Gros, Allan, & Szafranski, 2016; Newby, McKinnon, Kuyken, Gilbody, & Dalgleish, 2015). These limitations include: (a) The inconsistency between the disorder-specific focus of the interventions and the growing literature on the overlapping nature of the emotional disorders (e.g., shared etiological and maintaining factors), (b) the omission of comorbid presentations, despite their high prevalence among the emotional disorders, (c) the challenges that a large number of disorder-specific protocols for the emotional disorders present for dissemination and implementation efforts. Given these limitations, transdiagnostic approaches to psychotherapy for the emotional disorders have been gaining in popularity. Transdiagnostic approaches aim to target underlying or cross-cutting symptoms (e.g., psychological, emotional, cognitive, or behavioral process) that are common across a specific set of disorders or conditions (Barlow et al., 2004; Harvey, Watkins, Mansell, & Shafran, 2004; Newby et al., 2015).

A small number of transdiagnostic treatment approaches have been developed and studied for patients with depressive/anxiety disorders (Andersen, Toner, Bland, & McMillan, 2016; Norton & Paulus, 2016), with initial outcomes demonstrating moderate-to-high treatment effect sizes (Barlow et al., 2017; Farchione et al., 2012; Gros, 2014; Norton, 2012; Norton & Barrera, 2012; Riccardi, Korte, & Schmidt, 2017). While each of these treatments use a varying combination of cognitive and behavioral techniques, the treatments differ in their targeted transdiagnostic symptom/process that is identified to be central to symptom improvements. To name a few, unified protocol for emotional disorders (UP) was designed to address emotion dysregulation across psychopathology (Barlow et al., 2017) and transdiagnostic behavior therapy (TBT) identifies avoidance as its primary transdiagnostic target for the emotional disorders (Gros, 2014). Additional transdiagnostic treatments target safety behaviors (false safety behavior elimination therapy; Riccardi et al., 2017), or general symptomatology common among group of disorders (group cognitive-behavioral therapy of anxiety; Norton, 2012).

Interestingly, although these transdiagnostic treatments purport to target a specific symptom, studies of their efficacy have rarely included targeted assessments of said symptoms. In the largest efficacy study of a transdiagnostic treatment to date, Barlow et al. (2017) did not include a measure of emotion regulation in their study of UP, but rather only reported measures of general psychopathology and specific diagnoses. The same was true of earlier pilot trials of UP (Ellard, Fairholme, Boisseau, Fachione, & Barlow, 2010). Similarly, the initial trials of TBT also neglected measures specifically assessing the types of avoidance targeted by the intervention, in favor of general measures of depression and anxiety and related impairments (Gros, 2014; Gros, Szafranski, & Shead, 2017; Gros et al., 2019). Together, although these studies have consistently supported their efficacy, the omission of their targeted symptom or process limits the understanding of the effects associated with these treatments and whether the identified transdiagnostic symptoms are influenced by the treatments.

The goal of the present study was to investigate changes in the targeted transdiagnostic symptom, avoidance, in TBT in participants with emotional disorders. Previous research on TBT has demonstrated reliable improvements in the symptoms of depression, anxiety

(including cognitive and somatic anxiety, separately), stress, symptoms of posttraumatic stress disorder (PTSD), and related impairment (Gros, 2014; Gros et al., 2017, Gros et al., 2019). However, to date, no studies have investigated transdiagnostic avoidance, including the four types of avoidance identified in TBT (situational, physical/interoceptive, thought, and positive emotional). We hypothesized that reliable improvements would be evidenced in each of the four types avoidance in participants completing the course of TBT.

2 | METHOD

2.1 | Participants

Forty-four participants were enrolled into a study of evidence-based psychotherapy for symptoms of depression and anxiety at primary care and mental health clinics within a large southeastern Veterans Affairs Medical Center (VAMC). Study inclusion criteria involved: (a) Competence to complete study consent and procedures; (b) DSM diagnostic criteria for a principal diagnosis of an emotional 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), or major depressive disorder (MDD); and (c) participant age of 18 years or older. Study exclusion criteria involved: (a) Recent history (≤2 months) of psychiatric hospitalization or a suicide attempt, (b) current diagnosis of substance use disorder, (c) acute, severe illness or medical condition that likely will require hospitalization and/or otherwise interfere with study procedures, (d) recent start of new psychiatric medication (≤ 4 weeks), or (e) diagnosis of schizophrenia, psychotic symptoms, personality disorder, and/or bipolar disorder.

2.2 | Study procedures

All procedures were approved by the local VAMC Research and Development Committee as well as the Institutional Review Board at the affiliated university. Interested participants were referred to project staff and scheduled for an intake appointment to complete consent documents, evaluate study inclusion and exclusion criteria, and complete diagnostic and self-report measures. Participants were assigned to a project therapist to complete 12 weekly sessions of psychotherapy. Participants completed diagnostic and self-report measures at baseline and at immediate posttreatment (1 week after completion of Session 12).

Treatment was delivered by project therapists that received extensive training in TBT. Individual sessions were from 45 to 60 min in duration. A review of 20% of treatment session recordings, rated on a session-specific 5-point fidelity rating scale, revealed that TBT (M = 4.8; standard deviation [SD] = 0.5) was delivered with high fidelity.

2.3 | Transdiagnostic behavior therapy

TBT was developed as a streamlined protocol focusing on education, practice, and mastery of four different exposure techniques for negative emotions (situational/in vivo, physical/interoceptive, thought/imaginal, and [positive] emotional/behavioral activation) to reduce transdiagnostic avoidance and lead to symptom remission. TBT has received initial support as an individual therapy (Gros, 2014; Gros et al., 2017), and was revised slightly to fit into a group format for an additional successful trial (Gros et al., 2019). Session topics include:

psychoeducation on negative emotions and avoidance (Session 1), assessment of motivation and treatment goals (Session 2), psychoeducation on avoidance and exposure (Session 3), getting started with exposures (Session 4), exposure practice—Part 1 (Session 5), exposure practice—Part 2 (Session 6), maintenance and refinement of exposure practices (Sessions 7–11), and review of treatment progress and relapse prevention strategies (Session 12).

2.4 | Measures

2.4.1 | Albany Panic and Phobia Questionnaire (APPQ)—The APPQ is a 27-item self-report measure that assesses agoraphobia, social anxiety, and interoceptive avoidance (Rapee, Craske, & Barlow, 1994–1995). For the purposes of the present study, only the agoraphobia and interoceptive avoidance scales were investigated. Each subscale has been shown to have good internal consistency and temporal stability (Brown, White, & Barlow, 2005). The APPQ scales demonstrated good internal consistency across all assessment points (αs > .86).

2.4.2 | Anxiety disorder interview schedule 5 (ADIS-5)—The ADIS-5 is a well-established, semi-structured interview designed to assess a wide range of psychiatric disorders (Brown, 2014). The ADIS-5 assesses current and past diagnoses with DSM diagnostic criteria, severity scores, and lists of feared and avoided situations for the anxiety disorders. The ADIS-5 has demonstrated excellent inter-rater reliability and validity of emotional disorder diagnoses. In the present study, 20% of interviews were scored by an independent rater. The findings demonstrated excellent inter-rater agreement for the most common diagnoses of MDD (85.0%), PD/AG (100%), and PTSD (100%).

2.4.3 | Multidimensional assessment of social anxiety (MASA)—MASA is a 38-item self-report measure that was designed to assess trait symptom dimensions consistent with the hybrid model of social anxiety (Gros, Simms, & Antony, 2011; Gros, Simms, Antony, & McCabe, 2012). The MASA contains six subscales that assess behavioral avoidance (MASA-BA), physiological arousal and avoidance (MASA-PA), thought avoidance (MASA-TA), anhedonia (MASA-ANH), functional impairment, and coping with substances. The six subscales have been supported in a clinical sample as well as nonclinical student samples (Gros et al., 2011, 2012), and shown to differentiate symptoms across anxiety disorders and depression and their comorbidities, rather than being limited to social anxiety symptomatology (Gros, McCabe, & Antony, 2013). The measure also has been shown to be sensitive to improvements during the course of evidence-based psychotherapy (Gros, Farmer, McCabe, & Antony, 2015). For the purposes of the present study, the functional impairment and coping with substances scales were not investigated. In general, the studied MASA scales demonstrated good internal consistency across all assessment points (αs > .88) with one exception. The internal consistency for the MASA-PA was lower than previously reported at baseline (α = .59) and at follow-up (α = .72).

2.4.4 | PTSD Checklist 5 (PCL-5)—The PCL-5 is a 20-item self-report measure that assesses DSM-5 criteria PTSD symptoms experienced in the last month (Weathers et al., 2013). For the purposes of the present study, only items assessing thought avoidance (Item 6: “avoiding memories, thoughts, or feelings related to the stressful experience?”),

situational avoidance (Item 7: “avoiding external reminders of the stressful experience?”), and anhedonia (Item 12: “loss of interest in activities that you used to enjoy?”) were investigated. Previous versions of the PCL-5 have been shown to have excellent internal consistency (αs > .94) and excellent test–retest reliability in veterans (r = 0.96; Orsillo, Batten, & Hammond, 2001). The total scale for the PCL-5 demonstrated excellent internal consistency across assessment points in the present study (αs > .92).

2.5 | Data analytic plan

All data were inspected for missing values, and minimal item-level missing values were identified (<0.2%; 5 of 3,358 responses). As such, no participants were excluded due to missing data. Within scale mean substitution was used to replace item-level missing values in participants with minimal missing data.

Across all participants with pretreatment data, mixed regression modeling was conducted in Mplus version 8.3 using robust maximum likelihood to provide estimates robust to missing data. Time was included to model change from pre- to postintervention symptoms specifically targeted by TBT, including (a) situational avoidance (APPQ-agoraphobia, MASA-behavioral avoidance, PCL-5-situational avoidance item), (b) interoceptive avoidance (APPQ-interoceptive, MASA-physical arousal/avoidance), (c) thought avoidance (MASA-thought avoidance, PCL-5-thought avoidance), and (d) positive emotional avoidance (MASA-anhedonia, PCL-5-anhedonia). Effect sizes (Cohen’s d) were calculated as the change from pre- to postintervention over the baseline standard deviation with small, medium, and large effects considered 0.2, 0.5, and 0.8, respectively.

3 | RESULTS

3.1 | Participant demographics and diagnostics

Participants had an average age of 43.5 (SD = 11.5), with the majority being men (79.5%), Black (52.3%) or White (38.6%), married (47.7%) or previously married (34.1%), employed (56.8%), and completed some college (59.1%). Many participants reported serving in the U.S. Army (52.3%) or Air Force (34.1%), deployed to Operations Enduring and/or Iraqi Freedom (47.7%) or Desert Storm/Shield (13.6%), and having a Department of Veterans Affairs service-connected disability (75.0%).

On average, participants met diagnostic criteria for 2.3 (SD = 1.1) emotional disorders. Based on principal diagnoses, participants endorsed symptoms consistent with MDD (n = 19; 43.2%), PTSD (n = 10; 22.7%), or PD/AG (n = 8; 18.2%), SOC (n = 4; 9.1%), GAD (n = 2; 4.5%), or OCD (n = 1; 2.3%). The most common additional or comorbidity diagnoses were MDD (n = 13; 29.6%), GAD (n = 12; 27.3%), SOC (n = 10; 22.7%), SP (n = 9; 20.5%), PD/AG (n = 4; 9.1%), and PTSD (n = 4; 9.1%).

3.2 | Treatment completion

Of the 44 participants that initiated treatment, 29 participants (65.9%) completed the treatment and the posttreatment assessments. Completers and noncompleters were compared in baseline scores via a one-way analysis of variance. No group differences were evidenced

across any of the measures at baseline (*Fs* < 3.4; *ps* > .07). Further, although all participants were included in the analyses, effect sizes and outcomes were not substantively different when restricted to only participants completing the posttreatment assessments.

3.3 | Treatment outcome

The treatment outcome findings are presented in Table 1. Participants demonstrated significant treatment improvements with medium-to-large effect sizes in situational avoidance (*ps* < .006; *ds* > 0.44), thought avoidance (*ps* < .005; *ds* > 0.61), and positive emotional avoidance (*ps* < .001; *ds* > 0.72). However, only one of the two measures of interoceptive avoidance (MASA-PA: $p = .014$; $d = 0.35$) demonstrated reliable symptom change, whereas the second measure did not (APPQ-interoceptive: $p = .284$; $d = 0.21$).

4 | DISCUSSION

The present study investigated the treatment effects of TBT on its hypothesized transdiagnostic symptom target of avoidance in veteran participants with emotional disorders. Despite being specifically designed to target avoidance, this study was the first study to include measures that assessed the four types of avoidance identified in TBT: situational, physical/interoceptive, thought, and positive emotional (Gros, 2014). Across measures, significant treatment improvements were evidenced for each of the types of avoidance, with one exception for physical/interoceptive avoidance. Only one of the two measures of physical/interoceptive avoidance demonstrated a reliable change from pre- to posttreatment, with small-to-moderate effect sizes observed across measures. Together, these findings suggest that TBT results in significant treatment improvements in transdiagnostic avoidance across different emotional disorders.

TBT hypothesizes that transdiagnostic treatment change occurs through improvements in four different types of avoidance (Gros, 2014). The present findings supported the influence of TBT on treatment improvements in avoidance. The strongest effects were demonstrated for positive emotional avoidance (large effect sizes), with moderate effects observed in situational and thought avoidance as well. The weakest effects were seen for physical/interoceptive avoidance. One explanation for differences across the types of avoidance may be the format in which TBT is presented to patients and the diagnoses studied in the present sample. More specifically, the different types of avoidance targeted by TBT are dependent on the presenting diagnoses/symptoms. For example, TBT suggests targeting positive emotional avoidance in patients with a single diagnosis of MDD, and omitting the other types of avoidance practices. Similarly, different avoidance/exposure practices would be matched to presenting symptoms in patients with PTSD (situational, thought, positive emotional), PD/AG (situational, physical/interoceptive), or comorbid PTSD and PD/AG (situational, physical/interoceptive, thought, positive emotional). Based on the diagnoses observed in the present sample, there was a smaller number of participants with diagnoses characterized by high physical/interoceptive avoidance, such as PD/AG ($n = 12$; 27.3%), compared with the other diagnoses characterized with less physical/interoceptive avoidance, such as MDD ($n = 32$; 72.7%) and GAD ($n = 14$; 31.8%; Gros et al., 2013). Although treatment effects still were observed in all types of avoidance across the full sample, this

limitation of investigating participants with mixed emotional disorders and comorbidities highlights one of the challenges innate in studying transdiagnostic interventions (Gros, 2015).

Another explanation for the different effects across types of avoidance may be related to the assessments used in the present study (Antony & Rowa, 2005). Although measures of experiential avoidance have been developed with some overlapping dimensions of avoidance (Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011), no specific transdiagnostic measure of avoidance maps onto the types of avoidance hypothesized in TBT. As such, the present study relied upon a combination of three measures (APPQ, MASA, PCL-5) that assess different types of avoidance. Of note, despite being developed for the hybrid model of social anxiety (Gros et al., 2011), the MASA identified subscales match well with the targets of TBT and were supported by factor analytic investigations (Gros et al., 2011, 2012). In addition, the MASA avoidance scales were found to be sensitive to the differences in avoidance across diagnoses as discussed previously (e.g., high thought avoidance in PTSD compared with other emotional disorders; Gros et al., 2013). However, despite these findings, the limitations of the measures used in the study may have related to differences observed across the types of avoidance studied, as well as the slight differences observed across the different measures assessing the same type of avoidance (e.g., APPQ-Interoceptive and MASA-physical arousal/avoidance). Future investigations of TBT would benefit from a standalone transdiagnostic assessment of the types of avoidance hypothesized in the treatment.

Independent of the differences across the types of avoidance, the findings still demonstrate significant improvements in transdiagnostic avoidance, an important mechanism associated with the development and maintenance of the emotional disorders (Barlow et al., 2004; Craske, 2012). The author of TBT advocates that the strengths in the treatment relate to its straightforward approach to addressing a single, easy-to-treat transdiagnostic symptom (Gros & Oglesby, 2019), which allows for a wider number of covered disorders compared with other transdiagnostic protocols (e.g., coverage of PTSD and MDD) and a simpler means for dissemination and implementation (Gros et al., 2016). The present findings add to that growing body of literature in its support of changes in transdiagnostic avoidance, a finding missing from the previous TBT studies. Future research on TBT should incorporate session-by-session assessments of avoidance and psychiatric symptomatology to determine the relations between the changes in symptoms during the course of TBT to determine the mechanisms driving treatment improvements.

However, these findings should be interpreted with some caution due to a few limitations that merit discussion and should be addressed in future studies. Most significantly, the study involved a pre-post study design without a control group or comparison treatment. Without a control group, it is not possible to determine if the changes in the studied symptoms were due to TBT or another unexpected factor (e.g., time) or symptom improvements across treatments (e.g., UP). Another significant limitation that may have contributed to the findings was the high attrition rates in the present study (34.1%). Of note, no differences in baseline measures were observed between treatment completers and those that prematurely discontinued the treatment, intent-to-treat analyses were used to include the full sample, and

similar average attrition rates have been reported in the literature (42%; Goetter et al., 2015). In terms of limitations to the generalizability of the sample, the study sample was limited to U.S. Military veterans that were predominantly male, with lower rates of employment and higher rates of disability, and no comorbid schizophrenia or substance use, personality, or bipolar disorders. Other limitations include the use of a specific (yet-to-be-developed) transdiagnostic avoidance measure as well as completing session-by-session assessments of avoidance and psychiatric symptomatology to determine changes over time, the size of the sample and frequency of comorbidity, and lack of data on the specific types of avoidance practices used with each participant.

The present findings provided support for treatment improvements in transdiagnostic avoidance across participants with various emotional disorders, as hypothesized by the author of TBT (Gros, 2014). The findings address a significant omission in the previous investigations of TBT, and add to the growing literature of transdiagnostic evidence-based psychotherapies. Along with the successful trials for the other protocols (Barlow et al., 2017; Farchione et al., 2012; Gros, 2014; Gros et al., 2017, 2019; Norton, 2012; Norton & Barrera, 2012; Riccardi et al., 2017), findings are increasingly supportive for the benefits of transdiagnostic psychotherapies, as compared with traditional disorder-specific approaches in their coverage of a set of related diagnoses, coverage of comorbidity, and potential ease of dissemination and implementation.

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TABLE 1

Pre to posttreatment outcomes for transdiagnostic avoidance targeted by TBT

	Intercept	Slope	*p* Value	Effect size
MASA-behavioral avoidance	29.92	−8.64	<.001	0.71
APPQ-agoraphobia	20.07	−8.38	.005	0.45
PCL-5-situational avoidance	3.23	−1.01	<.001	0.72
MASA-physical arousal/avoidance	3.32	−1.1	.014	0.35
APPQ-interoceptive	29.54	−2.13	.284	0.21
MASA-thought avoidance	21.14	−4.52	.004	0.62
PCL-5-thought avoidance	2.25	−0.93	.002	0.66
MASA-anhedonia	27.06	−5.45	<.001	0.73
PCL-5-anhedonia	2.64	−1.32	<.001	0.88

Note: Intercept is the estimated baseline mean. Slope captures reductions from pre- to postintervention. Cohen's *d* used for effect sizes.

Abbreviations: AAPQ, Albany Panic and Phobia Questionnaire; MASA, multidimensional assessment of social anxiety; PCL-5, PTSD checklist 5; TBT, transdiagnostic behavior therapy.