Transdiagnostic Behavior Therapy (TBT) for Generalized Anxiety Disorder

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Abstract
Generalized anxiety disorder (GAD) is a highly prevalent disorder that has a number of overlapping symptoms with and is frequently comorbid with other affective disorders. Despite its prevalence, the evidence-based therapies (EBTs) for GAD have lagged behind the EBTs for the other affective disorders. The newly developed transdiagnostic psychotherapies may be well suited to the highly overlapping and comorbid presentations of GAD. The present case study involves a veteran with GAD receiving Transdiagnostic Behavior Therapy (TBT), a transdiagnostic behavioral intervention designed for veterans with affective disorders, but has yet to be investigated in GAD, a disorder with a significant cognitive component. The veteran case completed 8 sessions of TBT. Significant symptom improvements were evidenced at post-treatment assessment and sustained at follow-up. The present case study provides very preliminary evidence to suggest that transdiagnostic EBTs, such as TBT, may be a potentially effective treatment for GAD.
Keywords: *Transdiagnostic, evidence-based therapy, generalized anxiety disorder, GAD, case study*

Introduction

Generalized anxiety disorder (GAD) is characterized by the presence of excessive anxiety and worries (i.e., apprehensive expectations) which are persistent in nature and difficult to control. This excessive worrying is accompanied typically by somatic (e.g., fatigue, muscle tension, feeling keyed up or on edge), cognitive (e.g., difficulty with concentration), and behavioral (e.g., checking behaviors, sleep disruption) symptoms (American Psychiatric Association [APA], 2013). Individuals with GAD also characterized by significant functional impairment including occupational (e.g., frequency of absence and work productivity), social (e.g., social network and family), and physical health (e.g., chest pain and irritable bowel syndrome) functioning (Roemer, Orsillo, & Barlow, 2002; Wittchen & Hoyer, 2001). The prevalence of GAD in the United States is approximately 2.9% (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012), and the prevalence is notably higher (i.e., 12%) in Veteran Affairs Medical Centers (VAMCs; Milanak, Gros, Magruder, Brawman-Mintzer, & Frueh, 2013).

Despite its prevalence, the psychosocial treatment of GAD has lagged behind the majority of the other affective disorders (Newman, Llera, Erickson, Przeworski, & Castonguay, 2013). For example, fewer patients with GAD achieve clinically significant change in treatment than patients with other disorders (Newman & Borkovec, 2002). These findings have led researchers to investigate alternative treatments to traditional cognitive behavioral therapy (CBT) for GAD, such as treatments targeting emotional deepening or regulation (Mennin, 2006), interpersonal problems (Newman et al., 2011), mindfulnesss (Roemer et al., 2008), intolerance of uncertainty (Dugas et al., 2005), attentional bias (Amir & Taylor, 2012), and motivational interviewing (Westra, Arkowitz, & Dozois, 2009). However, to date, none of these treatments have been shown to demonstrate superior efficacy to the traditional CBT approaches (Newman et al., 2013).

At the same time as the development of more specific treatments for GAD (Newman et al., 2013), the shift to broader, transdiagnostic psychotherapies has been gaining attention in the treatment literature (Barlow et al., 2010; Gros, 2014; Norton, 2012; Schmidt et al., 2012). Transdiagnostic treatments are defined as, "those that apply the same underlying treatment principles across mental disorders, without tailoring the protocol to specific diagnoses" (McEvoy et al., 2009, p. 21). Several key advantages have been hypothesized for transdiagnostic approaches to treatments, including improving dissemination efforts as well as superior coverage of comorbidity. The advantage to coverage of comorbidity in particular could be helpful in addressing the limitations GAD disorder-specific treatments, as comorbid diagnoses are found in the majority of individuals with GAD (e.g., 66% current comorbidity; Noyes Jr, 2001), with lifetime comorbidity rates as high as 90% (Wittchen, Zhao, Kessler, & Eaton, 1994). In addition, patients with GAD evidence transdiagnostic symptoms of affective disorders even when comorbid diagnoses are not identified (Gros, McCabe, & Antony, 2013).

One candidate transdiagnostic treatment for GAD is *Transdiagnostic Behavior Therapy* (TBT; Gros 2014). TBT is an evidence-based, behavioral intervention that was developed for veterans with affective disorders. The transdiagnostic, unifying symptom of the affective disorders targeted during TBT is avoidance. The initial findings for TBT suggest that it provides excellent coverage of principal diagnoses of posttraumatic stress disorder (PTSD), major depressive disorder (MDD), and panic disorder with various comorbid conditions. However, TBT has yet to be investigated in patients with GAD. In addition, GAD has been shown to have several primary cognitive mechanisms (Newman et al., 2013), suggesting that an exclusively behavioral intervention, such as TBT, may not adequately address its associated symptoms. Thus, the following case presentation provides the first examination of the use of TBT with a patient with a principal diagnosis of GAD to provide initial findings on its ability to address the symptoms associated with the diagnosis.

Method

Case: Jim

Jim was a 53-year-old, unemployed White male of non-Hispanic descent. Jim served in the United States Marines Corps for five years before being administratively discharged following an automobile accident, during which he sustained multiple life-threatening injuries. Jim was stationed at a military base during the time that the drinking water was accidentally contaminated with various hazardous chemicals. Jim went on to develop bladder cancer, for which he was being treated while participating in therapy. Additionally, seven years prior to intake, Jim was misdiagnosed with Leukemia, and four years later the diagnosis was changed to Leukocytosis. Jim reported that he spent those four years worrying about his health and "just waiting to die." Following this change in his diagnosis, Jim continued to experience daily worries pertaining to his health, which generalized to several other areas of his life. Jim was referred for psychotherapy as these worries became persistent and intrusive, and he began to experience symptoms of depression.

Assessment

Jim completed an assessment battery which consisted of the *Mini International Neuropsychiatric Interview* (MINI; Sheehan et al., 1998) and self-report questionnaires, including the *Depression, Anxiety, and Stress Scales* (DASS-21; Lovibond & Lovibond, 1995), *State Trait Inventory for Cognitive and Somatic Anxiety – Trait Version* (STICSA; Gros, Antony, Simms, & McCabe, 2007), *PTSD Checklist for DSM-5* (PCL-5; Weathers et al., 2010), and *Illness Intrusiveness Rating Scale* (IIRS; Devins et al., 1983). Jim met the diagnostic criteria for GAD as indicated by *the Diagnostic and Statistical Manual of Mental Disorders 5th ed.* (DSM-5; APA, 2013). Jim also met diagnostic criteria for comorbid Tobacco Use Disorder and Alcohol Dependence in Full Remission. Jim also presented with a generalized depressed mood, but did not endorse symptoms consistent with MDD or any other depressive disorder. Jim endorsed moderate-to-severe symptoms of depression, anxiety, and stress on the DASS, cognitive and somatic anxiety on the STICSA, and intrusions,

avoidance, numbing, and arousal on the PCL-5. Curiously, his self-reported impairment score on the IIRS was low and inconsistent with clinician impressions at intake assessment.

Jim reported experiencing excessive worries about his health, his daughter's health and general wellbeing, and a number of small things (e.g., the state of the world, conflicts in the Middle East, poverty) throughout the day for at least three hours per day, most days, with an onset around the time of his diagnosis of Leukemia in 2007. Jim reported difficulty associated with controlling his worries, and reported that praying was sometimes helpful for him. Jim reported that he felt on edge and restless on a daily basis to the extent that he experienced muscle tension and pain, fatigue, difficulty with concentration, and disrupted sleep (e.g., frequent nighttime waking). He reported feeling irritable often and experiencing depressed mood (e.g., including decreased motivation, decreased pleasure in some activities), although he made it a point to resist behaving irritably toward others. Jim reported that his worries caused him significant distress and that they sometimes interfered with him accomplishing tasks throughout the day. Jim had a history of alcohol dependence but had been in full remission for over 12 years. At the time of intake, Jim smoked approximately two packs of cigarettes per day.

Jim was very motivated to begin treatment, and he noted several overarching goals for intervention. Specifically, Jim reported that he would like a better understanding of his current state of health and anxiety, decrease his daily worries and the anxiety associated with those worries, and become more active and involved in life-enriching activities.

Treatment

In general, the first six sessions of TBT are designed to educate on, prepare for, and practice four different types of exposure techniques for transdiagnostic avoidance (situational/in-vivo, physical/interoceptive, thought/imaginal, and [positive] emotional/behavioral activation; Gros, 2014; Gros et al., 2013). Once daily exposure practices are regimented, optional therapeutic modules can be incorporated into TBT to further improve exposure practices (e.g., response prevention, brief cognitive therapy, sleep hygiene, management of substance use, anger management, and pain management). Each module is designed as a single session of content that can be incorporated into existing exposure practices. The final session covers a review of treatment progress and relapse prevention strategies. From the transdiagnostic avoidance perspective of TBT, Jim's symptoms of GAD and depressed mood were best captured by situational avoidance/exposure (e.g., reassurance seeking, checking, avoiding situations associated with his worries, such as interacting with his landlord and taking a leadership role in Alcoholics Anonymous meetings) and positive emotional avoidance/exposure (e.g., social interactions, physical exercise, and hobbies). Jim's completion of treatment was consistent with the TBT protocol.

Sessions 1 and 2 focus on educating patients on the symptoms of their disorders, outlining the treatment model, and identifying treatment-consistent motivations and treatment goals. More specifically, the first session consisted of psychoeducation about GAD, its prevalence, and associated symptoms, as well as linking Jim's symptoms of GAD and depressed mood to the key symptom of transdiagnostic avoidance. Jim was asked to monitor his negative emotions over the next week, especially including times during which he found it hard to stop worrying, and to identify physical, cognitive, and behavioral (avoidance) components associated with those events. The second session focused on motivational interviewing and goal setting. Jim identified several advantages to participating in treatment, and with the help of the clinician, he was able to set measurable behavioral goals to be accomplished during treatment, including 1) increasing the number of social activities he participated in to 3 times per week, 2) decrease the amount of time he spent worrying to less than 30 minutes per day as demonstrated by 0 acts of checking on his daughter's wellbeing and reassurance seeking behaviors, and 3) increase his physical activity by walking or riding a bike for 30 minutes, 5 times per week. Although not a specific goal of TBT, Jim also agreed to start tracking his daily worry duration to examine the effect of using a transdiagnostic behavioral intervention on the major cognitive component of GAD, and this is displayed in Figure 1 (Appendix).

Sessions 3 to 5 set the foundation for repeated exposure practices to address transdiagnostic avoidance. The third session began with a review of the previous week's content and a review of Jim's self-monitoring homework. Notably, Jim reported several periods of intense worry and urges to check on his daughter over the past week, but that he had independently resisted the urges based on the goal setting exercise in Session 2. Session content involved a discussion on the short-term positives and long-term negatives of avoidance, a model of avoidance and how it's self-reinforcing, the four types of avoidance, the basic rationale for exposures to address avoidance, and the assignment of an initial "experimental" exposure exercise to be completed during the following week. An exposure hierarchy also was developed during the session. Jim decided to have two conversations with his daughter without checking on her alcohol use as his initial exposure exercise (situational exposure).

Session 4 involved a review of the previous session's content and a discussion of Jim's initial exposure practice, for which he was successful in engaging in a conversation with his daughter without checking on her health and/or drinking behaviors. Jim reported an increase of daily worrying and related anxiety symptoms associated with his initial exposure practice. Session content involved outlining the four types of exposures to address transdiagnostic avoidance and the rules for completing future exposure practices. Daily exposure homework was assigned to address Jim's specific treatment goals, including participating in social activities (positive emotional exposure), walking 3 days a week (positive emotional exposure), calling his daughter without checking on her health or alcohol behaviors (situational exposure), purposefully interacting with his landlord (situational exposure), and volunteering to lead a future AA meeting (situational exposure).

Session 5 focused primarily on Jim's past exposure practice and assigning future exposure practices. Jim reported success in each of his assignments, with several related improvements in functioning. For example, Jim noted that his frequent interactions with his daughter, without reassurance seeking and checking, had brought the two of them closer. Jim also reported a reduction in unrelated worries (e.g., worries about his physical symptoms and overall health) related to these improvements in his negative and positive emotions due to his exposure practices. An increased number of exposure practices were assigned, including applying for a volunteer position at the Veterans Affairs Medical Center and a local church (situational exposure), completing a part-time job search at library (situational exposure), walking 4 times over the week for 30 minutes (positive emotional exposure), and engaging in two planned social activities with a friend and one with his daughter (positive emotional exposure).

In the remaining sessions of TBT, exposure practices are monitored, reinforced, and perfected over time until the behavioral treatment goals are reached. Jim demonstrated a continuation of his exposure successes in Session 6. Jim completed the majority of his exposure assignments and reporting doing much better overall. More specifically, Jim reported that his mood was lifted and that his anxiety and worry had decreased significantly, as highlighted by the following quotes: "I am more active now than ever" and "I have come to accept my present circumstances and the circumstances of others." Jim also reported a stronger and more gratifying relationship with his daughter and friends. Few obstacles to successful exposure practices were identified, limiting the need for the incorporation of optional treatment modules in TBT (e.g., light cognitive therapy, relaxation training, and sleep hygiene). The one exception was Jim's use of smoking cigarettes as a safety behavior (e.g., smoking to cope with negative emotions during exposure practices). Jim had already independently set some smoking cessation goals earlier in treatment. These goals were now reinforced and tracked. Daily situational and positive emotional exposure practices were assigned.

Session 7 was the final exposure session. Jim described another week of successful situational and positive emotional exposures. At that point, Jim had reached or surpassed each of his initial behavioral treatment goals that were established in Session 2. Overall, Jim reported feeling "great." No additional treatment goals were identified, and each of the exposures on his hierarchy had been completed. Jim was assigned two weeks of exposure practices in preparation of the final TBT session.

Session 8 was the final session of TBT. The session focused on reviewing Jim's treatment progress, completing and reviewing self-report measures of affective symptoms, and teaching relapse prevention strategies. As presented in Table 1 (Appendix), Jim endorsed significant improvements across all domains of

functioning at post-treatment. In fact, all of his scores fell below established diagnostic cut scores on the specific measures. Jim also reported averaging less than 30 minutes of daily worry duration.

Follow-up

Thirty days after completing TBT, Jim was contacted over the telephone to check in on his treatment progress. Jim reported maintenance of his treatment gains, with some gradual improvements continuing post-treatment. Jim completed the self-report measures over the phone and was provided feedback on his continued success. As presented in Table 1 (Appendix), Jim endorsed further reductions on 5 of the 7 symptoms, with a stabilization of stress and a minor, but yet non-significant, increase in anxiety on the DASS.

Discussion

The present case study investigates that potential effectiveness of TBT in the treatment of GAD. TBT is designed as a primary behavioral intervention focusing on exposure techniques to address transdiagnostic avoidance. Despite initial promising findings (Gros, 2014), TBT had not been investigated in patients with a principal diagnosis of GAD. In addition, due to the behavioral focus of TBT and the significant cognitive symptoms of GAD, historically treated with cognitive-based techniques, it was possible that TBT would not adequately address GAD symptoms. Fortunately, however, that hypothesis was not supported as reliable symptom improvements were evidenced at post-treatment and follow-up assessments.

The present findings have implications for the treatment of GAD as well as the use of TBT in treating the affective disorders. First, the findings suggest that GAD may be adequately addressed by behavioral techniques. This finding is particularly notable as the majority of EBTs for GAD involve large cognitive components (Newman et al., 2013), and the addition of cognitive therapy to behavioral techniques has been suggested, by some, to be less effective in treating the affective disorders (Longmore & Worrell, 2007). The present case involved both situational and positive emotional exposures to successfully address symptoms of GAD and related depressed mood. Although very preliminary due to the nature of this investigation, these findings may suggest that largely behaviorally-based interventions could be used to treat GAD.

A second implication of these findings is that TBT may in fact be well suited to treat all of the affective disorders. The initial studies of TBT included primarily veterans with principal diagnoses of PTSD, MDD, and panic disorder. In fact, GAD was not reported as a principal or additional diagnosis in any of the participants in either of the two studies described. In contrast, the present case study involved a patient with a diagnosis of GAD as the only affective disorder. These findings are promising due to the prevalence of GAD reported in veteran samples (Milanak et al., 2013), as well as the scope of the transdiagnostic treatment. In contrast to some of the other transdiagnostic approaches that only cover a subset of the affective disorders (Norton, 2012; Schmidt et al., 2012), this case study, in combination with the initial trials (Gros, 2014), may suggest that TBT can adequately treat the broad spectrum of affective disorders.

There are a few limitations of the case study that should be addressed in future investigations. First and foremost, a single case is a limitation in itself and its ability to generalize to larger groups is limited. In addition, no disorder-specific self-report measure of GAD was included in the study, although the STICSA has been shown to provide excellent coverage of the anxiety-based symptoms of GAD (Gros et al., 2007). Finally, the case had a single diagnosis of GAD, which, although was particularly interesting for this investigation, is less common than more typical comorbid presentations of GAD.

Taken together, the present case study is the first demonstration of TBT's potential effectiveness in the treatment of GAD. Future trials of TBT will incorporate GAD cases to further investigate the intervention's efficacy in this population. Further, from a GAD treatment perspective, EBTs with a strong behavioral component should be considered for GAD.

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Table 1. Self-Reported Symptom Severity Throughout Treatment

Measure	Pre	Post	Follow-Up	RCI
DASS-Depression	22	6*	2*	13.6
DASS-Anxiety	32	4*	8*	11.3
DASS-Stress	40	10*	10*	11.1
STICSA-Cognitive Anxiety	32	19*	13*	7.6
STICSA-Somatic Anxiety	35	16*	11*	7.6
PCL5-PTSD	66	36*	11*	12.1
IIRS-Impairment	38	38	30	16.2

Note. DASS = Depression, Anxiety and Stress Scale; STICSA = State Trait Inventory for Cognitive and Somatic Anxiety – Trait Version; PCL5 = Posttraumatic Stress Disorder Checklist Version 5; IIRS = Illness intrusiveness rating scale. RCI = reliable change index; these scores were computed using Jacobson's reliable change index (Jacobson & Truax, 1991). Reliable change scores are computed as a function of the standard deviation of the measure in the target population before treatment, and the measure's reliability. Standard deviations and reliabilities for these measures were derived from Gros, Antony, McCabe, & Swinson (2009) for the DASS and IIRS, Gros et al. (2007) for the STICSA, and Brief et al. (2013) for the PCL5. *indicates that the change from the pre-treatment score is reliable.

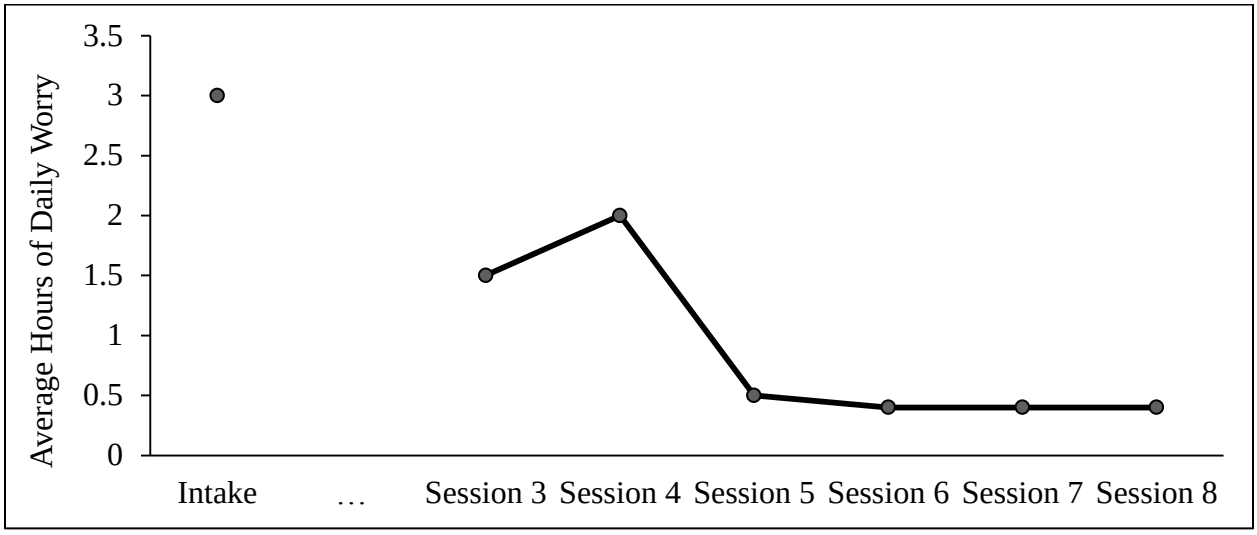

Figure 1. Time Spent Worrying Across Treatment Sessions