Efficacy of Transdiagnostic Behavior Therapy Across the Affective Disorders

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Objective: Transdiagnostic psychotherapies are designed to apply the same underlying treatment principles across a set of psychiatric disorders. However, the most studied transdiagnostic protocols for adults have varied in their scope and disorders investigated, limiting the understanding of which disorders may be treated effectively by these protocols. Transdiagnostic behavior therapy (TBT) is one of the few transdiagnostic treatments shown to be effective for patients with anxiety disorders, major depressive disorder, and posttraumatic stress disorder. Limited research has been completed to compare the outcomes of TBT or other transdiagnostic treatments across disorders.

Methods: In this study, outcomes data of 134 participants from five completed group and individual treatment trials using the same methodology and treatment protocol were compared. Participants completed a diagnostic interview as well as self-report measures pre- and posttreatment. All participants were enrolled in a 12-week TBT protocol.

Results: Analyses of covariance were used to investigate treatment outcomes across participants with principal diagnoses of major depressive disorder, posttraumatic stress disorder, panic disorder and agoraphobia, and social anxiety disorder. All participant groups demonstrated significant treatment improvements across all measures.

Conclusions: The present findings provide support for the efficacy of TBT across participants with principal diagnoses of various affective disorders, including major depressive disorder and posttraumatic stress disorder. These findings show expanded treatment coverage for the transdiagnostic psychotherapies, possibly reducing the number of treatment protocols providers need to learn to treat patients with affective disorders.

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Transdiagnostic treatments, or "those that apply the same underlying treatment principles across mental disorders, without tailoring the protocol to specific diagnoses" (1), are based on the idea that various evidence-based psychotherapy protocols contain overlapping components designed to address common underlying symptoms found across groups of disorders (2). This is particularly true for the affective disorders, including the *DSM-5* depressive, anxiety, obsessive-compulsive and related, and trauma- and stressor-related disorders (3) and their disorder-specific cognitive-behavioral therapy (CBT) protocols. During the past 30 years, the number of *DSM* affective disorders has grown significantly, with matching disorder-specific CBT protocols for each disorder, leading to highly similar treatments for highly similar disorders that may be unified into single transdiagnostic protocols (2, 4, 5).

In adults, a number of common-element approaches and transdiagnostic treatment protocols have been developed for and studied in groups of patients with affective disorders on the basis of these hypotheses (5–8). In general, preliminary outcomes for these protocols demonstrate moderate-to-high treatment effect sizes. However, several differences exist among the most studied protocols (9–12). For example, some transdiagnostic protocols have been developed to be delivered online in a self-help format, while others are to be

HIGHLIGHTS

- Although transdiagnostic psychotherapies have been developed to be effective across multiple diagnoses, few data exist to support this hypothesis.
- The present study combined five trials of transdiagnostic behavior therapy (TBT) to provide sufficient sample sizes for the four most prevalent affective disorders.
- TBT was found to be effective in all disorder groups.
- The findings contribute to the growing support for the shift from disorder-specific psychotherapy protocols to transdiagnostic protocols for the affective disorders.

delivered in-person in clinical settings (6). Some transdiagnostic protocols have been developed to be delivered in a group psychotherapy format, while others have been developed for an individual psychotherapy format and then later adapted for both formats (13, 14). These differences may inform protocol selection by treatment providers.

One particularly significant difference among the most studied transdiagnostic protocols for adults is their coverage of the various affective disorders. In terms of reducing provider training and improving coverage of comorbid symptoms compared with disorder-specific protocols (2, 4), a transdiagnostic protocol covering a wider range of diagnoses would provide superior benefits over protocols covering fewer diagnoses. Two of the transdiagnostic protocols, group cognitive-behavioral therapy of anxiety (GCBT) (11) and false safety behavior elimination therapy (F-SET) (12), have been developed for and studied exclusively in the anxiety disorders. Although studies of GCBT suggest that the treatment may be effective in addressing comorbid symptoms of depression (15), no trials have investigated GCBT or F-SET in patients with principal diagnoses of major depressive disorder, posttraumatic stress disorder, obsessive-compulsive disorder, or related conditions. A third protocol, the unified protocol for transdiagnostic treatment of the emotional disorders (16), has been designed to be applied to the emotional disorders (17); however, to date, this protocol has only been tested in randomized trials of patients with anxiety and obsessive-compulsive disorders (9, 17). In addition, use of the unified protocol has been investigated in a case study of patients with major depressive disorder (18) and in a naturalistic study of group treatments in a posttraumatic stress disorder clinic, where diagnostic assessments and/or confirmation of diagnoses were lacking (19). Similar to the study of GCBT for comorbid symptoms of depression (15), the unified protocol also has been shown to effectively reduce comorbid depressive symptoms in participants with principal diagnoses of anxiety and obsessive-compulsive disorders (20).

To date, transdiagnostic behavior therapy (TBT) (10) is the transdiagnostic protocol that has been investigated in the largest number of principal diagnoses of affective disorders. Similar to the unified protocol (17), TBT was developed to address symptoms of the depressive and anxiety disorders (10), with added coverage of obsessive-compulsive disorder and posttraumatic stress disorder. In contrast to investigations of the other transdiagnostic protocols (9, 11, 12), however, TBT trials have specifically included patients with principal diagnoses of posttraumatic stress disorder and major depressive disorder, as well as patients with anxiety disorders, such as panic disorder and agoraphobia, social anxiety disorder, generalized anxiety disorder, and obsessive-compulsive disorder. TBT was developed to target transdiagnostic avoidance common across diagnoses (situational, interoceptive, and thought, as well as avoidance due to lack of positive emotions). Consistently large treatment effect sizes have been reported for TBT across studies and samples (10, 13, 21).

Variations in the development and investigation of the transdiagnostic protocols suggest that these treatments may or may not adequately cover a wide range of affective disorders. Exploratory analyses have been conducted to investigate symptom changes during TBT across patients with posttraumatic stress disorder, major depressive disorder, and panic disorder and agoraphobia (10). Although the analyses did not reveal any significant group differences, the analyses were insufficiently powered because of the small sample sizes. Further investigation of transdiagnostic protocols across patients with various affective disorders is needed to better understand the scope, coverage, and related benefits of these treatments.

The goal of the present study was to investigate treatment outcomes of TBT across patients with common affective disorders (major depressive disorder, posttraumatic stress disorder, panic disorder and agoraphobia, and social anxiety disorder). By applying methods from similar transdiagnostic treatment investigations (22), data from five trials of TBT were used to sufficiently represent each diagnosis in the analyses (10, 13, 21, 23). It was hypothesized that TBT would demonstrate moderate-to-large treatment effect sizes on all measures across participants in each of the studied disorder groups.

METHODS

Participants

Data from 134 participants were collected from five completed trials that shared methodologies and used the same treatment protocol (10, 13, 21, 23). Data for the five trials were collected between October 2008 and March 2018. All participant responses were collected from outpatient samples at clinics for the assessment and treatment of anxiety and depressive disorders, with data from 100 veteran participants collected from U.S. Veterans Affairs medical centers (10, 21, 23) and data from 34 civilian participants collected from a university hospital setting in Canada (13). Study inclusion criteria involved meeting diagnostic criteria for at least one *DSM-5* anxiety disorder, depressive disorder, posttraumatic stress disorder, or obsessive-compulsive disorder on a diagnostic interview, being at least 18 years of age, and being clearly competent to provide informed consent (in the trials that required it).

Procedure

All procedures and measures used in this study were approved by the local institutional review board. Four trials investigated TBT as incorporated into standard practices in the clinic (10, 13, 21). The fifth trial involved data from a research-specific randomized controlled trial of TBT delivered within a research treatment clinic (23). Across all trials and settings, each participant was scheduled for an intake appointment upon referral per clinic procedures. The intake appointment included completion of a diagnostic interview, including the Mini International Neuropsychiatric

Interview (MINI) (24), the Structured Clinical Interview for *DSM-5* (SCID) (25), or the Anxiety and Related Disorders Interview Schedule for *DSM-5* (ADIS-5) (26). All participants also completed self-report questionnaires at intake, including the Depression Anxiety Stress Scales (DASS) (27), State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA) (28), and Illness Intrusiveness Rating Scale (IIRS) (29). All participants included in this study received either individual (10, 21, 23) or group (13) TBT.

All therapy was provided by master's-level counselors, doctoral-level psychology trainees, and/or staff psychologists who had received specialized consultation and training in TBT by its author (10). Group TBT was co-led by a staff psychologist and doctoral-level psychology trainees (13). The majority of providers completed a 4-hour training session on TBT (21). Providers unable to attend the session were supplied with all training materials, and consultation meetings were completed until providers demonstrated excellent understanding of TBT. Available treatment session recordings were rated on a session-specific 5-point fidelity rating scale and showed that the TBT (mean=4.8; SD=0.5) was delivered with high fidelity.

TBT

TBT was developed as a streamlined protocol to teach, prepare for, practice, and master four types of exposure techniques for negative emotions (situational/in vivo, physical/interoceptive, thought/imaginal, and [positive] emotional/behavioral activation) to reduce avoidance and lead to symptom remission. TBT has received initial support as an individual therapy (10, 21) and has been revised slightly to fit into a group format for an additional successful trial (e.g., group ice breakers were added to the first session) (13). 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). Individual sessions were 45–60 minutes in duration, while group sessions were 90–120 minutes with 4–8 participants in each group.

Measures

ADIS-5. The ADIS-5 is a well-established, semi-structured interview designed to assess a wide range of disorders (26). The ADIS-5 assesses current and past diagnoses with *DSM-5* diagnostic criteria, severity scores, and lists of feared and avoided situations for the anxiety disorders. The ADIS-5 has demonstrated excellent interrater reliability and validity of depressive and anxiety disorder diagnoses.

DASS. The DASS (27) is a 21-item measure with three subscales designed to assess dysphoric mood (depression subscale), symptoms of fear and autonomic arousal (anxiety subscale), and symptoms of tension and agitation (stress subscale). Items are rated on a 4-point scale, ranging from 0, did not apply to me at all, to 3, applied to me very much, and summed to compute the three subscales. Support for the factor structure and convergent and discriminant validity of the DASS has been found in community samples (27). The DASS demonstrated good internal consistency across studies, subscales, and assessment points in the present study ($\alpha > 0.85$).

IIRS. The IIRS (29) is a 13-item transdiagnostic questionnaire that assesses the extent to which a disease interferes with important domains of life, including health, diet, and work. Each item is rated on a 7-point scale, ranging from 1 to 7, with higher scores indicating greater illness intrusiveness. The total summed scale score was used for the present study (29). Previous research has shown the IIRS to have strong psychometric properties in studies of participants with physical and/or emotional health concerns (30, 31). The IIRS demonstrated good internal consistency across studies and assessment points in the present study ($\alpha > 0.87$).

MINI. The MINI is a clinician-rated structured diagnostic interview designed to provide a brief, but accurate, assessment of a wide range of *DSM-5* psychiatric disorders, including depressive and anxiety disorders and substance use disorders (24). The MINI has demonstrated adequate interrater and test-retest reliability across most disorders and has shown good interrater reliability with other structured diagnostic interviews (24).

STICSA—trait version. The STICSA is a 21-item measure designed to assess trait cognitive and somatic anxiety (28, 32). Each item is rated on a 4-point scale, ranging from 1 to 4, with higher scores indicating more symptoms of anxiety. The cognitive and somatic subscales have been supported by factor analysis, and both subscales have been found to have high internal consistency (32). In addition, the STICSA trait scales were found to remain stable over repeated administrations during several stress manipulations (28). The STICSA demonstrated good internal consistency across studies, subscales, and assessment points in the present study ($\alpha > 0.86$). Of note, the STICSA was only completed in three of the five trials (N=81) included in the present study.

Structured Clinical Interview for DSM-5 (SCID-5). The SCID-5 is a semi-structured interview designed to diagnose the *DSM-5* psychiatric disorders (25). The SCID has shown adequate interrater reliability for all disorders and adequate test-retest reliability in clinical samples (33).

Data Analysis

Data for all participants from the demographic, diagnostic, and self-report measures were inspected for missing values. Minimal missing data were identified across studies (i.e., 1–2 items missing in 22% of the total sample of treatment

TABLE 1. Treatment outcomes for transdiagnostic behavior therapy among participants with affective disorders (N=134)[a]

	Pretreatment		Posttreatment				
Measure	M	SD	M	SD	t	df	d
DASS							
Depression	12.3	5.8	5.4	5.1	12.52	109	1.26
Anxiety	10.7	5.7	5.3	4.6	10.39	109	1.04
Stress	13.5	5.3	7.5	4.9	11.47	109	1.18
STICSA							
Cognitive	29.2	6.4	21.4	8.0	8.61	80	1.08
Somatic	25.0	7.8	19.3	7.4	6.64	80	.75
IIRS	60.7	15.2	41.4	19.9	10.35	109	1.09

[a] DASS, Depression Anxiety Stress Scales; IIRS, Illness Intrusiveness Rating Scale; STICSA, State-Trait Inventory for Cognitive and Somatic Anxiety. DASS scores for each subscale range from 0 to 21, with higher scores indicating greater applicability of symptoms. STICSA scores range from 21 to 84, with higher scores indicating more symptoms of anxiety. IIRS scores range from 13 to 91, with higher scores indicating greater illness intrusiveness. All p values <.001.

completers; no participants missing >2% of data; <0.3% of data missing from the full sample). Thus, no participants were excluded from the analyses for significant missing data. Within each scale, mean substitution was used to replace missing values. Paired-sample t-tests were used to investigate overall treatment effects across the DASS, IIRS, and STICSA scales for all participants.

To explore group differences, participants were separated into the four most common disorder groups on the basis of their principal diagnosis identified in the diagnostic interview: major depressive disorder (N=45), posttraumatic stress disorder (N=39), panic disorder and agoraphobia (N=21), and social anxiety disorder (N=17). Participants with a principal diagnosis of generalized anxiety disorder (N=10) and obsessive-compulsive disorder (N=2) were excluded from the analyses because of poor representation in the sample. Upon identification of the four diagnostic groups, chi-square tests of independence (for categorical variables) and one-way analyses of variance (for continuous variables) were used to investigate differences in demographic variables (sex, race, relationship status, education, and age), treatment modality (individual vs. group therapy), comorbid conditions, and premature treatment discontinuation. Analyses of covariance were used to investigate group differences in treatment outcome variables (DASS scales, STICSA scales, and IIRS) with the matching baseline symptom measures entered as covariates (DASS scales, STICSA scales, and IIRS). In addition, demographic, treatment, and diagnostic variables identified to significantly differ between the disorder groups were entered as covariates.

RESULTS

General Treatment Findings

The treatment outcome findings for all participants are presented in Table 1. Across participants, significant symptom reductions were observed on the DASS scales (t>10.4, df=109, p<0.001; d values ranged from 1.04 to 1.26), STISCA scales (t>6.6, df=80, p<0.001; ds ranged from 0.75 to 1.08), and IIRS (t=10.4, df=109, p<0.001; d=1.09) (Table 1).

Baseline Demographic Characteristics by Diagnostic Group

Demographic, treatment, and diagnostic variables for the four groups are presented in Table 2. Of the investigated variables, treatment modality (individual vs. group therapy) was found to significantly differ between the diagnostic groups (χ^2=9.5, N=122, df=3, p=0.023), with larger percentages of participants with major depressive disorder (31%, N=14) and social anxiety disorder (35%, N=6) receiving group therapy compared with participants with posttraumatic stress disorder (8%, N=3) and panic disorder and agoraphobia (14%, N=3).

Diagnostic Differences in Treatment Completion

Treatment discontinuation data were available for three of the five trials involved in this investigation. Of the 81 participants enrolled in those trials, 58 (72%) completed the intervention. As presented in Table 2, there were no reliable differences in treatment discontinuation across the four disorder groups (χ^2=1.5, N=81, df=3, p=0.692).

Diagnostic Differences in Treatment Outcome

As shown in Table 3, participants across all four disorder groups demonstrated significant symptom reduction on 23 of 24 comparisons (t>2.5; p< 0.027; d>0.70). The only nonsignificant finding was on the STICSA-somatic scale in the patients with social anxiety disorder (t=2.0, df=13, p=0.069; d=0.52). Analyses of covariances were conducted for each posttreatment measure, with the matching pretreatment symptoms and treatment modality (individual vs. group) included as covariates. No significant group differences were observed on the DASS scales (F<2.35, df=3 and 94, p>0.068; η_p^2<0.070), STICSA scales (F<0.3, df=3 and 65, p>0.845; η_p^2<0.015), and IIRS (F=1.1, df=3 and 94, p=0.323; η_p^2=0.034).

DISCUSSION

The present study investigated the treatment outcomes of TBT across participants with various principal diagnoses, including major depressive disorder, posttraumatic stress disorder, panic disorder and agoraphobia, and social anxiety disorder. The study involved participant data collected across five TBT trials to improve sample size and representation among participants with the investigated disorders. The findings demonstrated significant treatment effects for TBT across all measures and within all investigated disorder groups. Although potentially underpowered because of the sample sizes of some of the diagnoses (e.g., disorder group size ranged from 17 to 45 participants), no reliable differences were observed among the groups in symptom improvement or treatment completion. Together, these findings demonstrate that TBT is effective across a wide range of symptoms and affective disorders.

TABLE 2. Demographic, treatment, and diagnostic variables among participants, by principal diagnosis[a]

	Major depressive disorder		PTSD		Panic disorder and agoraphobia		Social anxiety disorder		Test		
Scale subgroup	N	%	N	%	N	%	N	%	statistic	df	p
Diagnosis	45	–	39	–	21	–	17	–	–	–	–
Age (M±SD)	46.2	11.8	45.3	14.2	44.3	11.9	42.4	13.8	F=.4	3	.748
Sex	–	–	–	–	–	–	–	–	χ^2=7.0	3	.072
Male	29	64	33	87	14	67	10	59	–	–	–
Race	–	–	–	–	–	–	–	–	χ^2=10.6	12	.568
White	28	62	22	56	11	52	14	83	–	–	–
Black	14	31	14	36	10	48	3	17	–	–	–
Relationship	–	–	–	–	–	–	–	–	χ^2=5.8	6	.447
Single	14	32	7	19	4	19	2	13	–	–	–
Married	12	27	10	27	9	43	7	44	–	–	–
Cohabitating	18	40	20	54	8	38	7	44	–	–	–
Education	–	–	–	–	–	–	–	–	χ^2=12.1	12	.439
Completed high school	18	43	17	47	14	70	9	56	–	–	–
Some college	12	29	7	19	2	10	4	25	–	–	–
Completed college	3	7	6	17	2	10	1	6	–	–	–
Treatment modality	–	–	–	–	–	–	–	–	χ^2=9.5	3	.023
Group therapy	14	31	3	8	3	14	6	35	–	–	–
Comorbid conditions (M±SD)	2.0	.8	2.1	.7	2.3	.7	2.3	.6	F=1.1	3	.365
Number of participants with available treatment discontinuation data	26	–	30	–	17	–	8	–	–	–	–
Number of participants discontinuing treatment before completion	7	27	9	30	6	35	1	14	χ^2=1.5	3	.692

[a] PTSD, posttraumatic stress disorder.

The present study represents the first investigation to compare transdiagnostic treatment outcomes across participants with a principal diagnosis of depressive, anxiety, trauma- and stressor-related, or obsessive-compulsive and related disorders (3). Although only four disorder groups were considered because of representation in the samples, the investigated sample included principal diagnoses (e.g., major depressive disorder and posttraumatic stress disorder) typically excluded in most transdiagnostic trials (9, 11, 12, 17) and demonstrated significant outcomes in all groups. The findings support previously untested hypotheses from the transdiagnostic treatment literature in terms of the treatment's coverage of the depressive and anxiety disorders (10, 17). Although incorporated into other studies of transdiagnostic protocols (9) and included in TBT treatment trials but only in small numbers (23), future research should investigate TBT in larger samples of participants with principal diagnoses of generalized anxiety disorder and obsessive-compulsive disorder. Of note, a successful case study of a patient with generalized anxiety disorder receiving TBT has been presented previously (34).

The evidence for the success of TBT in addressing symptoms across the affective disorders may be associated with the transdiagnostic symptom targeted by the treatment (10). TBT was designed to address transdiagnostic avoidance through a primary emphasis on four types of exposure exercises, which are common behavioral strategies for addressing the affective disorders in existing disorder-specific CBT protocols. Similarly, the unified protocol was designed to address emotion processing and regulation through five core treatment modules and three associated modules found in disorder-specific CBT protocols (16), and therefore, may demonstrate similar outcomes across the affective disorders in future investigations of outcomes across disorders, including posttraumatic stress disorder and major depressive disorder. Other transdiagnostic protocols (GCBT and F-SET) include transdiagnostic components more specific to the anxiety disorders, potentially explaining their exclusive investigation in participants with an anxiety disorder (11, 12). The scope of the transdiagnostic model informing the treatment components may be instrumental in determining which disorders it can cover and may guide selection of transdiagnostic treatment protocols.

Some important clinical implications can be associated with these findings. From a patient treatment perspective, these findings suggest that a single transdiagnostic treatment, without individualized tailoring, can be effective in treating patients with the most common affective disorders (35, 36). These treatment benefits extend to patients with a principal diagnosis of major depressive disorder, a disorder previously tested only in case studies and as a comorbid/secondary condition in the transdiagnostic literature (15, 18, 21).

TABLE 3. Transdiagnostic behavior therapy treatment outcomes across principal affective disorder diagnoses (N=122)[a]

	Within groups								Between groups		
	Pretreatment		Posttreatment								
Measure and diagnosis	M	SD	M	SD	t	df	p	d	F	df	η_p^2
DASS-depression	–	–	–	–	–	–	–	–	2.2	3, 99	.065
Major depressive disorder	11.9	5.9	5.2	5.2	7.9	37	<.001	1.20	–	–	–
PTSD	12.2	5.7	5.9	4.9	7.0	29	<.001	1.19	–	–	–
Panic disorder and agoraphobia	15.0	5.5	3.9	4.7	7.5	14	<.001	2.17	–	–	–
Social anxiety disorder	10.7	5.7	4.9	4.3	4.1	15	.001	1.15	–	–	–
DASS-anxiety	–	–	–	–	–	–	–	–	1.2	3, 99	.038
Major depressive disorder	8.6	5.9	3.8	4.0	5.0	37	<.001	.95	–	–	–
PTSD	11.1	5.9	5.7	4.6	6.6	29	<.001	1.02	–	–	–
Panic disorder and agoraphobia	15.7	3.2	6.1	4.7	7.6	14	<.001	2.39	–	–	–
Social anxiety disorder	9.7	4.5	6.1	4.7	2.8	15	.013	.78	–	–	–
DASS-stress	–	–	–	–	–	–	–	–	2.3	3, 99	.070
Major depressive disorder	12.9	5.4	6.4	4.7	6.8	37	<.001	1.28	–	–	–
PTSD	14.5	5.9	9.0	5.3	7.0	29	<.001	.98	–	–	–
Panic disorder and agoraphobia	15.4	3.2	6.6	4.9	7.1	14	<.001	2.13	–	–	–
Social anxiety disorder	11.1	4.8	7.8	4.2	2.7	15	.017	.73	–	–	–
STICSA-cognitive	–	–	–	–	–	–	–	–	.2	3, 70	.008
Major depressive disorder	27.9	6.5	20.6	7.7	5.9	31	<.001	1.06	–	–	–
PTSD	28.2	7.2	20.4	7.6	3.1	14	.008	1.05	–	–	–
Panic disorder and agoraphobia	34.2	4.7	21.6	8.8	4.0	8	.004	1.79	–	–	–
Social anxiety disorder	28.3	5.7	21.6	8.1	3.4	13	.005	.96	–	–	–
STICSA-somatic	–	–	–	–	–	–	–	–	.3	3, 70	.015
Major depressive disorder	23.5	8.8	18.0	6.5	4.2	31	<.001	.71	–	–	–
PTSD	24.0	6.3	18.9	6.6	2.5	14	.026	.79	–	–	–
Panic disorder and agoraphobia	31.0	5.2	22.5	9.8	2.7	8	.026	1.08	–	–	–
Social anxiety disorder	23.7	7.3	19.8	7.6	2.0	13	.069	.52	–	–	–
IIRS	–	–	–	–	–	–	–	–	1.1	3, 99	.034
Major depressive disorder	58.9	15.7	39.3	19.7	6.1	37	<.001	1.10	–	–	–
PTSD	59.1	15.2	40.1	18.8	4.9	29	<.001	1.11	–	–	–
Panic disorder and agoraphobia	63.6	13.9	34.4	18.0	6.6	14	<.001	1.82	–	–	–
Social anxiety disorder	65.5	13.3	47.4	20.3	4.0	15	.001	1.05	–	–	–

[a] DASS, Depression Anxiety Stress Scales; IIRS, Illness Intrusiveness Rating Scale; STICSA, State-Trait Inventory for Cognitive and Somatic Anxiety. DASS scores for each subscale range from 0 to 21, with higher scores indicating greater applicability of symptoms. STICSA scores range from 21 to 84, with higher scores indicating more symptoms of anxiety. IIRS scores range from 13 to 91, with higher scores indicating greater illness intrusiveness.

Although direct comparison studies between transdiagnostic and disorder-specific protocols are needed for patients with principal diagnoses of major depressive disorder and posttraumatic stress disorder, the moderate-to-large effect sizes demonstrated in the present study are promising. Additionally, if a single transdiagnostic treatment can address symptoms across the affective disorders, the training requirements for providers could be reduced from the numerous existing disorder-specific treatments to a single transdiagnostic protocol. This benefit to providers could have significant implications for ongoing dissemination and implementation efforts for evidenced-based psychotherapies. As detailed elsewhere, training in evidence-based psychotherapies is time-intensive and expensive and can present challenges for treatment facilities in terms of supervision requirements and clinical hours lost to training (2, 37). A preliminary study involving a 4-hour training session in TBT was well received by providers and resulted in significant symptom improvements with moderate-to-large effect sizes in participants receiving the treatment (21).

The present study involved several limitations that should be considered in interpreting the findings as well as in planning future research. Although this study followed established methods for combining samples from studies involving the same treatment protocol (22), the present study drew participants from five trials on TBT, rather than from a single study designed to test the study hypotheses. The five trials varied slightly in sample and treatment characteristics, which required statistical consideration in the analyses (e.g., treatment modality included as covariate) as well as in the

data collection (e.g., only presented treatment data for participants who completed treatment). Additionally, the study relied on transdiagnostic measures of affective symptomatology, rather than on disorder-specific measures for the targeted diagnoses (e.g., PTSD checklist for posttraumatic stress disorder symptoms) (38) and did not assess change in clinical and subthreshold diagnostic status. Although participants with all diagnoses were recruited for the trials, unequal numbers of participants with specific disorders were represented across the trials, limiting the interpretation for some disorders (e.g., generalized anxiety disorder). Finally, only one of the trials included an independent measure of treatment fidelity for TBT; the other studies relied on the TBT training and supervision of the study therapists.

CONCLUSIONS

In this study, TBT outcomes across participants with principal diagnoses of major depressive disorder, posttraumatic stress disorder, panic disorder and agoraphobia, and social anxiety disorder were investigated. The findings demonstrated significant treatment effects across all measures and disorder groups. These findings represent a significant advancement in expanding the data on adult transdiagnostic outcomes within the literature on major depressive disorder and posttraumatic stress disorder treatments. In addition, the present findings may provide support for a shift from provider training in multiple disorder-specific psychotherapy protocols to training in a single transdiagnostic protocol for the affective disorders. Future studies should extend this work by comparing TBT and/or other transdiagnostic protocols to the available disorder-specific protocols for the affective disorders, including major depressive disorder and posttraumatic stress disorder.

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