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Efficacy of Transdiagnostic Treatments: A Review of Published Outcome Studies and Future Research Directions

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Theory and evidence relating to biological and psychological vulnerabilities, comorbidity, latent structure, cognitive and behavioral maintaining factors, and treatment outcome suggest that commonalities across emotional disorders may outweigh the differences. Thus, researchers have recently begun evaluating transdiagnostic (or unified) treatment protocols, which target common maintaining factors, by applying them to individuals with multiple disorders or to mixed-diagnosis groups. The aim of this article is to review the efficacy of unified protocols for anxiety and mood disorders. Evidence suggests that unified treatments are associated with symptom improvement, generally perform better than wait-list controls, are associated with improvements in comorbid disorders, and may compare well to diagnosis-specific treatments. Unified protocols are also associated with high client satisfaction, therapeutic alliance, group cohesion, and positive treatment expectations. However, these conclusions are tempered by the small number of studies and methodological limitations. We propose directions for future research.

Keywords: transdiagnostic; unified; treatment; emotional disorders; cognitive-behavioral therapy

Interest in transdiagnostic approaches to treating mental disorders is burgeoning. Though the advent of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994) has encouraged the pursuit of identifiable differences between mental disorders, the theoretical and empirical rationale for considering more unified approaches to treatment planning has recently been described (Barlow, Allen, & Choate, 2004). The pursuit of disorder-specific processes has de-emphasized and limited our understanding of substantial commonalities that exist across the disorders. Thus, some researchers have suggested that in light of the last 20 years of accumulated knowledge it is time to come "full circle" and revisit earlier transdiagnostic conceptualizations of emotional disorder. To this end, transdiagnostic (or unified) treatment protocols that emphasize commonalities across the disorders are now being

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investigated. The purpose of this article is to review the evidence for transdiagnostic treatments for mood and anxiety disorders. Theoretical and practical rationales for transdiagnostic treatments, as opposed to diagnosis-specific interventions, will first be outlined, followed by potential advantages and disadvantages of each approach. The format and content of existing transdiagnostic protocols will then be reviewed, along with outcome data where available. Finally, we propose research directions. This review will focus on unified conceptualizations and cognitive-behavioral treatments for unipolar depression and anxiety disorders.

Definition of Transdiagnostic Treatments

A variety of "broad-spectrum" treatment protocols have been designed to apply common treatment principles to a variety of disorders. However, not all of these treatments can be considered truly unified. Unified (or transdiagnostic) treatments are those that apply the same underlying treatment principles across mental disorders without tailoring the protocol to specific diagnoses. Instead, the emphasis is on functional links between components of the transdiagnostic formulation (e.g., thoughts, behaviors, physiology, and emotions), which is then individualized during therapy. This approach increases the flexibility for clients to identify and challenge a variety of problematic cognitions and behaviors that may contribute to the same emotional response (e.g., anxiety) in response to different cues (e.g., interoceptive cues, social interactions), as well as to different emotional responses (e.g., depression, anxiety, anger). The unified treatment focus is not limited to specific diagnoses, even though they are applied to individuals who may meet criteria for one or more clinical diagnoses.

Individualized, evidence-based case formulation is the bedrock of treatments such as cognitive-behavioral therapy (e.g., Persons & Tompkins, 2007), which has proven to be effective for anxiety and depression (e.g., Butler, Chapman, Forman, & Beck, 2006; Persons, Roberts, Zalecki, & Brechwald, 2006). Transdiagnostic approaches to treatment, either individually or within a group, capitalize on the commonalities across individualized case formulations for emotional disorders. The questions posed by unified formulations are what *common* elements lead individuals to develop emotional disorders, at what times, and what functional relationships appear to maintain them? It is argued that once these common processes are understood, they can be used to guide individualized case formulations so that both diagnosis-specific and common maintaining factors can be targeted during treatment. The premise underlying transdiagnostic treatments is that the commonalities across disorders outweigh the differences and that targeting the common functional relationships may have a number of important benefits compared to diagnosis-specific approaches.

Rationale for Transdiagnostic Treatments

There are a number of strong theoretical and empirical reasons to believe that commonalities across disorders are greater than differences, and thus transdiagnostic and diagnosis-specific treatments could be at least equally effective (see Barlow et al., 2004, for an excellent review; Moses & Barlow, 2006). For instance, evidence from genetics studies suggests a strong, nonspecific heritability to mood and anxiety disorders (Andrews, 1991; Kendler, Neale, Kessler, Heath, & Eaves, 1992), comorbidity between emotional disorders is consistently found to be high (Brown, Campbell, Lehman, Grisham, & Mancill, 2001), and structural equation modeling has shown commonalities in latent structure across emotional disorders (e.g., Brown, Chorpita, & Barlow, 1998). Clark and Watson's (1991) tripartite model suggests that mood and anxiety disorders share negative affectivity, which is similar to other constructs found to be common across emotional disorders such as neuroticism and trait anxiety (Barlow, 2000, 2002). Negative affectivity is defined as "the extent to which a person is feeling upset or unpleasantly engaged rather than peaceful and encompasses

various aversive states including *upset, angry, guilty, afraid, sad, scornful, disgusted, and worried*" (Clark & Watson, 1991, p. 321).

Barlow (2002) argued that negative affectivity results from threatening perceptions of uncontrollability or unpredictability, which is a common vulnerability across emotional disorders, alongside a genetic vulnerability and early learning experiences. Given the overwhelming evidence that emotional disorders share etiological and phenomenological factors, treatments targeting these common variables may represent the most effective and efficient means of ameliorating risk and maintaining factors for primary and comorbid disorders. Brown, Antony, and Barlow (1995) speculated that recurrence rates of comorbid disorders 2 years after treatment may be a consequence of higher-order (i.e., shared) risk factors not being addressed.

Other theories of emotional disorder postulate common maintaining factors across emotional disorders (Gross, 2007; Wells & Matthews, 1996), and there is evidence that many cognitive and behavioral processes are nonspecific across disorders (Harvey, Watkins, Mansell, & Shafran, 2004; Starcevic & Berle, 2006). For instance, Andrews, Stewart, Allen, and Henderson (1990; see also Andrews, 1996) demonstrated that neuroticism and particular coping styles explain the majority of comorbidity among emotional disorders. Additional sources of evidence suggest that commonalities across the emotional disorders outweigh the differences, including similar efficacy of pharmacotherapeutic and psychotherapeutic interventions across the disorders (Norton, 2008; Tyrer et al., 1988) and the response of comorbid conditions to diagnosis-specific treatments targeting the primary disorder (Borkovec, Abel, & Newman, 1995; Brown et al., 1995).

Potential Advantages of Transdiagnostic Treatments

A number of potential advantages of transdiagnostic treatments have been postulated. As mentioned above, there is evidence that diagnosis-specific cognitive-behavioral therapy has beneficial effects on untargeted comorbid disorders (Borkovec et al., 1995; Brown et al., 1995; Tsao, Lewin, & Craske, 1998; Tsao, Mystkowski, Zucker, & Craske, 2002, 2005). For instance, Borkovec et al. (1995) treated patients with primary diagnoses of generalized anxiety disorder and found that the rate of comorbid diagnoses also declined following treatment. Likewise, at posttreatment Brown et al. (1995) found a significant reduction in comorbid diagnoses in a sample treated for panic disorder. This phenomenon could be explained by the comorbid disorders being functionally secondary to the treated disorder, clients applying treatment strategies to other emotional dysfunction, or impacts on common underlying factors such as negative affectivity and perceived lack of control (Brown et al., 1995; Tsao et al., 2005). Regardless of the mechanisms by which diagnosis-specific interventions have positive impacts on comorbid disorders, it is possible that unified treatments targeting and capitalizing on the commonalities across disorders could facilitate even greater generalization of treatment effects across comorbid emotional disorders. It is also possible that by encouraging clients to apply treatment strategies to their emotional experiences in general they will learn how to more flexibly and creatively incorporate the principles into their repertoire of coping armament. In these ways, unified treatments are more efficient at treating comorbid conditions than sequentially treating each disorder. Moreover, if the common, higher-order factors represent significant risk factors for relapse, unified treatments may target these factors more directly and perhaps comprehensively.

Researchers also suggest that the vast array of diagnosis-specific manuals are unwieldy in terms of training and cost demands, which may act as a disincentive for the dissemination of empirically validated treatments (Addis, Wade, & Hatgis, 1999; Barlow et al., 2004; Norton & Philipp, 2008). Specifically, resources in many clinical settings may not extend to purchasing and training clinicians in all relevant diagnosis-specific protocols, leading to calls for treatment manuals to be more accessible (Hollon et al., 2002). There are also a number of practical advantages to unified treatments. From a service point of view, many community clinics may not

receive enough referrals for each disorder to easily schedule diagnosis-specific groups. It is likely that transdiagnostic treatments will facilitate more flexible treatment scheduling and shorter treatment waiting times for patients.

Potential Disadvantages of Transdiagnostic Treatments

Despite potential advantages, unified treatments may introduce a number of challenges. For instance, normalization of symptoms as clients identify with their peers is an important benefit of group therapy. Though the evidence is mixed, some studies have found that group cohesion is related to treatment dropout and outcomes (Joyce, Piper, & Ogrodniczuk, 2007; Norton, Hayes, & Springer, 2008; Roback & Smith, 1987; Tschuschke & Dies, 1994). However, it is possible that clients' different presentations within heterogeneous groups may dilute group cohesiveness and be detrimental to outcomes. Another benefit of group treatment is vicarious learning. Though clients in diagnostically heterogeneous groups observe others applying common treatment principles, they may not relate as well to the content of others' concerns and the strategies designed to challenge their idiosyncratic fears. Thus, there may be fewer opportunities to learn from other group members, such as additional pertinent targets for exposure. If the group's content is seen as less relevant to each individual, clients may be less engaged and more likely to drop out. It is also possible that because less time will be spent modifying diagnosis-specific processes, clients may find it more difficult to generalize treatment principles to their own concerns. On the other hand, it is possible that clients will be more likely to question their own fears when they observe the irrationality of others' fears.

Craske et al. (2007) found indirect evidence that treatments attempting to treat emotional disorders may be less effective than focusing on one primary disorder. These researchers treated a primary diagnosis of panic disorder with or without agoraphobia in one condition but in a comparison condition allowed therapy to "stray" onto patients' most severe comorbid disorder. Those receiving cognitive-behavioral therapy (CBT) focused on the primary disorder fared better on some indices of primary and comorbid psychopathology. Though this program was not truly unified due to its focus on specific diagnoses, it suggests that broader approaches to treatment may dilute treatment effects.

The Current Study

Though the theoretical and practical rationale for using unified treatments is strong, potential disadvantages may limit their utility. The main purpose of the current study is to review existing published evidence for the efficacy of transdiagnostic treatments for anxiety and/or depression.

Inclusion and Exclusion Criteria and Search Strategy

Inclusion criteria for the current review were the following: (a) treatment modality was primarily cognitive-behavioral including at least exposure or cognitive therapy, (b) participants met diagnostic criteria for specific mood and/or anxiety disorders, (c) the study was published in a peer-reviewed journal (see Norton & Philipp, 2008, for a review of published and unpublished transdiagnostic treatments for anxiety disorders), and (d) the treatment protocol was applied to multiple disorders (individually or in group formats). Relevant research papers were sourced by literature searches of PsychInfo and Medline databases with ([anxiety]) or ([depression]) and ([treatment]) or ([therapy]) or ([cognitive-behavioral/behavior therapy]) and ([mixed]) or ([unified]) or ([broad-spectrum]) or ([heterogeneous]), and combinations of these terms, as identifiers. In addition, references sections of all identified papers were scrutinized for additional

published and unpublished papers in this area. Finally, leading authors were directly contacted for additional published or in-press papers.

Review of Treatment Outcome Studies

Ten treatment trials and one meta-analysis were identified (see Table 1). In addition to including patients with anxiety and/or depression, Manning, Hooke, Tannenbaum, Blythe, and Clarke (1994) included patients with other diagnoses. Although anxiety and mood disorders are the focus of this review, this study was included because a majority of the sample was anxious and/or depressed and so few studies were identified in the literature. Treatment protocols typically included psychoeducation, cognitive restructuring, exposure, and behavioral experiments, although there were also some differences in content (see Table 1).

Erickson (2003) published outcomes from an uncontrolled trial of a 12-week cognitive-behavioral group therapy (CBGT) program for patients with anxiety disorders. Treatment components included psychoeducation, cognitive restructuring of diagnosis-specific and common beliefs (e.g., increasing tolerance of uncertainty, identifying and challenging negative core beliefs), and exposure (diagnosis-specific). Treatment was evaluated using the Brief Symptom Inventory and the Fear and General Symptom Questionnaire, and scores on all scales significantly improved by posttreatment. Gains were also maintained at 6-month follow-up. Erickson, Janeck, and Tallman (2007) randomized 152 patients to either a delayed treatment control condition or an 11-week CBGT program and reported outcomes on the Beck Anxiety Inventory (BAI). Overall, the immediate treatment group improved more than the delayed treatment controls, although when each diagnostic category was examined only patients with a principal (i.e., most severe) diagnosis of panic disorder improved more than the wait list.

Garcia (2004) reported preliminary data from an 8-week group transdiagnostic treatment protocol for anxiety disorders developed for Spanish national health care clinics. The 90-minute weekly sessions were primarily psychoeducational, discussing topics including understanding the disorder, control of physiological symptoms, distorted thoughts, fighting the threat, coping behaviors, dealing with causes and maintainers, and coping with social pressure. Relaxation techniques were practiced weekly and, at the conclusion of each session, the therapists recommended that the procedures discussed during that session be practiced for homework. Data from 19 of 44 patients who attended an initial data collection session suggested that treatment was associated with significant decreases in self-reported anxiety, depression, and subjective feelings of distress. In addition, compared to nonattendees and dropouts, treatment completers showed reduced anxiolytic use 1 year after treatment.

McEvoy and Nathan (2007) applied a transdiagnostic group treatment protocol (Nathan, Rees, & Smith, 2001) to patients with anxiety and/or mood disorders and then used a benchmarking strategy to compare their treatment outcomes to previous efficacy and effectiveness studies of diagnosis-specific interventions. This program included five main components: psychoeducation, calming techniques, behavioral activation tasks, exposure, and cognitive restructuring. Following psychoeducation about the causes and correlates of emotions such as anxiety and depression, clients were taught to identify their own problematic emotions as well as associated negative thoughts and behaviors (e.g., avoidance, withdrawal, safety-seeking behaviors). For the remainder of the program, clients were encouraged to practice cognitive restructuring skills and to undertake a program of repeated, prolonged, and graded exposure to feared stimuli and behavioral activation. Because the treatment was administered in a tertiary community mental health clinic, it was neither practical nor ethical to randomize patients to wait-list controls or placebo treatments. Benchmarking enables outcomes from uncontrolled, "real-world" samples to be compared to outcomes from well-controlled efficacy and effectiveness studies. Outcomes were indexed by effect sizes as well as by the proportion of the sample achieving reliable and

TABLE 1. Summary of Treatment Studies Investigating Transdiagnostic Protocols for Anxiety and/or Depression

Study	*N*	Disorder(s)	Design	Treatment	CBT Components	Measures	Main Findings
Erickson (2003)	70	Anxiety	UCT	CBGT, 12 weekly 2-hour sessions	Psycho-education and cognitive, behavioral, and interpersonal techniques	BSI, FGSQ	All scales reduced by posttreatment and to 6-month follow-up.
Erickson et al. (2007)	152	Anxiety	RCT	CBGT, 11 weekly 2-hour sessions vs. wait-list control	Psycho-education, relaxation, exposure, cognitive therapy, core schema, breathing control	BAI, BDI, ASI, GAF	Overall, immediate treatment group improved more than delayed treatment controls on BAI. Only panic disorder patients improved more compared to waitlist.
Garcia (2004)	19	Anxiety	UCT	CBGT, 8 weekly 90-minute sessions vs. nonattendees	Psycho-education, relaxation techniques, exposure, cognitive therapy	STAI, BDI	Improvements on STAI and BDI. Attendees showed greater benzodiazepine reduction than nonattendees.
McEvoy & Nathan (2007)	143	Depression, anxiety	UCT	CBGT, 11 weekly 2-hour sessions	Psycho-education, calming techniques, behavioral activation, exposure, cognitive therapy	BDI, BAI	Improvements on BDI and BAI. Effect sizes compared well to diagnosis-specific treatments, especially for the BDI.

(*Continued*)

TABLE 1. (*Continued*)

Study	*N*	Disorder(s)	Design	Treatment	CBT Components	Measures	Main Findings
Manning et al. (1994)	531	Mood, anxiety, adjustment, psychosis	UCT	Mixed groups, 60 hours over 2weeks, plus concurrent individual psychiatric care	Psycho-education, cognitive therapy, behavior therapy, goal setting, assertiveness, psycho-education, stress management, lifestyle issues, relaxation, supporter's session	BDI, STAI, RSES, LCS, program satisfaction	Improvement on all measures at post-treatment, maintained at 6-month follow-up. High ratings of program satisfaction.
Hooke & Page (2002)	348	Mood, anxiety	UCT	See Manning et al.	See Manning et al.	DASS, LCB, RSES, GAF, HoNOS	Improvements on all outcome measures. No interactions with diagnostic group.
Norton & Hope (2005)	19	Anxiety	RCT	Broad-spectrum CBGT; 12 weekly 2.5-hour sessions vs. wait-list control	Psycho-education and self-monitoring, cognitive restructuring, exposure (in vivo, role play, imaginal, interoceptive), cognitive therapy	ADIS, CSR, fear and avoidance hierarchy; DASS–A/S, MASQ –SA/GD	Active treatment superior in terms of caseness, CSR (primary and average across all disorders), hierarchy anxiety ratings; no advantage on self-report measures (DASS, MASQ)

Norton et al. (2004)	23	Anxiety	RCT	See Norton & Hope	See Norton & Hope	MASQ–AD, DASS–D	Immediate treatment group improved more on MASQ-AD than waitlist, trend for DASS-D ($p = .06$).
Norton (2008)	52	Anxiety	UCT	12 weekly, 2-hour sessions	Psycho-education, self-monitoring, cognitive restructuring, exposure	STAI	Reduction in STAI scores during treatment. No differences across diagnoses.
Norton et al. (2008)	54	Anxiety	UCT	12 weekly sessions of CBGT	See Norton & Hope	STAI, WAI, GCS, RTQ	Reduction in STAI scores. Working alliance and group cohesion were strong and improved during treatment. Working alliance and treatment credibility compared well to diagnosis-specific treatments.

Note. UCT = uncontrolled trial; RCT = randomized controlled trial; CBGT = cognitive-behavioral group therapy; BSI = Brief Symptom Inventory; FGSQ = Fear and General Symptom Questionnaire; BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory; ASI = Anxiety Sensitivity Index; GAF = Global Assessment of Functioning; STAI = State Trait Anxiety Inventory; RSES = Rosenberg Self-Esteem Scale; LCS = Locus of Control Scale; DASS = Depression (D), Anxiety (A), and Stress (S) Scales; LCB = Locus of Control of Behaviour Scale; HoNOS = Health of the Nation Outcome Scales; ADIS = Anxiety Disorders Interview Schedule; CSR = Clinician Severity Rating; MASQ = Mood and Anxiety Symptom Questionnaire (SA = somatic anxiety, GD = general distress, AD = anhedonia scales); WAI = Working Alliance Inventory; GCS = Group Cohesion Scale; RTQ = Reactions to Treatment Questionnaire.

clinically significant change (Jacobson & Truax, 1991). McEvoy and Nathan found that outcomes for patients with anxiety disorders alone, mood disorders alone, and comorbid anxiety and mood disorders generally compared well to previous effectiveness and efficacy studies using diagnosis-specific treatments in terms of effect sizes, reliable change, and clinically significant change. These authors, along with others (e.g., Norton & Hope, 2005), therefore concluded that the similarities of treatment components may account for greater change than the differences in diagnosis-specific content. It is noteworthy that although effect sizes on the BAI were within the range of previous effectiveness studies, including Erickson et al.'s (2007) transdiagnostic protocol, effect sizes for the Beck Depression Inventory (BDI) were considerably larger. Given that the BAI is most valid for panic disorder (Cox, Cohen, Direnfeld, & Swinson, 1996), this finding could be explained by the fact that McEvoy and Nathan's sample consisted of a relatively small number of patients with panic disorder. As noted earlier, Erickson et al. found that only patients with panic disorder changed more than wait-list controls on the BAI.

Manning et al. (1994) and Hooke and Page (2002) evaluated outcomes from an intensive 2-week day program for diagnostically heterogeneous patients (i.e., mainly affective and anxiety disorders, although Manning et al. included patients with psychosis and other diagnoses). This program included cognitive therapy with self-monitoring, behavioral assignments to challenge thoughts and beliefs, realistic goal-setting, assertion skill training, psychoeducation, stress management, lifestyle issues, relaxation, and a supporters' session for significant others (e.g., spouse). Manning et al. found significant improvements at posttreatment and 6-month follow-up on the BDI, State Trait Anxiety Inventory, Rosenberg's Self-Esteem Scale, and the Locus of Control Scale. Importantly, patients also rated the program as highly satisfactory, suggesting that the mixed-diagnosis nature of the groups did not adversely affect patient engagement. Hooke and Page also found significant improvements on all outcome measures with no interactions by diagnostic group, which suggests that patients with anxiety and mood disorders improved to a comparable degree. Hooke and Page's study went further and examined predictors of posttreatment symptoms above and beyond pretreatment symptoms. Though pretreatment self-esteem predicted posttreatment stress scores for those with mood and anxiety disorders, it predicted posttreatment anxiety only for those with anxiety disorders. In contrast, pretreatment locus of control predicted posttreatment depression for those with mood disorders but not anxiety disorders. These findings suggest that low self-esteem contributes to stress for those with mood and anxiety disorders, which may represent a common maintaining factor. However, low self-esteem may only contribute to anxiety in those with anxiety disorders, and an external locus of control may only contribute to low mood in those with mood disorders, which suggests symptom-specific influences across different disorders.

Norton and colleagues have thus far conducted the most comprehensive research program on transdiagnostic treatment for anxiety disorders. Recent articles have investigated treatment outcomes using randomized controlled trials (e.g., Norton, Hayes, & Hope, 2004; Norton & Hope, 2005), differential efficacy across anxiety disorders (Norton, 2008), differential outcome across different subtypes within the same disorder (i.e., obsessive-compulsive disorder: Norton & Whittal, 2004), an evaluation of process variables within diagnostically heterogeneous groups (Norton et al., 2008), and a meta-analysis of published and unpublished treatment outcomes (Norton & Philipp, 2008). Norton and colleagues' protocol consists of psychoeducation, cognitive restructuring of specific and general cognitions, and exposure with response prevention. Norton and Hope (2005) published the first controlled trial of a transdiagnostic treatment protocol for anxiety disorders. That study found that outcomes on clinician-rated severity, caseness, and idiographic fear-avoidance hierarchies were superior for patients receiving treatment compared to wait-list controls. Although no advantage was found on the self-report measures of anxiety and stress, subsequent analyses showed that the treatment group improved more than waitlisted clients on self-reported comorbid depression

symptoms (Norton et al., 2004). Norton (2008) used mixed-effect regression modeling to investigate differential change on the State Trait Anxiety Inventory—State Version (STAI-S) across the anxiety disorders in an open trial of their unified protocol. Interestingly, no evidence was found for a session-by-diagnostic category interaction for any principal or comorbid disorder, suggesting that clients benefited to a similar degree regardless of their diagnoses.

Norton and Philipp (2008) conducted a meta-analysis of eight published and unpublished trials (plus three control conditions) of unified treatments for anxiety disorders. These researchers found a relatively large range of effect sizes (d = 0.37 to 2.66), but overall the treatment conditions had a large average effect size (d = 1.29) compared to controls (d = 0.14). Inclusion of relaxation training and larger samples were associated with smaller effect sizes, whereas number of dropouts, percentage female, session duration, number of sessions, and total contact time were not significantly related to outcome. Finally, Norton et al. (in press) examined changes on the STAI-S during treatment along with the impact of nonspecific factors on treatment outcome, including working alliance, group cohesion, and treatment credibility. Clients significantly improved on the STAI-S following treatment. Moreover, scores on the Working Alliance Inventory and Group Cohesion Scale improved during treatment and indicated a high degree of working alliance and group cohesion. Scores on these measures, along with treatment credibility ratings, compared well to diagnosis-specific treatments, and improvements in these variables during treatment were associated with better outcomes.

Discussion

Although the number of published investigations on the utility of transdiagnostic treatments for anxiety and mood disorders is limited, evidence to date is promising. The main aims of this study were to (a) summarize the rationale for unified treatments, along with potential advantages and disadvantages, and (b) review published protocols and outcomes available. Theory and evidence in relation to genetics, comorbidity, latent structure, aetiology, maintaining factors, and treatment response suggest that transdiagnostic treatments may be beneficial for emotional disorders. A number of practical benefits have also been proposed for both clinical service providers and clients, including cost, training requirements, and treatment waiting times. In contrast, potential disadvantages from unified treatments include threats to group cohesion, reduced treatment alliance and retention, less opportunity to target idiosyncratic maintaining factors, and, as a consequence, dilution of treatment effects.

The studies in this review used a variety of methodologies, including uncontrolled trials, benchmarking comparisons, meta-analytic techniques, and randomized controlled trials. Evidence from each of these studies suggests that unified treatments are associated with symptom improvement and generally perform better than wait-list controls. Although more research is needed, there is also evidence that unified treatments compare well to diagnosis-specific treatments. Moreover, unified treatments were associated with improvements in the severity of comorbid disorders and symptoms, and treatment efficacy did not appear to interact with diagnoses, with the exception of Erickson et al.'s (2007) study, which found a superior response for patients with panic disorder. Investigations of nonspecific factors have also suggested that unified treatments are associated with high client satisfaction, therapeutic alliance, group cohesion, and positive treatment expectations.

Despite these encouraging findings many questions remain. Importantly, no study has directly compared unified and diagnosis-specific protocols. Most studies have used uncontrolled research designs, which leave open the possibility that factors other than the intervention could contribute to symptom improvement or that diagnosis-specific interventions would have been superior. Though unified treatments tend to perform better than wait-list controls, a more useful comparison at this juncture would be to an empirically validated diagnosis-specific protocol. This

would enable researchers to evaluate the relative impact of different approaches to treatment on (a) diagnosis-specific symptoms, (b) higher-order and common factors (e.g., negative affectivity, locus of control, emotion regulation), (c) nonspecific factors (e.g., therapeutic alliance, group cohesion), (d) treatment compliance and attrition, (e) relapse, and (f) comorbid disorders. Given the accumulating evidence that diagnosis-specific treatments have positive effects on comorbid diagnoses (Tsao et al., 2002) and that concurrently treating comorbid disorders may be detrimental to outcome (Craske et al., 2007), it is imperative that studies of unified treatments evaluate the impact on primary and comorbid disorders compared to diagnosis-specific treatments. Research on common and distinct processes that mediate change across the diagnoses would be useful to better understand what, if any, diagnosis-specific processes need to be targeted in addition to a unified protocol. Specifically, it is important to empirically evaluate the hypothesis that it is primarily the content of a unified formulation (e.g., diagnosis-specific cognitions) that differs across individuals and diagnoses rather than the functional links between components of the formulation (e.g., cognition, behavior, emotion, physiology).

If some of these questions are to be addressed, evaluation of processes and outcomes from unified treatment requires consideration. In addition to structured diagnostic interviews and behavioral indicators, several types of self-report measures have been used, each with advantages and disadvantages. Some studies have used generic symptom measures such as the BAI as a measure of anxiety symptoms (Erickson et al., 2007) and the BDI as a measure of depression symptoms (e.g., McEvoy & Nathan, 2007). An important advantage of broad symptom measures is that they are brief and less onerous for clients and more feasible within busy clinical settings. In addition, measures such as the BAI and BDI are commonly used in diagnosis-specific interventions, and thus outcomes from transdiagnostic treatments can be benchmarked to previous outcome studies. However, there are several limitations of this strategy. First, generic measures may be more valid for some disorders than others, which would differentially affect sensitivity to change. For instance, there is evidence that the BAI is more valid for panic disorder than for other anxiety disorders (Cox et al., 1996). The fact that Erickson et al. (2007) found larger changes on the BAI for those with panic disorder than other disorders in their transdiagnostic treatment may simply reflect the measure's insensitivity to change for some diagnoses rather than the possibility that unified treatment is more beneficial for those with panic disorder. Moreover, generic measures do not allow for benchmarking to diagnosis-specific measures used with diagnostically homogenous samples. These issues highlight the need to use both diagnosis-specific and generic symptom measures when evaluating and comparing outcomes.

Another disadvantage of generic and diagnosis-specific symptom measures is that they do not indicate whether higher-order constructs common across the disorders (e.g., negative affectivity) are changing or whether change is restricted to the symptom level. This is important because an intervention designed to target common factors across the disorders may be more likely to achieve remission and prevent relapse compared to those targeting only diagnosis-specific symptoms and processes.

To assess common factors, some researchers (e.g., Norton & Hope, 2005; Norton et al., 2004) have used instruments designed to measure components of Clark and Watson's (1991) tripartite model, such as the Depression, Anxiety, and Stress Scales (Lovibond & Lovibond, 1995) or the Mood and Anxiety Symptom Questionnaire (Watson & Clark, 1991). The major advantage of these measures is that they can assess change in common (i.e., negative affect) and distinct (i.e., somatic anxiety and positive affect/anhedonia) aspects of mood and anxiety disorders. In a comparison study, these measures could assess the degree to which unified treatments are more or less effective at shifting common and distinct factors of emotional disorders compared to diagnosis-specific measures. Other common factors have been measured, such as neuroticism, perceived control, self-esteem, and emotion regulation skills (Allen, McHugh, & Barlow, 2008; Craske et al., 2007; Hooke & Page, 2002). Hooke and Page explored the predictive utility of locus of control and

self-esteem for those with anxiety or mood disorders and found evidence for both common and specific influences. Though these measures can answer important questions relating to the commonalities and differences across emotional disorders, they are difficult to compare to diagnosis-specific measures used in diagnosis-specific treatment trials.

An optimal evaluation strategy might include diagnosis-specific symptom measures as well as measures of common and higher-order features of emotional disorders (see Allen et al., 2008, for an example of a comprehensive approach to evaluating unified treatments). Outcomes could then be compared using benchmarking strategies or within the context of randomized controlled trials to best assess relative benefits and costs of unified treatments and to answer important theoretical questions. In addition, generic measures of distress and disability would enable the assessment of general functioning and quality of life following treatment, which would provide further information about treatment outcomes beyond the symptom change. Finally, it would be useful to measure process variables to assess clients' experiences with unified (versus diagnosis-specific) treatments, including therapeutic alliance, group processes, and adherence to the program. As mentioned above, it is possible that diagnosis-specific treatments, especially within group contexts, would better promote nonspecific factors associated with change, although there is evidence that patients participating in unified protocols find the experience positive (Manning et al., 1994), with high therapeutic alliance and group cohesion (Norton et al., 2008).

Unified treatments for anxiety and mood disorders represent an exciting avenue for continuing research. The evaluation of such treatments is in its infancy, with the evidence base currently consisting of a limited number of randomized controlled trials using wait-list controls rather than diagnosis-specific interventions, along with uncontrolled treatment trials. Accumulating evidence suggests that unified approaches may be an effective, efficient, and practical treatment modality that could be more easily disseminated than the multitude of diagnosis-specific manuals. However, more research is clearly needed to establish whether there are specific advantages to a transdiagnostic perspective on treatment. Research into unified treatments also can answer important questions about the common and distinct factors maintaining emotional disorders, which will help inform and extend existing theoretical models. Future research directly comparing diagnosis-specific to unified protocols using a broad spectrum of measures will provide an important contribution to existing literature.

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