

Behavioral Activation as an Intervention for Coexistent Depressive and Anxiety Symptoms

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Abstract: In recent years, behavioral activation approaches have been used to treat individuals with clinical depression. Extension of these strategies toward individuals presenting with coexistent depressive and anxiety symptoms may represent a parsimonious, practical, and time- and cost-effective treatment method. The present study outlines a case in which coexistent anxiety and depressive symptoms predominate, a clinical presentation made somewhat more complex given an Axis III diagnosis of colitis. A brief behavioral activation treatment for depression (BATD) is used to simultaneously incorporate activation and exposure strategies to ameliorate affective symptoms. Following a 10-session treatment protocol, the patient demonstrated notable decreases in self-reported anxiety and depressive symptoms and increased quality of life. Although these data are preliminary, they suggest some efficacy for BATD as a viable treatment alternative for individuals with a mixed anxiety-depressive disorder presentation.

Keywords: behavioral activation; depression; anxiety; exposure.

1 THEORETICAL AND RESEARCH BASIS

A behavioral activation approach to treating depression involves increasing an individual's positive experiences by increasing his or her activity level, including both responsibility-related activities and recreation-based activities. These activities are designed to produce both primary (e.g., enjoyment, increased self-efficacy) and secondary benefits (e.g., appreciation from family members, extension of social support system). Recent data indicate that behavioral activation interventions may successfully be

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used in the context of both outpatient and inpatient settings to alleviate patients' depressive symptoms (Hopko, Lejuez, LePage, Hopko, & McNeil, 2003; Jacobson, Dobson, Truax, & Addis, 1996; Lejuez, Hopko, LePage, Hopko, & McNeil, 2001). Although a cognitive component is not directly included in these interventions, behavioral activation is based on the premise that negative affect and corresponding maladaptive cognitions can be ameliorated via an increase in behavior (Jacobson et al., 1996; Lejuez et al., 2001). Although behavioral activation strategies generally have been used in the context of treating individuals with clinical depression, its potential relevance to treating anxiety, as a form of in vivo exposure, is worthy of investigation. This necessity is based on the interrelatedness of these conditions (Merikangas, Risch, & Weissman, 1994; Mineka, Watson, & Clark, 1998) as well as the functional similarity that involves an avoidance of environmental stimuli that are either aversive or presumably non-reinforcing. Thus, despite the fact that behavioral activation and in vivo exposure may operate via different behavioral principles (differential reinforcement and extinction, respectively), it is conceivable that a treatment may be designed that integrates these two processes. The present case study represents an initial exploration of the effectiveness of an activation-based treatment manual (Lejuez, Hopko, & Hopko, 2001) in treating a patient with both anxiety and depressive symptoms.

2 CASE PRESENTATION

The patient was a 28-year-old married Caucasian female who was a full-time student.

3 PRESENTING COMPLAINTS

On entering therapy, the patient reported that she was experiencing coexistent anxiety and depressive symptoms. Included among these symptoms was depressed mood that had been present for several years, the severity of which had waxed and waned significantly, with periods of normal functioning being evident. She also reported significant anhedonia, avolition, difficulty concentrating, periodic insomnia, and occasional fatigue. Panic symptoms also were reported, including panic attacks that were occurring approximately 1 to 3 times per week, accompanied by a persistent fear of having additional and more severe attacks. Related symptoms included hyperventilation, increased heart rate, sweating, fears of losing control and dying, and avoidance of certain situations that included driving, eating in restaurants, and attending class. This avoidance behavior, albeit partially associated with an effort to avoid aversive physiological and cognitive responses, by the patient's report also was associated with an underlying depressed mood that inhibited her from engaging in previously rewarding behaviors. Thus, some behav-

iors such as driving and dining out were avoided due to both their anxiety-eliciting nature and avolition associated with depressed mood (i.e., she could not motivate herself to engage in these previously enjoyed activities). Other behaviors such as contacting family members and walking her dogs, on the other hand, were not necessarily avoided subsequent to anxious responding, but more a function of depressive affect. Finally, the patient also reported more diffuse anxiety symptoms including a core fear related to death, dying, and becoming ill and the correlates associated with these possibilities (e.g., experiencing pain, being a burden on family members, and not having the opportunity to raise a family).

4 HISTORY

The patient reported that anxiety and depressive symptoms had been present for approximately 3 to 4 years. She indicated that two particularly significant events were proximal to the onset of these problems. First, following the experience of persistent abdominal distress, the patient underwent a physical examination and was diagnosed with colitis. Second, her aunt had passed away following a lengthy bout with cancer. The patient indicated she had a close relationship with her aunt and was present during the several days preceding her death.

The patient reported that she decided to seek treatment due to the progressive worsening of her affective symptoms following these events, combined with the added demands of academic responsibilities. During the course of her initial treatment (which ended 6 months prior to treatment with the behavioral activation treatment for depression [BATD] protocol), the patient was treated for 18 weeks with a combined pharmacological and psychosocial intervention. The former component consisted of 20 mg of Paroxetine administered daily. The latter component included traditional cognitive-behavioral treatment for panic disorder that included relaxation training, cognitive restructuring, and interoceptive exposure (Barlow & Craske, 1994). In addition, the patient was presented theory, metaphor, and intervention consistent with acceptance and commitment therapy (Hayes, Strosahl, & Wilson, 1999). This element was included as part of the cognitive restructuring phase to focus on the patient's verbal behavior as it related to attempts to "control" emotional states and the potential exacerbation of symptoms associated with such an exercise.

5 ASSESSMENT

The patient presented to the initial interview as well groomed, friendly, and attentive. Speech rate, tone, and volume were within normal limits. The patient was oriented on all spheres. Mild psychomotor agitation was evident and was consistent with the

patient's mood, which was described as somewhat anxious and depressed. Affect was congruent with mood. There was no evidence of perceptual distortions or any indication of suicidal ideation. Thought process as exhibited by verbal behavior was logical and the patient appeared to be above average in intellect. The patient also had adequate insight pertaining to the nature of her symptoms.

The patient underwent a semistructured interview (*The Anxiety Disorder Interview Schedule for DSM-IV*; Brown, DiNardo, & Barlow, 1994) that revealed coprincipal diagnoses of panic disorder with agoraphobia and dysthymia (see the Presenting Complaints section for a discussion of specific symptoms). Her multiaxial diagnosis was as follows:

Axis I: 300.21 Panic disorder with agoraphobia
 300.4 Dysthymic disorder
 Axis II: 799.9 Diagnosis deferred
 Axis III: 556.9 Colitis
 Axis IV: Academic pressure
 Axis V: GAF = 62

Prior to commencing with therapy, the patient was asked to complete four self-report assessment instruments.

The State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) consists of two 20-item subscales designed to measure state and trait anxiety. Internal reliability, test-retest reliability, and convergent and discriminant validity have been demonstrated for the state and trait scales in both younger (Spielberger et al., 1983) and older adults (Kabacoff, Segal, Hersen, & Van Hasselt, 1997). Because we were interested in anxiety as a more global, trait-like dimension, only the trait scale was incorporated in the present context.

The Beck Anxiety Inventory (BAI) (Beck & Steer, 1990) is a 21-item self-report measure of anxiety with strong psychometric support. Factor analyses fairly consistently suggest the existence of somatic and subjective/cognitive factors (Beck & Steer, 1990; Kabacoff et al., 1997; Morin et al., 1999).

The Beck Depression Inventory (BDI) (Beck & Steer, 1987) consists of 21 items, each of which is rated on a 4-point Likert-type scale. The instrument has excellent reliability and validity with depressed younger (Beck & Steer, 1987; Beck, Steer, & Garbin, 1988) and older adults (Thompson, Gallagher, & Breckenridge, 1987).

The Quality of Life Inventory (QOLI) (Frisch, 1994) is a 16-item self-report measure of life satisfaction with various life domains (e.g., health, relationships, money) that are judged as important by the respondent. The instrument is scored on a scale ranging from -6 to +6, with higher scores indicating increased life satisfaction. The psychometric properties of the QOLI indicate that it is a valid and reliable measure of life satisfaction (Frisch, 1999).

Pretreatment assessment occurred 6 months after the 18 sessions of cognitive-behavioral treatment and pharmacotherapy, 1 week prior to the implementation of the

BATD protocol. The patient's scores on pretreatment measures were as follows: STAI = 53 ($T = 66$, 95th percentile; Spielberger, Gorsuch, & Lushene, 1970); BAI = 27 (moderate-severe anxiety; Beck & Steer, 1990); BDI = 13 (mild depression; Beck & Steer, 1987); and QOLI = 0 (average quality of life; Frisch, 1999).

6 CASE CONCEPTUALIZATION

The case formulation was conceptualized according to the stimulus-organism-response-consequences (SORC) model (Goldfried & Sprafkin, 1976). As the SORC model applies to the present case, the behavior targeted for change was a rather extensive avoidance of several environmental situations. Among the stimuli that elicited this pervasive avoidance were situations that included dining in restaurants, driving, classroom and employment activities, and reminders of death, illness, or mortality. Certain *organismic* variables also contributed to the clinical presentation. First, there was some evidence of a familial history of anxiety (i.e., panic disorder, generalized anxiety disorder) and major depression among first-degree biological relatives. Second, the patient's colitis affected her physiological functioning such that anxious/depressive symptoms manifested or were exacerbated subsequent to digestive problems that in turn further intensified the severity of her physical symptoms. In response to this vicious cycle and as a consequence of her learning history, symptoms associated with her colitis often were antecedent to escape behavior to prevent the subjective experience of anxiety and to protect against "potentially embarrassing situations such as having an accident" from occurring (i.e., avoidance behavior was negatively reinforced). Third, through a process of vicarious conditioning connected with the experience of her aunt's death, the patient had associated illness with the inevitability of dying. The patient's responses to the aforementioned stimuli were maladaptive with respect to all three response systems: motoric, physiological, and cognitive (Lang, 1968). In addition to escape and avoidance strategies associated with anxiety-eliciting situations, lethargy and anhedonia were evident in that the patient had ceased to expose herself to previously rewarding behaviors that included exercising, writing letters, walking her dogs, and communicating with family members. This combination of escape and avoidance of aversive situations and withdrawal from contingencies of reinforcement were conceptualized as critical factors in maintaining anxious and depressive affect. Certain maladaptive behaviors also were emerging that included poor dietary habits (e.g., fast food), which further served to exacerbate digestive problems, followed by increased worry, physiological symptoms, and depressive affect. Physiological symptoms of anxiety (increased heart rate, hyperventilation, sweating) and worsening of digestive problems also were key contributors to maintaining avoidance behaviors. As the patient continued to restrict her behaviors, negative cognitions became more frequent and intense, including thoughts such as "What if I die and never get a chance to be a mother?" "What if I have to quit my job and we have to reduce our stan-

dard of living?” and “What if I have an embarrassing accident or panic in public?” The long-term, high-magnitude negative consequences of these responses included inadequate exposure to anxiety-eliciting situations which inhibited the extinction process, lack of response-contingent reinforcement, and the sacrifice of highly valued behaviors such as dining out, attending church, and engaging in employment-related activities. Balanced against these long-term, high-magnitude negative consequences were positive consequences that despite their seemingly smaller magnitude and shorter duration, were both seemingly less delayed and more certain. Specifically, these included the removal (or lessening) of physiological and cognitive symptoms of anxiety following instances of both active avoidance/escape (leaving an anxiety-provoking situation) and passive avoidance/escape behavior (staying in bed all day), as well as immediate gratification through primary reinforcement (i.e., satisfaction gained from unhealthy eating behaviors).

7 COURSE OF TREATMENT AND ASSESSMENT OF PROGRESS

Based on this case conceptualization, the patient was treated using the BATD protocol (Lejuez, Hopko, & Hopko, 2001). The treatment is based on two major premises that were presented to the patient as a rationale for treatment. The first is the principle of emotional acceptance and behavioral change, whereby the patient was presented with the rationale that “it is difficult to ‘control’ or directly change negative emotional states and that the best mechanism to improve affect is to directly target what is controllable—overt behavior” (Hayes et al., 1999). The second major premise involves the notion that the relative value (i.e., frequency, duration) of depressed behavior, compared to nondepressed behavior (i.e., healthy behavior), is proportional to the relative value of reinforcement obtained for depressed behavior compared to nondepressed behavior (Herrnstein, 1970; McDowell, 1982). Thus, the patient was presented with the idea that

increased exposure to positive consequences resulting from increased healthy behavior (e.g., completing responsibilities, visiting friends) should reduce the relative value of avoidance and other consequences of depressed behavior, and therefore result in an increase in the frequency of healthy behavior with a corresponding decrease in depressed behavior.

Based on these tenets, BATD generally is structured to gradually expose a patient to positive environmental contingencies (i.e., healthy behaviors) that increase response-contingent reinforcement that subsequently facilitates alleviation of depressive symptoms. In the present case, consistent with coexistent anxiety problems, the format was modified somewhat to include gradual exposure to aversive situations, the objective being to facilitate the extinction process. Treatment consisted of 10 sessions. The patient was not taking psychotropic medication during the treatment, nor had she taken medi-

cation for several months prior to commencement of psychotherapy. She had tapered off this treatment under the supervision of the prescribing physician toward the end of her initial 18-week treatment. In the 2 initial sessions that included an explanation of the treatment rationale, rapport building, and activity and goal selection, sessions took approximately 1 hour. Over time, as the patient became more skilled at monitoring, sessions were reduced to between 30 to 45 minutes. The patient began treatment by engaging in a weekly self-monitoring exercise to examine already occurring daily activities. The primary goals of this assignment were (a) to provide a baseline measurement by which to compare progress following behavioral activation, (b) to make the patient more cognizant of the quality and quantity of her activities, and (c) to provide some ideas with regard to identifying potential activities to target during treatment. Following this monitoring, the emphasis shifted to identifying her values and goals within a variety of life areas that included family, social, and intimate relationships; education; employment/career; hobbies/recreation; volunteer work/charity; physical/health issues; and spirituality. Following this exercise, an activity hierarchy was constructed in which 14 activities were identified and rated from *easiest* to *most difficult* to accomplish. These activities included already-occurring behaviors that she wanted to increase in frequency, activities designed to accomplish long-term goals, and activities determined to facilitate a sense of pleasure or accomplishment. In addition, several anxiety-eliciting situations were targeted that included eating in a restaurant, attending work, and driving. The patient's death anxiety also was directly confronted via exposure to church (and discussions within) and watching the television program *ER*. Previously rewarding activities that the patient had discontinued also were incorporated: writing letters, walking dogs, contacting parents and sister, and exercising. Also important, efforts were made to modify maladaptive eating behaviors that included bringing lunch to work/school and eating dinner at home. The patient's nutritionist was consulted regarding dietary habits and a structured meal program, the progress of which was monitored weekly. Using a master activity log and behavioral checkout to monitor progress, the patient moved through the hierarchy in a progressive manner, moving from the easier behaviors to the more difficult. For each activity, the therapist and patient collaboratively determined the *final goal* in terms of the frequency and duration of activity per week. These goals were recorded on the master activity log that was kept in the possession of the therapist (the patient's master activity log is presented in Table 1). *Weekly goals* were recorded on a behavioral checkout form that the patient brought to therapy each week. At the start of each session, the behavioral checkout form was examined and discussed, with the following weekly goals being established as a function of the patient's success or difficulty. As indicated through the initial 4 weeks of the master activity log, the patient exhibited good compliance with the treatment protocol. Rewards were identified on a weekly basis as incentive for completing the behavioral checkout.

Assessment at posttreatment revealed notable decreases in anxiety and depressive symptoms and improved quality of life. At posttreatment, the patient's scores on the pre-

TABLE 1
Patient's Master Activity Log

| Activity | Week 1 | | | Week 2 | | | Week 3 | | | Week 4 | | | | |
|---|------------|----------|--------|---------|----|--------|---------|----|--------|----------|----|--------|----------|----|
| | Ideal Goal | | Goal | Goal | | Goal | Goal | | Goal | Goal | | Goal | | |
| | Number | Time | Number | Time | Do | Number | Time | Do | Number | Time | Do | Number | Time | Do |
| On time for work (9:00 a.m.) | 5 | | 4 | | ✓ | 5 | | ✓ | 5 | | ✓ | 5 | | ✓ |
| On time for therapy session (3:00 p.m.) | 1 | | 1 | | ✓ | 1 | | ✓ | 1 | | ✓ | 1 | | ✓ |
| Call sister | 1 | Minimum | 1 | Minimum | ✓ | 1 | Minimum | ✓ | 1 | Minimum | ✓ | 1 | Minimum | ✓ |
| | | 10 min | | 10 min | | | 10 min | | | 10 min | | | 10 min | |
| Practice progressive muscle relaxation | 6 | 15 min | 3 | 15 min | ✓ | 4 | 15 min | ✓ | 5 | 15 min | ✓ | 6 | 15 min | ✓ |
| Contact parents | 3 | Minimum | | | ✓ | 4 | Minimum | × | 4 | Minimum | ✓ | 4 | Minimum | ✓ |
| | | 20 min | | | | | 20 min | | | 20 min | | | 20 min | |
| Dine out in a restaurant | 2 | UF | | | ✓ | 1 | UF | ✓ | 1 | UF | ✓ | 2 | UF | ✓ |
| Bring lunch to work/school | 3 | | | | ✓ | 2 | | ✓ | 3 | | ✓ | 3 | | ✓ |
| Eat dinner at home | 3 | | | | | | | | 3 | | × | 2 | | ✓ |
| Walk dogs | 2 | 20 min | | | | | | | 1 | 20 min | ✓ | 2 | 20 min | × |
| Attend church | 1 | UF | | | | | | | 1 | UF | ✓ | 2 | UF | × |
| Write letter to friend or family | 1 | UF | | | | | | | 1 | UF | ✓ | 1 | UF | × |
| Exercise | 3 | 20 min | | | | | | | 3 | 20 min | ✓ | 1 | 20 min | × |
| Watch ER | 1 | 1 hr | | | | | | | 1 | 1 hr | ✓ | 1 | 1 hr | × |
| Travel alone on freeway | 5 | 10 miles | | | | | | | 5 | 10 miles | ✓ | 1 | 10 miles | ✓ |

NOTE: UF = until finished.

test measures were as follows: STAI = 41 ($T = 54$, 66th percentile; Spielberger et al., 1970); BAI = 18 (mild-moderate anxiety; Beck & Steer, 1990); BDI = 4 (minimal depression; Beck & Steer, 1987); and QOLI = 2 (above average quality of life; Frisch, 1999).

8 COMPLICATING FACTORS

The primary complicating factor in treating the patient involved the waxing and waning of colitis symptoms, despite the patient's compliance with the corticosteroid prescribed by her physician. Periodic inflammation and associated symptoms (e.g., abdominal pain) occasionally precluded completion of activities on the hierarchy. During these times, and consistent with the BATD protocol, the patient was reminded that she had been diagnosed with colitis and that there was unfortunately little she could do to change this reality. Accordingly, brief discussions ensued that focused on the uncertainty associated with inflammation and the exacerbation of affective problems that often elicited or occurred subsequent to physical symptoms. These discussions included attention to the idea that adhering to her behavioral hierarchy might help to minimize the severity of both affective and physical problems. The notion of acceptance of periodic magnification of symptoms also was highlighted, with the message communicated that "unreasonable" efforts to control these symptoms (such as through excessive rumination) might in fact result in their worsening. Instead, the patient was encouraged to try and behave in a manner consistent with her goals and values (i.e., hierarchy) as could reasonably be expected given restrictions sometimes imposed by the illness. Consultation with her physician and nutritionist also was helpful in structuring activities and behaviors that would minimize the likelihood of exacerbation of colitis symptoms.

9 MANAGED CARE CONSIDERATIONS

Although BATD has been investigated in small-scale studies and case investigations only, the time-efficient, flexible, and uncomplicated nature of BATD may make it an extremely practical intervention in the era of managed care.

10 FOLLOW-UP

Due to logistical problems (i.e., patient's relocation), follow-up data could not be obtained.

11 TREATMENT IMPLICATIONS OF THE CASE

Perhaps the most important implication of this case study is the finding that the structure of BATD may allow for the integration of behavioral activation and exposure strategies in a treatment protocol that may effectively target depressive and anxiety symptoms simultaneously. Given the comorbidity of these conditions (Merikangas et al., 1994; Mineka et al., 1998) and the increasing interest in treating a mixed anxiety-depressive disorder presentation (Barlow & Campbell, 2000), BATD may show particular promise among patients with these symptoms. In addition, as documented in the present study, BATD is flexible enough to be implemented among patients with coexistent medical problems and in collaboration with medical physicians. This characteristic prompts further inquiry as to whether BATD may be a viable treatment alternative among depressed and/or anxious individuals with significant medical problems, physical disability, or behavioral limitations sometimes associated with the aging process.

12 RECOMMENDATIONS TO CLINICIANS AND STUDENTS

There is significant overlap of behavioral and cognitive symptoms traditionally associated with anxiety and depressive disorders. At this stage of treatment development, despite empirically validated treatment protocols for anxiety and depressive disorders, the purposeful design of an intervention to treat a comorbid anxiety-depressive presentation is lacking. Indeed, whether such an intervention is required is arguable, based on findings that treatment of one condition (or symptom pattern) may result in transfer effects to the other (Gelernter et al., 1991; Stanley et al., 2003). Accordingly, the relative utility of a disorder-specific versus a more holistic approach is uncertain. Given this state of affairs, it seems prudent to suggest that clinicians continue to use skills in their clinical repertoires that are most suitable to the ideographic clinical presentations of their patients. For example, the use of a protocol that can be individualized to address a patient's specific symptoms across both domains may be both more acceptable to a patient who might otherwise be concerned that aspects of his or her concerns are being ignored and may more directly and rapidly address the functional relations sustaining these symptoms. Currently, BATD stands as one of the few protocols that can be used in such a manner. Although further work is necessary to document its efficacy, BATD may be one strategy to consider when working with patients with coexistent anxiety and depressive symptoms.

REFERENCES

- Barlow, D. H., & Campbell, L. A. (2000). Mixed anxiety-depression and its implications for models of anxiety and mood disorders. *Comprehensive Psychology*, *41*, 55-60.

- Barlow, D. H., & Craske, M. G. (1994). *Mastery of your anxiety and panic II*. Albany, NY: Graywind Publications.
- Beck, A. T., & Steer, R. A. (1987). *Beck Depression Inventory: Manual*. San Antonio, TX: The Psychiatric Corporation.
- Beck, A. T., & Steer, R. A. (1990). *Beck Anxiety Inventory: Manual*. San Antonio, TX: The Psychological Corporation.
- Beck, A. T., Steer, R. A., & Garbin, M. A. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 8, 77-100.
- Brown, T. A., DiNardo, P. A., & Barlow, D. H. (1994). *The Anxiety Disorder Interview Schedule for DSM-IV*. Albany: State University of New York, Center for Stress and Anxiety Disorders.
- Frisch, M. B. (1994). *Manual and treatment guide for the Quality of Life Inventory*. Minneapolis, MN: National Computer Systems, Inc.
- Frisch, M. B. (1999). Quality of life assessment/intervention and the Quality of Life Inventory (QOLI). In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcome assessment* (2nd ed., pp. 1277-1331). Hillsdale, NJ: Lawrence Erlbaum.
- Gelernter, C. S., Uhde, T. W., Cimboric, P., Arnkoff, D. B., Vittone, B. J., Tancer, M. E., et al. (1991). Cognitive-behavioral and pharmacological treatments of social phobia. *Archives of General Psychiatry*, 48, 938-945.
- Goldfried, M. R., & Sprafkin, J. N. (1976). Behavioral personality assessment. In J. T. Spence, R. C. Carson, & J. W. Thibaut (Eds.), *Behavioral approaches to therapy* (pp. 295-321). Morristown, NJ: General Learning Press.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: Guilford.
- Herrnstein, R. J. (1970). On the law of effect. *Journal of the Experimental Analysis of Behavior*, 13, 243-266.
- Hopko, D. R., Lejuez, C. W., LePage, J. P., Hopko, S. D., & McNeil, D. W. (2003). A brief behavioral activation treatment for depression: A randomized trial within an inpatient psychiatric hospital. *Behavior Modification*, 27, 458-469.
- Jacobson, N. S., Dobson, K. S., Truax, P. A., & Addis, M. E. (1996). A component analysis of cognitive-behavioral treatment for depression. *Journal of Consulting and Clinical Psychology*, 64, 295-304.
- Kabacoff, R. I., Segal, D. L., Hersen, M., & Van Hasselt, V. B. (1997). Psychometric properties and diagnostic utility of the Beck Anxiety Inventory and the State-Trait Anxiety Inventory with older adult psychiatric outpatients. *Journal of Anxiety Disorders*, 11, 33-47.
- Lang, P. J. (1968). Fear reduction and fear behavior: Problems in treating a construct. In J. M. Schlien (Ed.), *Research in psychotherapy* (Vol. III). Washington, DC: American Psychological Association.
- Lejuez, C. W., Hopko, D. R., & Hopko, S. D. (2001). A brief behavioral activation treatment for depression: Treatment manual. *Behavior Modification*, 25, 255-286.
- Lejuez, C. W., Hopko, D. R., LePage, J., Hopko, S. D., & McNeil, D. W. (2001). A brief behavioral activation treatment for depression. *Cognitive and Behavioral Practice*, 8, 164-175.
- McDowell, J. J. (1982). The importance of Herrnstein's mathematical statement of the law of effect for behavior therapy. *American Psychologist*, 37, 771-779.
- Merikangas, K. R., Risch, N. J., & Weissman, M. M. (1994). Comorbidity and co-transmission of alcoholism, anxiety and depression. *Psychological Medicine*, 24, 69-80.
- Mineka, S., Watson, D., & Clark, L. A. (1998). Comorbidity of anxiety and unipolar mood disorders. *Annual Review of Psychology*, 49, 377-412.
- Morin, C. M., Landreville, P., Colecchi, C., McDonald, K., Stone, J., & Ling, W. (1999). The Beck Anxiety Inventory: Psychometric properties with older adults. *Journal of Clinical Geropsychology*, 5, 19-29.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *Manual for the State-Trait Anxiety Inventory (STAI)*. Palo Alto, CA: Consulting Psychologists Press.
- Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Stanley, M. A., Beck, J. G., Novy, D. M., Averill, P. M., Swann, A. C., Diefenbach, G., et al. (2003). Cognitive-behavioral treatment of late-life generalized anxiety disorder. *Journal of Consulting and Clinical Psychology*, 71, 309-319.

Thompson, L. W., Gallagher, D., & Breckenridge, J. S. (1987). Comparative effectiveness of psychotherapies for depressed elders. *Journal of Consulting and Clinical Psychology*, 55, 385-390.

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