

A Review of Acceptance and Commitment Therapy with Anxiety Disorders

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ABSTRACT

Anxiety disorders are the most widespread cause of distress among individuals seeking treatment from mental health services in the United States. However, despite the prevalence of research on effective therapeutic interventions and their promising outcomes, significant shortcomings remain. In response to these drawbacks, a novel treatment, acceptance and commitment therapy (ACT), was developed in an attempt to reformulate the conceptualization and treatment of anxiety disorders. The new treatment takes advantage of the power of exposure therapies while simultaneously addressing issues of comorbidity, fear, and avoidance related to them, as well as emphasizing the commitment to clients' chosen values. Although the research base is small, a review of the current literature supports the notion that the ACT model of anxiety may be appropriate for conceptualizing and subsequently treating these disorders.

Key words: acceptance and commitment therapy, anxiety disorders.

With a one-year prevalence rate of 13.1% for adults aged 18-54 (Narrow, Rae, Robins, & Regier, 2002), anxiety disorders are the most widespread cause of distress among individuals seeking treatment from mental health services in the United States (Orsillo, Roemer, Block-Lerner, LeJeune, & Herbert, 2005). Furthermore, they are often chronic afflictions. The three-year remission rates for social phobia, generalized anxiety disorder, agoraphobia, and panic disorder with agoraphobia ranges anywhere from 16 to 23% (Keller, 2000). Additionally, anxiety disorders often cause their sufferers a great deal of functional impairment, as they are correlated with higher rates of financial dependence, unemployment (Leon, Portera, & Weissman, 1995), poorer quality of life (Massion, Warshaw, & Keller, 1993), and an increased risk for suicide (Allgulander, 1994).

Due to the prevalence, chronicity, and cost associated with anxiety disorders, it is not surprising that tremendous effort has gone into developing effective treatments, and there is reason to be optimistic about the gains made from this line of research. For instance, cognitive-behavioral treatment for panic disorder yields large effect sizes, ranging from .68 to .88 (Gould, Otto, & Pollack, 1995), and a large percentage of these patients will remain panic free one year later (Barlow, 2002). Cognitive-behavioral

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therapies have also demonstrated their effectiveness in treating obsessive-compulsive disorder (OCD; Abramowitz, 1997) and generalized anxiety disorder (GAD; Borkovec & Ruscio, 2001). Research also suggests that exposure treatments for social anxiety disorder yield large effect sizes when used as interventions in themselves (.89) or in combination with cognitive restructuring (.80; Gould, Buckminster, Pollack, Otto, & Yap, 1997).

Despite the prevalence of research on effective therapeutic interventions and promising outcomes in the treatment of anxiety disorders, significant shortcomings remain. For example, even when clients are provided with empirically supported treatment protocols, a significant number fail to respond to treatment, and of those who do demonstrate measurable improvement, many still remain functionally impaired and will continue to seek treatment (Orsillo *et al.*, 2005). This is particularly true for clients presenting with more severe anxiety disorders or those with co-morbid conditions (Barlow, 2002). In addition, many clients will find exposure therapy intolerable and prematurely end treatment (Orsillo *et al.*, 2005). In response to these drawbacks, a novel treatment, acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999), was developed in attempt to reformulate the conceptualization and treatment of anxiety disorders. The new treatment takes advantage of the power of exposure therapies while simultaneously addressing issues of comorbidity, fear, and avoidance related to them. It also adds an emphasis on the commitment to clients' chosen values (Orsillo *et al.*, 2005). Furthermore, one study suggests that therapists with little training get better results when using ACT than CBT (Lappalainen, Lehtonen, Skarp, Taubert, Ojanen, & Hayes, 2007).

WHAT IS ACCEPTANCE AND COMMITMENT THERAPY? AN OVERVIEW

Acceptance and commitment therapy is a third-wave behavior therapy rooted in the philosophical tradition of functional contextualism (Hayes, Hayes, Reese, & Sarbin, 1993) and based on Relational Frame Theory (Hayes, Barnes-Holmes, & Roche, 2001). ACT has two major goals: (a) actively accepting unwanted and perhaps uncontrollable thoughts and feelings and (b) commitment and action towards goals that are aligned with one's chosen values. Thus, ACT is about acceptance and change at the same time (Eifert & Forsyth, 2005). ACT is predicated on the notion that psychological suffering is caused by cognitive entanglement (i.e., fusion with maladaptive thoughts), psychological rigidity that prevents individuals from taking action towards their values, and "experiential avoidance" (behaviors that are intended to alter the intensity or frequency of unwanted private experiences such as unpleasant thoughts, feelings, and bodily sensations; Hayes *et al.*, 1999). Six core processes of ACT are used to increase psychological flexibility. These include,

- Cognitive defusion: strategies to reduce the reification of thoughts, sensations, and emotions;
- Acceptance: allowing experiences to be as they are without resistance;

- Contact with the present moment: being open, interested, and receptive to the here and now;
- Self as context: developing a concrete sense of self as observer that is stable and independent of the changing experiences of each moment;
- Values: defining what is most important in a person's life; and
- Committed action: taking actions that are guided by one's values.

When applied towards anxiety disorders, ACT teaches clients to end the struggle with the unpleasant sensations stemming from their anxiety while simultaneously choosing behaviors that move them closer to their values –regardless of what unpleasant thoughts and feelings these actions may spawn (Twohig, Masuda, Varra, & Hayes, 2005). General reviews of the effectiveness of ACT have included anxiety together with other conditions (Pull, 2008; Ruiz, 2010; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Ost, 2008). One other review has examined the use of ACT with anxiety disorders in isolation (Soo, Tate, & Lane-Brown, 2011); however, several contributive studies were missing from that paper. Thus, this review contributes to the burgeoning ACT research base by focusing specifically and more comprehensively on the use of ACT and its key elements with anxiety disorders.

ACT FOR ANXIETY DISORDERS: A RATIONALE

Evidence supports the notion that anxiety disorders are developed and maintained by avoidant behavior patterns and fusion with maladaptive thoughts (Orsillo *et al.*, 2005). Research also supports the notion that attempts to regulate anxiety may increase psychological suffering and transform experiences of anxiety into a maladaptive form (Hayes *et al.*, 1999). The ACT approach is well equipped to address these concerns because it teaches clients how to accept and live with unpleasant symptoms of anxiety (e.g., worries, bodily sensations, disturbing thoughts, etc.) rather than trying to eliminate or suppress them (Hayes *et al.*, 1999). Thus, ACT fosters a willingness to be with all of human experience, which increases psychological flexibility and reduces attempts to avoid psychological and emotional phenomena. Clients are then free to choose actions that lead them closer to their chosen values.

ACT is based on the idea that experiential avoidance can be linked to the processes of language. For example, language creates rule-governed patterns of behavior (e.g., “I will be anxious at the party so I won't go”) as well as negative self-evaluations (e.g., “I am incompetent”). Individuals often become entangled in the web of judgments and negative evaluations, which substantially impacts their life choices. For example, clients may wish to engage in a social event with their significant other or friends as part of enjoying a valued life, but their avoidance behavior tends to dominate (Eifert *et al.*, 2009), so they choose to stay home. Thus, “defusion” from the literality of thoughts is a primary focus in ACT.

In sum, the ACT formulation of anxiety disorders conceptualizes the problems arising from anxiety as stemming from 6 conditions: (a) clients are unwilling to experience

the physiological concomitants of anxiety (e.g., shaking, sweating, etc.) or the private experiences that create “normal” anxiety (e.g., worrying about the future); (b) clients view “normal” anxiety as a threat to their basic health and something to be controlled and/or eliminated; (c) attempts to control or eliminate anxiety end up escalating it to intolerable levels; (d) clients initiate experiential avoidance strategies that are either psychological (e.g., worry, rumination, etc.) or behavioral (e.g., checking, situational avoidance, etc.) in nature, which negatively reinforces their anxiety; (e) the subtle and overt avoidance behaviors are applied even more frequently as a result of increased anxiety, fueling the reinforcement cycle; and (e) this pattern of avoidance and increased anxiety leads to psychological and behavioral consequences that restrict one’s functioning in one or more areas of life (Orsillo *et al.*, 2005).

ACT WITH SPECIFIC ANXIETY DISORDERS: OUTCOME STUDIES

Generalized Anxiety Disorder (GAD)

Chronic worry is the hallmark of GAD -a constant mental tirade of future-focused thoughts about potential negative outcomes (Orsillo *et al.*, 2005). GAD is the most common anxiety disorder and perhaps the most difficult to treat because of the diffuse manifestation of anxiety provoking stimuli (Roemer & Orsillo, 2002). Thus, before delving into the research examining ACT with GAD, it is necessary to clarify how this unique and somewhat elusive disorder fits within the conceptual framework of ACT. Importantly, research suggests that the verbal linguistic form of anxiety in GAD (worry thoughts) can be conceptualized as experiential avoidance via two mechanisms. The first mechanism involves the superstitious belief that worrying about low-probability future negative events will reduce the likelihood of their occurrence (Orsillo, 2002). For example, one may believe that worrying about dying in a horrific plane crash will actually prevent this from occurring. However, although chronic worriers believe that their worrying will help them prepare for the negative events they fear, research shows that worry does not reduce the likelihood of negative outcomes nor increase the likelihood that effective coping strategies will be employed (Borkovec, Hazlett-Stevens, & Diaz, 1999; Stoeber, 1998).

The second mechanism accounting for the conceptualization of worry as experiential avoidance involves both conscious and unconscious attempts to avoid states of internal distress (Orsillo, 2002). For example, one may begin to worry about minor matters when experiencing unpleasant internal events related to a feared event. There is some evidence to suggest that worrying does in fact reduce distress in the short term. For example, when conducting an imaginal exposure with speech phobic individuals, researchers found that those who were instructed to worry beforehand did not show increased heart rate during the imaginal exposure (Borkovec & Hu, 1990). Investigators have also demonstrated that experiential avoidance is significantly correlated with levels of trait worry (Roemer & Orsillo, 2001). Furthermore, research suggests that abstract, verbal activity is less tied to physiological responding (Vrana, Cuthbert, & Lang, 1983). Since worrying is primarily verbal-linguistic rather than imaginal in nature, this could

explain why worrying is not associated with sympathetic activation (Borkovec, 1994) and is negatively reinforced in the presence of unpleasant physiological sensations. One can verbally rehearse a plethora of foreboding catastrophes without physiologically experiencing their emotional impact. Importantly, however, the disconnection between mental content and physiological experience may disrupt learning in the form of corrective feedback from the environment (Hayes *et al.*, 1999). In fact, behavior that is maintained by verbal contingencies as opposed to direct contact with these contingencies tends to persist even in light of disconfirming evidence (Hayes & Ju, 1998). Thus, paying attention to actual experience -both the internal and external cues of the present moment- may be key in treating anxiety (Roemer & Orsillo, 2002).

Several studies implementing concepts from ACT in the treatment of GAD have demonstrated its potential effectiveness with this population. For example, Huerta, Gómez, Molina, & Luciano (1998) reported a case study of a 26-year-old woman with GAD, who was successfully treated with a therapy that incorporated key elements from ACT. They noted that this outcome was particularly promising because this woman had failed to respond to a year of psychopharmacology treatment. In addition, her positive results were maintained up to a year later. In another study, researchers used an integrated protocol of traditional cognitive-behavioral methods and acceptance-and value-based concepts inherent to ACT to treat four individuals suffering from GAD (Orsillo, Roemer, & Barlow, 2001). After the 10-week treatment period, two of the four clients demonstrated substantial reduction in anxious and depressive symptoms, and the third showed modest improvement. The fourth individual missed several sessions and did not demonstrate improvement in symptoms. However, all four participants made significant and positive life changes, especially in regards to their jobs and relationships. They reported that the values and acceptance elements of treatment were particularly helpful. Roemer & Orsillo (2007) subsequently revised the aforementioned protocol, which included transforming it into an individual format, and conducted an open trial in order to test the effectiveness of their acceptance-based behavior therapy (ABBT) in treating individuals with GAD. The sixteen clients who completed therapy evidenced significant overall improvements in GAD, worry, anxiety, and depressive symptoms as well as an increase in the quality of life, and these results were maintained at a 3-month follow-up assessment. In addition, significant reductions were observed on measures of fear and avoidance of internal experiences, which suggests that targeting experiential avoidance may have been key in the treatment's success.

The same ABBT protocol was also tested in a randomized controlled trial (Roemer, Orsillo, & Salters-Pedneault, 2008). A total of 31 clients with GAD were randomly assigned to either an immediate or delayed treatment condition. Results indicated that the use of ABBT led to a significant decrease in clinician-rated and self-reported GAD symptoms, and these reductions were maintained at a 3- and 9-month follow-up assessment. Furthermore, at the end of treatment, 78% of clients no longer met criteria for GAD, and 77% achieved high end-state functioning. These proportions were consistent or increased at follow-up. Consistent with ABBT's goal of targeting experiential avoidance, treatment outcomes were associated with decreases in avoidance of private experiences and increases in mindfulness.

Only one study to date has been published in which researchers implemented the ACT protocol in isolation to treat patients with GAD. This pilot study treated seven older primary care patients with 12 sessions of ACT and another nine patients with CBT (cognitive-behavioral therapy; Wetherell *et al.*, 2011). Whereas all participants in the ACT condition completed all 12 sessions, only five out of the nine participants in the CBT condition completed treatment. However, completer data for both groups revealed significant improvement in symptoms of anxiety and depression. The researchers noted that although the effects of ACT in their study were smaller than those demonstrated in younger adult samples with GAD (Roemer & Orsillo, 2007; Roemer *et al.*, 2008), ACT may be beneficial for the older adult population and merits additional empirical evaluation.

Obsessive-Compulsive Disorder (OCD)

The current gold-standard treatment for OCD is exposure and ritual prevention (ERP), with effectiveness rates ranging from 60-85% (Abramowitz, 1997). However, important limitations inherent to ERP make the search for alternative treatments necessary. First, although the treatment is highly effective, it still leaves a full 15-40% of patients unresponsive. Additionally, 25% of individuals will refuse ERP and another 3-12% will drop out of treatment (Foa, Steketee, Grayson, & Doppelt, 1983). Finally, certain types of compulsions -particularly covert compulsions (Salkovskis & Westbrook, 1989) and hoarding (Clark, 2004)- have been found to be particularly difficult to treat with ERP. For these reasons, some researchers have investigated the utility of ACT in the treatment of OCD.

Twohig, Hayes, and Masuda (2006) evaluated the efficacy of an eight-session ACT intervention in four patients with OCD. They hypothesized that acceptance and defusion would be especially useful with this population because individuals with OCD are overly focused on their obsessive thoughts and engage in a variety of escape and avoidance behaviors (American Psychiatric Association, 2000). The authors found that there was a significant reduction in the number of compulsions by the end of treatment for all participants based on a self-report measure of the frequency of compulsions, and these results were maintained at the 3-month follow-up. All participants also evidenced significant reductions in levels of anxiety and depression, even though this was not the goal of therapy. Furthermore, participants demonstrated decreased experiential avoidance, believability of obsessions, and the need to respond to their obsessions. The researchers concluded that their findings open the door to alternative approaches in dealing with the difficult thoughts, feelings, and behaviors associated with OCD. Twohig *et al.* (2006) argue that their data indicate that ACT deserves further attention as a treatment for OCD.

Eifert *et al.* (2009) presented a case study involving a 52 year-old woman with a principal diagnosis of OCD and a secondary diagnosis of panic disorder who was successfully treated with the ACT protocol. The woman received a total of 12 weekly 1-hour sessions, and by the end of treatment, her OCD severity dropped from moderately severe at pretreatment to subclinical levels at posttreatment. She also endorsed significantly lower levels of overall distress, and notably, no distress related to her panic. At the

6-month follow-up, her OCD problems remained at subclinical levels, and she reported making positive life changes in regards to career aspirations.

One randomized clinical trial compared the effectiveness of an 8-session ACT protocol to progressive relaxation training (PMT) in the treatment of 79 individuals with OCD without in-session exposure (Twohig *et al.*, 2010). The authors found that although treatment refusal and drop-out were low in both conditions, those treated with ACT demonstrated greater changes at posttreatment and follow-up on OCD severity than those treated with PMT. Furthermore, for those who reported at least mild depression at pretreatment, significantly greater reductions in depression symptoms were also experienced by those in the ACT condition versus those in the PMT condition. Although the quality of life showed significant improvement in both conditions, those in the ACT condition demonstrated slightly more improvement at posttreatment. The researchers concluded that the ACT model seems to be broadly applicable to an OCD population.

Three research studies have also demonstrated the effectiveness of ACT with two OCD spectrum disorders: trichotillomania and skin picking (Twohig & Woods, 2004; Twohig, Hayes, & Masuda, 2004; Woods, Wetterneck, & Flessner, 2006). Woods *et al.* (2006) conducted a randomized trial comparing Acceptance and Commitment Therapy/Habit Reversal Training (ACT/HRT) to a waitlist control in the treatment of 25 adults diagnosed with trichotillomania. Following treatment, those in the ACT condition evidenced a significant reduction in hair pulling severity, impairment ratings, and hairs pulled. They also significantly reduced their levels of experiential avoidance as well as anxiety and depressive symptoms when compared to those in the waitlist controlled group. Treatment progress was generally maintained at the three-month follow-up. The researchers also noted that decreases in experiential avoidance and higher treatment compliance were correlated with positive treatment outcomes. One controlled single case research study also demonstrated the effectiveness of ACT with trichotillomania (Twohig & Woods, 2004). Using a multiple baseline design, researchers demonstrated that ACT in combination with habit reversal was shown to decrease hair pulling to near zero levels for 4 out of the 6 participants, and these results were maintained for 3 out of 4 of these individuals at the 3-month follow-up. The same ACT protocol implemented in a pair of multiple baseline designs was also used in the treatment of skin picking (Twohig *et al.*, 2004). The intervention was effective in the near elimination of skin picking for 4 out of the 5 individuals that participated in the study (Twohig *et al.*, 2004), and these gains were maintained at follow-up.

Generalized Social Anxiety Disorder

Numerous studies have investigated ACT's potential as an efficacious treatment for social anxiety disorder. Two such studies evaluated the treatment of social phobia using ACT in comparison to cognitive behavioral group therapy (CBGT; an empirically supported treatment for social phobia) and a no-treatment control condition (Block, 2002; Block & Wulfert, 2000). In the former, a total of 39 participants consisting of 13 men and 26 women were randomly assigned to each of the three groups. The active treatment groups consisted of either a three-session ACT workshop or a three-session CBGT-based

workshop. By the end of treatment, in comparison to the no-treatment control group, the participants in the ACT group demonstrated an increase in willingness to experience anxiety, a significant decrease in behavioral avoidance during public speaking, and a slight decrease in anxiety during exposure exercises. Participants in the CBGT group demonstrated an increase in willingness, a decrease in self-reported avoidance, and a slight decrease in reported anxiety when compared to the no-treatment control condition. When comparing outcomes between those in the ACT group versus those in the CBGT group, no significant differences emerged. However, it is notable that after controlling for pretreatment scores, ACT participants remained longer in the posttreatment behavioral exposure task than participants in the CBGT group. Block (2002) noted that a decrease in experiential avoidance and an increase in willingness to experience anxiety was characteristic of the ACT group.

In the second study comparing ACT to CBGT, Block and Wulfert (2000) described the treatment of 11 undergraduate students with public speaking anxiety. Treatment consisted of 4 weekly 1 ½-hour sessions held by trained doctoral students in clinical psychology. The researchers found a greater decrease in avoidance of public speaking in the students treated with ACT ($n= 3$) relative to those treated with cognitive therapy ($n= 4$) or in the waitlist control condition ($n= 4$). However, those in the CBGT group showed a slightly greater decrease in levels of anxiety. The results for each condition are consistent with the conceptual foundations behind each treatment intervention. In fact, given that ACT was designed to provide individuals with a greater sense of willingness, the researchers speculated that those treated in the ACT condition would show greater improvements beyond the one-month follow-up.

Other researchers have also examined the efficacy of ACT in the group treatment of social phobia with similar promising results. For example, Ossman, Wilson, Storaasli, and McNeill (2006) tailored an ACT protocol towards the avoidant behaviors and life problems that are typical for socially anxious individuals. Twenty-two participants enrolled in their group treatment for 10 sessions. Notably, only 12 participants actually completed the study. Of those who completed, however, their level of social anxiety decreased significantly at post-treatment, and these reductions were maintained and even slightly improved at follow-up. Participants also demonstrated a significant reduction in experiential avoidance, and there was a significant positive correlation between participants' decrease in experiential avoidance and their decrease in social phobia symptoms. The authors noted that this was an important area for further investigation. Ratings of effectiveness in living, especially those related to social relationships, also significantly increased at follow-up. Although these results are encouraging, there were a number of inherent limitations to the study including the small sample size, the lack of a formal control group from which to compare results, and the large dropout rate.

In one pilot study, Dalrymple and Herbert (2007) examined the effectiveness of ACT in combination with exposure therapy for social anxiety using a detailed treatment manual (Herbert & Dalrymple, 2006) designed for individual 1-hour treatment sessions. Nineteen individuals (10 females and 9 males) were recruited for participation over the treatment period of 12 weeks. Results showed significant improvement from pretreatment to follow-up on self-report measures of social anxiety symptoms. The participants also

reported increased functioning and quality of life as well as an increase in value-directed behavior, which was consistent with a decrease in their use of avoidance-based coping. Importantly, the authors reported that earlier changes in experiential avoidance were associated with later changes in outcome, even after controlling for earlier changes in symptoms and earlier changes in perceived control over emotions. Similar to the conclusions made by Ossman *et al.* (2006) and Block (2002), the authors of this study emphasized that experiential avoidance may be a key mechanism of change in ACT and deserves further attention.

Finally, Eifert *et al.* (2009) provided a case illustration of the successful treatment of a 51 year-old male who presented with a primary diagnosis of generalized social phobia and a secondary diagnosis of dysthymia. The specific social situations that he feared the most involved public speaking, being assertive, speaking with unfamiliar people, and attending social gatherings. By the end of the 12-week treatment, outcome measures revealed that the client was more willing to accept undesirable thoughts, to act in accordance with his values, and three times less likely to “buy into” his thoughts and feelings. The authors also reported that this patient experienced significant decreases in distress related to his anxiety and dysthymia. For example, he showed significant reductions in anxiety sensitivity, worry, mood-related distress, and obsessional thinking.

Post-Traumatic Stress Disorder (PTSD)

Orsillo and Batten (2005) argue that ACT is a suitable treatment for clients presenting for treatment due to life problems related to the experience of a traumatic event. The authors make the case that PTSD can be conceptualized as a disorder that is developed and maintained as the result of unsuccessful attempts to control unwanted thoughts, feelings, and memories, particularly those related to the traumatic event. Orsillo and Batten (2005) provided a case example of a 51 year-old Vietnam combat veteran successfully treated with ACT for a long history of PTSD symptoms including intrusive memories, nightmares, panic attacks, and significant guilt associated with the acts he had carried out in Vietnam. The authors demonstrated how effective application of several ACT-consistent interventions improved this patient’s functioning and how these interventions might be generalized to successfully treat other clients’ PTSD diagnoses.

Twohig (2009) also presented a case study of a 43 year-old woman with PTSD and major depressive disorder successfully treated with 21 sessions of ACT after being unresponsive to 20 sessions of CBT. By the end of treatment, measurements of PTSD severity, depression, anxiety, psychological flexibility and trauma-related thoughts and beliefs had all significantly decreased. Although these two case studies are promising, the authors agree that significantly more research needs to be done on the effectiveness of ACT for the treatment of PTSD.

Panic Disorder

Promising results in the treatment of panic disorder are also evident in the ACT literature. For example, when exposing clients to CO₂ to induce panic-like symptoms,

an ACT acceptance intervention significantly increases patient willingness to undergo this exposure following an initial exposure session and significantly reduces anxiety that is associated with the exposure (Levitt, Brown, Orsillo, & Barlow, 2004). Furthermore, Eifert and Heffner (2003) demonstrated that ACT intervention exercises had a greater impact on avoidance and the physiological and mental concomitants of anxiety during a CO₂ inhalation exposure than did a distraction and control comparison condition.

Eifert *et al.* (2009) provided a case illustration of the successful treatment of a 31 year-old man with a primary diagnosis of panic disorder and a secondary diagnosis of obsessive-compulsive disorder (OCD) who was successfully treated using the ACT protocol. By the end of the 12-week treatment program, clinician severity ratings for his panic were “0,” and test scores indicated that he experienced more control over his panic and OCD-related symptoms. These positive results were maintained at the 6-month follow-up, despite major setbacks in his career. Carrascoso (2000) conducted a case study with a 28 year-old male with a diagnosis of panic disorder with agoraphobia. After 12 treatment sessions, the man no longer met diagnostic criteria for panic disorder, and in the three years following had not sought additional treatment. Morón (2005) successfully treated a young boy with panic attacks and agoraphobia with 9 sessions of ACT. At the end of treatment, the number of panic attacks and his agoraphobic symptoms had significantly decreased. Zaldívar & Hernández (2000) presented a case of a 30-year old woman complaining of agoraphobic problems, anxiety, and depression. After 26 sessions of treatment with ACT, the client had increased value-oriented actions and decreased avoidance responses. The results of these case studies suggest that ACT should be explored as a viable option for the treatment of panic disorder.

Other Stress and Anxiety Studies

Two randomized controlled trials of ACT and cognitive therapy (CT) for anxiety and depression offer clear evidence for the effectiveness of ACT. In one study conducted by Forman, Herbert, Moitra, Yeomans, & Geller (2007), one-hundred-and-one outpatients, who reported moderate to severe levels of anxiety or depression, were randomly assigned to receive either CT or ACT. Both groups showed large and equivalent improvements in depression, anxiety, functioning difficulties, quality of life, life satisfaction, and clinician-rated functioning at the end of treatment; however, the mechanisms of change seemed to be different between the two groups. Changes in “observing” and “describing” one’s experiences seemed to mediate outcomes for the CT group while “experiential avoidance,” “acting with awareness,” and “acceptance” mediated outcomes for the ACT group. The researchers concluded that in a naturalistic outpatient setting, using therapists in training without allegiance to a particular approach, ACT seems to be as effective as the gold-standard CBT treatment (CT).

In another study, ACT was compared to CBT in 128 individuals with one or more DSM-IV (APA, 2000) anxiety disorders (Arch, *et al.*, in press). Both CBT and ACT groups improved similarly across all outcomes from pre- to post-treatment. CBT resulted in higher quality of life, whereas ACT resulted in greater psychological flexibility and lower principal anxiety disorder severity for those who completed treatment. Because

overall improvement was similar between ACT and CBT, the researchers concluded that ACT is a highly viable treatment for anxiety disorders.

Luciano & Gutiérrez (2001) described a case in which experiential avoidance was a primary factor of psychological distress in the case of a 45-year old woman, who was experiencing anxiety and panic over the difficulties in her marriage. Using ACT, the patient was successfully treated over a period of 15 sessions, when measuring success as an increase in actions moving her towards chosen life values. Positive results were maintained at both a 2-month and 4 ½-month follow-up. The authors maintained that ACT was a viable alternative to other forms of behavioral interventions.

Zettle (2003) conducted a randomized controlled trial using both ACT and systematic desensitization as treatments for math anxiety. Both treatments included 6 weekly 1-hour sessions with 37 college students (30 women and 7 men) suffering from math anxiety. By the end of the study, both groups evidenced significant decreases in math anxiety, and these results were maintained at the 2-month follow-up. However, those with high levels of experiential avoidance demonstrated a larger change in math anxiety at follow-up than those with low levels of experiential avoidance within the ACT condition, but not within the systematic desensitization condition. The author concluded that the two interventions may work through different processes.

CONCLUSION

The underlying ACT model was developed out of intensive work with the problems inherent to anxiety disorders. Although the research base is small, preliminary data support the notion that the ACT model of anxiety may be appropriate for conceptualizing and subsequently treating these disorders. However, the successfulness of ACT rests on the outcomes of future research studies.

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