Effectiveness of Cognitive Behavioral Therapy on Anxiety Disorders in a Graduate Level Training Clinic

Kimberly Coppersmith
Pacific University

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Effectiveness of Cognitive Behavioral Therapy on Anxiety Disorders in a Graduate Level Training Clinic

Abstract
Anxiety Disorders rank among the most common and debilitating mental health diagnoses. Furthermore, the prevalence of presenting anxiety disorders has been found to be high in training clinics. While cognitive-behavioral therapy (CBT) has been shown to be the gold standard of treatments for anxiety disorders, little research has been done examining the effectiveness of CBT for anxiety disorders in a university training clinic. Even though training clinics are an excellent resource for collecting effectiveness research data, they are often underutilized for this purpose. The current study used a paired-samples t-test of pre- and posttest scores on a popular outcome measure to examine the effectiveness of CBT treatment for anxiety disorders in a training clinic. Results were significant and indicated that student clinicians are effective in treating anxiety disorders using CBT. A discussion of clinical implications of the research, limitations of the study, and future research is included.

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EFFECTIVENESS OF COGNITIVE BEHAVIORAL THERAPY ON ANXIETY DISORDERS

IN A GRADUATE LEVEL TRAINING CLINIC

A THESIS

SUBMITTED TO THE FACULTY

OF

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JULY 25, 2011

APPROVED:

Lisa R. Christiansen, Psy.D.
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Abstract

Anxiety Disorders rank among the most common and debilitating mental health diagnoses. Furthermore, the prevalence of presenting anxiety disorders has been found to be high in training clinics. While cognitive-behavioral therapy (CBT) has been shown to be the gold standard of treatments for anxiety disorders, little research has been done examining the effectiveness of CBT for anxiety disorders in a university training clinic. Even though training clinics are an excellent resource for collecting effectiveness research data, they are often underutilized for this purpose. The current study used a paired-samples t-test of pre- and posttest scores on a popular outcome measure to examine the effectiveness of CBT treatment for anxiety disorders in a training clinic. Results were significant and indicated that student clinicians are effective in treating anxiety disorders using CBT. A discussion of clinical implications of the research, limitations of the study, and future research is included.

Keywords: Cognitive-Behavioral Therapy, Anxiety Disorders, Training Clinics
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Introduction

It is estimated that 18.1% of the general population is affected by an anxiety disorder (Kessler, Chiu, Demler, & Waters, 2005). This equates to almost 2 out of every 5 people in the United States who are struggling with anxiety severe enough to warrant a diagnosis. Of those who carry a diagnosable anxiety disorder, only 21.7% seek health care from a mental health provider. Furthermore, only 16% of those with an anxiety disorder seek services from a professional other than a psychiatrist such as a psychologist, counselor, or social worker (Wang et. al., 2005). A study by Wang, Lane, Olfson, Pincus, Wells, and Kessler (2005) showed that only 52.1% of clients with anxiety disorders who seek mental health services from a nonpsychiatrist receive adequate treatment, which was defined as at least 8 sessions with a mental health professional lasting an average of 30 minutes. These figures provide evidence that anxiety disorders are highly prevalent in the United States, that only a small proportion of individuals with an anxiety disorder seek treatment, and that those who do seek treatment often do not receive adequate services. It only seems natural that clinicians would want to increase the number of clients who receive adequate treatment by ensuring that the treatment offered is effective. One way to do this is to examine outcome data and determine effectiveness based on whether clients demonstrate improvements at the end of treatment or not.

University training clinics are an excellent source of valuable client outcome data for many reasons. These clinics generally have faculty researchers at close proximity who can assist in conducting evaluations in a systematic manner and clients who seek services from these clinics are highly likely to be receptive to involvement in research. Furthermore, it is thought
that therapy at training clinics can be highly generalized to other clinic settings (Neufeldt & Nelson, 1998).

Examining outcome data can be beneficial for the administrators, supervising faculty, and student clinicians at training clinics (Neufeldt & Nelson, 1998). A clinic that analyzes its outcome data will be able to identify which presenting concerns are most common and which diagnoses the clinicians are most effective and ineffective at treating. This information will point to strengths and weaknesses of the program and point out where there are gaps in training. Furthermore, the clinic will not only learn about itself, but positive outcome data will increase the confidence of student clinicians, supervisors, and other professionals in the community interested in referring clients to training clinics.

The current study is interested in the treatment of anxiety disorders at a training clinic in Portland, Oregon. More specifically, this study will examine outcome data to determine the effectiveness of Cognitive Behavioral Therapy (CBT) on anxiety disorders in a doctoral level training clinic.

**Literature Review**

**Prevalence and Impact of Anxiety Disorders**

Anxiety disorders are extremely prevalent in the United States. As mentioned above, it is estimated that 18.1% of the general population is affected by an anxiety disorder. Diagnoses that are classified as anxiety disorders according to the Diagnostic and Statistical Manual, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association [APA], 2000) include Panic Disorder with or without Agoraphobia, Specific Phobia, Social Phobia, Obsessive-Compulsive Disorder, Posttraumatic Stress Disorder, Acute Stress Disorder, and Generalized
Anxiety Disorder. These disorders are discussed in detail below with a description of diagnostic criteria and broad impact of each.

**Panic Disorder with or without Agoraphobia**

According to the current edition of the Diagnostic and Statistical Manual (APA, 2000), Panic Disorder is marked by the presence of recurring, unexpected Panic Attacks in addition to at least one month of worry about having additional Panic Attacks. Panic Disorder is either diagnosed with or without Agoraphobia, which is anxiety about being in places or situations where a Panic Disorder could occur or from which escape may be difficult. Furthermore, Agoraphobia can also be diagnosed without a history of Panic Disorder (APA, 2000).

Panic Disorder is often comorbid with Major Depressive Disorder, Substance-Abuse Disorder, and other Anxiety Disorders. More specifically, in individuals with Panic Disorder, 15% to 30% also have either Social Phobia or Generalized Anxiety Disorder, 2% to 20% have Specific Phobia, and up to 10% also have Obsessive-Compulsive Disorder (APA, 2000).

A study examining the quality of life in clients with Panic Disorder compared them with individuals who experience infrequent panic using a survey assessing life satisfaction and panic-related work disability and an interview to assess for overall quality of life. Predictors of work disability included panic frequency, illness attitudes, family dissatisfaction, and gender. Subjects with Panic Disorder reported greater work disability than controls and those with infrequent panic. Comorbid depression, low social support, worry, and severity of chest pain were used to predict overall quality of life. Results indicated that subjects with Panic Disorder have significantly lower quality of life than controls and those with infrequent panic. Overall, subjects with infrequent panic as well as Panic Disorder have decreased quality of life and increased work
disability, but those with Panic Disorder are impacted significantly more by their disorder (Katerndahl & Realini, 1997).

**Specific Phobia**

Specific Phobia is diagnosed when a client presents with an intense and persistent fear of a certain object or situation and exposure to that object or situation provokes an immediate anxiety response, which could be as severe as a Panic Attack. The fear must be considered to be excessive or unreasonable and must be associated with functional impairment or subjective distress. Subtypes of Specific Phobia include animal, natural environment, blood-injection-injury, situational, and other. In clinical settings, situational type is most frequent and in community samples, phobias of heights, spiders, mice, and insects are most common (APA, 2000).

While many people in the general population possess fears of specific objects or situations, they are rarely significant enough to warrant a diagnosis of Specific Phobia. The current prevalence rate of Specific Phobia ranges from 4% to 8% in community samples, and lifetime prevalence rates are between 7.2% and 11.3% (APA, 2000). Specific Phobia is comorbid with many other Axis I disorders including other Anxiety Disorders, Mood Disorders, and Substance-Abuse Disorders. In community samples, comorbidity with these other disorders occurs in approximately 50% to 80% of patients with Specific Phobia. However, when this diagnosis occurs with other comorbid conditions, it is rarely the focus of treatment unless it is the presenting concern of the client, which is only true in 12% to 30% of Specific Phobia cases (APA, 2000).

Little research has been done on the impact of Specific Phobia on quality of life. This may be due to the fact that, often times, the quality of life of a client with Specific Phobia is
unaffected by the disorder if the feared stimulus can be avoided with ease. One study by Cramer, Torgersen, and Kringlen (2005) compared quality of life across all of the anxiety disorders and found Specific Phobia to have only a small effect on quality of life, almost the lowest of all the anxiety disorders.

**Social Phobia**

Social Phobia is characterized by a marked and persistent fear of social situations due to the possibility of experiencing humiliation or embarrassment in these situations. The feared social situations are either avoided or endured with intense anxiety. Also, the anxiety produced by the social situation must be recognized by the sufferer to be excessive or unreasonable (APA, 2000). Social Phobia has a lifetime prevalence rate ranging from 3% to 13% and accounts for 10 to 20% of anxiety cases seen in outpatient clinics (APA, 2000). Social Phobia is the fourth most prevalent mental disorder, surpassed only by Major Depressive Disorder, Alcohol Abuse, and Specific Phobia (Nathan & Gorman, 2007).

Social Phobia has been shown to have profound effects on one’s life. A client with this symptom cluster is by nature not going to feel comfortable interacting in social situations, which in most cases is a necessary first step in forming interpersonal relationships. This is why individuals with Social Phobia are less likely to be married and report impaired social functioning and social support than non-anxious individuals. They also report lower levels of educational attainment and reduced productivity in the workplace due to their inability to properly function in a social manner in school or vocational settings (Eng, Coles, Heimberg, & Safren, 2005).

**Obsessive-Compulsive Disorder**
Obsessive-Compulsive Disorder (OCD) is diagnosed in individuals experiencing either obsessions, which are recurrent, uncontrollable thoughts, or compulsions, which are repetitive behaviors aimed at reducing distress. Furthermore, the obsessions and/or compulsions must be recognized by the individual to be excessive or unreasonable and cause marked distress by interfering with the individual’s life (APA, 2000). In 90% of individuals with OCD, compulsions serve the purpose of relieving distress associated with obsessions (Foa et al, 1995). In a great majority of individuals with OCD (90%), obsessions and compulsions are both present, whereas 2% report experiencing obsessions only (Foa et al, 1995).

The lifetime prevalence rate of OCD is estimated to be approximately 2.5% and the 1-year prevalence is between 0.5% and 2.1% (APA, 2000). Disorders found to be comorbid with OCD include Major Depressive Disorder, other Anxiety Disorders, Eating Disorders, and Personality Disorders. Additionally, OCD is comorbid in 35% to 50% of individuals diagnosed with Tourette’s Disorder (APA, 2000).

OCD has been shown to have detrimental impacts on the quality of life of those who suffer from the disorder. Vikas, Avasthi, and Sharan (2011) compared patients with OCD and those with Major Depressive Disorder (MDD) on quality of life and impact of the diagnosis on their caregivers. Patients with OCD were more behaviorally disabled than those with MDD, but MDD patients endorsed a lower quality of life than those with OCD. However, the caregivers of OCD patients felt more burdened and reported that they felt they had to accommodate more than the MDD caregivers. These results show that OCD is not only be a burden for the patient, but that it affects loved ones as much, if not more than, the patients themselves.

**Posttraumatic Stress Disorder**
Posttraumatic Stress Disorder (PTSD) is diagnosed in individuals who have been exposed to a traumatic event in which actual or threatened death or serious injury was experienced and the initial response to the event was intense fear, helplessness, or horror (APA, 2000). To meet criteria for a diagnosis of PTSD, clients must have episodes of reexperiencing the trauma, actively avoid stimuli associated with the event, and have symptoms of increased arousal which were not present prior to the trauma.

The lifetime prevalence of PTSD in North America is 8%, and it has been shown to be associated with an increased risk for Major Depressive Disorder, Substance-Related Disorders, Panic Disorder, Agoraphobia, Obsessive-Compulsive Disorder, Generalized Anxiety Disorder, Social Phobia, Specific Phobia, and Bipolar Disorder (APA, 2000). This disorder is associated with elevated health care costs even after controlling for depression and chronic mental illness (Walker et al., 2003). Overall, individuals experiencing PTSD experience psychological, social, and economic burden.

PTSD can negatively affect client’s lives in numerous ways. Not only are clients with PTSD anxious, but they also might be experiencing some depressive symptoms or attempt to self-medicate with alcohol or drugs. Most importantly, the interpersonal relationships of clients with PTSD often suffer as a result of the diagnosis. Clients become consumed with their feelings and show a reduced interest in hobbies. They can also be irritable and cranky. These symptoms are often interpreted by loved ones as selfishness and cause them to feel rejected and unloved (Andrews et al., 2003).

**Acute Stress Disorder**

Acute Stress Disorder is characterized by the development of anxiety symptoms one month after being exposed to an extreme traumatic stressor. Additionally, symptoms of
numbing, derealization, depersonalization, dissociative amnesia, and/or reduction in awareness must have occurred while experiencing the trauma, and following the trauma, the individual must show a marked avoidance of stimuli associated with the traumatic event. The anxiety and fear produced by the trauma and ensuing avoidance must cause marked distress and interference in the life of the individual (APA, 2000).

Acute Stress Disorder is often comorbid with Major Depressive Disorder and approximately 80% of those diagnosed with Acute Stress Disorder later meet full criteria for Posttraumatic Stress Disorder. The prevalence rate of Acute Stress Disorder is unknown in the general population. However, the rate of developing Acute Stress Disorder in those that have experienced severe trauma ranges from 14% to 33% (APA, 2000). Acute Stress Disorder is similar to PTSD and often has generally the same impact on functioning that is discussed above for PTSD.

**Generalized Anxiety Disorder**

Generalized Anxiety Disorder (GAD) is marked by uncontrollable, excessive anxiety and worry about numerous events and activities. The worry is recognized by the individual to be uncontrollable and unreasonable, and interferes with daily functioning. GAD has been found to be comorbid with Mood Disorders, other Anxiety Disorders, and Substance-Related Disorders. Furthermore, many physiological symptoms associated with stress (i.e. irritable bowel syndrome, headaches) are also associated with GAD (APA, 2000). One-year prevalence rate for GAD is approximately 3% and the lifetime prevalence rate is between 5% and 5.7% (APA, 2000; Kessler et al., 2005).

In a study examining the burdens of GAD, Hoffman, Dukes, and Wittchen (2008) found that individuals with a single Axis I diagnosis of GAD were more likely to report role...
impairments than those without the diagnosis. When asked to rate their past-month’s role impairment, respondents reported that their impairment level was comparable to that observed in patients with chronic medical conditions such as ulcers, arthritis, diabetes, and autoimmune disease. Furthermore, GAD respondents were more likely than others to report poor overall functioning, dissatisfaction with one’s family life, vitality, and emotional functioning. GAD was shown to have the most impairment of all the anxiety disorders.

**Treatments for Anxiety Disorders**

Historically, behavior therapies have been classified into three distinct “waves.” The first, behavior therapy, originated in the 1950’s with B.F. Skinner’s research on operant conditioning. The “second wave” of behavior therapy came in the 1960’s when psychologists become curious of how cognitions affected emotions and behaviors. During this time, Aaron Beck developed a form of psychotherapy that focused on not only helping clients alter their behavior, but their thoughts and emotions as well. This therapy is known as Cognitive Behavioral Therapy (CBT). CBT is a talk therapy technique that aims to approach psychological symptoms including dysfunctional cognitions, behaviors, and emotions with goal-oriented, systematic interventions. CBT helps clients learn how their thoughts, emotions, and behaviors are related to each other as well as the effect that thoughts and behaviors have on emotions and vice versa. The cognitive model of anxiety disorders stipulates that individuals develop beliefs about certain objects or situations that are rooted in danger. These beliefs cause them to narrow their attention to any potential threat and engage in “safety behaviors,” which often revolve around attempting to avoid all contact with the feared stimulus (Beck, 2005). CBT helps clients understand how their emotions and irrational beliefs are affecting their behavior, and in turn, how their avoidant “safety behaviors” are maintaining negative thoughts and emotions. In
therapy, clients challenge their dysfunctional beliefs with talk therapy and reduce “safety behaviors” by being slowly exposed to the feared stimulus.

Butler, Chapman, Foreman, and Beck (2005) reviewed meta-analyses of treatment outcomes for CBT from 1967 to 2003 and obtained a total of 15 methodologically rigorous meta-analyses that included a total of 9,138 subjects and 332 studies. Their review examined effect sizes of CBT outcomes contrasted with the outcomes of control groups for a wide range of disorders. Large effect sizes (grand mean = 0.90) were found for unipolar depression, Generalized Anxiety Disorder, Panic Disorder with and without Agoraphobia, Social Phobia, and childhood depressive and anxiety disorders, showing that CBT is an effective treatment for a variety of disorders.

CBT is one of two types of therapy that have been listed as well-established efficacious treatments for anxiety disorders (Chambless et. al, 1998). The other well-established efficacious treatment identified by Chambless et al. is exposure therapy. Exposure therapy is a type of therapy in which the therapist helps the client expose him or herself to a feared stimulus. Exposure therapy works through helping clients identify the emotions, cognitions, and physiological responses associated with the feared stimulus and helping to break the pattern of avoidance that reinforces the fear response. It is based on Mowrer’s (1947) two-factor theory of learning, which as the name suggests, posits that a fear response is learned in two distinct steps. The first step is based on the principles of classical conditioning established by Ivan Pavlov, which postulate that when a neutral stimulus is repeatedly paired with a meaningful stimulus that is already known to produce a certain behavior, the presentation of the neutral stimulus alone will eventually produce the behavior. Classical conditioning theory can be used to explain the reflexive physiological anxiety response clients experience when their feared stimulus is not
Present. The second step of learning occurs through B.F. Skinner’s theory of operant conditioning. This learning theory asserts that an individual will voluntarily modify their behavior based on the association of that behavior with a stimulus. Operant conditioning theory postulates that individuals can modify their behavior in one of four ways: positive punishment, negative punishment, positive reinforcement, and negative reinforcement. Positive punishment happens when a behavior is followed by an aversive stimulus, thus decreasing that behavior. Negative punishment occurs when a behavior is followed by the removal of a positive stimulus after an undesired behavior, which leads to a decrease in that behavior. Positive reinforcement is when a behavior is followed by a rewarding stimulus, which results in an increase in that behavior. Finally, negative reinforcement occurs when a behavior is followed by the removal of an aversive stimulus, thereby increasing that behavior's frequency. Negative reinforcement is what happens following the classically conditioned fear response in Mowrer’s two-factor theory. An individual learns that by avoiding the feared stimuli, they do not become anxious, and therefore, their avoidant behavior is appealing and they begin to avoid all the time. Treatment with exposure therapy involves the construction and completion of steps on a fear and avoidance hierarchy, which leads clients through a series of challenges working toward an end goal of reduced or non-existent anxiety in situations which were previously difficult. This works by helping to reduce avoidant behavior and eventually help clients through the process of extinction described in classical conditioning theory, in which the feared stimulus is slowly unassociated with an anxiety response.

Exposure therapy has been shown to be effective for Panic Disorder with and without Agoraphobia, PTSD, Social Phobia, and Specific Phobia. In a study comparing treatments for Panic Disorder, exposure was found to yield significant improvements on both panic and
agoraphobia symptoms including general anxiety, depression, social adjustment, quality of life. Sixty-seven percent of participants showed clinically significant improvement at post-treatment and 75% showed improvement at follow-up (Ost, Thulin, & Ramnero, 2004). Powers, Halpern, Ferenschak, Gillihan, & Foa (2010) conducted a meta-analysis to examine the overall effectiveness of exposure therapy on PTSD to date. Thirteen studies met their inclusion criteria of being a randomized control trial of prolonged exposure versus a control group. Large effect sizes were found for post-treatment gains and medium to large effect sizes were found at follow-up. Exposure therapy for Social Phobia has been shown to be as effective as social skills training. The most popular types of exposure for Social Phobia are graded exposure to feared social situations in a group setting and in vivo exposure. These techniques have been shown to reduce the physiological symptoms related to Social Phobia and the avoidance of feared situations (Andrews et al., 2003). The literature on Specific Phobia shows that there is a consensus that exposure therapy the treatment of choice (Nathan & Gorman, 2007; Andrews et al., 2003). Exposure should be repeated as frequently as possible to increase tolerance of the feared stimulus. This type of therapy is shown to produce rapid and effective results (Andrews et al., 2003).

CBT and exposure therapy are the two most well researched and effective cognitively based treatments for anxiety disorders. However, there are other treatments that were established during the “second wave” of behaviorism that have been shown to work for clients with anxiety disorders. These include applied relaxation, exposure and response prevention, and stress inoculation.

Applied relaxation is similar to CBT in that it conceptualizes anxiety cases as having three main components: cognitive, emotional, and physical. This technique focuses on the
physical component and teaches clients how to reduce the intensity with which their bodies react to a stimulus. The overarching goal of applied relaxation is to learn the skill of relaxation, which can then be applied to any stimulus in any situation. Ideally, clients learn how to identify oncoming anxiety and cope with it instead of allowing it to become overwhelming (Ost, 1987).

A randomized control trial compared CBT and applied relaxation to waitlist control groups and found that applied relaxation proved to be equivalent to CBT as a treatment for GAD (Dugas et al., 2010). The results of another study comparing CBT to applied relaxation found that there were no differences between the two treatments when treating Panic Disorder (Ost & Westling, 1995). These studies provide evidence that applied relaxation is an effective treatment for some anxiety disorders.

Unlike applied relaxation, which focuses on the physiological expressions of anxiety, stress inoculation therapy (SIT) was designed to conceptualize and treat anxiety by focusing mainly on the cognitive and emotional components. SIT begins by using Socratic-type questioning to educate clients about the nature and impact of stress in their lives. The therapist then helps the client build and rehearse skills that are tailored to the specific stressors in their lives (Meichenbaum, 1996).

Ponniah and Hollon (2009) reviewed randomized controlled trials for the use of stress inoculation training with Acute Stress Disorder and Post Traumatic Stress Disorder. Fifty-seven studies met the inclusion criterion for the study and results found that stress inoculation training was an efficacious treatment for PTSD. Another study compared stress inoculation training with prolonged exposure, combined treatment (prolonged exposure and stress inoculation training), and waitlist control. Results showed that all three active treatments reduced symptom severity compared to the waitlist control group and that the active treatment results did not significantly
differ from each other. Furthermore, these gains were maintained at follow-up indicating that stress inoculation training is an effective treatment for PTSD (Foa et al., 1999).

Exposure and response prevention (ERP) is the final of the “second wave” behavioral therapies that has been shown to effectively treat anxiety disorders. More specifically, ERP is the only therapy shown to be empirically supported for the treatment of OCD (Chambless & Ollendick, 2001). ERP is similar to exposure therapy and operates on the same principles of conditioning and extinction as described above. Similar to exposure therapy, clients are exposed to the feared stimulus and are not allowed to engage in any avoidant or safety behaviors. The main difference is that in ERP, the client is expected to refrain from the avoidant response at all times and not just during the practice exercises during therapy sessions (Meyer, 1966). A review of treatment outcome research shows that between 63% and 83% of clients show some improvement in OCD symptoms following ERP, and many of these gains were maintained at long-term follow-up (Antony, Purdon, & Summerfeldt, 2007).

Overall, the “second wave” of behavioral therapies has been well researched and extremely effective. In an article examining empirically supported treatments, Chambless and Ollendick (2001) identify evidence-based treatments for different psychological diagnoses. To do this, they created three categories based on the amount of empirical support each treatment demonstrates. To qualify for the highest category, a treatment must be supported by at least two rigorous randomized control trials and show superiority to placebo control conditions or another bona fide treatment. Treatments that meet these criteria for each of the anxiety disorder diagnoses are listed in Table 1.

Table 1  
Empirically Supported Treatments for Anxiety Disorders

<table>
<thead>
<tr>
<th>CBT</th>
<th>Exposure</th>
<th>Applied Relaxation</th>
<th>ERP</th>
<th>Stress Inoculation</th>
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</table>


Agoraphobia/Panic Disorder with Agoraphobia  
Generalized Anxiety Disorder  
Obsessive-Compulsive Disorder  
Panic Disorder  
Posttraumatic Stress Disorder  
Social Phobia  
Specific Phobia  


In the last 10-15 years, behaviorism has given rise to a “third wave” of behavioral therapies. Among the most popular and well researched of these therapies are Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and Mindfulness Based Cognitive Therapy (MBCT). These therapies are based in empirical research and similar in that they incorporate mindfulness techniques and work to address not only the content of one’s thoughts, but the process of thinking itself. The emphasis of these therapies is on reacting to thoughts in new ways and putting them into context instead of arguing or becoming discouraged with negative thoughts. Both ACT and MBCT have begun to be tested on anxiety disorders.

ACT postulates that thoughts should be accepted, not changed. ACT teaches clients how to notice, accept, and embrace their private events, especially unwanted ones. ACT helps clients become aware of the “self-as-context,” which is the part of one’s awareness that is always observing and experiencing thoughts, feelings, sensations, and memories. Furthermore, ACT encourages living a value driven life, meaning that clients identify their personal values and learn to shape their behavior so as to act upon making steps towards living a more fulfilling life. There are six core values ACT therapists use: cognitive defusion, acceptance, contact with the present moment, observing the self, values, and committed action (Hayes, 2005; Harris, 2006).
Cognitive defusion is learning how to recognize thoughts and emotions for what they are and to not buy into or get hooked by any single thought or emotion. Acceptance is allowing thoughts to come and go and consciously making an effort not to struggle with them. Contact with the present moment is practicing mindfulness by being in the here and now. Observing the self is finding the conscious part of oneself that can recognize everything that is going on in both the internal and external environments. Values encompasses discovering what is most important in one’s life, and committed action is setting goals to carry out and live by those values (Harris, 2006). Unlike CBT, which teaches clients how to change their thoughts, ACT teaches clients how to change the relationship they have with their thoughts.

ACT has been shown to be effective with Social Phobia, OCD, and Panic Disorder with and without Agoraphobia. An outcome study by Ossman, Wilson, Storaasli, and McNeill (2006) examined the effect of ACT on Social Phobia in a group therapy setting. Post-treatment and follow-up data revealed significant decreases in Social Phobia (effect size = 0.83) and experiential avoidance measures (effect size = 1.71). Another study examining the effects of ACT for Social Phobia found that when ACT was paired with exposure therapy in 19 participants, large effect size gains were found at follow-up (Dalrymple & Herbert, 2007), further indicating that ACT is an appropriate treatment for Social Phobia. ACT has also been shown to be effective with OCD. A randomized control trial by Twohig et al. (2010) revealed that ACT was more effective than progressive relaxation training for adult OCD in a sample of 79 adults. Another study by Twohig, Hayes, and Masuda (2006) found that ACT produced clinically significant reductions in compulsions by the end of treatment for participants with OCD and results were maintained at follow-up. To test the effects of ACT versus CBT principles on Panic Disorder, researchers had participants listen to one of three audio recordings
prior to a 15-minute carbon dioxide challenge. Two of the recordings were emotion regulation strategies (acceptance and suppression) and the third recording was a neutral narrative, which served as the control condition. All groups had similar panic symptoms during the challenge, but the acceptance group was less anxious and avoidant than the suppression and control groups following the challenge, indicating that they would be willing to participate in a second challenge. The results of this study suggest that ACT interventions might be useful for reducing subjective anxiety in clients with Panic Disorder (Levitt, Brown, Orsillo, & Barlow, 2004).

Another of the “third wave” therapies that has been useful with anxiety disorders is Mindfulness Based Cognitive Therapy (MBCT). MBCT was originally designed for use with people who suffer from chronic depression. It combines the theory of cognitive therapy discussed above with meditative practices and mindfulness attitudes. Like CBT, MBCT encourages clients to become aware of the thoughts, behaviors, and emotions that perpetuate their depressive symptoms. When combined with mindfulness and meditation, clients become not only aware of their experiences, but learn to develop a new relationship with them.

MBCT has mostly been tested on depression, but the rise in popularity of the “third wave” therapies has brought extra attention to research on MBCT in recent years, producing a few preliminary studies using MBCT on anxiety disorders. When MBCT was tested on Social Phobia in a group setting, researchers found that MBCT produced a large effect size (0.78) and continued to improve between post-treatment and follow-up. The MBCT effect size was slightly lower than the effect size found for CBT in this study (1.15), but the difference was not significant, suggesting that MBCT could be a useful, low cost treatment for Social Phobia (Piet, Hougaard, Hecksher, & Rosenberg, 2010). Furthermore, MBCT has been tested on GAD and results showed that significant improvements were made, but the rate of recovery was slow
Another study focusing on MBCT for GAD found significant reductions in symptoms in 11 participants at the end of treatment (Evans et al., 2008).

**Literature on Trainees**

Very little research has been done examining the effectiveness of clinicians in training. One study by Bados, Balaguer, & Saldana (2007) found CBT applied by trainee therapists in a Spanish university clinic to be effective with large effect sizes. However, the means of the trainee therapists were slightly lower when compared to CBT experts in prior studies. Furthermore, the trainee therapists were found to have a higher drop-out rate among their clients and had a longer duration of treatment. These results suggest that trainee therapists are generally as effective, though perhaps slightly less efficient, in using CBT to treat clients.

Dehle, Lewis, and Simons (2010) also examined trainees in a university training clinic. They examined 28 student therapists in their second through sixth year of a doctoral training program who were using CBT to treat a variety of mental health disorders. The clinicians administered a Comprehensive Semi-Structured Clinical Interview for the DSM-IV (SCID-I) for determining diagnoses and a battery of self-report measures including the Beck Depression Inventory II (BDI-II), the Beck Anxiety Inventory (BAI), and the Dysfunctional Attitudes Scale (DAS). The therapists completed treatment with a total of 123 clients (53.48% of those who began treatment). Paired samples \( t \)-tests were used to compare pre- and post-treatment scores on the BDI-II, BAI, and DAS and effect sizes were calculated. Results show large effect sizes for the BDI (1.50) and BAI (0.94) indicating that student therapists are highly effective using CBT to treat clients with depression and anxiety in a community and student sample.

Another study by Foa et al. (2005) compared CBT experts to therapists who were trained in CBT for the purpose of the study and instructed to work from a CBT manual. Results showed
that the CBT clinicians with minimal experience were as efficacious as CBT experts. These findings suggest that student clinicians are effective when using CBT, even in the early months and years of their training careers.

A study by Lappalainen, Lehtonen, Skarp, Tauber, Ojanen, and Hayes (2007) compared trainee therapists using CBT to trainee therapists using ACT. Fourteen therapists were trained in CBT and ACT and 28 participants were randomly assigned to each approach, with each therapist treating one client using CBT and another using ACT. Clients treated with ACT showed more symptom reduction despite reports from the therapists that they initially felt less knowledgeable about the modality and more fearful using it throughout treatment. Overall, trainee therapists got better effects using ACT than with CBT.

The previous studies suggest that student clinicians are generally as effective, though perhaps not as efficient, as experts. A study by Callahan, Almstrom, Swift, Borja, & Heath (2009) attempted to explain why. They found that a clinician’s supervisor is significantly related to client outcome. More specifically, supervisors may account for as much as 16% of the variance in outcome beyond that accounted for by the client’s initial severity and the treating therapist’s attributes. Therefore, if a student has an effective supervisor guiding them in their training, they are likely to show positive client outcomes.

A study by Lambert (2010) highlights the importance of collecting outcome data in a training clinic and utilizing it to provide feedback to therapist trainees. He collected outcome data at a university training clinic and tested whether or not trainees were able to decrease deterioration rates of clients that were not doing well in therapy. He found that providing trainees with feedback from outcome measures increased overall outcomes, reduced treatment failures, and identified trainees that were in need of increased levels of supervision. This study
points out not only the importance of collecting outcome data in a training clinic, but also how the data can be used to further train student therapists.

**Description of CBT Teams in This Study**

Student therapists on the CBT teams at the clinic being studied rarely practice under strict CBT manuals. This author interviewed the supervisors of these teams and found that each supervisor that self-identifies as a CBT therapist allows their students to use a variety of interventions in the CBT family, which are discussed above as effective treatments for anxiety disorders.

The lack of adherence to manuals has been thought by some to be the best approach to therapy. Corey (2001) states that an integrative approach “can ideally be a creative synthesis of the unique contributions of diverse theoretical orientations, dynamically integrating concepts and techniques that fit the uniqueness of a practitioner’s personality and style.” However, he warns against the dangers of therapists blending techniques without a comprehensive understanding of the overall theoretical rationale or best interest of the client. When a therapist lacks the knowledge and skill to select the best interventions, results could be confusion and reduced effectiveness.

Lazarus (1997) believes that integration of technically eclectic techniques is not only beneficial, but sometimes necessary when dealing with culturally diverse clients. However, he believes it is best for clinicians remain theoretically consistent. He contends that by remaining theoretically consistent, but technically eclectic, clinicians will be able to best pick and choose what is best for each client and will also understand why those interventions are the most appropriate in that case.

**Purpose of the Current Study**
The current study seeks further understanding of the effectiveness of clinicians in training in treating anxiety disorders. Review of the literature indicates that CBT interventions are generally effective in ameliorating anxiety. Further, other studies have shown that novice therapists are as efficacious as experts when using CBT. Therefore, it is hypothesized that, as a group, clients who present with anxiety disorders at a doctoral training clinic and receive interventions from the Cognitive Behavioral Therapy (CBT) family of interventions will show significant improvement at the end of treatment.

Method

Participants

Participants included 32 previous clients of a university training clinic located in Portland, Oregon. Demographic information was available for 30 of the 32 clients. Of those 30, 19 were male, 11 were female, and the age ranged from 18 to 66 with a mean age of 35.73. Only clients who received an Axis I anxiety disorder diagnosis were included in the analysis. Diagnoses were given by student clinicians and approved by licensed clinical psychologists. Primary diagnoses represented in the sample are shown in Table 2.

<table>
<thead>
<tr>
<th>Anxiety Disorder Representation in the Current Study</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Panic Disorder with or without Agoraphobia</td>
<td>3</td>
</tr>
<tr>
<td>Specific Phobia</td>
<td>0</td>
</tr>
<tr>
<td>Social Phobia</td>
<td>5</td>
</tr>
<tr>
<td>Obsessive Compulsive Disorder</td>
<td>2</td>
</tr>
<tr>
<td>Posttraumatic Stress Disorder</td>
<td>11</td>
</tr>
<tr>
<td>Acute Stress Disorder</td>
<td>0</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>10</td>
</tr>
<tr>
<td>Anxiety Disorder Not Otherwise Specified</td>
<td>1</td>
</tr>
</tbody>
</table>

Measures
To track treatment outcome, clients were asked to complete the Outcome Questionnaire (OQ 45.2) prior to each of their therapy sessions. The OQ 45.2 is a 45-item self-report instrument designed to measure a client’s subjective experience of overall functioning. The OQ 45.2 is commonly used to track treatment outcomes in therapy. Questions are answered on a 5-point Likert scale from 0 (never) to 4 (almost always) and scoring can be done either by hand or by computer. The measure consists of a Total score ranging from 0-180 and three subscale scores: Symptom Distress, Interpersonal Relations, and Social Role. Clinical cutoff scores for the Total, Symptom Distress, Interpersonal Relations, and Social Role scores are 63, 36, 15, and 12, respectively. It is determined that client has “reliably improved” if the difference in their scores on the Total, Symptom Distress, Interpersonal Relations, and Social Role scales improve by 14, 10, 8, and 7 points, respectively (Lambert et al., 2005). A client is classified as recovered if their Total score falls below the clinical cutoff of 63 and they evidenced reliable change of at least a 14 point decrease in their pre- and post-treatment scores and reliable improved if they evidence reliable change but have not dropped below the clinical cutoff. A client can also evidence no change if there is no reliable change in either direction or can be classified as reliably deteriorated if there is a reliable change in the incorrect direction (14 point increase).

The OQ 45.2 has been normed on a university counseling center population. Internal consistence estimates range from .70 (Social Role subscale) to .93 (total score). Test-retest reliability was evaluated over a 3-week period and ranged from .78 (Subjective Distress subscale) to .84 (total score). To test concurrent validity, the test authors examined correlations of OQ 45.2 scores with scores on 10 other tests that measure similar constructs. Correlation coefficients were acceptable, ranging from .44 to .92 (Lambert et al., 2005).
The intake and termination OQ Total scores were utilized in the current study to measure treatment outcome. Using the reliable change index discussed above, it was determined that a subject was reliably improved if the difference in their pre- and post-treatment OQ 45.2 scores was equal to or greater than 14 points.

**Setting**

This study examined client outcomes at a university training clinic in Portland, Oregon. The student clinicians that participated were primarily in their second year of a doctoral psychology program and include both master’s and post-master’s degree students. Each year approximately 50 students are admitted to the program. The program’s primary goal is to train effective clinicians in a broad range of therapies. During the first year of the program, students take courses in theoretical models of psychotherapy, interventions, basic therapy skills, diagnosis and treatment planning, psychopathology, and assessment, among others. These clinicians were all under the supervision of a licensed clinical psychologist who self-identified as a CBT therapist.

**Procedure**

Upon first contacting the clinic, prospective clients completed a phone screen, and if deemed to be an appropriate fit for a training clinic, set up an intake appointment. During the first appointment, all clients signed an informed consent document, part of which included the explicit option to either allow or disallow the university to use de-identified data for research. Only clients who opted to allow their de-identified information to be used in research were included in the study. Following the intake appointment, clients usually attended weekly therapy sessions of 50 minutes in duration, though some clients attended more or less frequently and some treatments, such as exposure, necessitated sessions longer than 50 minutes. Upon
terminating therapy, the client's file was closed and the clinician completed an outcome tracking sheet, which included the file number, initial and final OQ scores, and client demographics. The information from the outcome tracking sheets was then entered into a database by graduate assistants. The information in this database is anonymous. The data were de-identified prior to the time of use for the current study. Therefore, neither the primary investigator nor the faculty advisor were able to associate names with data.

The data used in this study was drawn from an archival database of former clients at this university training clinic. The primary investigator examined all clients who received an anxiety disorder diagnosis and were treated with a CBT approach. More specifically, the supervisor name, number of sessions attended, and intake and termination Outcome Questionnaire (OQ-45.2) scores of these clients were used in the analysis. Data from this de-identified database was analyzed using the Statistical Package for the Social Sciences (SPSS) software.

**Results**

A paired-samples \( t \) test was conducted to evaluate whether changes in OQ 45.2 scores from a subject’s initial session to their termination session reflect significant improvements in functioning. The results were consistent with the proposed hypothesis and indicated that the mean OQ 45.2 score at posttest (\( M = 64.63, SD = 29.11 \)) was significantly lower than the mean OQ 45.2 score at pretest (\( M = 74.28, SD = 18.40 \)), \( t(31) = 2.78, p < .05 \). The standardized effect size index, \( d \), was .49 indicating a medium effect. The eta-squared effect size was small (\( \eta^2 = .20 \)), indicating that 20% of the variability in difference scores was due to subjects receiving the treatment. The 95% confidence interval for the mean difference was 2.58 to 16.74.

As described above, a client can be classified in 1 of 4 ways using change scores from the OQ 45.2: recovered, reliably improved, no change, and reliably deteriorated. The number and
percentage of participants in each of these categories is 11 (34.3%), 2 (6.3%), 16 (50%), and 3 (9.4%) respectively. This data is listed in Table 3.

Table 3

<table>
<thead>
<tr>
<th></th>
<th>recovered</th>
<th>reliably improved</th>
<th>no change</th>
<th>reliably deteriorated</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>11</td>
<td>2</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>%</td>
<td>34.3</td>
<td>6.3</td>
<td>50</td>
<td>9.4</td>
</tr>
</tbody>
</table>

**Discussion**

The purpose of this study was to evaluate whether student therapists are effective at treating anxiety disorders using CBT. It was hypothesized that clients receiving CBT for anxiety disorder treatment would show significant improvement between pre- and post-test outcome measure scores. As expected, the findings from the paired-samples $t$-test reveal significant results for the effectiveness of student therapists using CBT to treat anxiety disorders in a training clinic. This result compares well to other studies that have researched the effectiveness of novice or student clinicians (Bados, Balaguer, & Saldana, 2007; Dehle, Lewis, & Simons, 2010; Foa et. al, 2005; Lappalainen, Lehtonen, Skarp, Tauber, Ojanen, & Hayes, 2007). The effect size found in this study was medium (.49), which may be a result of the large number of participants who evidenced no change or reliable deterioration. It is possible the number of participants in those categories was so high because they did not attend as many sessions as those who were classified as recovered or reliably improved. It is unknown if this is the case since this study did not examine number of sessions, but this could be a possible area for future research. In general, the current study adds evidence to the existing research literature that student therapists are effective clinicians.
This study also adds to the research of the effectiveness of CBT treatments in real world treatment settings. Since this study was not conducted in a laboratory with strict manualized administration of CBT, the results suggest that CBT works well not only in laboratories, but in real world treatment settings as well. Furthermore, the training clinic sampled from in this study is representative of many real world treatment settings in that treatment time is not fixed, clients are allowed to terminate when they feel it is necessary, no one modality is strictly adhered to, and clients do not possess only a single Axis I diagnosis.

Clinical implications of this research are important because showing that student therapists are effective in treating anxiety disorders provides evidence that training clinics are a reliable place for clients to seek treatment. This is important not only for clients who are seeking affordable services, but also for students and other mental health professionals in the area. As more research is done showing that student clinicians are effective, other mental health professionals will feel comfortable in referring their patients to training clinics.

Another clinical implication of this study is that it shows the importance of tracking clinical outcomes in treatment settings. Outcome measures are essential in tracking whether or not treatment is effective and in aiding clinicians to make decisions about how to improve the course of treatment so that clients receive the best treatment possible (American Psychological Association, 2006). However, one survey of practicing psychologists found that a mere 37% of respondents use outcome measurements in their practice (Hatfield & Ogles, 2004). This is problematic because it means that clinicians are relying on their clinical judgment to guide treatment and assess client outcomes. Regular use of outcome measures allows clinicians to track whether their clients have improved but not recovered, recovered, remained unchanged, or deteriorated (Jacobson, Roberts, Berns, & McGlinchey, 1999). Being able to track client
outcomes in a measurable way can be a supplement to clinical judgment that will hopefully aid in improving overall treatment outcomes and increasing cost-effectiveness of treatment for clients. This study adds to the body of literature on the benefit of using outcome tracking measures in that it shows favorable outcome for a clinic that chose to do so.

This study has some notable limitations, which should be taken into consideration when interpreting the results. One major limitation is the small number of participants sampled. Only 32 pre- and posttest means were used in the analysis. While the small sample is perhaps problematic, it should be noted that results from the analysis were significant, indicating that a genuine treatment effect was detected even in a small sample. The small sample size, however, could have impacted the effect size. Given the high significance of the results it is likely that a larger sample size would have also revealed a larger effect size. If so, this study may underestimate the effect size of treatment received from graduate students.

Further limitations of this study include threats to both internal and external validity. Internal validity is a measure of how confident one can be that the observed changes were due to the intervention and not extraneous variables. One possible threat to internal validity is the instrumentation used. It should be noted that while the OQ 45.2 is a highly reliable and valid measure of overall functioning, it does not specifically measure distress related to anxiety or the severity of anxiety symptoms. Therefore, we can be unsure whether the intervention helped alleviate or eliminate participant’s anxiety disorders specifically, or if it simply improved their overall quality of life. Also, the OQ 45.2 is a self-report measure, which means it is subject to error based on inaccurate recall and both intentional and unintentional misrepresentation.

Another threat to internal validity is the integrative nature of the therapy practiced by the student therapists in this study. Students use a multitude of interventions from the CBT family to
individualize treatment. Each therapist was supervised by a psychologist who identifies as a CBT therapist, but the students do not routinely use strict manualized treatments; instead, they incorporate interventions from other modalities as they see fit for the client’s specific problems or areas of impairment. While most of the other interventions are drawn from modalities within the CBT family (i.e. ACT, DBT, mindfulness), the specific interventions used by each clinician for each client were not recorded as part of the research database. Due to the integrative approach of the therapists in this study, it can only be concluded that students are effective in using CBT in conjunction with its variants. It cannot be determined that students are effective in using any particular specific CBT intervention in its purest form.

A final threat to internal validity in the current study is the lack of a control group. Without a control group, we can be unsure whether the treatment gains were from the intervention or from other variables. Without a comparison point for the experimental group, we have no way of knowing if CBT was the active ingredient in the improved OQ 45.2 scores or if factors such as therapist variables, client variables, therapeutic rapport, demographics, and so forth were wholly or partially responsible for the observed improved functioning of the participants.

The results should be considered quite generalizable. Even though the effect size was small and indicated that only 20% of the variability in difference scores was due to the intervention received, the results were statistically significant, indicating that it is highly likely that these results represent a genuine phenomenon in the population from which the sample was collected. This means that it is highly likely that similar results would be found in other training clinics that utilize practicum, intern, and fellowship level therapists. However, it should be noted
that the sample was collected from a small private university lacking in ethnic diversity, which limits the generalizability of the findings.

While the participants in this study are in many ways representative of the larger population, it should also be noted that there are limits to the external validity of this study. One limit is that not all of the anxiety disorders are represented in this sample. As indicated above, the diagnoses represented are Generalized Anxiety Disorder, Posttraumatic Stress Disorder, Social Phobia, Panic Disorder, Obsessive Compulsive Disorder, and Anxiety Disorder Not Otherwise Specified. Additionally, diagnoses were not equally distributed, with some being much more prevalent in this sample than others. Another threat to external generalizability is that 97% of the client outcome data that was used was collected during one academic year. This means that the results indicate that students working as practicum students that year were successful at using CBT to treat anxiety disorders, but we cannot be sure that students in years before or after were equitable.

One final threat to external validity is the lack of follow-up data. Without follow-up data to inform us of maintained treatment gains, we can only conclude with confidence that the intervention helped during the time the participant was in treatment. Nothing can be said about the long-term effect of the treatment.

The research on student clinicians is sparse, and while this study adds to that literature, there is still a long way to go when it comes to understanding the extent to which student therapists are effective in their work with clients. Future research could include a replication study with a larger sample to see if the results are still found to be significant or effect sizes increase when more participants and multiple training years are included in the analysis.
Another idea for future research would be to examine the effectiveness of student therapists when treating other disorders or while using other interventions.

Since this study used a very broad description of CBT which included multiple interventions and “third wave” behavioral therapies, other studies could most closely track the specific interventions used by student clinicians to better assess which ones are most effective and perhaps which do not facilitate positive treatment outcomes. A related but different study might compare CBT teams that follow a more regimented manualized version of CBT with those that are reportedly more integrative to determine which style of treatment is most effective.

A final recommendation for future research would be to more closely examine outcomes for specific anxiety disorders. Treatment outcomes could be assessed for each individual anxiety disorder as opposed to anxiety disorders as a whole to determine if students are more effective at treating some disorders over others. A study like this would require a larger sample size that included representation from each of the anxiety disorders. Each of the proposed studies presented above could easily be conducted at any training clinic by gathering continued outcome data.

The results of this study are important because they demonstrate that student clinicians are effective at treating anxiety disorders using CBT. Since 18.1% of the general population is affected by an anxiety disorder (Kessler, Chiu, Demler, & Waters, 2005), this is exciting news for a large portion of clients seeking affordable and reliable mental health services. Not only does this study provide preliminary evidence that CBT student clinicians are effective, but it provides feedback data for the clinic from which the data was collected. The data points to strengths in the training program and provides proof that the CBT teams are being effectively taught how to treat anxiety disorders. Furthermore, providing positive outcome feedback to
student clinicians will ideally foster a lifetime pursuit of outcome assessment in their careers as therapists.
References


