

CLINICIANS' ATTITUDES TOWARDS CCBT

EVALUATION OF PSYCHOLOGY CLINICIANS' ATTITUDES  
TOWARDS COMPUTERIZED COGNITIVE BEHAVIOR THERAPY, FOR USE  
IN THEIR FUTURE CLINICAL PRACTICE, WITH REGARD TO TREATING  
THOSE SUFFERING FROM ANXIETY AND DEPRESSION

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### **Abstract**

Computerized Cognitive Behavioural Therapy (CCBT) is an empirically supported therapeutic modality used in the treatment of anxiety and depression. It is an important area of research considering there is much research lacking in this area, especially regarding trainee and qualified psychology clinicians' attitudes which are informative in terms of uptake and adherence. This study examined trainee and qualified psychology clinicians' attitudes towards CCBT for use in their future clinical practice, with regard treating those suffering from anxiety and depression. Overall, 31 participants took part in the research, which resulted in 31 completed informed consent forms and questionnaires being returned to the researcher. This data was gathered using an email-based survey and a convenience, voluntary sample, which was comprised of 31 participants with varying employment statuses, who had achieved a minimum of a Masters degree in the counseling/ psychology fields. The survey consisted of quantitative questions such as Credibility and Expectancy Scales (Borkovec & Mathews, 1988) to measure participants' perceptions of CCBT and how likely they were to recommend CCBT to a client, and qualitative questions were used to gather more details regarding their perceptions of the advantages and disadvantages of CCBT. All participation was voluntary. This mixed-methods survey found results that suggested that participants' attitudes towards CCBT were less than favorable; specifically, results showed low ratings of the logical nature of CCBT, its potential to facilitate successful client outcomes and low rates of probable referral of a client to CCBT. Participants also indicated a lack of knowledge surrounding such programs and their implementation. Qualitative results found that attitudes towards CCBT were less than favorable, and that clinicians' had a lack of information and knowledge about such programs. Further research should examine if these results would be

maintained amongst a larger sample size. The electronic version of this dissertation is available free at Ohiolink ETD Center, [www.ohiolink.edu/etd](http://www.ohiolink.edu/etd)".

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## **Introduction**

### **Background of Problem**

The Internet has dramatically influenced how transactions and interactions take place around the world, making communication easier and breaking down boundaries. In December 2009, 74% of adult Americans aged 18 and older were using the Internet; of this 60% of adult Americans used broadband connections in their home and 55% were using the Internet wirelessly (Rainie, 2010). Of those surveyed, 93% in the 18-29 year old category were Internet users as well as 94% of college students (Rainie, 2010). The Internet and the technological advancements that have occurred have allowed individuals access a much greater amount of information at a much greater speed, and therefore many different sectors have benefitted. Healthcare is one such sector.

These dramatic increases in Internet usage numbers, combined with ever-increasing technological advancements, created the opportunity to develop computer mediated therapeutic technologies over the Internet. Computerized cognitive behavioural therapy (CCBT) is one such program that was devised. There are several reasons for the development of these types of programs. Firstly, the ever-increasing number of people diagnosed with mood disorders, such as depression and anxiety, necessitates the development of alternative treatment modalities. For example, according to The World Health Organization (World Health Organization [WHO], 2012), more than 350 million people worldwide suffer from depression. In addition, anxiety disorders affect approximately 19 million adult Americans (Katz, 2012). This is contributing to the overall burden of disease worldwide and the extra pressure on healthcare systems and professionals around the world (WHO, 2012).

Before the introduction of CCBT, there were only a few available treatments for depression and anxiety. These more traditional treatment modalities are sometimes referred to as treatment as usual or TAU. The typical options available to those with moderate-severe depression are psychosocial support; the use of antidepressant medication; psychotherapy; problem-solving skills and cognitive behavior therapy (WHO, 2012).

Mental health services are currently experiencing huge strain because of an increase in demand for mental health treatments and services. There are several treatments for depression and anxiety, which have proven useful; for example, pharmacological interventions such as antidepressant and anti-anxiety medications; counseling and psychotherapy with trained mental health professionals; or alternative treatments such as using herbs like St. Johns Wart and holistic therapies. However, access to these treatments is a large problem ("Depression," 2012). Thus, there is a need for more clinically efficacious treatment modalities that are more readily accessible and available. This will allow patients greater access to effective treatments, combined with a reduced wait time. Another important aspect of CCBT is that it is a cost-effective treatment modality often resulting in lower patient costs than if the client were to attend the same number of sessions with a trained cognitive behavioural therapist.

Finally, as technology has advanced, computer and Internet applications have become a part of daily life for many in the developed world. It is now more common for people to have access to computers. For those that don't own computers, access is widely being made available through schools, clinics, libraries and public programs. Thus, in this technological era, computerised treatments for mental health difficulties

were created to suit the population seeking treatment while also making the type of treatment current and accessible.

### **Purpose of the Study**

The purpose of this study is to survey trainee and qualified psychology clinician attitudes towards CCBT, as a possible treatment modality for use in their clinical practice. This is an important research area since clinicians are integral to the delivery of CCBT as a treatment modality. For example, clinicians can refer their clients to various CCBT programs; therapists or trained professionals are also needed to monitor patient progress through the program. However, the extent and manner to which clinicians use CCBT will depend on their attitudes towards this treatment modality. Thus the focus on clinicians' attitudes to CCBT is an important area of research, as it is relatively new in the field of psychology.

The respondents surveyed in this present research are mainly doctoral students in clinical psychology, who have achieved a minimum of a Masters degree in psychology. As part of a psychologist's clinical training, they are required to complete training clinical hours, in which they see clients, face-to-face. The reason for the interest in the attitudes of this group is because they are the next generation of mental health professionals. As they have achieved a minimum of a Masters degree in psychology, they are academically successful and have considerable experience with technology and with psychological processes such as treatment modalities and theoretical orientations. However, as they are relatively new to the field, their attitudes at this stage have less likelihood of having been influenced by external factors such as others attitudes and opinions about such programs, making them potentially less biased towards these kinds of applications. The hypothesized exception to this bias would be their preference for traditional face-to-face therapy.

Therefore, it is important to address the gaps in the literature and examine the attitudes of clinicians with regard to the implementation and uptake of therapeutic modalities such as CCBT.

### **Definition of Terms**

Computerized Cognitive Behavioral Therapy (CCBT) is a self-help computer program that enables participants to look at unhealthy coping styles and to potentially help participants cope with feelings of sadness and anxiety (Devon Partnership National Health Service Trust, 2007). It is the delivery of cognitive behavioural therapy over a computer. All that is needed is a computer, access to the Internet and minimal computer experience. CCBT programs are designed to be used with brief support from a trained clinician or other support worker. This support usually occurs in person, over the phone or by email. Typically, CCBT programs consist of up to eight sessions, each of which must be completed in order to move onto the next session. Between traditional CBT sessions, therapists often ask their clients to do homework (Chen et al., 2006); this is a commonly used technique that enables participants to become more familiar with practicing the tools that they are learning. Therefore, homework assignments are also incorporated into CCBT, where the client set for themselves specific assignments to do each week. As CCBT is accessed from any location and it doesn't require a therapist to be present, it appears to be a flexible therapeutic modality.

### **Importance of the Study**

It is evident in the review of the literature that the most common research focus within this domain is the efficacy of CCBT programs or how much they alleviate participants' symptoms, pre and post treatment. This study, on the other hand, assesses the attitudes of clinicians towards the program; therefore, its

importance lies in the potential impacts on the success and uptake of CCBT programs worldwide. The idea of assessing therapist attitudes is another way of asking how current mental health workers soon to be psychologists, really feel about CCBT and its use within their future clinical practice. The attitudes of this generation of therapists are extremely important, as many of these same clinicians have grown up alongside the technological boom.

There are a limited number of studies, which use a mixed-methods approach to assessing the attitudes of clinicians towards CCBT. Thus, the information gathered will fill an important void that exists in the current literature. The use of a mixed-methods research design is helpful in that it allows the researcher to gather both narrative and statistical information.

Due to the lack of trained therapists and the increased demand for treatments, the establishment of alternative treatment modalities is important for those suffering from anxiety and depression. The goal is to therefore increase the types of clinically effective treatment modalities available. The recent economic decline compounds the importance of evaluating cost effective treatments and thus make access to treatment more accessible to those who are in financial hardship.

Another point of relevance is that as CCBT can accommodate hundreds if not thousands of users simultaneously, multiple clients can be treated at once. Therefore, the barriers to effective mental health services are continuing to be brought down while access is increasing. This is specifically pertinent when treating those with decreased mobility, or those who live in more rural locations.

## **Literature Review**

### **Introduction**

The use of CBT as a clinically effective treatment is widely acknowledged. However, the research into evaluating the effectiveness of CCBT is less extensive. In particular, there is a void in the current literature, with specific regard to assessing clinicians' attitudes towards CCBT.

CBT is a treatment modality that was devised by Aaron Beck. It is a method that is used to treat a variety of mental health difficulties and concerns. As a treatment modality CBT aims to enable individuals to assess their cognitive schema and thus change the way that they think and therefore behave. This model also employs several other practical techniques including homework. One of the main benefits of CBT as a treatment is the longevity of the tools that are learned during treatment in such a way that they can use beyond treatment cessation.

CCBT is the computer mediation of traditional CBT. It is a more recent therapeutic technique that was initially devised for the treatment of anxiety and depression (National Institute of Clinical Excellence, 2013). It is a modern technique that came about with several technological advancements. This will be discussed further in this literature review. CCBT has been shown to be as effective as more established treatment modalities (Proudfoot et al., 2003; Cavanagh & Shapiro, 2004). There are several benefits to CCBT, which shall be discussed in further detail; however, they include, but are not limited to, the following: it is suitable for many populations and many mental health diagnoses; it is cost-effective; it is a convenient treatment modality and is suitable for those who want to maintain strict privacy and secrecy.

The dramatic rise in the number of individuals being diagnosed with anxiety and depression, combined with the ever-increasing difficulty of accessing suitable and effective treatments necessitates further research into alternatives. Different types of anxiety and depression, along with their various causes, will be discussed. The treatments available for these disorders will also be considered. However, for many individuals diagnosed with anxiety and depression, access to effective treatment is not an option; this will be elaborated on. Treatment-as-usual modalities, including antidepressant use and augmentation, along with the placebo effect and alternative more natural interventions, will also be evaluated.

There has been a rise of the amount of computerized treatments available, such as instant messaging counseling modalities and instant chat therapy. These types and experiences of these treatments will be evaluated. Disclosure styles that are witnessed when individuals used these treatment modalities vary considerably from traditional counseling. It is common that individuals are more open and honest; the reasons for this shall be explored.

### **Anxiety**

As Katz (2012) noted anxiety disorders affect approximately 19 million adult Americans. The onset of anxiety disorders is usually in childhood, adolescence or early adulthood and the prevalence of an anxiety disorder is more common in women than men (Katz, 2012). Anxiety disorders occur equally in all cultures including Caucasians, Hispanics and African-Americans (Katz, 2012).

It has been cited that anxiety disorders are caused by chemical imbalances in the brain, environmental stress (American Psychiatric Association, 2013) and psychological/ emotional factors. Environmental factors such as witnessing a trauma

can also bring on anxiety disorders; however, this mostly occurs when individuals have an inherited susceptibility of developing the disorder (Katz, 2012).

There are many types of anxiety disorders, each with their own symptoms and specific characteristics (Katz, 2012). The different types of anxiety disorders are: Panic disorder, Obsessive-Compulsive Disorder (OCD), Post-Traumatic Stress Disorder (PTSD), Social Anxiety Disorder, specific phobias and Generalized Anxiety Disorder (GAD) (Katz, 2012). According to Katz (2012) there are several symptoms of anxiety disorders, including, but not limited to the following: anxiety, fear, uneasiness, panic, obsessive thoughts that feel uncontrollable, nightmares, flashbacks, ritualistic behaviors, trouble falling or staying asleep, excessive perspiration on the hands or feet, shallow breathing, heart palpitations, nausea, heightened muscle tension and dizziness (Katz, 2012).

**Available Computer-based Treatments for Anxiety.** Katz (2012) stated that there has been a considerable amount of research on anxiety disorders has been conducted over the last two decades; this has resulted in a much more knowledge about how to best treat anxiety disorders. The most favorable treatment approach depends on the specific type of anxiety disorder; however, a combination of therapies may be best. The following therapies have been deemed useful in the treatment of anxiety disorders: cognitive behavior therapy, medication, psychotherapy, lifestyle and dietary changes and relaxation techniques (Katz, 2012).

Kenwright, Liness, & Marks (2001) evaluated the usefulness of computer-aided self-help in the treatment of phobias and panic disorders. Their reasoning behind this research is that they believe that those suffering from phobia and panic disorders find it difficult to access suitable treatments. Participants were screened for suitability, and if found to be appropriate candidates, they participated in 6 sessions of

computer-guided self-help, using the system FearFighter. All participants received six sessions of computer-guided-self-help, named FearFighter (Kenwright, Liness, & Marks, 2001). Of these there were two groups, one of 54 participants and the other of 31, with the latter group being deemed similar to the study group; all suffered from a type of phobia or panic. Participants were separated into two treatment groups. One group received only computer-guided treatment and the other group received the same computer-guided treatment along with the help of a clinician. Their results showed that this treatment modality helps as much as traditional therapist led face-to-face therapy, and that computer-aided self-help allows patients to receive treatment in an easier and more time effective manner. It was also revealed that by having patients use only computer-guided self-help, that this reduced the time they would have to spend with a therapist by more than 80%, in comparison to those in the group who received computer-guided treatment with the assistance of a clinician, thus allowing the therapist to treat many more individuals. Kenwright et al. (2001) concluded that the limitations of this study must be discussed as the majority of the participants were self-referred and a number of participants dropped out early. As this was only a preliminary report, the authors suggested that a larger controlled study was needed (Kenwright et al., 2001). Therefore clinician's attitudes towards such treatment modalities are important as they may be of benefit to both the client and the clinician.

A recent meta analysis was conducted on the effect that Internet and computerized treatments are having in the treatment of anxiety (Reger & Gahm, 2009). This type of research was quantitative in its nature and it examined the current literature regarding the available treatment effects. It included 19 randomised controlled trials, of which there were 7 in the placebo group, and results showed that Internet and computerized treatments were found to be more affective than waitlist

and placebo categories within all groups (Cohen's  $d = .49-1.14$ ) (Reger & Gahm, 2009). Reger & Gahm (2009) concluded that the impact and effect of these computerised treatments were found to be as effective as traditional face-to-face counseling, however, caution must be taken, as the sample sizes were small.

In this meta analysis, the placebos used included the ability to keep a diary online and to access psychoeducational material and computerized meditative techniques (Reger & Gahm, 2009). When all of the outcomes were combined and their effectiveness measured together the effect size was significant ( $p < .05$ ) (Reger & Gahm, 2009). It was also found that participants reported less depressive symptoms following the computerised treatment in comparison to treatment as usual. The authors went one step further and statistically analyzed the presence of publication bias, which was not found. The authors suggest that further research would be beneficial if the statistical analyses could be conducted according to diagnostic category (Reger & Gahm, 2009), therefore increasing the number of studies without compromising the stringent inclusion criteria.

Bandelow et al., (2015) conducted a meta-analysis on the effectiveness of pharmacological, psychological and other combined treatment approaches for the three most common anxiety disorders which are panic disorder, generalized anxiety and social phobia. The number of included studies was 234 in total, which made a total of 37,333 patients (Bandelow et al., 2015). The majority of the patients were diagnosed with Generalized Anxiety Disorder ( $n = 13,950$ ), followed by panic disorder/ agoraphobia ( $n = 12,317$  and then social anxiety disorder ( $n = 11,066$ ). The results found suggest that those who received medications had greater improvements, as demonstrated by an increase in effect sizes (Cohen's  $d = 2.02$ ), in comparison to those who received psychotherapeutic interventions (Cohen's  $d = 1.22$ ). The

participants in the studies were prescribed several different medications and the types of psychotherapies that were included were mindfulness, relaxation, CBT, exposure therapy, psychodynamic therapy, eye movement desensitization reprocessing and interpersonal therapy. Bandelow et al., (2015) also found that for those who received individual CBT, they showed more symptom improvement in comparison to those who received a placebo or were on a waitlist. However, Selective Norepinephrine Reuptake Inhibitors (SNRI) medications were found to be most effective when the mean effect size was compared to psychotherapies. Importantly, the authors detail that the results were not due to a publication bias, for example, the authors would not have published results that did not align with their original thoughts when planning the study and hypothesizing the potential findings. Bandelow et al. (2015) also detailed the importance of considering the side effects of medications and how this element differs from psychotherapeutic interventions, when the risks and benefits are weighed up. Thus, even though there is a need for medications in the treatment of the most common anxiety disorders, there is also a need for alternative therapies such as face-to-face counseling and CCBT that don't have such side-effects.

In summary, it is evident that the diagnosis of disorders such as anxiety and related mood disorders are on the rise, therefore suitable treatments and the exploration of such is important. Anxiety is a diagnosis that occurs cross-culturally, thus the applicability of differing therapeutic treatment modalities is an important area of research. Specifically, when trying to meet the demands of clients suffering from anxiety related symptoms. Depression and its usual treatments, along with the psychopharmacological approach to treating depression shall be discussed next.

## **Depression**

According to The World Health Organization (WHO, 2012), more than 350 million people worldwide suffer from depression. Sadly, depression is becoming increasingly more common and putting extra pressure on healthcare systems. In 2002, 42,000 Americans were interviewed and more than five percent reported having experienced a depressive episode over the preceding 12 months (Sweeney, 2009). This translates into more than one in every eight people having been diagnosed with depression (Sweeney, 2009). Therefore, much research has gone into discovering the best ways to treat this illness. Depression is one of the leading causes of disease worldwide (WHO, 2012). Unfortunately, when left untreated, depression can result in suicide (WHO, 2012) thus; it is imperative that effective treatments are found.

There are several common symptoms associated with depression including, but not limited to the following: difficulty concentrating, poor memory, indecisiveness, fatigue and a constant feeling of tiredness, feelings of worthlessness, guilt, hopelessness, helplessness, insomnia or early waking, excessive sleeping, irritability, a marked increase or decrease in eating habits, physical pain, persistent feelings of sadness and possible suicidal ideation and or attempts (Goldberg, 2012). According to the WHO (2012) the difference between depression and common short-duration mood fluctuations is that depression is longer lasting and has a moderate to severe intensity, which makes it more difficult to deal with and treat. Depression hugely affects individuals' level of functioning. Individuals feel the effects of depression in their normal everyday activities - at work, in their relationships and within their family unit (WHO, 2012).

Depression is a cyclical type of mental health disorder. It usually occurs in episodes. These may recur over and over again, or they may only happen once in a

lifetime (Sweeney, 2009). Highly stressful events are what usually trigger depressive episodes (Post, 1992). In order for depression to be diagnosed, it must have a longitudinal affect of two weeks or more; individuals must have withdrawal symptoms, a lack of enjoyment in usually pleasurable activities, amongst other symptoms (Sweeney, 2009). The WHO (2012) suggested an important point that must be noted is that physical illness can also bring on depression and its symptomatology, and depression can only be diagnosed by trained healthcare professionals.

The prevalence of depression varies across cultures. Amongst Chinese-Canadians the occurrence is less than 5%, in comparison to more than 15% of East Indians (Murali, 2001). A commonly known statistic is that women are as much as twice as likely to suffer from depression as men (Sweeney, 2009). It is important to discuss heredity effects when depression is the topic. Research has shown that if one of an identical set of twins has clinical depression, then the other twin, of the same set, has a 70 percent likelihood of also receiving a clinical depression diagnosis (Sweeney, 2009).

Depression can be caused by a number of varying factors and individuals may have a combination of all or just one of these factors. These include but are not limited to social, biological and psychological or emotional factors ("Depression," 2012). A frequent correlate of depression is an imbalance of the neurotransmitter serotonin (Sweeney, 2009). Kalat identifies the symptoms of major depressive disorder that individuals usually experience as lack of energy, feelings of worthlessness, suicidal ideation, difficulties falling and staying asleep, lack of the ability to concentrate and the inability to imagine ever being happy again (Kalat, 2013). In addition, Aaron Beck, the founder of CBT believed that depression and other mood disorders were caused by three aspects that affect individuals cognitions:

by seeing oneself as inadequate; viewing ones environment with a negative bias; or seeing the future with a lack of hope (Beck, 2011). Recently, Kalat (2013) has proposed that depression, and other psychologically based mood disorders arise from a mix of genetics, environmental factors and biological factors. There has been much recent research conducted on the genetic aspects of depression, and scientists are yet to pinpoint the specific gene that causes it (Kalat, 2013). There has been many reported cases of depression that have been attributed to hormonal changes (Kalat, 2013). Pregnancy is a time of considerable hormonal changes; both during and after pregnancy the body goes through several physical and biological changes that can also bring about episodes of depression (Kalat, 2013).

Sweeney (2009) stated that scientists have now discovered that sadness can be seen in particular brain regions. In order for depression to be diagnosed, it must have a longitudinal effect of two weeks or more; individuals must have withdrawal symptoms, a lack of enjoyment in usually pleasurable activities, amongst other symptoms (Sweeney, 2009).

Advances in neuroimaging technology have allowed us greater access inside the human brain. Positron Emission Tomography otherwise known as PET scans, tell us a lot about the various brain locations involved in depression and the areas that depression most greatly impacts (Sweeney, 2009). These scans have shown us that depression results in shrinkage of the hippocampus region; this is one brain region responsible for regulating stress (Sweeney, 2009). In addition, a process known as asymmetry can be seen when individuals are sad, this occurs when a left-right split in neuronal activity occurs (Sweeney, 2009). When an individual is sad there is increased activity in the right hemisphere of the amygdala and the right hemisphere of the frontal cortex, and there is a decrease in activity in the amygdala's right

hemisphere and the left hemisphere of the frontal cortex (Sweeney, 2009). Sweeney (2009) also asserted that depression causes shrinkage to occur in the frontal lobes, therefore lowering individuals' abilities to reason and make sound judgments.

**Available Treatments for Depression.** There are several different types of depression, these include: major depression, chronic depression (also known as Dysthymia), atypical depression, postpartum depression, bipolar depression (also known as Manic depression), seasonal depression (SAD) and psychotic depression (Goldberg, 2012). Depending on the type of depression an individual has, there are different treatment options. As depression usually occurs in episodes, with time, these episodes usually resolve themselves without treatment (Kalat, 2013). The options available to those with moderate-severe depression are psychosocial support, the use of antidepressant medication, psychotherapy, problem-solving skills and cognitive behavior therapy. Although antidepressants can be used to treat moderate-severe depression, they are not the first line of treatment for mild depression ("Depression," 2012).

In the case of using CBT to treat straightforward anxiety or depression, typically only 6 to 12 sessions are needed, as the CBT is educational in nature, the skills developed are useful for the lifetime of the client (Beck, 2011). In comparison, for those with more chronic or severe mental health disorders, their CBT treatment may last from 6 months to over a year in duration (Beck, 2011).

**Barriers to Effective Care.** There are several treatments for depression, which are known to be useful; however, access to these treatments is a large problem (WHO, 2012). According to the WHO (2012), less than half of those affected by depression worldwide have access to treatment. Depending on location, fewer than ten percent of some populations have access to effective treatment. Sadly,

approximately half of all individuals who experience depressive symptoms never seek help, get diagnosed or treated for their depression (Goldberg, 2012).

There are several barriers to effective care, including but not limited to: a lack of trained mental health care providers, inadequate resources, stigma that is associated with help seeking behaviors, particularly seeing a therapist and the use of inaccurate assessment tools (WHO, 2012). There are several reasons why access to appropriate treatment is so difficult. These barriers to accessing treatment are very important and clinicians should be involved in breaking them down, in order to help more people seek appropriate therapy modalities. Web-based treatment is important, as it allows some of these barriers to be overcome, such as the location of services and the therapist's time (Titov, 2007). Thus, this treatment modality can fill the void that currently allows patients to go without effective healthcare.

### **Treatment as Usual**

Psychopharmacological Treatment. The following is important to note, when it is considered that the United States most commonly used treatment for depression is the use of antidepressant medications (Olfson & Klerman, 1993).

Kalat (2013) explained that scientists accidentally found antidepressants, illustrating how antidepressant medications are created in reverse order, where medications are first created with no disorder in mind and then scientists are tasked with the job of trying to decide for what disease the specific medication works best. The types of antidepressants available are broken down into different classes: tricyclics, selective serotonin reuptake inhibitors (SSRI's), monoamine oxidase inhibitors, selective norepinephrine reuptake inhibitors (SNRI's) and atypical antidepressants (Kalat, 2013).

Tricyclic antidepressants block proteins, which are used for transportation, these help reabsorb serotonin, dopamine and norepinephrine into the presynaptic neuron after their release (Kalat, 2013). As a result of this process, the neurotransmitters linger for longer in the synaptic space, thus allowing for stimulation to take place for a longer duration (Kalat, 2013). Although these type of antidepressants are helpful, Kalat (2013) warned that they do have side effects, which include but are not limited to the following: having difficulty passing urine, drowsiness, heart irregularities and a dry mouth. Selective serotonin reuptake inhibitors (SSRI's) work in a similar way to tricyclic antidepressants, the main difference is that of the neurotransmitter serotonin (Kalat, 2013). Side effects associated with this type of antidepressant are less severe than tricyclics but they are equally effective (Kalat, 2013). Monoamine oxidase inhibitors block the MAO enzyme, which therefore surrenders serotonin and catecholamines inactive; frequently, MAO's are prescribed when SSRI's and tricyclics have been found to be ineffective (Kalat, 2013). These atypical antidepressants work because they inhibit the reuptake of dopamine (Kalat, 2013), the feel-good hormone.

Kalat (2013) explained that the main way that antidepressant medications work is by affecting the actions of neurotransmitters within the synapse. however, it has been discovered that individuals with depression have approximately normal rates of neurotransmitter release, as do those without depression. The attrition rates of antidepressants were compared to those of CBT and it has been frequently documented that antidepressants have a higher attrition rate compared to CBT (Parker, Crawford, & Hadizi-Pavlovic, 2008).

A very important component of healthy brain function has been discovered, this is called brain-derived neurotrophic growth factor (BDNF). This substance aids

neuronal growth, helps sustain neuronal survival and develop its connections (Kalat, 2013). It has been scientifically shown that depressed individuals have lower rates of BDNF and they therefore have a smaller than average sized hippocampus and thus have a reduced number of newly created hippocampus neurons (Kalat, 2013).

Scientists have also discovered that BDNF modulates the responses to antidepressants (Kato & Serretti, 2010). Therefore it has been suggested, that scientists take these facts into greater consideration when they are developing specific medications, because gene profiling may be very useful in predicting how effective a treatment may be (Kato & Serretti, 2010).

**Antidepressants.** Augmentation of antidepressant prescribing is a commonly used strategy; this occurs when two or more antidepressant medications are prescribed for concurrent consumption, this combination is used in the hope of increased efficacy (Yury, Fisher, Antonuccio, Valenstein, & Matuszak, 2009). Research conducted by Yury et al. (2009) examined the effectiveness of augmentation strategies frequently implemented by physicians and found that there is only a small effect size ( $d = .1782$ ) for those with unipolar depression. The authors suggest that more research needs to be done in order to fully quantify whether the effects of augmentation strategies are in fact significant (Yury et al., 2009). In contrast, a meta-analytic study examining the usefulness of augmentation strategies, found that a combination of antidepressant medications is more effective than monotherapy (Lopez Rocha, Fuzikawa, Riera, & Hara, 2012). These authors stated that there is most impact when augmentation is used at the onset of major depressive disorder (Lopez Rocha et al., 2012).

A study conducted by Glue, Donovan, Kolluri, & Emir (2010) examined double-blind placebo-controlled relapse prevention rates, using pharmacological methods. This meta-analytic study examined 54 prior studies, which was made up

9268 participants in total. Results showed that rates of relapse were considerably reduced when antidepressant usage was continued. The authors discovered that by continuing with pharmacological therapy, individuals greatly reduced the possibility of relapsing by up to two thirds. Within this meta-analysis, the most common forms of antidepressants studied were SSRI's and SNRI's. The results of the Glue et al., (2010) study display how important the continuation of treatment is for those with depressive disorders, but it must also be noted that all of the authors in this study were either sponsored by or were employed by Pfizer Inc. therefore care must be taken when interpreting these results (Glue et al., 2010).

Rayner et al., (2011) conducted a meta-analysis, which looked at the usefulness of antidepressants, their results found that they are both useful and effective in the treatment of depression, within a palliative care context. They found that antidepressants were superior in comparison to placebo in their effectiveness and this was shown in the mean depression scores. The effectiveness of the antidepressant usage was seen after 4-5 weeks and the efficacy increased concurrently with prolonged usage. The authors pointed to caution, as they stated that the results are often over emphasized due to biases such as publication bias and the unreliability of self-report measures. Commonly, those with depression who are receiving palliative care, often suffer from comorbid difficulties, therefore this is a difficult population to assess affects within. It is also noted that in order for the antidepressants to take full effect, that the early detection of depression is key (Rayner et al., 2011).

**Placebo Effect.** The placebo effect must be taken into consideration when discussing the role of antidepressants. Kalat (2013) specified that when an individual takes an antidepressant, there is more likely than not a certain expectation that goes along with this, thus, this expectation of the usefulness of the medication alone, may

enhance the effects, regardless of the role of the drug. The occurrence of the placebo effect is a result of one of two things, these are because individuals actually expected to improve, or because of a natural improvement that takes place over time. When comparing the results of drugs and placebo in the treatment of depression, the results are actually on par (Kalat, 2013).

**Natural Interventions.** Recently, considerable research has gone into the effects of more natural interventions. This research is providing valuable information, as antidepressants don't work for everyone. For those who have suffered from early abuse in childhood or those who have multiple psychological disorders, the use of antidepressants are virtually ineffective (Kalat, 2013).

The use of omega-3 fatty acids EPA and DHA, which are found in cold-water fish, have been examined more closely and with regular use, several studies have shown a significant reduction in depression and other affective disorders (Kendall-Tackett, 2010). These results have been shown to be relevant during pregnancy, as mothers who eat more fish during pregnancy have lower rates of post-partum depression. Research has shown that the effects of exercise are on par with those of antidepressant medications (Kendall-Tackett, 2010).

In summary, the brain regions that are most affected by depression have been discussed and it is now clear, that the use of antidepressant medications are for most people ineffective, with the exception of those suffering from severe depression and for those who are receiving palliative care (Kalat, 2013). Furthermore, it has been discovered that antidepressants are no more effective than placebos (Kalat, 2013) and yet antidepressant use is the most common treatment modality for depression in America. Thus, the importance of perhaps using a combined approach to treatment, by possibly incorporating a combination of psychotherapy and anti-depressant

medication should not be overlooked. Therefore, the importance of CCBT and the role that it can play in effectively treating those with depression cannot be understated. Interestingly, the combination of antidepressants and psychotherapy is more effective in comparison to receiving one of these treatments alone (Kalat, 2013). Because of the risk of suicidality with a person suffering from depression, it is important to explore all of the other effective treatments aside from usual antidepressant medications. As previously mentioned, depression has both emotional and physical impacts that affect people individually. The lack of accessibility to affordable and effective treatments means that more accessible treatments such as CCBT must not be overlooked. Thus, clinician's attitudes towards CCBT as a treatment modality are important as they may influence rates of uptake and adherence to such programs. Therefore allowing more people to access suitable service more easily and effectively. Thus the present research addresses an important gap in the current literature concerning reasons for recommending and referring clients to such programs. In the next section the theoretical origins and foundations of CBT will be discussed, and the Cognitive Model will be explained in great detail. The efficacy of traditional and computerized CBT will also be discussed as will the application of CBT to computerized modalities.

### **Cognitive Behavioural Therapy**

Cognitive behavior therapy is a form of psychotherapy that was devised by Aaron T. Beck in the 1960s (Beck, 2011). Aaron T. Beck devised CBT while practicing psychiatry at the University of Pennsylvania (Beck, 2011). The goal of CBT is for the client and therapist to work together to solve problems. To do this a client is helped to alter their negative thoughts, which in turn affects their behavior and therefore their emotional responses. Beck thought that these schemas that he

interchangeably referred to as cognitions, were all about the self, the future or the world, and that these therefore enable us to bring up negative automatic thoughts (Hoffman, Asnaani, Vonk, Sawyer, & Fang, 2012).

Cognitive behavioral therapy (CBT) is a very well established treatment modality, and one of the most frequently tested treatments for depression (Beck, 2011). Cognitive behavioral therapy has been found effective in thousands of studies that have examined its usefulness in the treatment of mental health disorders, specifically for treating depression, anxiety disorders, eating disorders, substance abuse and other disorders, to name but a few (Beck, 2011).

**Focus.** In contrast to other forms of therapy such as psychoanalysis, CBT focuses more so on the present; it is time-limited and its main focus is on problem solving using cognitive tools. The main premise of CBT is based on the idea that cognitive distortions are what cause depression. The aim of CBT is to enable patients to realize and identify their distorted patterns of thinking and thus to be able to replace these thoughts with more functional thoughts and those of which are more realistic (Kendall-Tackett, 2010). Although there are several skills involved in CBT, some of the most frequently used skills are identifying distorted patterns of thinking, modifying false beliefs and learning about ways to relate to others more effectively and changing dysfunctional behaviors. One of the main benefits of CBT is that beyond treatment cessation, clients can use the tools that they learned for the rest of their lives and in varying situations.

**Cognitive Model.** CBT is based on the cognitive model, in which our perception of certain situations affects how we feel emotionally (Beck, 2011). Thus, clients must commit to learning this model and they must complete weekly homework between sessions, in order to practice the new skills that they are learning. As a result

individuals begin to learn how to initiate their own behavioral changes making them active participants in their own treatment and recovery. Some of the essential components of the therapeutic process of cognitive behavioral therapy include, but are not limited to: developing therapeutic rapport between the client and therapist; goal setting; treatment planning; choosing appropriate interventions; demonstrating appropriate empathy; developing rapport and trust from the first meeting onwards and collaboration.

The cognitive model is based on a cognitive theory of psychopathology (Beck, 2011). This model describes how people's thoughts and perceptions about certain situations affect their emotional reactions to specific events, thus affecting their behavioral responses and often their physiological reactions. The individual's automatic thoughts are examined. Automatic thoughts are those which often spontaneously occur, in the form of verbal or imaginative cognitions. In CBT, the individuals' information processing techniques are shifted, and thus individuals give more accurate appraisals on situations that they find themselves in. Using the cognitive model, individuals are helped to identify their distorted thinking and thus their basic understanding of themselves, their world and other people are altered, allowing them to more accurately process information and lessen the likelihood of having so many distorted thoughts.

**Purpose & Techniques of CBT.** CBT is a technique that helps individuals reframe their problems to look at their issues from a more positive vantage point by talking with a therapist. For thousands of years, individuals have talked with each other about their feelings. Sweeney (2009) states talking is a time-honored technique that has been continuously successful to this day. Psychotherapy, as a talking therapy, is equally effective regardless of the severity of the depression (Kalat, 2013). In

several studies, CBT has been proven to be as effective as the use of antidepressant medication (Kendall-Tackett, 2010). It has been discovered that CBT reduces the body's automatic response to depression, which is turning on the inflammation response; it does this by changing people's beliefs that therefore cause them to experience greater levels of stress (Kendall-Tackett, 2010).

The reframing technique that is used in CBT allows individuals' brains to recover from mood disorders such as depression (Sweeney, 2009). As a result, CBT allows individuals to decrease their emotional responses, increasing their cognitive abilities (Sweeney, 2009). Activation in the right ventrolateral region of the cortex may occur when individuals put their emotions into words, which therefore lessens amygdala activation (Sweeney, 2009), which is the part of the brain responsible for emotions. The main goals of CBT are to help clients achieve remission of their illness and to therefore prevent the likelihood of relapse. In order to do this therapists must teach their clients cognitive, behavioral, and emotional-regulation skills so that they can then guide their own recovery. The format of CBT is collaborative. Therefore, therapists who provide CBT convey the goals at the beginning of treatment, they explain how they are going to be accomplished by use of a plan, and they discuss the different interventions available. The key components of each session include, but are not limited to: mood checking, bridging, prioritizing, discussion, skill teaching, summarizing and providing feedback.

**CBT Components.** According to Chen et al. (2006) between CBT sessions, therapists often ask their clients to do homework; this is a technique used to enable participants to become more familiar with practicing the tools they are learning. Homework could comprise of, for example: asking a client to create a list of goals and later asking the client to break the problem down into smaller chunks and having

them tackle it in these small pieces (Chen et al., 2006). In comparison to antidepressant usage, one of the greatest benefits of CBT is that individuals can be better equipped for stressful events after treatment cessation, as they learn a variety of tools, which can help them cope in future stressful events (Beck, 2011). In contrast, once an individual stops taking antidepressants, he or she will stop experiencing the positive benefits, as they do not continue to work beyond treatment cessation (Lopez Rocha et al., 2012).

**Efficacy of CBT.** A meta-analysis conducted by Hoffman et al., (2012) compared a sample of 106 studies that met their inclusion criteria. The authors deduced that the evidence in support of CBT is powerful; however, they do mention that CBT techniques are best suited to treating the following disorders: anxiety disorders, somatoform disorders, bulimia, anger management problems and general stress (Hoffman et al., 2012). It was also suggested that more meta-analytic studies be conducted on specific subgroups such as ethnic minorities and across all levels of socioeconomic strata (Hoffman et al., 2012). The results of this study found that CBT for depression has been shown to be more effective than control conditions such as waiting list and no treatment, the effect size was medium in size (Van Straten et al., 2010). This study showed that CBT is equally as effective as other treatments and when the authors compared the results of CBT to pharmacological treatments, they found similar effects sizes in the medium to large category (Vos et al., 2004). Based on their findings, the authors suggested that pharmacotherapy and CBT be used together, as this combination it was more effective, in comparison to just treatment alone (Chan, 2006). The authors found that the results of all of the different studies varied considerably and attributed this to a possible occurrence of a publication bias.

Another meta-analysis, based on 16 literature review articles, examined the outcome of CBT as a treatment for a multitude of mental health disorders (Butler, Chapman, Forman, & Beck, 2006). The usefulness of a treatment is most often measured by the use of effect sizes (ES). These ES show the actual size of a specific treatment (Butler et al., 2006). The ES are generally measured using standard deviations (SD), which show how far away a score is from the mean; these are usually always combined with correlation coefficients (Butler et al., 2006). In order to minimize noise in the data and increase sample sizes, effect sizes are used, making the results in meta-analytic studies more robust, which in turn allows for a more accurate measure of the treatment effect (Butler et al., 2006).

Another major study focused on comparing other treatment interventions with CBT and the results showed a large effect size when they compare CBT to antidepressant medications in the treatment for unipolar depression in adults ( $d = .38$ ) (Hollon, Thase & Markowitz, 2002). This supports the efficacy of CBT in the treatment of depression. It was also noted that when comparing CBT and pharmacological interventions, that the latter has higher relapse rates and it is a less cost-effective intervention, in comparison to CBT (Butler et al., 2006). This study was published in 2006, and the authors stated at the time of publishing that there were over 325 articles at that point that examined the effects of CBT (Butler et al., 2006).

**Publication Bias.** Regarding possible limitations of this research showing the efficacy of CBT, Cuijpers, Smit, Bohlmeijer, Hollon, & Anderson (2010) conducted a meta-analytic study that examined the indicators of publication bias within CBT-related articles for the treatment of adult depression. 117 clinical control studies were examined, of which there was a total of 175 comparisons between CBT and other control criteria included (Cuijpers et al., 2010). The results found after very in-depth

statistical analysis showed that the effects of CBT for depressed adults are greatly exaggerated, pre  $d = .67$  and post  $d = .42$  (Cuijpers et al., 2010). The authors attributed this over-exaggeration to publication bias, where they stated that more studies showing the effect of CBT are being published in comparison to the studies that aren't being published. Furthermore, these studies were found not to show statistically significant effects, therefore excluding important findings from publication (Cuijpers et al., 2010). We must also take into consideration the idea that correlation is not causation and therefore we should not make conclusions regarding causality unless basing this on studies with an experimental design. From another biased position, drug companies publish much of their own research and the economic incentive to publish statistically significant results must not be ignored (Cuijpers et al., 2010). It is also important to note that psychological researchers may also have their own personal interests when it comes to publishing articles (Cuijpers et al., 2010).

However, these limitations aside, the results of the several meta-analytic studies, which were previously discussed, show findings consistent with the idea that the results of CBT are on par with antidepressant medications.

In summary, it is evident from many research studies discussed above that CBT is a robust therapeutic modality that allows trained psychologists help their clients reframe their maladaptive thoughts, which in turn improves their behaviors and increases their overall wellbeing, resulting in a reduction of symptoms. Thus, CBT is an effective and accessible treatment used for several different diagnostic categories. Clinician's attitudes towards CCBT are important because they are the ones who guide traditional CBT and therefore are knowledgeable about its usefulness and application with various different disorders. The application of CBT mediated

over a computer will be discussed from a technical and user based standpoint.

Including types of disclosure styles and availabilities.

**Computerized Treatments.** Dramatic increases in the numbers of people using the Internet, combined with ever-increasing technological advancements, created opportunities to develop computer mediated therapeutic technologies. The development of Internet-based therapeutic interventions is a long and detailed process, which involves several highly trained individuals (Ritterband et al., 2003). According to Ritterband et al., (2003) it usually requires clinicians and other health care providers to design the content of the programs; web programmers to build the actual computer applications; web designers to create the web structure of the program; graphic designers to create the still and animated parts of the program; database managers to hold and store the very sensitive and personal information; health informatics professionals to evaluate all outcome eventualities and to test the program; and behaviorists to use behavioural change concepts within the program in an appropriate and useful manner.

Other important individuals involved in the development of these programs include, business and financial advisors, who help with marketing, advertising and sales targets; audio engineers to create the audio files, videographers to create the videos used, statisticians to incorporate appropriate scales into the program; technological support teams to support users and administrators (Ritterband et al., 2003), and many others depending on the program type and the intended users.

Using the Internet as a medium for psychological treatment potentially opens the doors to individuals who would not otherwise be helped or treated. Ritterband et al., (2003) states that typically, Internet mediated interventions are behavioural treatments, that are transformed for delivery over the Internet, a medium to which

they are well-suited. Ritterband et al. (2003) initially conducted research on Internet mediated therapeutic approaches because they found a lack of literature on the usefulness, feasibility and outcomes of such approaches. Their results suggest that these Internet mediated treatments will grow to be an important part of behavioural based treatments, but the authors do not believe that it will take the place of traditional face-to-face treatment. They also suggest that Internet based treatments may be more likely used by clinicians in conjunction with the therapeutic techniques that they are using. For example if a clinician is able to treat depression but doesn't have the skills to treat the insomnia that is comorbid with the depression, they may then use it in conjunction to the treatment that they are providing, as an adjunctive component (Ritterband et al., 2003).

**Technology in a Clinical Setting.** It is evident that the use of technology is becoming more prevalent in mental health treatment (Musiat, Goldstone, & TARRIER, 2014). As the waiting lists for treatment are becoming longer, the need for speedy, effective, and time limited treatments are becoming greater (Musiat et al., 2014). However, as numerous other types of treatments have become available and useful, the uptake of technological treatments has remained at a slower pace in comparison (Musiat et al., 2014). Musiat et al. (2014) used a large sample size to examine why the uptake is slow, and why the acceptability to users has remained low. It is important to note that almost half of the participants had experienced mental health issues in the past; thus, the sample seems quite balanced in terms of bias and experience (Musiat et al., 2014). Using quantitative statistical analyses, the results display the importance of the perception of the following factors by service users: helpfulness, the strength of motivation and how credible a treatment is along with immediate availability is what were identified as the key factors (Musiat et al., 2014). Therefore, the most commonly

selected intervention, according to participants' perceptions of the above factors, was face-to-face therapy (Musiat et al., 2014). In contrast, Musiat et al. (2014) stated that the treatments that weren't met with such appraisal were computerised and smartphone treatments. Furthermore, the majority of participants surveyed responded that they were very unlikely to use computerised interventions at a future date. Therefore, it is clear that public and primary care perceptions of computerised treatments needs to be encouraged in order for uptake and acceptance to increase (Musiat et al., 2014).

**Efficacy of Computerized Treatments.** Hanley & Reynolds (2009) examined the empirical evidence of clinical psychologists who use the Internet in their practice, specifically text-based therapeutic interactions. The authors began by conducting an extensive literature review, and then they systematically reviewed the literature with a focus on the therapeutic alliance (Hanley & Reynolds, 2009). Results of this study report success in outcome measures and strength in alliances that have been built and maintained online. The outcome measures detailed the effect sizes found of online counseling with regard to the specific modes of communication, these effect sizes were as follows: 0.91 for audio modalities, 0.53 for chat modalities, 0.31 for webcam usage, 0.51 for e-mail methods and 0.34 for health forums (Hanley & Reynolds, 2009), showing an overall positive trend.

Knaevelsrud & Maercker (2007) examined the effects of an internet-based treatment for PTSD, among 96 participants, with regard to stress reduction and developing a therapeutic alliance. This type of internet-based therapy that the authors used is called Interapy (HSK Groep, 2001), which consisted of ten sessions that took place over five weeks (Knaevelsrud & Maercker, 2007). Results of this study found a significant difference to participants symptoms post-treatment, with an effect size of d

= 1.40 (Knaevelsrud & Maercker, 2007). The PTSD symptoms that improved included: intrusions, hyperarousal and avoidance . In comparison to the wait-list participants, the participants who received this treatment dropped their levels of co-morbid anxiety and depression considerably. Knaevelsrud & Maercker (2007) found that when these positive effects were assessed again at a three-month follow up that these improvements were sustained. Interestingly, participants highly rated the benefits of the therapeutic alliance that they developed with their online therapist. This, combined with low dropout rates, show that there was in fact a valid therapeutic alliance established throughout the course of treatment and this therapeutic alliance was developed and maintained online. After the authors examined any evidence of strong correlations, it was found that there was an association between therapeutic relationship and improved recovery. It must be noted that the participants in the control group also improved in their symptomatology with regard to depression and trauma (Knaevelsrud & Maercker, 2007).

The authors of another study examined the effects on online counseling and telephone counseling for young people in Australia (King, Bambling, Reid, & Thomas, 2006). There were 102 participants included in the telephone counseling sample and 86 participants in the online counseling sample. The difference in the two treatment modalities was that the telephone counseling allowed for real-time communication and each session lasted approximately 45-60 minutes in duration whereas the online counseling was mediated by a text message exchange, that also took place in real-time and used emoticons, the average session duration was between 50-80 minutes. The authors used Kids Help Line as the mechanism of their therapy and counseling, which is a free service. The researchers measured therapeutic alliance and the impact of the sessions. The results suggested that telephone counseling, in

comparison to online counseling, had a greater impact and that there were better-recorded outcomes. These results were measured by the improvement in sessions having a greater impact and that a more sturdy counseling alliance was developed overall. As the design of this study was naturalistic, it is thus advisable to use caution when generalizing the results. There were differences in the results of the telephone and online counseling and this must not be ignored. Telephone counseling involves greater and more effective levels of communication, which could have also impacted the preference for this modality as evidenced by the results of treatment (King et al., 2006). Thus, the use of computerised therapeutic interventions is important in modern counseling, specifically when examining effectiveness, however the therapeutic alliance must not be undermined. Computerized treatments are becoming more common-place in mental health settings. Therefore clinician's perceptions and thus their attitudes may need to be addressed in order for such modalities to have an increase in uptake and adherence by clients in need.

In conclusion, it is evident from reviewing the most relevant literature on the efficacy of computerized treatments that benefits and positive outcomes have been both acknowledged and reported. These outcomes showed improvement in PTSD symptomatology, including improvement in symptom management and a reduction in many more notable and persistent symptoms. It was also found that there were high ratings of a computer mediated therapeutic alliance, which is usually only found in face-to-face psychotherapies, thus this finding is most interesting. Therefore, it is important to assess attitudes as CCBT has been shown through many peer-reviewed research studies to be effective, even when compared to treatment as usual. Thus, the use of CCBT appears to increase accessibility and allows those with sub-threshold

diagnoses to be treated more quickly by using interventions that can be used beyond treatment cessation.

**Computerized Experience.** The working alliance in computer-mediated therapy is relevant when considering computerized experience.

Cook & Doyle (2002) examined the working alliance amongst online therapy users, in comparison to traditional, face-to-face therapy users. Participants included one male and 14 female participants, who received online therapy, their ages ranged from 19 to 80 years old, of these over half were United states citizens and over a third were Canadians (Cook & Doyle, 202). A working alliance is an important component of face-to-face therapy and it has been debated as to whether it can properly develop when individuals are geographically distant from their counselors or clinicians (Cook & Doyle, 2002). Results of this study indicated that the working alliance amongst the computer users group showed significantly higher means, thus indicating that the working alliance can be effectively established and maintained online (Cook & Doyle, 2002). The authors allowed the participants to add comments as they wished once they had finished participating in the study. Several key themes emerged in the results. The first was viability: six participants reported that they considered online therapy to be a viable method of delivering effective psychological services. The second theme was disinhibition: participants felt that they were able to express themselves fully and did not feel encumbered by doing so, as they felt they would not be judged or embarrassed by anyone. The third theme was cost: participants were satisfied by the price of the program and considered it to be affordable. Travel was the next theme: participants were happy not to have to leave their homes and highlighted this benefit as particularly pertinent to individuals with limited mobility. The next theme that emerged was that of the client/counselor relationship (this was only

relevant for participants in the computerized group who were assisted by a therapist) with the majority of participants reporting that they were satisfied with the relationship that they had developed. Participants were pleased to be able to communicate using text rather than voice, and thus being able to refer back to the material that came up during the session after treatment cessation. The final theme was that of the convenience and flexibility of using a computer based treatment. Specifically, scheduling issues were avoided and participants valued this along with the lack of travel time (Cook & Doyle, 2002).

It must be noted, however, that each group consisted of small numbers of participants in and the majority of participants were female (Cook & Doyle, 2002). Therefore, caution must be exercised when generalizing these findings. It is also suggested that the population of clients who seek out online therapy may in fact differ greatly from those who seek traditional face-to-face therapy (Cook & Doyle, 2002). The element of the therapeutic alliance is important because it is a huge catalyst for change in traditional therapy and it is of course missing from computerized treatments. However, CCBT is usually combined with the assistance of a trained clinician, using in person meetings and sometimes support over the phone or via email. Thus an alliance can still be built but it would be somewhat different to the true meaning of the therapeutic alliance.

Computerized Therapies. The following qualitative study is one of very few qualitative studies that have been conducted within the area of computerized therapies. The authors examined the experiences of 5 participants who had used online-based counseling (Haberstroh, Duffey, Evans, Gee, & Trepal, 2007). Their focus was on the participants' personal experiences in relation to: barriers to technology, ease of connecting with their assigned counselor, their feelings on

interacting with a lack of verbal or visual feedback, the location that they received the counseling, and how they found the consistency and speed of the sessions (Haberstroh et al., 2007). The authors initially used a one-hour focus group to gather data, in which a structured interview was given, followed by three 30-45 minute semi-structured interviews. According to Haberstroh et al. (2007) these semi-structured interviews took place before, during, and after the online counseling sessions. From this data gathered, the authors were able to identify the key themes that emerged, identifying the participant's experiences; results suggested that these experiences considerably varied between the respondents. Participants reported some technical problems that ultimately delayed them from starting treatment, which often lead to feelings of frustration. In terms of the counseling process, some respondents reported a lesser feeling of self-consciousness, while others liked the objectivity of their therapist and some said they liked it much more than they had previously expected. In terms of relating to their counselor, respondents reported feelings of easiness and greater comfort while another respondent reported wanting to see their body language and missing the lack of this. Haberstroh et al., (2007) detailed that with regard to the overall pace, respondents liked the slower pace as they felt this facilitated deeper reflection into topics, in contrast to some who would rather a faster pace. The main complaint with receiving therapy from the comfort of one's home was the abundance of possible distractions and then clients feeling that they wouldn't take the treatment as seriously as a result. Limitations of this study are that the participants were student volunteers and thus the findings may therefore not be relevant to the general population (Haberstroh et al., 2007).

**Virtual Communities.** Within the e-health arena, one of the fastest growing areas is the availability of online peer-to-peer community venues (Eysenbach, Powell,

Englesakis, Rizo, & Stern, 2004). In these communities, people virtually gather and share their experiences around health-related topics. They ask questions, respond with their answers to others and provide emotional support and share self-help techniques with one another. These peer-to-peer support groups are usually made up of mailing list groups, chat rooms, and discussion forums.

Eysenbach et al., (2004) state that that after extensively searching the literature, they failed to find information sources that show the health benefits of support groups and belonging to a virtual community. They say that some unscientific research exists, showing that electronically based, peer-to-peer groups may be helpful interventions, whereas others warn of the dangers associated with groups of this type. The authors also found that after evaluating much of the research that has been conducted on the health benefits of online, peer-to-peer community venues, that most of the research available has too many confounds and thus a direct conclusion to this techniques effectiveness cannot be made. Thus, they suggest that quantitative research methods be used to evaluate the evidence associated with the usefulness of peer-to-peer support groups (Eysenbach et al., 2004).

**Accessibility.** Some of the key benefits to Internet therapy are convenience and the increase in the increased number of individuals who can access this treatment modality. The Internet also makes it possible for those with limited mobility or a lack of resources, who would otherwise be unable to get into a therapist's office, to receive appropriate treatment (Rochlen et al., 2004). The ability for these users to be disinhibited and the ability for internalization is also a cited benefit. The increase in disinhibited responding often allows for less time to be wasted as users usually go straight to the root of the problem, and it is thought that text-based self-disclosure elicits highly intimate responding which also provokes the user to be fully honest

(Rochlen et al., 2004). Another key potential benefit is that the user can refer back to the text notes that are recorded during the exchange, increasing the chance of solidifying the things that they have learned in previous correspondence with the therapist. Rochlen et al. (2004) also cited that the actual process of writing down problems is therapeutic in and of itself. The power of the Internet is most useful when using multimedia programs as an adjunct to text based therapy, as it allows the clients to have quick and easy access to information available, videos, relevant pamphlets, and computerized assessment tools (Rochlen et al., 2004).

**Challenges to Computerized Treatment.** Some of the main challenges to therapeutic interactions over the Internet are as follows: The non-verbal cues that are a key component of interacting and communicating in face-to-face situations are not present and these are very important components to the therapeutic process. Clients may also misread the feedback that they receive (Rochlen et al., 2004). This is a common component of text based communication, in which the exchange is over a computer and requires written responding, this is even more likely to happen when clients have poor ego strength or paranoia, the authors point out, thus caution must be taken when working with these types of clients. Due to the asynchronous nature of email-based therapy, there is a pre-existing time delay between exchanges; therefore the nature of the counseling flow is altered (Rochlen et al., 2004).

According to Rochlen et al. (2004) individuals who wish to use this type of therapy modality must be fairly good writers and typists, and be familiar with using a computer; therefore those who cannot read or write could not use this type of program. Crisis intervention when needed with email-based therapy clients has been an area of debate as it is questioned whether clients can be adequately helped and supported during these times, particularly if they are suicidal (Rochlen et al., 2004).

The use of technology in therapy may also cause cultural issues to be overlooked, along with time zones and social systems, which are all important components of everyday life, thus, if there is constant cultural misunderstanding, it is most advisable to stop this type of therapy with the client (Rochlen et al., 2004).

Both identity and security are considerable ethical concerns when conducting email based therapy and thus, it is very important to establish a client's emergency contacts before treatment begins, along with the therapist implementing the safest confidentiality techniques to safeguard this sensitive information (Rochlen et al., 2004). In their review of the evidence regarding computerized treatments, Hanley and Reynolds (2009) stated that there is documentation available that outlines how therapists can better communicate using text messages. Techniques included the use of emoticons (otherwise known as face symbols), abbreviations such as u instead of you, and acronyms such as FYI. The authors discuss the importance of storing electronic files according to standards that allow for the maximum protection of client privacy. Results point towards the importance of online therapies, and although there is no one size fits all, it is suitable for several groups of people who believe in and would like to try this method (Hanley & Reynolds, 2009).

A few pitfalls of therapy mediated by the Internet are as follows: the factors such as therapist regard, empathy, communication of hope, help in maintaining patients' motivation to get better, and checking in with patients to see how satisfied they are with the progress of the therapy (Proudfoot, 2004).

Barak (1999) evaluated the use of the Internet and various technologies for psychological purposes. Specifically, there were 10 types of psychological services mediated by the Internet that were analyzed, these were: information resources, self-help sites, testing and assessment, therapy starting decisions, psychological

information, e-mail or e-bulletin advice, e-mail mediated counseling, instant chat counseling, web mediated telephony, videoconferencing, support and discussion groups, group counseling, and research (Barak, 1999). The author discusses the change in the use of the Internet that was mostly facilitated before the millennium, where individuals can now converse on a world-wide scale. The main ethical and legal concern that Barak (1999) discusses is the issue of confidentiality and privacy, as this is a key feature of the therapeutic alliance. Thus, it is suggested that all mental health workers who use the Internet in their practice or dealings with clients, receive special training to deal with this, so that their client's private information is safeguarded, to the highest standards. The author concludes by asking readers to proceed on this journey with caution, and therefore maximize the benefits to the users and minimize the potential costs of mistakes (Barak, 1999).

It is clear now that the clinician is no longer the gatekeeper of health related information, the Internet is currently full of information, which encompasses many different health related topics (Proudfoot, 2004) and is often the first choice for some. It is recommended that in order to ensure the safest standards of communication via the Internet and when using various technological devices, that the data is encrypted and that password use is standard (Proudfoot, 2004).

Ritterband et al., (2003) explained that clinicians will have to be trained how to use these programs and for each specific disorder, so that they are used appropriately. The authors also state that more treatment intervention modalities need to be incorporated into these Internet based treatments, in order for more patients to use these programs. It is suggested that psychologists need to become more accepting of these Internet based treatment programs, as they envisage a greater amount of use in the future (Ritterband et al., 2003).

**Computerized Disclosure Styles.** Studies have found that counseling mediated by the Internet produces beneficial results for some clients and there is ability for clients to develop a good therapeutic alliance, in spite of its technological nature. Skinner & Latchford (2006) investigated the self-disclosure styles of their participants towards internet-based therapy. They recruited 130 Internet support group users, 39 face-to-face participants and only 3 Internet therapy clients. The participants were broken up into three distinct groups: current face to face counseling clients, current Internet support group users, and current clients of Internet based therapy. Results suggest that there was no significant difference between face-to-face therapy users and support group users, with regard to their self-disclosure styles. However, the authors did find that the participants attending face-to-face therapy had a slightly greater tendency to disclose. Of the participants, 39 were made up of face-to-face clients and 120 were Internet support group users, aged between 16 and 65 years old (Skinner & Latchford, 2006).

Skinner & Latchford (2006) also found that the participants who used Internet support groups reported more positive feelings towards computer use for the purpose of communicating with their therapist. Additionally, Internet support group users had a more positive view of Internet based therapy when they had a past history of therapy. A limitation of this current study is that the authors report having had great difficulty recruiting enough participants, and as a result, they didn't have enough respondents to run all of the analyses that they had desired and thus purposely excluded the Internet therapy clients from their data analysis. The authors suggest that the considerable recruitment difficulties could be attributable to the limited use of Internet-based therapy. These results could make one question why more individuals

are not taking part in Internet based therapeutic modalities (Skinner & Latchford, 2006).

In conclusion, it is clear that having reviewed relevant literature on computerized experience that the working alliance can be procured and maintained online. It was also found that there were several key attributes with regard to the computerized experience, which included the ability of the user to feel that they could be free in their thoughts and input, a point that is sometimes not so freely related to in traditional therapy. The low cost of using computer-mediated therapies was also a cited bonus, as was a certain level of comfort with using such programs. The convenience and flexibility that is often talked about was also mentioned as an important factor in computer mediated therapies as this also helps participants feel more at ease with health seeking and using behaviors. However, in some of the reviewed literature, it was evident that not all users of computer programs liked all of the aspects, specifically the lack of human contact. Early intimate disclosure styles were also identified as being positive by users and again, this is not often seen in traditional psychotherapies. Thus, assessing clinicians attitudes can provide insight into how clinicians think about such programs, which could in-turn be influencing their clients' feelings toward such modalities. Therefore, it is important to assess their attitudes to maintain a sense of how willing the clinician is to recommend and refer clients to these alternative therapeutic methods.

In summary, it is evident that computerized treatments have a number of strengths and weaknesses, as previously mentioned. With the increase in computerized treatments there has been a parallel increase in the types and availability of virtual communities and online support groups. Signifying the public's need and desire for more treatments and reference sources that are both useful and

accessible. However, as aforementioned, there are a number of challenges associated with such computerized treatments in terms of appropriate and time-sensitive intervention in times of suicidality and self-harm. Thus, surveying clinicians' attitudes toward all aspects of CCBT can provide insight and create knowledge as to the perceived main strengths and weaknesses of such programs. The upcoming sections will discuss CCBT in more detail with specific information, in terms of its history and origins, along with its efficacy and how it compares to TAU in terms of cost.

### **Computerized-Cognitive Behavioral Therapy**

Computerized Cognitive Behavioral Therapy (CCBT) is a self-help computer program that enables participants look at unhealthy coping styles, helping participants cope with feelings of sadness and anxiety (Devon Partnership NHS Trust, 2007). To introduce the practice of CCBT, the author will focus briefly on Beating the Blues (Ultrasis, 2000) one of the many CCBT programs available (Van Den Berg et al., 2004). This CCBT program that has been designed to be used as a standalone computer package, which is delivered in a primary care physician's office; a clinic that specializes in psychotherapy or within a community center. However, it can be used in conjunction with treatments as usual (Proudfoot, 2004).

Beating The Blues is one of several computerized cognitive behavioral therapy programs available online. According to Van Den Berg, Shapiro, Bickerstaffe, & Cavanagh (2004) it is one of the most comprehensive and up-to-date programs available. Beating the Blues is used in the treatment of anxiety and depression and is comprised of traditional CBT, which is mediated over a computer (Van Den Berg et al., 2004). This CCBT program is facilitated by the Internet, taking place over eight weekly sessions. In the first introductory session, the CBT techniques that will be used are explained, then videos of 'patients' are shown, which illustrate

these techniques. After this introduction and display of videos, the CBT techniques and problems addressed are finally presented for the client to try themselves (Van Den Berg et al., 2004).

In this program, weekly reports of patients' progress can be sent to the client's healthcare provider. Thus, the treatment provider can stay very involved in the client's recovery and can monitor the client's progress over time, through graphs generated in the reports. This also allows the client's treatment provider to interject and become alerted if the client is not recovering or their condition is worsening. These measures also account for risk and likelihood of suicidal ideation. Healthcare providers believed 60-70% of patient referrals could benefit from this type of treatment program (Van Den Berg et al., 2004).

Van Den Berg et al. (2004) declared that one of the main benefits of CCBT lies in its potential to alleviate ever-increasing pressure on health care systems, enabling therapists to use their time more efficiently with those in greater need. The authors note that by using such CCBT programs, clients can become more self-sufficient and therefore depend less on therapists or other healthcare providers. The newly acquired techniques learnt throughout the program can be useful beyond treatment cessation. The number of people that can be treated simultaneously is unlimited. As a trained therapist is not needed for clients to participate in these programs and the fact that this treatment can be accessed in the comfort of a client's own home, the treatment seems to provide greater accessibility, in a time-sensitive manner (Van Den Berg et al., 2004). This also allows clients to avoid the stigma that can be associated when seeking therapeutic services.

**History of CCBT.** One of the most controversial outcomes of the technological boom has been the computer potentially taking the role of the

psychotherapist (Cavanagh & Shapiro, 2004). Cavanagh & Shapiro (2004) discuss the main changes that have come about, along with the results of a meta-analysis that they conducted. Results show a favorable outcome of CCBT in comparison to waitlist or usual comparisons and for pre and post outcome measures for anxiety and depression (Cavanagh & Shapiro, 2004).

In 2007, the National Institute of Clinical Excellence (NICE) endorsed the use of several CCBT programs (Devon Partnership NHS Trust, 2007). In order to use these CCBT programs, participants need some basic computer knowledge, but for the most part, the programs are simple, yet assistance is available where needed. Participants must commit to between six and eight weekly sessions in order to complete the specific course of CCBT chosen, with each session lasting a maximum of one hour. Participation in CCBT programs is completely confidential (Devon Partnership NHS Trust, 2007) and the data submitted over the Internet is encrypted for extra safety and security.

The amount of research being conducted concerning the efficacy of CCBT around the world is growing at a fast rate (Marks, Cavanagh, & Gega, 2007). Recently, it was found that there were 97 computerised psychotherapy systems available in 175 studies (Marks et al., 2007). Out of this there were 103 randomised controlled trials. This rapid increase in the study of this therapeutic modality was brought on by the fact that the National Institute of Clinical Excellence (NICE) recommended two CCBT programs in 2006. The two programs that were recommended were Beating the Blues for mild and moderate depression and FearFighter for panic, phobia and anxiety (Marks et al., 2007). As Marks et al. (2007) noted NICE not only recommended them as effective forms of treatment, but also because they can save up to 80% of the clinicians' time that they would ordinarily

have to spend with the patient. Therefore the use of such programs allows clients to be treated at a quicker and more responsive rate in comparison to waitlist, and it also allows for a more appropriate use of therapists time in seeing those with more disruptive symptomatology.

Since 2006, NICE have recommended the use of other approved CCBT programs (National Institute of Clinical Excellence, 2013). NICE currently recommend the following computerised CBT treatments: COPE for those suffering with non-severe depression, Overcoming Depression for those suffering from depression and BTSteps for those suffering from OCD (NICE, 2013).

**CCBT Components.** The CCBT programs that have been developed are designed to provide CBT techniques to specifically influence the cognitive outcomes of patients (Cavanagh & Shapiro, 2004). For example, Beating the Blues consists of eight modules, all of which focus on a different component of CBT. The following list describes topics of these eight modules in running order: introduction; automatic thoughts; thinking errors and distractions; challenging unhelpful thinking; examining core beliefs; identifying attributional styles; action planning; conclusion (Proudfoot et al., 2004).

Due the use of the multimedia format within CCBT programs, users are enabled to become engaged and stay interested, by using a mix of an engaging interface, thought provoking videos, graphical and animation style depictions and by encouraging interactive responding from the participants, problem solving, diary entries and also homework between sessions (Cavanagh & Shapiro, 2004). Once homework is finished, most programs offer feedback to optimize learning and reinforce the tools taught. Thus, a trained clinician monitors user accounts and measurement scales throughout program use, paying specific attention to possible

suicidality and self-harm issues that may arise. To make the program as user-friendly as possible, very basic grade-level language is used and these programs are designed to be used by individuals with limited previous computer experience (Cavanagh & Shapiro, 2004).

The results of a study conducted by Cavanagh & Shapiro (2004), show that computer treatments for mental health difficulties such as CCBT for depression and anxiety are acceptable (Proudfoot, 2004) and with use, clients generally persists with the program, usually leading to favorable outcomes. Another benefit discussed is that the standardization of the computer program omits individual variability and error when in therapy, specifically when a therapist is using a particular intervention or technique along with increasing the number of people who can access appropriate treatment for their anxiety and depression, which is currently needed in the U.K. (Cavanagh & Shapiro, 2004).

Cavanagh & Shapiro (2004) illustrated that immediate accessibility is another benefit of computerized treatment, which avoids the need for those who seriously need treatment having to wait for several months before seeing a trained therapist, whilst also reducing the number of face-to-face sessions. The authors conclude by stating the most salient benefits of CCBT which include, but are not limited to: an acceptable format of therapeutic care, ease of access, treatment for anxiety and depression, reduction in symptoms, lesser problem severity, increased functioning and greater wellbeing all at a reduced cost (Cavanagh & Shapiro, 2004).

**Efficacy of CCBT.** Proudfoot, Goldberg, Mann, Everitt, & Marks (2003) assigned 167 adults who were suffering from anxiety and/ or depression to eight sessions of Beating the Blues, with or without or treatment as usual, including medication. The measurements used included The Beck Depression Inventory, The

Beck Anxiety Inventory, and Work and Social Adjustment Scale. Measures were taken at multiple times, prior to treatment, two months after the treatment began and follow-up at 1, 3 and 6 months. The CCBT group showed a significant improvement in their depression and anxiety symptomatology, in comparison to the treatment as usual group, on a two and six month follow-up (Proudfoot et al., 2003). These improvements, as measured by symptom reduction, were seen in work and social adjustment self-report ratings (Proudfoot et al., 2003). These results suggest that the use of CCBT in conjunction with minimal clinical supervision are in fact useful, regardless of concurrent psychopharmacology, or with pre-treatment mental health difficulties of six months or more (Proudfoot et al., 2003). Thus, the use of CCBT in the treatment of anxiety and depression was found to be useful in this particular study.

Proudfoot et al. (2004) also examined the efficacy of CCBT using a randomized controlled trial for the treatment of anxiety and depression, within the primary care realm. The sample was made up of 274 participants who had anxiety or depression and they were randomly allocated to treatment groups, they were almost evenly male and female participants, majority of whom were of a white ethnic group who had less than 15 years of education, most of whom were employed and had previous computer experience. They were general practice patients aged between 18-75 years who had a score of 4 or higher on the 12-Item General Health Questionnaire (Goldberg, 1972) and 12 or higher on the computerised format of the Clinical Interview Schedule (Lewis, 1994). The two treatment groups that were compared were CCBT and treatment as usual, with all participants receiving a six-month follow up. The CCBT program used was Beating the Blues. The measures used to test treatment effectiveness included the Beck Depression Inventory (Beck et al., 1996), The Beck Anxiety Inventory (Beck & Steer, 1990), The Work and Social Adjustment

Scale (WSA; Mundt et al., 2002), The Attributional Style Questionnaire (ASQ; Peterson et al., 1982) and a measure of satisfaction of treatment. Results of this study show that the use of CCBT improved depressive symptomatology; clients' negative attribution style also improved, as did their adjustment to work and sociability. These improvements occurred independent of an interaction of drug treatment, the length of their preexisting illness or its severity, by the use of statistical analysis. In the treatment of anxiety, the use of CCBT showed greater improvements when compared to treatment as usual, specifically when the patient was more disturbed before treatment began. This is an interesting result found by Proudfoot et al. (2004) as it goes against the main body of research, claiming that CCBT is most useful for the treatment of mild to moderate anxiety and depression. Interestingly, CCBT and its use also increased the participants' satisfaction with treatment as evidenced by the measurements used. Thus, CCBT may be a useful tool in the treatment of anxiety and depression or mixed anxiety and depression within primary care facilities. However, a few limitations of this study must be noted. This study used solely self-report measures, which can be unreliable and the patients were aware of their treatment groups (Proudfoot et al., 2004).

Other researchers also suggest that CCBT is a viable alternative to CBT when used to treat mild to moderate depression (Kaltenthaler, Parry, Beverley, & Ferriter, 2008a). A meta analysis conducted by Kaltenthaler et al. (2008a) systematically reviewed articles that met their inclusion criteria and that displayed the effectiveness of CCBT. This was done by searching electronic databases and only included randomized controlled trials. In this study 455 articles were screened, of which 4 studies met their inclusion criteria. These four studies, which analyzed three computer

software packages, were compared to treatment as usual, educational websites and a placebo (Kaltenthaler et al., 2008a).

Results of the Kaltenthaler et al. (2008a) study showed that the effectiveness of CCBT was supported in the treatment of depression, but that the attrition rate was large and there was a lack of evidence showing participants' preferences, with specific regard to whether or not they found this treatment modality to be an acceptable one. It was also noted that the majority of the available research is conducted by those endorsing the products and thus bias must be taken into consideration (Kaltenthaler et al., 2008a).

**CCBT Effectiveness.** When the effects of CCBT were evaluated with regard to stress-related absenteeism at work, the results found were valuable (Grime, 2004). This study asked participants to complete the eight-week course of Beating the Blues and then post treatment measures were taken. Participants were made up of 48 public employees who had accrued 10 or more days of absenteeism due to stress-related issues during the past 6 months. The measurement tools used consisted of the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) and Attributional Style Questionnaire (ASQ; Peterson et al, 1982). The post treatment results showed that completion of Beating the Blues had positive effects on participants' anxiety and depression scores, including measures one month after treatment cessation. These results may also signify a use of CCBT for other stress-related disorders. The results found may signify that the use of CCBT may decrease psychological difficulties that result in absenteeism in the workplace, because of its acceptability and flexibility (Grime, 2004). However, these results are not generalizable to the normative population due to the sample size and the fact that all participants were employed.

In a meta-analysis, Andrews, Cuijpers, Craske, McEvoy, & Titov (2010) assessed the effectiveness of CCBT for the treatment of generalized anxiety disorder, major depression, social phobia and panic disorder. The authors found computerized CBT to be an acceptable and effective alternative for those with depression and anxiety due to the difficulty they experience in accessing treatment. The results indicated effectiveness in the short and longer terms and the improvements were maintained for a median of 26-weeks post treatment. In total, 22 studies were analyzed, including a control group and acceptability overall was rated as good. However, in comparison to waitlist conditions, the results were not significantly different. The authors also identified 5 studies that compared CCBT to face-to face treatment and the results of these comparisons showed that both treatment modalities were equal (Andrews et al., 2010).

Foroushani, Schneider, & Assareh (2011) acknowledged that in recent years there has been an increase in the number of CCBT packages tailored to treat mild or moderate anxiety and depression. The authors in this study examined only the effects of CCBT in the treatment of mild to moderate depression due to this being the most common mental health disorder. Results suggest that CCBT is a useful and effective treatment for mild to moderate depression; however, their analyses only included twelve systematic reviews from ten studies (Foroushani et al., 2011). It is also important to take the author's interests into consideration, as some wrote the very studies they were reviewing, and worked for the CCBT companies (Foroushani et al., 2011). The CCBT programs identified by the researchers as being helpful in the treatment of depression were MoodGym, Beating the Blues and Colour Your Life. The authors also found that therapist time was significantly reduced when CCBT

programs were used in the treatment of mental health difficulties (Foroushani et al., 2011).

In contrast, Graaf et al., (2009) evaluated the effectiveness of CCBT without the supplemented support of a therapist that is often used in many clinical trials within the primary care realm. The CCBT program used is called Colour Your Life and the follow-up period was six-months (Graaf et al., 2009). There were a total of 303 participants who were randomly assigned to three groups (Graaf et al., 2009). The first group was Colour Your Life, the second was treatment as usual (TAU) and the third was a combination of Colour Your Life and TAU (Graaf et al., 2009).

Participants ranged in age from 18-65 and they had to have had suffered from mild to moderate depressive symptomology to be able to participate (Graaf et al., 2009). The majority of participants were employed and there was a balanced gender percentage of males and females (Graaf et al., 2009). Most participants reported that their depressive episode was either their first or a recurrent episode (Graaf et al., 2009).

The Colour Your Life treatment program consists of eight 30-minute sessions, which are followed by a booster ninth session. Upon completion of each session, participants were also required to complete weekly homework assignments. Results indicate that there were no significant differences between the treatment groups, thus CCBT did not show greater results, in comparison with those participants who used treatment as usual. Although results indicated a decrease in depression scores post-treatment with those suffering from moderate to severe depression, this decrease was moderate in size. Results of this study conducted by Graaf et al. (2009) signify that the combination of CCBT coupled with a lack of support of a trained therapist is not effective in the treatment of depression. It was also discovered that within all groups, treatment adherence was low. It was also shown that participants who did not adhere

to treatment experienced a decrease in their depressive symptomatology, which organically improved with time (Graaf et al., 2009).

Another study conducted by Graaf et al. (2011) investigated the effect of completing a CCBT program, in which 303 depressed participants were involved, at a one-year follow up. The participants had a mean age of 44 years, however there was an unequal gender distribution between participants and treatment groups, although the authors reported that this did not have a statistical impact even when it was taken into account. There were three groups assigned, one group was offered CCBT without the support of a clinician, the second group sought help from their GP, and the third group used a combination of both treatment modalities being CCBT with a therapist's support, and help from their GP. Upon follow-up, there was no significant difference found between the three intervention groups. Within the first quarter of the follow-up period, the most notable differences were that participants had less contact with their GP; they consumed less antidepressants; and within the CCBT group, specialist mental health care was less sought out. However, it must be noted that these differences were not sustained over time. The results of this research suggest that treatment as usual is more effective in the treatment of depression than CCBT (Graaf et al., 2011). When the CCBT group was compared to the other two groups, the results suggested that those in the group used fewer healthcare services and that the results of improvement across all of the groups were modest (Graaf et al., 2011).

A study by Cavanagh, Seccombe, & Lidbetter (2011) was based on the valuable findings of several research studies which had contributed to developing the Beating the Blues program recommended by National Health Service in the UK. The authors tested the generalizability of findings with regard to the implementation of CCBT within a Self Help Clinic (Cavanagh et al., 2011). Cavanagh et al. (2011)

wrote that this Self Help Clinic aims to provide useful services to those suffering from depression and anxiety in an accessible and socially inclusive manner, in Manchester, England. The authors administered the PHQ-9 (Spitzer, Kroenke & Williams, 1999), which is a depression questionnaire, and the GAD-7 (Spitzer et al., 2006), which is an anxiety measure, to each participant before and during each treatment session (Cavanagh et al., 2011). Although the authors received 510 referrals to the program, there were only 156 participants, which equates to 52.9% that completed all eight sessions of Beating the Blues (Cavanagh et al., 2011). Of these participants, 68% were female and 60% of referrals were from general practitioners. Results of this study suggest that CCBT can be used effectively within specific environments, specifically within a service user-led, Self Help Clinic (Cavanagh et al., 2011).

So et al. (2013) explored the effects of CCBT in the treatment of depression. This research has been one of the largest meta-analytic studies; it is comprised of only the highest quality studies that have been completed to date (So et al., 2013). It was made up of a total of 14 trials that met the inclusion criteria, along with 16 comparisons, and the number of participants in each study ranged from 45 to 525 (So et al., 2013). The primary method of data collection in the So et al. (2013) study was a self-report measure and the results of this meta-analysis suggest that upon a long-term follow up, no significant results were found, but there were significantly higher dropout rates obtained compared to control criteria. Specifically when the CBT and control groups were compared the results were as follows: the effect estimate of the post treatment depression symptom reduction was -0.48, upon the longer follow-up the effect estimate was -0.05, at the post-treatment phase the improvement effect estimate was -0.05, and the post treatment attrition risk effect estimate was 1.68 (So et al., 2013). An effect estimate is calculated when prior to statistical analyses, variables

are grouped accordingly, rather than being analyzed individually. So et al. (2013) emphasized that caution must be exercised when interpreting these results as there was a significant publication bias found amongst the studies that met the inclusion criteria. The researchers found that the best improvements for the use of CCBT in the treatment of depression are found at the short-term follow-up, but these results were not found to be present upon a longer-term follow-up (So et al., 2013), making CCBT in the treatment of depression a less valid treatment modality as previously believed (So et al., 2013).

In summary, it is evident that clients who use CCBT learn techniques that they can re-use upon treatment cessation. The use of CCBT is also stigma reducing, particularly in countries and locations where there is a lack of therapy culture, such as Europe in comparison to North America, where the stigma associated with health-seeking behaviors is much lower in general. As CCBT usually takes 6-8 sessions to complete a program, it is a short-duration modality that has been shown to be effective in the treatment of mood disorders and it is also endorsed by NICE in the United Kingdom. Numerous aforementioned studies have displayed the efficacy of CCBT upon treatment cessation and also upon follow-up. In the following sections, suitable and unsuitable populations for CCBT will be discussed as will attrition rates, how cost effective it is along with generalized and clinician's attitudes towards such programs.

**Acceptability and Accessibility of CCBT.** Much research has been conducted on the efficacy of CCBT; however, according to Waller & Gilbody (2009) there has been limited focus on the barriers to uptake, a theme investigated by these researchers. The authors of this study evaluated the qualitative and quantitative evidence within 46 studies that explored the evidence around the consequences of the

computerized nature of the CCBT treatment modality, evaluating acceptability, and accessibility. The authors analyzed electronic databases and the results showed that a large portion of CCBT participants who agree to take part in studies withdraw before the trials have commenced (Waller & Gilbody, 2009). Waller & Gilbody (2009) explained that these individuals who withdraw usually do so without prior explanation. The authors discovered that on average 56% of participants completed the entire CCBT program and the main reason for the large attrition rate was due to personal circumstances. Technological difficulties and social background were not related to the large attrition rates. One of the major downfalls identified by the authors with the majority of CCBT programs was that risk was not a factor that was frequently assessed (Waller & Gilbody, 2009), specifically risk of self-harm and suicidal ideation. It was also found that people in CCBT treatment groups, compared to treatment as usual were twice as likely to drop out (Waller & Gilbody, 2009). This is a sizable difference in attrition rates that needs to be unpacked in future research.

A study conducted by Leibert et al. (2006) examined clients perceptions around Internet counseling and the therapeutic alliance. The study comprised of 81 participants, who were recruited through self-selection, their average age was 29.4 years old and most were female (82.7%), most were of white ethnicity and almost a third had attended some form of college. In Leibert et al.'s (2006) study, the majority of the participants were frequent Internet users, they were female and they enjoyed the anonymity and convenience of being able to complete the program from anywhere that they chose. The main disadvantage that these participants reported was the lack of nonverbal information, which participants reported was offset by the weighted advantage of anonymity (Leibert et al., 2006).

Cavanagh et al. (2009) researched the acceptability of CCBT from the perspective of the types of clients who might use this treatment program. This study combined the use of Beating the Blues and brief face-to-face support. These services were offered to participants in primary and secondary care practices, in which 191 participants completed Beating the Blues, which accounted for 87%. Of these participants, 131 were female and 88 were male, who ranged in age from 19-70 years old, with a mean of 44 years. Participants found this treatment modality acceptable and reported positive patient experiences as a result of using the program. Cavanagh et al. (2009) detailed that in a post-treatment follow up, women reported more favorability towards the therapy in comparison to men and reported finding the program more helpful with more expressing higher ratings of satisfaction. The measures used included Opinions about Psychological Problems Questionnaire (OPP; Barker, Pistrang, & Shapiro, 1983), The Attitudes to CCBT Questionnaire (ACCBTQ; Ultrasis, 2000) and The Patient Feedback Questionnaire for CCBT (PFQ-CCBT; Ultrasis, 2000), the latter two measures used were created for specific use with the Beating the Blues CCBT program. It was discovered that the pretreatment measure revealed positive ratings of credibility and expectancy, with post treatment ratings showing that upon treatment completion, the ratings were highly satisfactory. It was also shown that those who had received previous treatment for their anxiety or depression rated this type of treatment as being on par with the previous treatment modality that they had received. The authors highlighted that they would have liked to have conducted a more extensive follow up, in order to fully develop their understanding of the post treatment measures (Cavanagh et al., 2009). Again, this study displays the usefulness and acceptability of CCBT programs for use within primary care facilities.

Titov (2007) cites an increasing amount of research supporting the efficacy of CCBT. A main reason for this increase in interest is that it is a resource that is potentially capable of meeting the ever-increasing demands placed on mental health services and it also helps remove the many barriers individuals face when accessing treatment (Titov, 2007). Titov (2007) noted that some of the main barriers to effective mental health disorder treatment include, but are not limited to: the stigma associated with seeking treatment; the time it takes to travel to appointments (this is particularly relevant in the case of rurally-based clients); delays in treatment that people face due to long waiting lists and an insufficient amount of trained mental health workers. The author found CCBT to be most beneficial when assisted by a trained clinician; however, the author notes that individuals can benefit from as little as three self-lead CCBT sessions, without a therapist's assistance as evidenced by the research that was conducted (Titov, 2007).

Titov (2007) expresses the need for each program that is developed to be user friendly, and both clinically effective and inexpensive. With regard to the research available, the author advises caution when interpreting the findings, warning that most studies use relatively small sample sizes and the participants are self-selected (Titov, 2007; Kaltenthaler, Parry, Beverley, & Ferriter, 2008a). Results show that equal effect sizes were found when comparing CCBT and CBT conducted by a therapist (Titov, 2007). The authors stress that CCBT is not a treatment modality that will ever replace the clinician, but it is more an intervention that could be used to complement the work of the therapist (Titov, 2007).

In conclusion, it is clear having examined the research on acceptability and accessibility that larger than normal attrition rates are evident (Cavanagh et al., 2009). It is also apparent that being anonymous while undertaking therapeutic interventions

is frequently cited with positive regard (Stallard et al., 2010b). CCBT and similar programs were found to be useful, particularly within primary care settings (Proudfoot, 2004). Thus, it was clear that many traditional issues surrounding accessibility such as the various cited barriers were eliminated, due to the high levels of privacy that this therapeutic modality provides (Leibert et al., 2006). However, it is important to note that much of the research in this area is conducted by researchers working in the area of CCBT that may be employed by CCBT providers, but this is usually disclosed as per current research ethical requirements. It is also important to take into consideration the development of CCBT within the field of counseling and psychology. Similar to drug trials, it is not unusual that for the first few research projects, that they are paid for and implemented by the company itself; therefore the full disclosure of authors is imperative when taking a closer look at the results found and articles published. Thus, as the area has developed, third party researchers have measured and tested the available CCBT programs, resulting in a more varied results including different populations and the inclusion of more measures than before.

Therefore it is evident from the research findings that the attrition rates for CCBT completion can be and are often low, showing a large number of individuals who start but don't complete full programs. The anonymous nature of CCBT was discussed which is seen as an advantage by those who like their privacy to be respected. The use of CCBT also can alleviate the ever increasing demands placed on mental health workers, allowing diagnostically sub-threshold individuals to be treated in a more timely and effective manner, helping to decrease wait times and duration of symptoms.

**Suitable Populations for CCBT.** Waller & Gilbody (2009) suggest that CCBT will be a suitable treatment modality for some, but not for all, and that the pace

of the treatment comes into consideration because this is not as tailored in CCBT as it is in face-to-face therapy. They also identified a higher likelihood of individuals with a higher education using CCBT compared with those with a low level of education. Leibert et al. (2006) examined the sociodemographics of 81 clients (82.7% white, 2.5% African American, 2.5% Asian American, 3.8% Hispanic Americans and 6.3% who were not identified, of which there were 82.7% female and 17.3% male) with regard to Internet-based counseling. The majority of the participants were frequent Internet users and they were female. The authors found a correlation amongst participants, that the more a participant spent on the Internet per week, the more likely it was that they would make use of Internet based counseling modalities (Leibert et al., 2006). Participants rated privacy and convenience as the two most popular reasons for using online counseling and a majority of the participants (79%) had previously tried either group or face-to-face counseling (Leibert et al., 2006). When comparing clients who received online counseling to those who received face-to-face counseling, the latter group was more satisfied with their experience (Leibert et al., 2006). Those who received face-to-face counseling also reported more favorable scores on therapeutic alliance, in comparison to those who received computerized counseling (Leibert et al., 2006). This was underpinned by a concern from those who received Internet based counseling that should they enter a crisis, they would not have the support of a human being to help them navigate this difficult terrain (Leibert et al., 2006). Results showed that those who used online counseling were satisfied with their experience and rated themselves as being more able to self disclose over the Internet, other key advantages cited were disinhibition and flexibility (Leibert et al., 2006). The main limitations of this study are that the findings solely relate to Caucasian women and the possibility of a self-selection bias also exists (Leibert et al., 2006).

**Unsuitable populations.** Rochlen et al. (2004) advise that online therapy is not a suitable treatment modality for those who are hospitalized, or those with severe or chronic psychiatric disorders. The authors examined the most recent literature which indicated the types of problems that are best suited to online therapy to include personal growth, anxiety diagnoses, alcoholism in the family, agoraphobia, social phobias, and body image difficulties (Rochlen et al., 2004). Groups cited as not suitable to online therapeutic approaches are suicidal clients, those with thought disorders, borderline personality disorder and inconclusive medical issues (Stofle, 2001). It is suggested that therapists most suited to online therapy are those who are able to visualize situations, are not rigid, are patient and who can be creative (Rochlen et al., 2004). It is also stated that CCBT programs need to be tailored to different populations (Titov, 2007), as individuals differ so much and the 'one size fits all' approach does not work. In summary, it is evident that CCBT is useful for many populations but not for all clients. Educational level and internet usage is correlated with suitability, however as mentioned those with suicidal ideation, thought disorders and personality disorders are not suitable for such modalities, perhaps due to the more comprehensive and person-centered approach to therapy that is more desirable.

**Attrition Rates.** As a rationale for their study, Marks et al. (2003) highlighted that most individuals with anxiety and depression are not effectively treated for a number of reasons. They allowed self-referring individuals immediate access to one of four CCBT programs for depression, phobia or panic, general anxiety or obsessive-compulsive disorder. The sample was made up of 108 participants, of whom 47% were male, 53% were female and the average age was 39 years, most were unemployed or a student (35%). All participants were also allocated some time with a therapist in order to receive brief advice; every participant also had a screening

interview. Initially there were 355 referrals to the trial, then 266 took part in screening interviews and of these it was deemed that 79% were suitable (Marks et al., 2003). Results suggest that, interestingly, pre-treatment completers and non-completers of CCBT had very similar features, for example they had chronic problems that were moderately severe in their nature. Of those who completed the CCBT program, they had a mean of one hour of therapist support over the duration of their treatment, which took on average 12 weeks. The measurements used included the Patient Global Impression of Improvement score (Guy, 1976) and the Work and Social Adjustment scale (WSA; Mundt et al, 2002) along with other diagnoses specific measures. The improvements found proved to be both significant and clinically meaningful and respondents stated that with three out of the four CCBT programs used, that they were 'fairly satisfied' with them (Marks et al., 2003). In comparison to other randomized and controlled trials that the authors explored examining the usefulness of CCBT, they found that the results were on par (Marks et al., 2003). These results highlight the ease of access with computer mediated therapies and also the benefit in reducing clinician face-to-face client time, thus making it a cost effective treatment that allows more clients to be treated simultaneously.

It has been shown that Beating the Blues significantly reduces anxiety and depression ratings and that these results were still noted at the 6-month follow-up (Proudfoot, 2004). However, it must be stated that 29% of participants dropped out, prior to finishing treatment, of which half did so for reasons of dissatisfaction with the type of treatment (Proudfoot, 2004). In comparison to the group who received care as usual, those in the CCBT group were more satisfied with their treatment modality (Proudfoot, 2004). The measures included the General Health Questionnaire (GHQ-

12; Goldberg, 1972) and a computerized version of the Clinical Interview Scale-Revised (CIS-R; Lewis, 1994).

A study conducted by Van Den Berg et al., (2004) found that 52 of 115 participants, which equates to 45% of those who first enrolled, did not complete the program. This is a considerably higher attrition rate when compared to other treatments. In a study conducted by So et al., (2013) considerable dropout rates were also shown, ranging from 5% to 41% within the studies. However, the author highlights that this is common in the treatment of depression, where one of the most common symptoms is a lack of motivation (So et al., 2013).

Although travel time is eliminated with the use of CCBT, the time needed to complete the sessions is still a factor that individuals consider when trying new therapy modalities (Waller & Gilbody, 2009). With this in mind, Waller & Gilbody (2009) also discovered that clients' personal circumstances play a large role in their participation in therapeutic services. In a study conducted by Grime (2004) participant's negative attributional styles were lessened as a result of using a CCBT program and the main reasons for non-participation was related to access issues, a lack of preference for this treatment modality, the time it takes to complete all eight sessions, and skepticism about whether or not CCBT works (Grime, 2004). The measurement tools used consisted of the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) and Attributional Style Questionnaire (ASQ; Peterson et al, 1982).

Kaltenthaler et al. (2008b) examined the acceptability of CCBT in the context of it becoming a more widely used treatment within the UK and elsewhere in recent years. The authors broke down acceptability into measurable parts and examined rates of recruitment, attrition and the number of patient completed questionnaires. There

were 16 studies that the authors found that contained some of this information (Kaltenthaler et al., 2008b). They found attrition rates to be on par with other treatment modalities and identified a lack of information on recruitment and participation at the beginning of these programs (Kaltenthaler et al., 2008b). Congruent with other studies was a finding that there was more information from program completers and that there was a lack of information from those who had dropped out of treatment prematurely (Kaltenthaler et al., 2008b). It is still interesting as to why the attrition rate is so large and it would be interesting to investigate this further, although those who withdraw from treatment prematurely may be less likely to provide follow-up information.

In summary, it is evident that the ease of access of CCBT programs is an advantage, however, there may be a linkage to the ease of attrition. This may be in part due to the fact that it takes discipline to sit down and complete a computer mediated intervention on 8 consecutive weeks, this self motivation may contradict clinical symptomology of depressed patients, when they simply lack motivation to complete such programs. Thus, surveying attitudes of clinicians can provide insight as it may help to shape future research on ways to make such programs more accessible and user friendly, with regard to strategies that could improve client motivation and completion of such programs. The following sections will detail the cost effectiveness of CCBT and also an overview of current clinician attitudes towards such programs.

**Cost Effectiveness of CCBT.** An interesting point of consideration that is often discussed is the feasibility and cost-effectiveness of CCBT. McCrone et al. (2004) evaluated the cost-effectiveness of CCBT for the treatment of anxiety and depression within a primary care context (McCrone et al., (2004). The results found

showed that the CCBT group paid on average 40 Great British Pounds (GBP) more over eight months in comparison to the treatment as usual group (McCrone et al., 2004). However, when comparing the lost employment costs between the groups, the CCBT group lost 407 GBP less, which is a substantial saving. McCrone et al. (2004) also found that the use of CCBT has a high likelihood of being a cost effective treatment. Those in the treatment-as-usual group had a high amount of contact with their healthcare providers, and this continued through to the 8-month follow-up period (McCrone et al., 2004). This group also had more frequent visits to the emergency room, more frequent contact with psychiatric nurses and other professionals within the counseling realm (McCrone et al., 2004). This increase in the amount of health care visits may have also resulted in a greater expense to the client. Thus, CCBT may eventually help relieve the financial burden of mental health difficulties by also decreasing the prevalence of disorders (Titov, 2007).

**Generalized Attitudes towards CCBT.** Mitchell & Gordon (2007) evaluated attitudes towards CCBT amongst a student population who were attending Portsmouth University and this sample consisted of 20 university students who were randomly selected from the stage one recruitment which comprised of 122 participants, of these 122 participants, 75% were female and 25% were male with a mean age of 23.05, of these 20 participants 47% were female and 53% were male. It examined their perceived credibility, how much they expected to improve, and how likely they were to use it and thus recommend it to a friend (Mitchell & Gordon, 2007). At pre-treatment, a minority stated a preference for using CCBT, this equated to 9.8% of the sample, in comparison to other available interventions (Mitchell & Gordon, 2007). Then, Mitchell & Gordon (2007) showed the participants a video of CCBT and participated in the program as if they were a mildly depressed user. As a

result of this demonstration, there was a significant increase in expected credibility (Mitchell & Gordon, 2007); there was a greater expectancy for improvement reported and an increase in the perceived likelihood of using CCBT (Mitchell & Gordon, 2007). The percentage of people who stated a preference for CCBT after watching the video increased to 30%, and at both pre and post treatment, the majority of participants stated a preference for CCBT to be used in conjunction with face-to-face counseling (Mitchell & Gordon, 2007). The measures used included the Credibility/Expectancy Scales (Borkovec and Matthews, 1988) and demographic questions.

Mitchell & Gordon (2007) conducted a qualitative follow up, which allowed for greater detail to be sought from the participants in terms of their preferences. Participants noted several advantages and disadvantages for using CCBT when depressed (Mitchell & Gordon, 2007). Some of the advantages were included but not limited to the following: privacy, accessibility and the content (Mitchell & Gordon, 2007); the disadvantages included but were not limited to the following: impersonal, limited scope and that it was very symptom-related (Mitchell & Gordon, 2007). When the student participants were asked their preference of first choice interventions, the most popular was counseling (54.9%), the next was Internet (17.2%), followed by CCBT (9.8%) and the least popular was other (7.4%) which included medical, friends and family (Mitchell & Gordon, 2007).

However, Mitchell & Gordon (2007) noted that not all of the responses to the CCBT demonstration were positive, as some would not choose it as a therapeutic technique at all, even after watching the video demonstration. Caution is advised, as these findings must not be generalized to the wider population, as university students differ mainly in their level of educational achievement (Mitchell & Gordon, 2007) and age at the least. This study shows the importance of socialization to the use of

CCBT, where introductory material is helpful in helping clients gain a better understanding of this treatment modality and therefore help quash any misconceptions (Mitchell & Gordon, 2007).

Gerhards et al. (2010) examined CCBT from the perspective of a patient. Colour Your Life is a program used to treat depression. Semi-structured interviews were implemented, to collect data from 18 patients and these interviewees were chosen from a clinical trial. Once the data was collected, a content analysis was performed and the results showed that the main themes that emerged were related to the barriers and motivators around CCBT. The barriers participants reported were the lack of identification, a lack of acceptability of the program, and a lack of support throughout the program. Other cited barriers were not having efficient enough computer skills to participate fully, lacking the appropriate equipment and the cited location. Confusion for some participants meant that there were some who never began the CCBT program at all (Gerhards et al., 2010), following a similar attrition pattern of many other studies. This would be an interesting point to follow-up, as it was not fully explained by the authors.

Gerhards et al. (2010) asserted that some motivating factors cited were: making improvements because the participants used the CCBT program, the experiences of self-identification and many participants also liked the idea of taking part in a scientific study. Other motivating factors included the anonymous nature of the program and the freedom involved in this treatment modality. Thus, most of the barriers and motivating factors that were found related to the content of the CCBT program and to extraneous contextual factors. The authors suggest that adherence and improvements in results obtained post CCBT would be bettered if participants were supported more throughout the program. Results of this study suggest that the CCBT

program, Colour Your Life, does not help in the treatment of depression and, the authors recommend that the program should be more tailored to user preferences and that there is more support provided to those involved (Gerhards et al., 2010).

Stallard, Velleman, & Richardson (2010b) stated that many young people use the Internet as a means of accessing therapy and mental health related information, thus, researching their attitudes towards computer therapy may provide some insight into this unique population. This piece of research assessed the attitudes of 37 young people and 31 parents, by using a self-report questionnaire (Stallard et al., 2010b). The majority of these youths were aged between 15 and 17 and there was an almost equal response from boys and girls. Results indicated that these young people used the computer frequently and many went online and sought help for health related questions and concerns (Stallard et al., 2010b). The youths who participated in the study showed that although they use computers to find out about the problems that they experience, they rarely find this helpful. Interestingly, the results took an unexpected direction. Parents were more favorable about computerized therapy and identified more positive aspects. In comparison, the younger people showed more caution about using computerized therapy. When the authors analyzed the young people's interest in using computerized therapy, only 24% were interested, 27% were not and almost half were undecided. Almost half of the young participants also reported that they would prefer to talk with someone face-to-face, whereas 9% wanted to use a computer program alone, and 9% wanted to combine these two approaches. Some key themes emerged from assessing the parents' attitudes towards computerized therapy. These were: socialization and support; familiarity of this format; ability to remain anonymous; increasing their positive help-seeking behaviors and ease of access to information (Stallard et al., 2010b).

Hanson, Webb, Sheeran, & Turpin (2015) aimed to assess attitudes towards self-help options available for treating depression. In doing this, they used a large sample size of 536 participants. The results found indicated that the most accepted forms of treatment were guided self-help and psychotherapy; interestingly antidepressant medication and bibliotherapy were found to be the least accepted treatment modalities. However, these results are only representative of attitudes from a normative population and none of the participants were actively seeking treatment for depression; the results showed a preference for treatments that included human interaction, rather than self-guided therapeutic interventions (Hanson et al., 2015).

In conclusion, it is evident that the preference for using CCBT has been shown to dramatically increase when a demonstration video is used, as was found in the Mitchell and Gordon (2007) research. Perhaps these video demonstrations allow the viewer to have better knowledge and information and therefore understanding of such programs. It was also apparent that key benefits such as how accessible CCBT is and some disadvantages such as the lack of the therapeutic alliance were established from several different research participants (Mitchell & Gordon, 2007). Age was also found to be a factor that altered generalized attitudes about such computerized programs (Mitchell & Gordon, 2007). As mentioned when discussing the disadvantages, one of the main things mentioned is the lack of clinical support. Thus when examining clinician attitudes towards such programs, it is important to allow the clinician an opportunity to share all of the information that they would like to, in order to get a comprehensive view of their likes and dislikes about such programs. Taking this into consideration the following section will detail the current literature on clinician's attitudes towards such programs.

**Clinicians' Attitudes Towards CCBT. Whitfield & Williams (2004)**

explored individuals' attitudes towards CCBT. The authors attribute the increase in interest in this modality to its inclusion in the National Institute of Clinical Excellence's (NICE) recommended treatments for anxiety and depression (Whitfield & Williams, 2004). The authors used a national sample of 500 randomly selected therapists who were asked about their opinions on this type of treatment modality (Whitfield & Williams, 2004). Of these, 329 participants responded by completing the questionnaire. All of the therapists sampled in this U.K. based study were members of the British Association for Behavioural and Cognitive Psychotherapies, the main organization that represents cognitive behavioural therapists in the UK (Whitfield & Williams, 2004). The response rate was 65.8%, and out of these respondents, only 2.4% were using computerised self-help within their practice, and only 1% were using it as a substitute to face-to-face contact (Whitfield & Williams, 2004). However, more than 90% of responding therapists had not ruled out using computerized self-help in the future, but most of these respondents stated that they would use it in conjunction with, rather than instead of treatment as usual (Whitfield & Williams, 2004). The therapists sampled reported wanting to learn more about computerized self-help, and they also replied by stating that they would like some training in how to incorporate it into their practice (Whitfield & Williams, 2004). Interestingly, most respondents were not aware that computerized self-help is an evidenced based practice and the need to have some knowledge about computers was not seen as an obstacle to using this modality in the future. However, the majority of therapists did state that they personally felt that computerized self-help would not be as effective as face-to-face therapy and that clients would find that computer mediated experience less satisfactory (Whitfield & Williams, 2004).

Rochlen et al. (2004) state that having reviewed the literature, there are several authors and organizations that seriously favor or oppose the use and implementation of online therapy. Those therapists who do not like the idea of computerized therapy feel it may take away from their jobs and that the therapeutic alliance is an important element of psychotherapy that they feel is lost in the process of computerizing therapy (Rochlen et al., 2004). Rochlen et al. (2004) also suggest that more research is needed to measure general attitudes and perceptions towards online therapy, which should include how different personality traits, such as introversion and extroversion influences individual's preferences for the type of computerised therapy modality. They state that this analysis would provide a better understanding of the population traits of potential online therapy users. They suggest that attitudes should be assessed within these specific populations, for example those with disabilities, those living rurally, and those who stigmatize face-to-face counseling services. A limited number of studies exist that have considered possible cross-cultural issues and differences in online mediated therapy; therefore, more work is needed in this area (Rochlen et al., 2004).

A study conducted by Donovan et al., (2015) examined Australian mental health worker attitudes towards CCBT, and the role of knowledge. The reason for conducting such a study was to explore why the uptake is poor on CCBT modalities, and they did this by conducting a survey that 124 mental health workers completed (Donovan et al., 2015). The age range of most participants was 26-30 years old, and the highest level of education received was a graduate certificate or diploma, most participants were counselors, nurses or selected their occupation as 'other' (Donovan et al., 2015). The primary therapeutic approach selected by 33.1% of participants was

CBT, followed by Solution-Focused/ Brief Therapy (11.3%) and Mindfulness/ Acceptance and Commitment Therapy (11.3%) (Donovan et al., 2015).

In this survey they asked about the mental health workers knowledge of such programs, the advantages, and disadvantages, efficacy of computerization of therapeutic interventions, their level of comfort with computers being used in therapy and future intention to use CCBT (Donovan et al., 2015). There were two groups, one who viewed a presentation and the control group who did not (Donovan et al., 2015). Results suggest that the more knowledge someone had about CCBT that the more advantages they would associate with such modalities, and therefor the more times it was deemed to be advantageous (Donovan et al., 2015). Those who did not have an intention to use CCBT reported more disadvantages, compared to those with a higher intention (Donovan et al., 2015). The participants who viewed the CCBT presentation showed a significantly higher increase in knowledge about such programs compared to those who had not (Donovan et al., 2015).

**Adolescents and Children.** There is recent research conducted by Stallard, Richardson, & Velleman (2010a) surrounding the use of computerised cognitive behavioural therapy with adolescents and children. Previously, this was a mostly unexplored population, but there have been some interesting findings. There was a gap in the literature exploring clinicians' attitudes towards the use of CCBT for children and adolescents (Stallard et al., 2010a). Now this has been explored further and these researchers assessed 43 clinicians' attitudes using a self-report questionnaire. Although cautious, clinicians were generally positive about the use of CCBT with this population; they were most positive with the use of delivering prevention programs via this method and preferred this modality when treating mild to moderate levels of distress. However, most of the clinicians did not think that

CCBT should be freely available without the support of a mental health professional (Stallard et al., 2010a).

Stallard et al. (2010a) detailed that the most frequently cited problems that clinicians identified were the lack of a therapeutic alliance and the lack of professional support; in contrast, the most widely cited advantage was the ability of the clients to use this treatment modality from the comfort of their own home. The key themes that emerged centered on CCBT's limitations: the risks involved, the lack of support and inability for children and adolescents to understand the program, no therapeutic alliance and social isolation. In contrast, the most widely cited beneficial themes that emerged were: its usefulness in the delivery of psychoeducation and preventative strategies, accessibility, engaging nature of the programs, the computer being a preferential medium for children and adolescents, for use in conjunction with face-to-face therapy and the reduction in stigma (Stallard et al., 2010a).

An explorative study conducted in Sweden, conducted by Vigerland et al., 2014 examined attitudes towards using CCBT with children and adolescents. The authors examined whether attitudes changed according to chosen theoretical orientation or rural location (Vigerland et al., 2014). The authors used a random sample and there was a total number of 156 participants provided by psychologists, social workers, physicians and nurses (Vigerland et al., 2014). The measure used was an altered version of the questionnaire 'Clinicians views about the use of computerized CBT with children and adolescents' (Stallard et al., 2010), with the addition of demographic and computer skill questions (Vigerland et al., 2014).

These results found suggested that there was a lack of knowledge about CCBT, but that most of the surveyed clinicians thought such programs could be used as a preventative measure and in treating those with mild to moderate problems

(Vigerland et al., 2014). The author's found results displaying greater caution for use with more serious mental health diagnoses (Vigerland et al., 2014). Treatment orientation was found to have a greater effect on ratings, in comparison to rurality, specifically the lack of human interaction and support was one of the mentioned pitfalls with regard to age and seriousness of symptoms (Vigerland et al., 2014). The commonly cited advantages included availability, and CCBT being an alternative communication modality, along with it being appealing, advantageous in terms of self-help, and complementary (Vigerland et al., 2014).

A study conducted by Nordgreen & Havik (2011) surveyed psychologists in Norway, regarding the use of self-help materials for anxiety and depression. The study surveyed 43.7% (781 participants) of eligible clinical psychologists in Norway that took place nationally, of which 63.3% were female, and the average age was 41.4 years (Nordgreen & Havik, 2011). Of these participants, 93.5% of participants had previously recommended self-help materials to clients in the past, of which about half (55.1%) had experienced clients requesting such resources and materials over the last 6 month period (Nordgreen & Havik, 2011). These types of materials were recommended to complement traditional methods such as talk therapy, and were not intended to replace face-to-face time with the therapist (Nordgreen & Havik, 2011). Only 2.2% of respondents reported recommending Internet and computer based programs; those working with children recommended self-help materials less often, compared to those working with adults (Nordgreen & Havik, 2011). Only one fifth of the sample 20.2% communicated a familiarity with Internet and computer-based self-help programs (Nordgreen & Havik, 2011). Most of these materials were used to prevent relapse (16.6%) followed by an alternative to therapist contact (6.8%), with the most common type of material being a brochure or book 79.1%, and websites

were recommended by 41.9% of the sample (Nordgreen & Havik, 2011). The most influential theoretical orientation reported was CBT followed by psychodynamic psychotherapy (Nordgreen & Havik, 2011). Those that recommended the use of self-help materials had prior knowledge and training in the use of such complementary resources (Nordgreen & Havik, 2011). The author suggests that the results implicate the future of therapy in so far as dissemination of such self-help materials and interventions, whilst involved in training and in clinical settings (Nordgreen & Havik, 2011). Thus, the respondents wanted to learn more information about computerised treatments and submitted that they would need training in using such programs in the future (Nordgreen & Havik, 2011).

Fleming & Merry, 2012 conducted a study in Auckland, New Zealand, examining work service providers attitudes towards CBT for use within adolescent populations. The sample was made up of participants from diverse cultures, of which 24 respondents were male and 16 were female (Fleming & Merry, 2012). The authors used focus groups and semi-structured interviews to gather information, with a total of 40 providers of services, who were youth workers, social service staff and other youth workers (Fleming & Merry, 2012). Responses suggest that most of these youth workers were interested in CCBT in the treatment of depression, specifically those with a greater mental health orientation and those who saw a demonstration of CCBT (Fleming & Merry, 2012). However, none of the sample was currently using CCBT or other computerized treatments (Fleming & Merry, 2012). Some respondents suggested that CCBT be used as a gateway to traditional therapy, as a means of an introduction to actually sharing ones feelings, citing its usefulness for adolescents that like computers but don't want to go to counseling (Fleming & Merry, 2012). The respondents most likely concern was the lack of human contact, however the

advantages cited were that it is appealing to adolescents and the fact that it is effective in treating an array of mental health diagnoses (Fleming & Merry, 2012). The respondents stated that they would like to use CCBT by incorporating it into group sessions, however, it was felt that supportive training and resources would be needed for them to be able to do so (Fleming & Merry, 2012).

In summary, it is evident from the literature that research participants viewed CCBT as a prevention tool; this is an area largely unaddressed in the literature. The usefulness of CCBT with children and adolescents is congruent with technological advancements, in that children are learning how to use computers from a younger age, with more frequent integration into early education. Therefore, it may be useful in a complementary way. It was also evident that CCBT is demonstrable in nature, showing that when CCBT is demonstrated to research participants, that it therefore increases viewers understanding and openness toward the inclusion of such resources in clinical settings.

**Influences of Implementation.** Du, Quayle, & Macleod (2013) declared that within the United Kingdom the introduction of CCBT to those on waiting lists has recently begun with success in many cases. CCBT is used in this region amongst those in the National Health Service with diagnoses such as mild to moderate anxiety and depression (Du et al., 2013). However, it is thought that practitioner's attitudes towards the introduction of CCBT may unduly interfere with usage and continuation, but this is a largely unexplored area up to this point. These authors conducted survey-based research to evaluate attitudes of key CCBT service providers and decision makers, by conducting semi-structured interviews (Du et al., 2013). Results found by Du et al. (2013) suggested that ease of use of these programs was one of a few factors that had an impact of people trying CCBT as a treatment modality. Therefore, it was

found that behaviors towards these types of treatments was affecting uptake and adherence, specifically what the authors termed as “shaping behavior” (Du et al., 2013, p. 220). A caveat to this piece of qualitative research would be the small sample size of only 9 participants, however, it does show the prevalence of resistance within primary practice towards the modernization and computerization of available therapies (Du et al., 2013).

#### Summary and the Current Study:

In conclusion, this review of literature shows that CCBT has gained recognition in the therapeutic realm as a valuable therapeutic modality. However, it is clear that the use of such computerized therapies is extremely limited. It was also apparent that clinicians were not comfortable with the idea of using CCBT as a stand-alone therapy, but would rather use it along side traditional counseling methods. Interestingly, surveyed therapists requested more information on how to use and integrate such therapeutic modalities. The literature suggest that only a small number of clinicians are using such programs in their practice, thus showing a lack of implementation and incorporation in the mental health field in general. It was also evident that clinicians can display quite polar views of such programs specifically when children and adolescent usage is concerned. It is also clear that more research is needed when examining minority populations and perhaps the usefulness of CCBT within such groups. Positive attitudes from clinicians are reported when examining how they feel about CCBT, but these types of findings typically contradict how often therapists actually support the use of computerized modalities for use with their clients.

In conclusion, there is a major shortage of professionally trained therapists and thus the demand for therapeutic services is great (Proudfoot, 2004). To illustrate this

point, there are 20% of people suffering from depression and anxiety, and if only half of these people wanted to receive only 10 sessions of therapy, within the U.K., there would be a need for a hundred-fold increase in the quantity of trained therapists (Proudfoot, 2004). Therefore, having discussed various studies that display the efficacy of CCBT, along with the many other positive reasons for using CCBT, it is clear that clinician's attitudes towards this therapeutic modality are lacking and are in need of further investigation. Therefore, it is important to assess clinician attitudes towards CCBT because of the lack of trained therapists available to meet the ever-increasing mental health demands on both public and private healthcare. It is also important that these attitudes are evaluated because of the support of the clinician that is involved in clients using such programs. In doing so, it will become clear as to whether clinicians are promoting or ignoring such modalities in terms of referring their clients to these sorts of resources. Thus, results of this current research along with reviewing all of the above research display that further exploration may provide much useful information, as to whether or not clinician's attitudes would be favorable or not towards the use of CCBT, in their future clinical practice, and why.

## **Methodology**

The purpose of this study is to assess trainee and qualified psychology clinicians' attitudes towards computerized cognitive behavioral therapy (CCBT) as a treatment modality. This study is specifically focused on trainee and qualified psychology clinicians' attitudes, towards CCBT and its usefulness in treating clients suffering from anxiety and depression in their future clinical practice. The reason for assessing trainee and qualified psychology clinicians' attitudes towards CCBT is because they are an integral part of this treatment modality. However, the extent and manner to which clinicians use CCBT will depend on their attitudes towards this treatment modality. Thus the focus on clinicians' attitudes to CCBT is an important area of research.

### **Definitions of Important Terms**

Computerized Cognitive Behavioral Therapy (CCBT) is a self-help computer program that encourages participants to look at unhealthy coping styles; it therefore can help participants cope with feelings of sadness and anxiety (Devon Partnership NHS Trust, 2007). It is the delivery of cognitive behavioral therapy over a computer (Devon Partnership NHS Trust, 2007). All that is needed is a computer, the Internet and minimal computer experience and a willingness to engage the program. Typically, CCBT programs consist of up to eight sessions, each of which must be completed consecutively in order to move onto the next session. Although this may appear to be an oversimplification of CBT, it is marketed as such when its is named CCBT, using key elements of traditional CBT to create a computerized program that responds according to the items entered or selected.

The symptoms that were referred to in this study survey were anxiety and depressive types of symptoms. The following are the definitions of these symptoms.

Anxiety: There are several symptoms of anxiety disorders, including, but not limited to the following: anxiety, fear, uneasiness, panic, obsessive thoughts that feel uncontrollable, nightmares, flashbacks, ritualistic behaviors, trouble falling or staying asleep, excessive perspiration on the hands or feet, shallow breathing, heart palpitations, nausea, heightened muscle tension and dizziness (Katz, 2012).

Depression: There are several common symptoms associated with depression including, but not limited to the following: difficulty concentrating, poor memory, indecisiveness, fatigue and a constant feeling of tiredness, feelings of worthlessness, guilt, hopelessness, helplessness, insomnia or early waking, excessive sleeping, irritability, a marked increase or decrease in eating habits, physical pain, persistent feelings of sadness and possible suicidal ideation and or attempts (Goldberg, 2012).

### **Mixed Methods Research**

Mixed methods research is a type of research design that incorporates both quantitative and qualitative research traditions (Creswell & Plano Clark, 2011), thus the term *mixed methods* is used. As both methods are used, this allows the researcher to get the benefits of both statistical and narrative information. This combination of research methods means that the results are more comprehensive and rigorous, allowing the research question to be more fully and thoroughly answered (Creswell & Plano Clark, 2011).

There are several core characteristics of this mixed methods approach that are important to discuss. It allows the researcher to blend the two approaches so that the commentary is more comprehensive in answering the different parts of the questions posed (Creswell & Plano Clark, 2011). It is dependent on the researcher as to which method is emphasized most. Thus, it is argued that the researcher can better analyze the data and create most meaning out of it with this blended approach. One of the

most important characteristics is that this research approach allows the use of these procedures to be combined into a single research study (Creswell & Plano Clark, 2011), therefore enabling a more comprehensive and succinct end result.

A mixed methods approach is suitable for many types of research provided it is the approach that best fits the research questions being asked (Creswell & Plano Clark, 2011). In order to fully assess attitudes towards CCBT, a mixed methods approach is most suitable. The qualitative piece will discover participants' fundamental attitudes whereas the quantitative piece will assess measurements around clinicians' perceptions of expectancy and credibility of CCBT (Borkovec & Mathews, 1988). Credibility and Expectancy is measured using key variables such as logical, successful, confident and improvement (Borkovec & Mathews, 1988). In contrast, the fundamental qualitative questions allow the researcher to gain more information on clinician attitudes, assessing their preferences including what they feel are the main advantages and disadvantages of CCBT. Thus, the use of only one data source in this planned design would not be sufficient as the results would only tell an incomplete story (Creswell & Plano Clark, 2011) in comparison to combining both approaches. According to Creswell & Plano Clark (2011) the mixed methods approach provides more strengths than weaknesses in comparison to one of these methods alone, thus the benefit of one compensates for the negative in the other. For example, within the qualitative questions the researcher is able to ask the participant open-ended questions, which therefore allows the respondent full scope to answer in any way that they please. This information can then be coded in order to identify the most salient themes. In contrast, the quantitative approach allows preferences and rankings to be statistically analyzed to see if there are significant findings. Thus, in answering such questions the participants are more restricted to the available choices and answers.

Another benefit is the practicalities that mixed methods offers, in terms of answering the posed questions with the use of both numbers that are supported by words and vice versa (Creswell & Plano Clark, 2011). It also allows the researcher to look at the problems that they have put forward and to offer conclusions that come from multiple vantage points. Thus the results are more in-depth and the caveats that wouldn't be discovered by using one approach alone are uncovered. Therefore, when all of these advantages of doing mixed methods research are taken into consideration it is clear that this research study will be greatly strengthened by the use of this approach (Creswell & Plano Clark, 2011).

*Quantitative and Qualitative Method.* The qualitative nature of the narrative piece is a type of epistemology, in which the specific mode of enquiry differs considerably from quantitative methods (Muijs, 2011). As quantitative research is based on mathematics, it is sometimes described as a realist or positivist method of data collection and analysis (Muijs, 2011). Quantitative research methods are specifically suited to testing hypothesis derived by researchers. These are predictions regarding the topic of interest, the probability of which can be measured using statistical analyses. Typically, hypothesis testing helps the researcher to either disprove or to support the concepts under investigation (Muijs, 2011).

### **Design**

A mixed methods survey design was used (Pallant, 2013). This study investigated what trainee and qualified psychology clinicians' attitudes were towards CCBT as a treatment modality, for use in their future clinical practice. There were no steps taken for randomization or counterbalancing. This is because participants were recruited from a convenience sample. The researcher identified key themes and coded the results of this question according to the most salient themes identified. Thus, a

convergent parallel design was used (Creswell & Clark, 2011). This convergent parallel design allowed the researcher to design a survey that included both qualitative and quantitative questions. This type of design allowed the attitudes to be fully assessed, because it is a type of design that enables researchers to get a full understanding when assessing specific research variables (Creswell & Clark, 2011). Thus, both the statistical and narrative results are merged to assess how and why attitudes can be similar and different towards CCBT.

### **Participants**

In total, 31 participants took part in the study, of which all completed the survey. Of these participants, 8 were male (25.8%) and 23 were female (74.2%). Participants ranged in age from 26-65. The majority of participants were aged 26-35 (54.8%), 16.1% were aged 36-45 and 12.9% were aged 56-65. In terms of educational achievement, 29% of participants had obtained a Masters degree, 45.2% had obtained a Masters degree but were current Doctoral students at the time of sampling, and 25.8% had earned their doctoral degrees at the time of participation. In terms of current employment status, 74.2% of participants were employed and 25.9% of participants were not employed at the time of participation.

Inclusion criteria were that participants had a minimum of a Master's degree in the psychology/ counseling field. The inclusion criteria were clearly outlined in the consent form (Appendix A). Participants self-selected to be involved in the study. Participation was voluntary. The sample was made up of a convenience sample, whereby those who agree to participate in the study were involved and therefore no randomization or control criteria were used. Convenience sampling is a technique used by researchers as participants are easily accessible (Pallant, 2013). The main disadvantage with this type of sampling method is that a sampling bias may have

occurred, due to the self-selection and self-report measures. As a result, the subjects are not representative of the normative population, which is the biggest disadvantage of this sampling method; thus caution must be taken when interpreting the results (Pallant, 2013).

The researcher sent several recruitment emails to the AUSB PsyD Program Coordinator who posted the recruitment message on the AUSB electronic community boards. The researcher also sent the email to all of those known to her that had been involved in the Psychology or counseling field. The recruitment message (Appendix A) which made up the body of the email, had both the consent form (Appendix B) and the survey (Appendix C) attached. To view the part 2 survey questions, which are the Credibility/ Expectancy scales, please see article written by Devilly and Borkovec (2000) for the original survey.

The recruitment email contained the researcher's contact details along with the researcher's supervisor's details, and the rationale for conducting this research. Prior to participation, participants were told in the recruitment message that they could stop taking the survey at any time if they no longer wished to continue. It was also stated that the survey should have taken up to 30 minutes to complete in one sitting.

Participants were informed in the email that they should complete the consent form first and then the survey. They were then requested to return both to the researcher via email. There were no time restrictions put on participants to complete the consent form and survey.

### **Apparatus/ Materials**

Participants used a computer that they had access to, for completion of this online survey. The consent form was a Word Document, which participants were able to either print, sign and date and scan, or type in their name and date and return

electronically. The survey was a fillable PDF form, which allowed participants to either check boxes, leave them blank, or type in answers to the qualitative questions.

*IBM SPSS Statistics, version 21* was used to analyze the data statistically.

### **Procedures**

The dissertation proposal was approved by The Institutional Review Board of Antioch University Santa Barbara on the 22<sup>nd</sup> of January, 2015. The data was collected during the approved timeframe. The survey was then sent to potential participants and the data was collected over several months. No responses were excluded from the study.

In total 31 participants completed the survey, which took about 30 minutes to complete in one sitting. Participants were able to stop participating and take a break from the survey and return to it at a later time, if they wished. Participants were made aware that the researcher was available to answer any questions or concerns that they may have, via telephone or email.

Once participants had accessed the survey, they were first given a definition of the term CCBT. They began the survey by answering demographic questions and then they responded to the remaining survey questions. *Credibility and Expectancy Scales* (Borkovec and Mathews, 1988; Devilly and Borkovec, 2000) were also included. This measurement tool was tested in terms of its reliability and validity (Devilly and Borkovec, 2000). In doing this the authors tested the measure in three different studies in which their factor structure was examined showing that the measure had internal consistency and test-retest reliability, and that the factors that are used to make up the scale are acceptable and stable when used with different populations. Participants responded by selecting the most applicable response and also by typing in some of the

answers, where their commentary was requested. This allowed for both qualitative and quantitative questions to be asked.

### **Research Questions**

The quantitative hypotheses are as follows:

Hypothesis 1: Trainee and qualified psychology clinicians would feel that CCBT is not a very logical treatment modality.

Hypothesis 2: Trainee and qualified psychology clinicians think that CCBT would not be very successful in reducing anxiety and depression symptoms.

Hypothesis 3: Trainee and qualified psychology clinicians would not be confident in recommending CCBT to a client who experiences anxiety or depression.

Hypothesis 4: Trainee and qualified psychology clinicians would not expect a large improvement in their client's symptoms having completed a full CCBT program.

Hypothesis 5: Trainee and qualified psychology clinicians would not recommend CCBT to their clients.

Hypothesis 6: Trainee and qualified psychology clinicians may not have tried any CCBT program themselves.

Hypothesis 7: Trainee and qualified psychology clinicians would not be likely to recommend CCBT.

Hypothesis 8: Trainee and qualified psychology clinicians may be somewhat likely to recommend a self-help book.

Hypothesis 9: Trainee and qualified psychology clinicians would be very likely to recommend counseling.

Hypothesis 10: Trainee and qualified psychology clinicians would be unlikely to recommend the Internet to find relevant information.

The main qualitative question is, what are trainee and qualified psychology clinician's attitudes towards CCBT?

As the research was a mixed methods design, the researcher divided the questions accordingly in the survey, in order to make it simpler to complete, building from basic information to more detailed information that required more consideration from the participants. In designing the survey, part one included demographic questions on various factors that could impact their attitude towards CCBT such as age, sex, educational achievement, and previous use of CCBT both professionally and personally. It also asked how likely participants were to recommend CCBT as a possible treatment modality for anxiety and depression.

Then, in part two of the survey, there were three main sections. For the *Credibility and Expectancy scales*, there were four statements and four corresponding Likert scales. Within the general questions there were three main questions with the last of these three having four sub-questions. Within the qualitative questions, there were five main questions, which all had an open-ended element and two also included a selection of available options.

The Credibility and Expectancy scales were used with prior approval from the author Thomas Borkovec, who gave permission for the researcher to alter the wording of the questions in order to suit and be used in this specific research study. For example, a question was altered from its original form "How confident would you be in recommending this type of intervention to a friend who experiences similar

problems?’ to “How confident would you be in recommending this treatment to a client who experiences these types of problems?”. The questions were altered slightly so that they properly addressed the specific research population and also included the correct terminology, with prior approval from the author.

The credibility and expectancy scales had been previously evaluated with regard to their psychometric strength, and were shown to be adequate (Deville & Borkovec, 2000). The two key factors that were examined were credibility and expectancy; of these a high internal consistency was found which was between 0.79 and 0.90 (Cronbach’s Alpha) for expectancy and between 0.81 and 0.86 (Cronbach’s Alpha) for the credibility factor (Deville & Borkovec, 2000). These scales were included as they adequately addressed the research question. Thus, this questionnaire was designed to thoroughly assess participant’s attitudes, allowing them to offer and add comments in the final question, this was added by the researcher and was included in case there was something the participant wanted to make known, that wasn’t addressed in previous questions. It included questions that asked about participants previous uses of CCBT, with reference to themselves and their clients, it sought to assess what they felt were the main advantages and disadvantages with using such modalities and also gave participants an opportunity to tell the researcher anything they felt appropriate. The credibility and expectancy questions are quantitative questions, please see the article written by Devilly and Borkovec (2000) for the original Credibility/ Expectancy scales.

The Likert scales allowed the researcher to record the most frequently selected response of each participant, with selections from numbers 1-9, which represented ‘not at all’, ‘somewhat’ and ‘very’.

Within the qualitative sections the overall aim was to gather useful information from participants regarding whether they had previously recommended or tried CCBT along with what different therapeutic modalities that they would most likely refer clients to, some questions were survey style yes and no answers and others were open-ended. The reasons for these decisions along with the key advantages and disadvantages were also sought. The researcher was given permission to use the general questions (General Questions, page 2, Appendix C)) and the qualitative questions (Qualitative Questions, page 3, Appendix C) from the author Nicky Mitchell, having sought prior approval to do so. The general questions included the following example, "Have you ever recommended CCBT to any of your clients, who have symptoms of anxiety or depression?" These allowed the researcher to get a simple count of responses, which will therefore show the mean, median and the mode, of the selected responses. Other questions in this section are simple yes and no responses, which allowed for the researcher to simply categorize the responses. Other questions in this section are open; this therefore gave participants the chance to tell the researcher, in their own words, their responses to the questions asked. For example, one question asked "Have you ever tried any CCBT program yourself?" This sought a yes or no response. The last question in this section allows the respondent to use a Likert scale with the options ranging from 0%-100%, which represent 'not', 'somewhat' and 'very'. For example, a Likert scale was used so that the participant could rank each referral source according to their wishes. The question asked "If you had a client that was suffering from anxiety or depression, how likely would it be for you to recommend the following?" (Mitchell & Gordon, 2007).

In the final, qualitative section, the responses were either select one of the following, for example participants were asked 'If you had a client who was suffering

from anxiety or depression, which of the following options would you prefer to recommend?' participants were asked to highlight one of the following: CCBT, a self-help book, counseling or using the internet to find relevant information. Other questions used were open questions allowing the participant to tell the researcher in their own words, the answer to the questions asked. For example, one question asked 'Do you have any other comments about CCBT that you would like to share with the researcher? The qualitative responses allowed the researcher to code the responses and thus enable the most salient categories to be identified.

### **Ethical Considerations**

All human research subjects are vulnerable to possible adverse side effects as a result of participating in research. Therefore, prior to participation the aim of the study was communicated clearly to the participants and what exactly was being measured. Participation was voluntary and there were no rewards given. Participants were told that they could stop taking the survey at any time if they no longer wished to continue. Participants were also able to stop participating and take a break from the survey and return to it at a later time, if they wished to do so, by simply saving the Word document and returning to it at a later stage. Participants were made aware that the researcher was available to answer any questions or concerns that they may have had.

Participant's responses were confidential and stored according to the current ethical and APA guidelines. Upon receipt, the researcher separated the consent form and the completed survey from each participant and coded the survey, so that the two documents could be stored separately in a locked filing cabinet so that anonymity was maintained.

The aim of this research is to benefit the greater body of knowledge. Much research has been conducted evaluating the effectiveness of CCBT programs; however there has been little research conducted about individual clinicians' attitudes towards CCBT. The researcher has not found any research that examined trainee and qualified psychology clinicians' attitudes towards CCBT. Thus, by using a mixed methods approach, it was anticipated that much useful information would be discovered. The study only included completed questionnaires that were accompanied by completed (signed and dated) informed consent forms.

## Results

### Quantitative Results

**Overview of Quantitative Analyses.** After preliminary analyses, the relationship between the variables on the *credibility/expectancy scales* and participants' predictions of client improvement were investigated.

Table 1.  
Descriptive data for response findings on the Credibility/ Expectancy Scales and General Survey questions

Variable	Mean	Median	SD	Range	Total Freq. of Responses
Credibility/ Expectancy Scales					
Logical	6.90	7.00	1.62	3 - 9	31
Successful	5.93	6.00	1.91	2 - 9	31
Confident	5.50	5.00	2.40	1 - 9	31
Improvement	4.73	5.00	2.24	0 - 9	31
General Questions					
Recommend	1.87	2.00	.34	0 - 1	31
Tried	1.90	2.00	.30	0 - 1	31
How Likely Recommend					
CCBT	4.73	5.00	2.58	0 - 10	31
Book	4.37	4.00	2.66	0 - 9	31
Counseling	9.43	10.00	1.00	6 - 10	31
Internet	3.96	3.00	3.18	0 - 10	31

Hypothesis 1: Trainee and qualified psychology clinicians would feel that CCBT is not a very logical treatment modality. The *Logical* variable is derived from Question 1 in the *credibility/expectancy scales* of the survey. This variable thereby measures participants' expectations of how logical they think CCBT as a treatment modality seems. The mean total score for the logical variable on the Credibility/ Expectancy Scales was 6.90 out of 9, with a standard deviation of 1.62 (see Table 1). This result suggests that trainee and qualified psychology clinician's felt that CCBT is a somewhat logical treatment modality.

Hypothesis 2: Trainee and qualified psychology clinicians think that CCBT would not be very successful in reducing anxiety and depression symptoms. The *Successful* variable is derived from Question 2 in the *credibility/expectancy scales* of the survey. This variable thereby measures participants' expectations of how much they think their client's symptoms would be reduced after CCBT. The mean total score for the successful variable on the Credibility/ Expectancy Scales was 5.93 out of 9, with a standard deviation of 1.91. This result suggests that trainee and qualified psychology clinician's felt that CCBT is a somewhat successful treatment modality, for clients suffering from anxiety and depression.

Hypothesis 3: Trainee and qualified psychology clinicians would not be confident in recommending CCBT to a client who experiences anxiety or depression. The *Confident* variable is derived from Question 3 in the *credibility/expectancy scales* of the survey. This variable thereby measures how *confident* participants' would be in recommending CCBT to their client. The mean total score for the confident variable on the Credibility/ Expectancy Scales was 5.50, with a standard deviation of 2.40. This result suggests that trainee and qualified psychology clinician's felt somewhat confident in recommending CCBT as a treatment for clients suffering from anxiety and depression.

Hypothesis 4: Trainee and qualified psychology clinicians would not expect a large improvement in their client's symptoms having completed a full CCBT program. The *Improvement* variable is derived from Question 4 in the *credibility/expectancy scales* of the survey. This variable thereby measures participants' expectations of how much a patient would improve after CCBT. The mean total score for the improvement variable on the Credibility/ Expectancy Scales was 4.73, with a standard deviation of 2.24. This result suggests that trainee and

qualified psychology clinician's would expect to see an average improvement in their client's symptoms having completed a full course (8 sessions) of CCBT.

Hypothesis 5: Trainee and qualified psychology clinicians would not recommend CCBT to their clients. The mean total score for the recommend variable within the general questions was 1.87, with a standard deviation of .34. This result suggests that very few respondents had previously recommended CCBT to their clients.

Hypothesis 6: Trainee and qualified psychology clinicians may not have tried any CCBT program themselves. The mean total score for the tried variable within the general questions was 1.90, with a standard deviation of .30. This result suggests that very few respondents had previously tried CCBT themselves.

Hypothesis 7: Trainee and qualified psychology clinicians would not be likely to recommend CCBT; they would be most likely to recommend counseling, instead of recommending a self-help book, or using the internet to find relevant information. The Recommend variable is derived from the *General Questions* (Mitchell & Gordon, 2007) in the survey. This variable thereby measures how likely it would be for participants to recommend either CCBT, a self-help book, counseling or using the Internet to find relevant information. The mean total score for the recommend CCBT variable within the general questions was 4.73, with a standard deviation of 2.58. This result suggests that respondents would be somewhat likely to recommend CCBT to their clients suffering from anxiety or depression.

Hypothesis 8: Trainee and qualified psychology clinicians may be somewhat likely to recommend a self-help book. The mean total score for the recommend a self-help book variable within the general questions was 4.37, with a

standard deviation of 2.66. This result suggests that respondents would be somewhat likely to recommend CCBT to their clients suffering from anxiety or depression.

Hypothesis 9: Trainee and qualified psychology clinicians would be very likely to recommend counseling. The mean total score for the recommend counseling variable within the general questions was 9.43, with a standard deviation of 1.00. This result suggests that respondents would be very likely to recommend counseling to their clients suffering from anxiety or depression.

Hypothesis 10: Trainee and qualified psychology clinicians would be unlikely to recommend the Internet to find relevant information. The mean total score for the recommend the Internet variable within the general questions was 3.96, with a standard deviation of 3.16. This result suggests that respondents would be less than somewhat likely to recommend the Internet to their clients suffering from anxiety or depression.

### **Demographic Data**

It is evident from the demographic data collected (see Table 2) that the majority of respondents (54.8 %) were aged between 26 to 35, most of which were female (74.2 %) and were doctoral students (45.2 %) who were employed (74.2 %).

Table 2.  
Demographic frequencies

Variable	Percent	Freq. of Responses
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## CLINICIANS' ATTITUDES TOWARDS CCBT

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Age		
<25	6.5	2
26-35	54.8	17
36-45	16.1	5
46-55	6.5	2
56-65	12.9	4
66-74	3.2	1
75>	0	0
Gender		
Male	25.8	8
Female	74.2	23
Education Level		
Masters Degree	29.0	9
Doctoral Student	45.2	14
Doctoral Degree	25.8	8
Emp. status		
Employed	74.2	23
Unemployed	6.5	2
Student	19.4	6

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### Statistical Analyses

Initially, preliminary data analyses to test the normality and the distribution of the data were carried out. Results showed that there were no extreme outliers; the discrepancy between the mean and the trimmed mean was small in size and it was therefore decided not to remove any outliers (Pallant, 2010).

Upon graphing the data gathered for the improvement variable, it appeared normally distributed. Tests of normality were carried out, namely the Shapiro-Wilk. Results found showed that the skewness and kurtosis were very low,  $p > .001$ . This demonstrated that the underlying data represented a normal distribution, thus showing good symmetry (Pallant, 2013).

A simple linear regression was carried out to assess the relationship between the variables *Logical* and *Improvement*. A significant regression equation was found ( $F(1, 27) = 17.83, p < .001$ ), with an R Square of .398, showing a very strong correlation. Participants predicted that the *Logical* rating was equal to  $-1.486 + .887$  when the *Improvement* variable was measured.

A simple linear regression was carried out to assess the relationship between the variables *Success* and *Improvement*. A significant regression equation was found ( $F(1, 28) = 49.44, p < .001$ ), with an R Square of .638. Results show a strong correlation between the *Success* and *Improvement* variables, which is reflected in the data. Participants predicted that the *Success* rating was equal to  $-.783 +$  when the *Success* variable was measured. *Improvement* variable increased .924 for each unit of measurement of the *Success* variable.

### **Post-hoc Analysis**

A one-way ANOVA was conducted to assess the variables *Gender* and *Improvement*, to evaluate whether there was a difference in the means against male and female participants. Results showed no significant differences. Thus, it is appropriate to conclude that there is not a difference between male and female responses.

A one-way ANOVA was carried out on the variable *Improvement* based on the variable *Educational* level ( $F = 3.244, df = 2, 27, p < .055$ ). This result shows that there are differences in the means in the three *Educational* status groups potentially suggests that people who are currently in education have a higher regard for CCBT in comparison to people with doctorates who have a lower regard; however this finding is just at the threshold of significance and is technically not significant at the 5% level. Further study or a greater sample size may yield a different result.

A linear regression was conducted to assess the relationship between the *Improvement* and *Logical* variables ( $F(1, 27) = 17.829, p < .001$ ), with an R Square of .398. Results found that the more *Logical* participants think CCBT is as a treatment modality the more that they think it will *Improve* their client's symptoms.

Descriptive statistical analyses revealed that students with a Masters degree are more likely to believe that CCBT will improve their client's symptoms. At the doctoral level, they are less likely to believe that CCBT will *Improve* their client's symptoms. However, a one-way ANOVA was conducted and results showed that the differences in the means between these three groups is not significant ( $F= 3.244, df= 2, 27, p < .05$ ). It is not possible to make any further statements on this without a larger sample size, because the observed differences may well be attributable to random variation.

Upon conducting descriptive statistical analyses and plotting the data, it was deemed that the data surrounding the employment versus unemployment variable was unreliable. The results of a one-way ANOVA showed that there is no difference regarding *Employment status* and *Improvement*. There is no evidence showing that employment status of the clinician has any determination on the belief that a practitioner will think there will be an improvement in their clients' symptoms.

Table 3.  
Analysis of variance (ANOVA) between variables

	<i>df</i>	<i>F</i>	<i>Sum of Squares</i>	<i>p</i>
Gender & Improvement	1	.890	4.492	<.354
Educational Level & Improvement	2	3.244	28.260	<.055
Employment Status & Improvement	2	.896	9.079	<.420
Beliefs &	1	1.401	8.146	<.247

## Recommend

**General Survey Questions.** Of the participants surveyed, 4 had *Recommended* CCBT to clients (12.9%) whereas 27 participants had not *Recommended* CCBT to their clients (87.1%). When asked if any of the participants themselves had *Tried* CCBT, there were 3 participants who had (9.7%), and 28 participants who had not (90.3%). Of the three participants who had, the programs used were *Beating the Blues* and *MoodGYM*. One participant mentioned *Pesky gNats* which is a CBT based computer game, which is not specifically CCBT.

Table 4.  
Relationships between compared variables

	<i>df</i>	<i>R</i>	<i>p</i>	<i>R</i> <sup>2</sup>
Logical & Improvement	1, 27	17.83	<.001	.398
Success & Improvement	1, 28	49.44	<.001	.638
Recommend CCBT & Improvement	1, 27	20.30	<.001	.429
Improvement & Recommend Book	1, 27	.669	<.001	.448
Recommend CCBT or Book & Improvement	1, 26	21.11	<.000	.448
Recommend CCBT & Recommend Counseling	1, 27	1.401	<.247	.049
Recommend Counseling & Recommend CCBT	1, 27	.249	<.194	.062

**Recommend Data.** The *Recommending* of CCBT supports the *Improvement* belief. This was found upon conducting a linear regression. Results show a significant relationship between how likely participants were to *Recommend* CCBT and how likely they thought participants would *Improve* due to CCBT,  $df=1,27$ ,  $R= .20300$ ,  $p < .001$ , with an R Square of .429 (see Table 4). This analysis shows that the more a participant believes that there is an *Improvement* in a client's symptoms as a result of CCBT, the more they are likely to *Recommend* CCBT.

A regression analysis also shows that as the variable *Improvement* increases so does the likelihood of *Recommend* a self-help book,  $R= .669$ ,  $p < .001$ ,  $N=27$ ,  $df= 1$ ,  $26$ ,  $R\ Squared= .448$ . A regression analyses was conducted to discover the relationship between *Recommend* CCBT or a book to clients, while examining expected *Improvement*. Results were found to be significant for recommending CCBT  $F= 21.112$ ,  $df= 1$ ,  $26$ ,  $p < .000$ ,  $R\ Square=.448$ . A regression analysis showed significance for participants *Recommend* a book alone,  $F= 21.112$ ,  $df=1,26$ ,  $p < .000$ ,  $R\ Square= .448$ .

Participant's *Beliefs* about CCBT have no bearing on *Recommending* counseling. The results of an ANOVA showed that a linear relationship is not significant ( $F= 1.401$ ,  $df= 1$ ,  $27$ ,  $p < .247$ ),  $R\ Square= .049$ .

In viewing the recommending counseling data, a regression analyses initially showed no relationship between *Recommending counseling* and *Recommend CCBT* ( $R= .249$ ,  $p < .194$ ,  $N=28$ ,  $df= 1$ ,  $27$ ),  $R\ Squared = .062$ . However, on further investigation based on the *Recommending counseling* variable, it is visually apparent that the data is heavily skewed, and to all intents and purposes looks like it contains only the left-hand tail of a normal distribution. It is therefore not possible to run standard statistical tests on this data, because there is no transformation that can be

carried out to achieve normality. A Kolmogorov-Smirnov test was carried out to assess the normality of the data, and results found indicate that the data is normally distributed ( $df= 30, p < .000$ ).

### **Qualitative Results**

The qualitative results found display the most salient emerging themes and example statements that the participants provided. There were no formal coding systems or formal qualitative analytic methods used.

**Recommend Data.** All participants were asked if they had a client who was suffering from anxiety or depression, which of the following options would they prefer to recommend. The four options provided were CCBT, a self-help book, counseling or using the Internet to find relevant information. All participants answered this question, with 26 participants selecting counseling, 3 selecting a book, and 2 selecting CCBT; although one of these respondents seemed to have not answered the question correctly as they ranked the options rather than selecting just one. Thus, no one selected the Internet option.

#### **Why recommend Data.**

Research Question: If you had a client who was suffering from anxiety or depression, which of the following options would you, prefer to recommend:

a) CCBT, b) a self-help book, c) counseling or d) using the internet to find relevant information? Why would the clinician prefer this option, over the others?

The researcher identified key themes and coded the results of this question according to the most salient themes identified. In doing this a convergent parallel design was used (Creswell & Clark, 2011). Of all of the responses it was apparent that

the most commonly cited reason for recommending counseling was because of the interpersonal therapeutic relationship. It seemed that most selected counseling because of its one-on-one, personal and intimate nature, also stating that it is research-based and that it is one of the most effective treatments for anxiety and depression.

*Reasons for selecting CCBT.* One participant stated that “its extremely important to talk about behavior, anxiety and depression”. A participant who selected counseling stated that if “CCBT could be incorporated with therapy, I would likely endorse it more”. A participant mentioned having no knowledge of CCBT” and therefore not being able to recommend it. One person stated that they felt CCBT to be “non-personal” and therefore “less helpful”. Another “was not aware of CCBT programs”. The benefits of CCBT were mentioned, including it being thought of as “an excellent resource for people with barriers to traveling/ participating in face-to-face therapy” for reasons such as “financial, disability, availability of providers in rural areas (and) stigma”.

*Reasons for Selecting Self-Help Book.* One participant who selected recommending a book mentioned a specific author of books that they have had great success recommending to their clients. A participant stated that they would “recommend self-help books to friends, not to clients (as) it crosses a boundary”. Another wrote that self-help books “train people to accept the onus is on them to learn and apply skills in identifying and challenging cognitive distortions as they happen, it requires sustained work and so requires self-motivation”.

*Counseling.* Having selected counseling one participant wrote, “human contact is important, complex difficulties tend to require problem solving discussions between people, relationships are more important when dealing with difficulties”. Another participant stated “face-to-face counseling can be more comprehensive

incorporating non-verbal communication” and many others also mentioned this face-to-face element. One participant stated that “the therapeutic relationship is important to success”, mentioning adjusting the therapeutic pace and content as appropriate.

Another participant wrote with relation to their clients “counseling is what they want”. Other key words used by several participants in support of counseling that were stated were “extensive research, correcting emotional experiences, effective, reflecting, validating, mirroring, psycho-educating, efficacy, flexible, tailored nature, individual needs, understanding, familiar, interactive, social experience of therapy, coping skills, understand(ing), evidence-based, human connection and relationship”. It was also mentioned that the “therapeutic relationship is very valuable in reducing psychological distress”. Another wrote “nothing beats face-to-face therapy, there is a needed aspect of transference and a building of a therapeutic alliance that needs to occur”.

One person stated that they would recommend counseling because “the person can develop meaning and understanding behind their symptoms and become aware of unconscious material triggering and perpetuating symptoms, which is not possible with other approaches”.

Interestingly, a participant who would recommend counseling stated that they think that

*Face-to-face talk therapy is vital to activating the interpersonal neurobiological processes of healing, empathy, activation of social cognition, reality testing etc. It gives a clinical wealth of non-verbal, qualitative information about mood and affect and a patient's stability that might not be accessible via mediated communication, or even beyond that of what the patient is capable of articulating.*

**Advantages of a client using CCBT.**

Research Question: What advantages would the clinician identify with their client using CCBT? Several respondents stated that due to the technological nature of being perhaps able to use their “phone” that it may be “quick and easy”. Being able to use CCBT at “any time” and the “psychoeducational” element was more than half the time cited as an advantage of CCBT. Interestingly, one person also stated that CCBT may have “added computer gaming motivation qualities”. Convenience was frequently cited as an advantage of using CCBT; particularly for those who are very busy or may have transportation issues or scheduling issues that would not be able to “make it into an office on a regular basis”. Those suffering with “late night symptoms” or issues with “mobility or distance” were mentioned as being populations able to receive the maximum benefit. Another participant appreciated the structure of the program, and stated that it may be suitable for those who have an ability to follow advice.

A valuable advantage identified was the way in which CCBT could “support the skills which the client learns in session”, along with assisting “the client to gain an understanding of CBT”. This respondent also identified the ability of CCBT to fill the void, if a client missed a counseling session. The self-directive nature of CCBT was highlighted as an advantage, giving the client autonomy to complete the course on their own, in their own time, and in the comfort of their own surroundings.

Two participants commented that they had a lack of familiarity with such CCBT programs and another had concerns about compliance with CCBT. An identified advantage was the structure of CCBT, specifically highlighting “the areas in need of change”. This particular participant also commented that “with the widespread use of online programs, people may feel more comfortable online”.

One participant highlighted the cost-effectiveness of such CCBT programs. Another thought that CCBT may be useful if a client's health insurance would not cover the cost of traditional counseling and they were unable to pay for such. It was also highlighted that CCBT is "less expensive than traditional counseling". This participant also mentioned the possibility of CCBT "alleviating" a client's symptoms.

It was cited that CCBT might be a good "introduction to (traditional) CBT". Along with other comments such as "not tied to person or place", while taking command of clients' "readiness" and also the "standardized approach". The delivery method was described by respondents as "reliable", and it was also identified that this therapeutic modality is beneficial for "research purposes".

Respondents used important key words highlighting the advantages of CCBT such as: "barriers, travel, child care, time effective, cost effective, relaxed, safer, own pace, lack of resources and rural residents". A respondent also stated that certain populations "who have stigma against accessing mental health (e.g. military vets)" could perhaps benefit. Another stated that the advantage that they identified also supported the idea that "clients who are reluctant to engage with services can greatly benefit from support via technology". However, they also identified the disadvantage that this "safety behavior" could have. Another participant mentioned "symptoms which prevent them (clients) from leaving their comfort at home".

One respondent stated that some of their clients had expressed the preference of working alone on a more "structured" exercise, using words such as "independent" and "problem solving" to describe CCBT.

Therefore, it is apparent that the outlined advantages were relating mostly to "flexible" accessibility and convenience of use; specifically, for patients to work on their own, in their own time, at their own leisure. To summarize, a respondent

described CCBT as “conveniently efficient”, which seems to capture the essence of its advantages as described by the surveyed respondents. Time was also the most major factor identified when describing the benefits of CCBT.

**Disadvantages of a client using CCBT.**

Research Question: What disadvantages would the clinician identify with their client using CCBT? Several respondents cited the “lack of human contact” as being the main disadvantage identified with CCBT. Some felt that the lack of contact might cause a “misunderstanding”, making it seem “not important”. One person thought that the lack of human interaction doesn’t foster “significant or sustained change”. Along with this, some comments included having a “simplistic view of complex difficulties”. This type of therapy was also thought to “increase isolation” and perhaps perpetuate avoidance of human interaction. Words and phrases used to describe this lack of contact included: “isolation, compliance, lacks social benefit, lacks ability to recognize the need of medication, lack personal touch/connection needed, need a tailored plan, individual support, interaction, difficult to monitor, accountability, motivation, not individualized, no interpersonal relationship, adaptability and engagement”.

Importantly, a participant mentioned that CCBT “may not be appropriate in managing the emotional elements relative to the presented symptoms”. Some participants referred to mental health difficulties such as addiction and excessive drinking with a prominence of a lack of motivation and how this may cause someone to not “fully participate in CCBT type programs”. It was also mentioned that there is a lack of access to computers and the Internet, particularly amongst elderly clients, therefore accessibility could be an issue.

Importantly, the absence of “layers” of “non-verbal cues” was highlighted as a disadvantage by a few participants. Along these lines was the mention of “unconscious material” and with this was CBT being carried out in the “abstract” and the idea of CCBT not targeting “symptoms” but “causes” alone. Also, one participant mentioned the different “feels” that sitting in a room with clients who have specific disorders generates. They also commented on the importance of “differential diagnosis” and how this is “absolutely vital to getting someone effective treatment” stating “we (clinicians) need all sources of information available”. It was also mentioned that another disadvantage is that CCBT is “not responsive to fluctuations in a clients mood and thoughts”. The “manualization” of therapy was mentioned by one participant, however another participant felt “that this is not true”. The inability of talking with a counselor “right away”, for example in cases of emergencies, was also cited as a disadvantage. The inability to see how certain difficulties arose and were maintained was cited as being another disadvantage.

One participant included the important point of suitable populations and how CCBT is not suitable for all. A participant mentioned the “lack of accountability” including the “inability to check on cognitive distortions” and the “lack of therapeutic alliance”. Interactions were also highlighted when one participant noted that the client “may not feel heard” that there could be “confusion over materials” and that a client may therefore feel “unable to ask anyone for help”. Another participant wrote that in the case that all other tried therapeutic modalities had failed that “any form of therapy is better than no therapy”, thus implying that CCBT should only be used as a last resort measure.

One participant highlighted the point that “CCBT works best when there is support of a therapist”, therefore the clinician’s involvement was acknowledged by this and many other participants.

**Client using CCBT, alone or with counselor.**

Participants were asked if their client was going to use a CCBT program, would they prefer that they use it in addition to speaking with a counselor, or using CCBT alone. All 31 respondents chose that they would prefer their client use CCBT in addition to speaking with a counselor, not one selected the option of their client using it alone, the reasons stated were as follows.

One participant felt that clients “need as much help as possible”, and that they could “learn something new in counseling”. Poignantly, one participant stated that “difficulties tend to be complex and it may be important to discuss emerging problems with a counselor”, noting that “the human connection is particularly important for psychological difficulties”. Several important responses mentioned, “the evidence shows that the therapeutic alliance with a therapist is the most healing aspect of counseling”. Another participant stated that they prefer the one-on-one approach due to the “emotional and interpersonal aspect associated with the symptoms”.

The preference for participants to use CCBT in addition to speaking with a counselor were supported with statements such as; “for personalization and guidance during treatment”, “questions may arise and ideas may need to be discussed”, “intervention should be tailored to the individual”, “generate better awareness of underlying processes”, “feel supported” and “formulation is key”.

In terms of counseling as a profession, one participant wrote that “it seems necessary to give context and explain what counseling can offer...and that the client must do most of the work” thus allowing for a more inclusive client therapist

interaction, that isn't possible using CCBT alone. The ability to "monitor risk factors" was also cited as being important and therefore the reason for choosing that the participant's client would use CCBT in addition to speaking with a counselor. One other participant mentioned that they "have found behavioral therapy with a counselor when combined with another form of therapy to be most effective". One participant felt that CCBT is a "valid tool" for the user, however they were concerned with the appropriateness of referral to this type of therapeutic modality. A concerned respondent stated that the participant was "really doubtful that CCBT could replace the therapeutic work done with a trained psychotherapist".

It was also apparent that using alternative therapeutic modalities should "take into account both the client's preferences and the practitioner's judgment". With one respondent highlighting the fact that traditional counseling is "effective by research". Another participant suggested that CCBT may be useful as an adjacent tool to traditional therapy, in which participating in both counseling and CCBT simultaneously may be a positive step toward the resolution of difficulties.

One participant brought up the importance of assessment and how they felt that CCBT isn't appropriate with such regard, as it doesn't give an opportunity to re-assess a client or their developing symptoms. Another felt that it would be more likely that miscommunication would occur when using CCBT as opposed to traditional counseling, and therefore they felt that it would be less effective. It was also apparent that several respondents felt that clients needed ongoing or additional support whilst using CCBT type programs.

### **Concluding comments**

The final question on the survey asked each participant if there were any other comments that they would like to share with the researcher regarding CCBT.

One respondent stated that they found CCBT to be “very effective” in “helping a lot of people”, particularly those with accessibility issues. Another thought that it “may be particularly useful in a stepped-care program as the initial point of contact for psychoeducation”. However, this same respondent noted that if they were to recommend CCBT, that they wouldn't be comfortable not identifying “the importance of relationships and human connection”. Another noted that CCBT “may be a good maintenance option for clients who have been successfully treated with counseling but who have relapsed”.

In a positive statement, one person noted that they “hope it catches on more and we are able to reach those in need”. It was also stated that “CCBT is a great resource but one that should only be recommended to certain clients “after a very thorough intake assessment process is conducted”. Another wrote that they thought that CCBT is a “great tool and it can be very helpful”.

The idea of suitable populations was frequently cited, and one person noted that they felt CCBT may be very appealing to “young people” and those with great concern for the “stigma” associated with health seeking behaviors, including the increase in accessibility for those who can't access traditional therapy with ease.

Interestingly, quite a few respondents noted that their “knowledge of CCBT is extremely limited”, and that they hadn't “worked in a service which has incorporated CCBT into a treatment plan”. It was also stated that “appropriate training in CCBT and evidence base/ how it works would be beneficial for therapists”. Respondents also suggested that they weren't aware of current research practice, which seemed to make them more reluctant to try or endorse such programs. Some were afraid that the influx of such CCBT programs might perhaps try to “replace the therapeutic relationship”. CCBT was highlighted as being a “limited” treatment modality, mainly geared toward

“symptom” rather than cause. Some participants felt that CCBT may be helpful for milder mental health difficulties with more “surface level” problems, as opposed to those with more “complex attachment or systemic concerns at the root of their difficulties”.

## **Discussion**

### **Discussion of Findings**

The results suggest an overall consistency for the most part. Clinicians had a generally unfavorable attitude towards the use of CCBT in their future clinical practice; however, there was some potential for positive development of attitudes. This was particularly evident in the qualitative data. The results found in the quantitative statistical analyses showed greater support for this therapeutic modality, thus showing more favorable attitudes towards its use for the treatment of anxiety and depression.

It was evident that the more logical participants thought CCBT was as a treatment modality, the more the participant was likely to believe that there might be an improvement in their clients' symptoms; as one variable ratings increased, so did the other. Thus, the data collected showed a correlation between the two variables.

It was also found through a linear regression that as the improvement variable increased so did the success variable. Thus, the more a participant thought that CCBT would improve their client's symptoms, the more that that it would be successful in alleviating their clients' symptoms.

Responses from those in different educational groups showed a potential difference, although this possibility would need to be investigated in a larger sample. The relationship between education group and the present finding was also identified in the literature review where educational status of CCBT users was linked to uptake. Thus, those who were currently obtaining their doctorate potentially had a higher regard for CCBT, as opposed to those who had already obtained their doctorate, who had less regard for this modality. This finding is interesting in so far as it shows that

those still in the educational system are potentially more open to alternative therapeutic modalities, in comparison to those who have completed their degrees. Thus, students with a Masters were more likely to think that CCBT would improve their clients' symptoms. This is interesting, because there is an increase in means from one successive educational level to the next, and then a drop in the mean once a doctorate degree is achieved.

Of the 3 participants who tried CCBT themselves, only one had previously recommended it. Of these 3 participants, none of them stated that they would recommend it in the future. However, with such a small sample size, there is no confidence in the accuracy of this gathered result as being generalizable. Nonetheless, this is still a thought-provoking result that certainly warrants further investigation. Therefore, this would be an interesting area of further study, for example, in terms of investigating why CCBT isn't recommended that often and why participants did and did not try it previously. In addition, 27 participants had not ever recommended CCBT to their clients, and this too may be an area for future study.

Results found indicate that the younger a participant was that the more likely they would believe that their client's symptoms would be improved, however this is only slight. This could be due to the exposure and belief in technology amongst younger participants, due to an exposure to technology from a young and highly influential age. Therefore, the link between the youthfulness of a clinician and the application of CCBT usage with children and adolescents as previously discussed is interesting. It may also infer that as the years pass, CCBT may perhaps become more commonly used, as technology becomes more acceptable, particularly for the younger generations.

Results indicate that there were no differences found when looking at the employment statuses and improvement variables. It was also discovered that the more a participant believed that there would be an improvement in their client's symptoms, the more likely they were to recommend CCBT. Thus, when taking this into consideration with clinicians' attitudes, it may be that as education about CCBT increases for training clinicians, their attitudes and beliefs may therefore change. If clinicians have more knowledge, they may believe in this type of therapy more in terms of efficacy and uptake for their clients. Thus, leading them to incorporating it into mainstream counseling and psychological services. A link between this finding and the findings of attitudes in the current research shows that a demonstration of the CCBT program almost decreases the opposition to using it, therefore providing more information and potential knowledge to potential referring parties.

The majority of participants chose to recommend counseling over all of the other options: which were CCBT, a book or using the Internet to find relevant information. Results found that the more likely a participant was to recommend CCBT the more likely they were to recommend a self-help book. This could show that the average participant holds the two in the same esteem. Thus, these resources are both self-help tools that can be used in conjunction to traditional face-to-face counseling and along side traditional counseling. This is an area that is not widely discussed in the literature, as most modalities are viewed as stand-alone. Thus, going forward it may be appropriate to combine these types of modalities in order to support clients more fully. It may also be that in the future, CCBT becomes more acceptable and mainstream. However, this result of preference of referral source is not surprising, considering that clinicians are trained to be most knowledgeable and to obtain a skill set in a specific or a combination of key therapeutic modalities such as CBT. Thus,

the resistance towards the introduction of such computer-based treatments is unsurprising.

The more participants believe that CCBT will improve their client's symptoms the more likely they were to recommend CCBT as a therapeutic modality; however, participants were just as likely to recommend a self-help book. This is an interesting result and the reasons why this is the case remains unclear. There is no correlation between tendency to recommend the Internet and the variable improvement in using CCBT. There was no correlation between recommending the Internet and recommending CCBT, or a belief in CCBT. Thus, these modalities were considered totally separate by participants. It is interesting as CCBT and traditional therapy vary in so far as the human contact element is missing and thus the two are held in different regard amongst clinicians. However, this links back to clinicians and generalized attitudes where one of the most cited reasons for not endorsing such computerized treatments was the lack of human contact and support. Generally, clinicians prefer what they are most familiar with which is traditional counseling.

In terms of the qualitative findings, the reason cited for recommending counseling over CCBT, a book or the Internet was mostly because of the face-to-face nature of counseling, with the therapeutic alliance being regarded as the utmost importance. It was also stated multiple times that counseling is clinically supported as being an effective treatment modality. When asked about CCBT, it was clear that many participants had a self-declared lack of knowledge and understanding about CCBT: how it worked, its suitable populations and its efficacy. This is interesting, because today there is such a reliance on technology; it was surprising to find such a result. Thus, as mentioned in the discussion of current research, the inclusion of a

demonstration video may in fact improve attitudes and lower negative responses to such programs.

In terms of the advantages of CCBT, participants regarded it as being a useful modality for those who are living rurally or with mobility issues. Convenience was another identified theme that was frequently cited as being beneficial, specifically the ability to participate in the comfort of one's own home, in one's own time. This was also cited in multiple research studies, discussed above. Additionally, CCBT was thought of as being cost-effective and a modality which broke down the borders to therapy; specifically alleviating stigma and increasing accessibility. However, respondents mostly cited the lack of human contact as being the main disadvantage of CCBT. Specifically with regard to referrals and the importance of a differential diagnosis. The technological nature of CCBT was also highlighted and for the most part in a negative light. Thus, the lack of knowledge was related to a lack of understanding.

All of the participants chose that they would prefer that CCBT be used in addition to speaking with a counselor. This highlights the desire for clinicians to avoid a prominent entrance of technology into the therapeutic space. It was also frequently mentioned that there would only be certain suitable populations that should be referred to this source. Stating that some of the less severe and impactful mental health difficulties may be most suitable. This applicability links to the above discussion of suitable and unsuitable populations for the use of CCBT, showing that if clinicians were to integrate this modality into their practice that training about such issues would be of the utmost importance, to do no harm. Thus, clinicians have a clear desire for CCBT to be kept separate from traditional counseling for the most part. It is

evident that from participants attitudes that they want CCBT to stay separate and maintain its own boundaries.

This study arose from the researcher's interest in the computerization of traditional CBT, which was previously fostered during Masters level research. It is an area of interest for the researcher as there is very little available research examining clinician's attitudes, particularly trainee and qualified psychology clinicians' attitudes surrounding CCBT. Thus, as the gap was identified, the desire for greater information was formulated and developed.

### **Research Limitations**

It is evident from the literature that has been reviewed that for the most part, the research setting is the United Kingdom. This is in part because of computerized treatments having been recognized as effective by the NHS as per the NICE guidelines that supported the use of such programs within primary care settings, soon after these programs were developed. Thus, it is important to bear in mind that healthcare contexts differ around the world, as evidenced by the research findings which were based in the United States, in comparison with the majority of the literature which is mainly published on this topic in the United Kingdom. Thus, the discrepancy between attitudes of clinicians' research findings and the literature available shows the multicultural awareness that must be taken into context when evaluating the aforementioned findings.

Participants were self-selected to be involved in the study. Self-report measures were used to gather the data that addressed the multiple research questions. The main disadvantage with this type of sampling method is that a sampling bias may occur, due to the self-selection and self-report measures. This must be taken into

consideration when looking at the generalizability of the acquired results. Thus, caution of interpretation must be considered.

A flaw in the implementation of the research was that the sampling of potential participants was quite restricted. This was because only the snowballing method was used and the recruitment message was only circulated within one university campus. Recruitment in the current study was a difficult and lengthy process and yet this effort still resulted in only 31 participants. If similar research were to be carried out again, it may be advantageous to advertise more widely, including the use of posters on college campuses.

There were no differences found in responses from male and female participants, therefore gender was accounted for and found to be non-impactful. However, as the overall majority of respondents were female, thus these results are not generalizable to the normative population. In general, findings indicate that more women would recommend CCBT in comparison to men. However, the sample size and unequal responding in terms of male and female participants is unbalanced and therefore this finding is perhaps unreliable.

### **Future Research**

To further increase the impact of these findings, it may be appropriate in future studies of this nature to increase the sample size. This may yield different information that would be more robust when analyzed statistically.

It may be important in future research to narrow down the population sampled to more specific categories; perhaps one for those with Masters alone and another for those who have achieved a Doctorate. In doing this, the two groups attitudes could be examined separately and therefore the differences and similarities in opinions may be further highlighted.

A similar future research study examining attitudes towards CCBT could include an introductory video that outlines a traditional CCBT program: how it is used, how people are referred to it and how clinicians can monitor their clients while using such programs. This video could also outline the modules involved and clarify the structured, interactive and systematic nature of CCBT. It may be that such an informative video could alleviate some of the more negative attitudes towards CCBT, that may be simply based upon a lack of information and basic understanding. This would also allow clinicians to become aware of the different in-built monitoring tools that can be used, to monitor depressive and suicidal symptomology along with several other available monitoring options. With this, attitudes may become more favorable.

The hypothesis could be further tested by asking participants to complete a course of CCBT or to watch a demonstration video, prior to taking the survey. This could therefore allow greater information to be put forward after the participants have had a hands-on experience with such programs. Without prior use and therefore knowledge, the information accessed in this present research could be considered to be quite limited in its nature and scope, therefore only assessing surface level attitudes in a population that have minimal experience and exposure to such programs. The inclusion of semi-structured and structured interviews may also yield more fruitful information surrounding clinician's attitudes, as they may perhaps offer more information in a face-to-face situation. An area that warrants future investigation are the large attrition rates of using CCBT (Kaltenthaler et al., 2008a), and deciphering the reasons behind this would be an interesting area as it is an aspect within the CCBT literature that is the most widely reported. Therefore, one of the main questions that is asked frequently, is why attrition rates are so high? This is a question that remains and much follow-up research studies are needed to sufficiently address this concern. The

point that many participants don't even start to use the CCBT program is also another concerning trend that may perhaps be based on a lack of information and understanding. Another question that could be asked is whether or not CCBT is suitable for any other mental health diagnosis? The reason why this is an important question is because there are many other disorders without adequate access to available and efficacious treatments.

Why is it that the higher the level of education one has, the more likely they are to complete and use CCBT? Thus, the characteristics, in particular the individuals personality traits of completers versus non-completers is another worthwhile question, that deserves further investigation. More unbiased research evaluating the effectiveness of several CCBT programs is needed. As discussed, CCBT is a recommended treatment modality for anxiety and depression. Thus, it is an area that is gaining credibility and thus being used more frequently. However, only a few CCBT programs have received acceptance from governing bodies in the treatment of specific disorders, and with further research the breadth of applicable diagnoses suited to specific CCBT treatments may be more plentiful. In future research, it may also be important and interesting to investigate the therapeutic alliance, and whether or not some form or key signposts of this could perhaps be fostered electronically with those using CCBT.

Rochlen et al. (2004) stated that a huge challenge in conducting research within the online therapy arena is the ability to recruit clients and therapists to participate in the research. Thus, the reason why recruitment is so difficult is an interesting question, as this present researcher also had difficulty, which was previously stated. It is also clear that the public are very hesitant about using online counseling services, and that these hesitations seem to be greater than the reservations

that they have for traditional counseling (Rochlen et al., 2004). The reasons into these reservations and those of clinicians is a fascinating area that warrants further investigation.

### **Conclusions**

The use and rise of computerized treatments shows the direction that technology and psychological modalities are taking. This is proving to be an increasingly researched and used area that warrants further exploration. Results of several research studies conducted in this area show that the experience of computerized treatments is for the most part positive, therefore the question that arises is what the characteristics are of these users?

It is evident that future research is necessary to build on the present findings. It is clear however that trainee and qualified psychology clinicians' have an overall less than favorable attitude towards CCBT, with regard to use in their future clinical practice, and also with use for themselves. It is interesting that clinicians reported several key advantages of CCBT, but they also reported a lack of knowledge in terms of the usefulness, efficacy and the implementation of CCBT. When taking into consideration a combination of these findings, it leaves one to wonder about the future of CCBT, its direction and specifically how successful or not it may be in the future.

It would be beneficial for psychology doctoral students to receive more specific information about this therapeutic modality throughout the course of their education because if they had more accurate and useful information, they may be more willing to look at such CCBT programs in a more positive light; as a referral source that could be beneficial to specific populations and groups with specific needs, that they may treat in their future clinical practice.

Today, CCBT is a clinically and research supported therapeutic modality, that is slowly making its way into mainstream counseling services. It is evident that clinicians have a lack of knowledge about such programs, and this could be in part due to the minimal exposure to them, throughout the course of their education. It is an important modality because of the attained benefits that are quantifiable both during and beyond treatment cessation. This makes it stand out in comparison to psychopharmaceutical alternatives. Due to the increasing rates of mental health disorders, it is imperative that clinicians' attitudes are encouraged to become more favorable towards such treatment modalities; as waiting times could be significantly decreased and therefore those most in need of counseling could be seen in a more time and cost-effective manner. Thus, allowing valuable resources such as the clinician's expertise to be used more wisely. It is also a modality that could be used in the case of sub-threshold individuals who for example wouldn't receive a diagnosis of anxiety or depression or similar disorders, but may meet many of the diagnostic criteria. CCBT also allows those who could traditionally not access counseling to do so, and at the same time reduce or minimize certain key barriers such as location, time, money, stigma and accessibility.

As CCBT requires that a user have a certain amount of computer literacy, all of those individuals who could be referred to this source may not be suitable. Thus, some minorities may be excluded as a result, specifically those without a formal education, or the elderly. A stepped care model may be best suited to the implementation of CCBT to the general population. Thus, increasing flexibility of users and clinicians resources.

It is also evident as the literature suggested that CCBT is a cost-effective treatment modality that is at times cheaper than medication and as it is time limited,

does not continue for as long as antidepressants or anti-anxiety medications are needed for. The barriers to the effective treatment of anxiety and depression have been discussed and it is clear that these barriers are becoming more, rather than less difficult to overcome. Thus, the use of CCBT helps overcome many of these barriers, such as: stigma, length of treatment, convenience, cost, location of treatment, avoiding waiting lists, and the lack of trained therapists.

In conclusion, it is clear, as has been previously discussed that CCBT is a convenient, efficacious and cost-effective treatment modality. The widespread use of CCBT would therefore lessen the ever-growing burden on the public health systems and mental health workers worldwide. As CCBT is a suitable treatment modality for multiple mental health diagnoses and for multiple populations, the backing of it as an effective treatment is imperative. The reason why clinicians and specifically trainee and qualified psychology clinicians' attitudes are so important when evaluating CCBT programs as it is thought that many of them fear that programs like these may take away therapists' jobs. Thus, the results of the recommendation data are not surprising, considering the population sampled.

CCBT is not intended to replace trained clinicians, but it is a therapeutic modality that is helpful in alleviating the pressures of mental health workers whilst prioritizing the immediate needs of those with more time-sensitive mental health difficulties and diagnoses. As a modality, it has several key benefits such as how much time it saves, the quantity of users that can be treated simultaneously and the clinically significant improvements in mental health difficulties that can be achieved, both during and beyond treatment cessation. Thus, if clinicians had a more favorable attitude towards CCBT and if it were perhaps brought to those in the academic psychology field's attention, it may not be so unfavorable and therefore could do what

its mean to; which is help those in need, whilst also assisting the trained therapist. It is a therapeutic modality that is advantageous both societally and economically and because so many of the worlds population are living in poverty but have access to computers and the internet, it may be a way of alleviating the ever-increasing rates of mental health difficulties worldwide.

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## **Appendices**

### **Appendix A: Informed Consent**

#### **Informed Consent**

Antioch University is committed to the ethical protection of participants in research. This form will provide you with information about the survey that you are being asked to fill out, so that you can decide whether you wish to participate. Participation in this survey is voluntary and anonymous. Your answers will be identified by a code number, not by your name.

This survey is about Psychology doctoral students' attitudes towards computerized cognitive behavioural therapy (CCBT). The questionnaire will likely take approximately 30 minutes to complete. You do not have to finish it all at one time, nor do you have to answer every question. If you decide to participate we ask that you sign and date this form to say that you agree with the terms, before you begin.

If you decide to participate your answers may help individuals understand more about attitudes towards CCBT. While it is highly unlikely, the possibility exists that answering these questions may be upsetting, or raise uncomfortable issues for you. Be assured that if this happens, you may contact the study investigator with your concerns, and steps will be taken to insure that you receive a list of local resources that can provide counseling and support to you.

If you have any further questions concerning this study, please feel free to contact the study investigator, Nivek Dunne XXXXXX@XXXXXXXX.XXX (XXX)

CLINICIANS' ATTITUDES TOWARDS CCBT

XXX-XXXX or her supervisor, Dr. Ron Pilato, at Antioch University, Santa Barbara, California, 93101, (XXX) XXX-XXXX ext. XXXX. If you agree to the outlined terms and wish to include your answers to the survey in this study, please sign along the line below, demonstrating that you understand your rights and agree to participate in this study.

Your participation is invited, yet strictly voluntary. All information will be kept secure and confidential and your name will not be associated with any research findings.

\_\_\_\_\_

Signature of Participant

\_\_\_\_\_

Date

## **Appendix B: Recruitment Email**

Hello,

I am currently completing a doctoral program in clinical psychology in Antioch University, Santa Barbara. As part of my dissertation I am conducting a survey. This survey is about individuals' attitudes towards computerized cognitive behavioural therapy (CCBT). The questionnaire will likely take approximately 30 minutes to complete.

Inclusion criteria are that participants have a minimum of a Masters degree (or its equivalent) in the psychology/ counseling field. Participants do not have to finish it all at one time, nor do they have to answer every question. This survey can be completed on your computer. If you decide to participate we ask that you sign the attached consent form before you begin.

If you are interested in participating, please sign and date the attached consent form. Then, please complete the attached survey. Once you have completed both the consent form and the survey, please send them both back to me via email. My email address is [XXXXXX@XXXXXXXX.XXX](mailto:XXXXXX@XXXXXXXX.XXX) or cell [XXX-XXX-XXXX](tel:XXX-XXX-XXXX). Your participation would be greatly appreciated but is not expected.

Thanking you in advance for considering your participation.

Nivek Dunne

## Appendix C: Survey

### Dissertation Title

Psychology doctoral students' attitudes towards Computerized Cognitive Behavior Therapy (CCBT), as a treatment modality, for possible use in their clinical practice.

### Instructions

Please read the following questions carefully and answer each by filling in the blank, highlighting the answer that best fits your desired response, or by checking the most appropriate box. Remember that your participation is greatly appreciated but not expected.

**Important Term:** Computerized cognitive behavioral therapy or CCBT for short is a self-help computer program in which cognitive behavioral therapy is delivered over a computer.

### Part I: Demographic Questions

1. What age are you? \_\_\_\_\_
  - a. Under 25
  - b. 26-35
  - c. 36-45
  - d. 46-55
  - e. 56-65
  - f. 66-74
  - g. 75 or over
  
2. What gender are you? \_\_\_\_\_
  - a. Male
  - b. Female
  
3. Highest educational level obtained? \_\_\_\_\_
  - a. Masters level
  - b. Doctoral level
  - c. Current doctoral student with a Master's degree
  
4. What is your current employment status? \_\_\_\_\_
  - a. Employed
  - b. Unemployed
  - c. A homemaker
  - d. A student
  - e. Retired
  - f. Unable to work

Part 2 Survey Questions: Please see article written by Devilly and Borkovec (2000) for the original Credibility/ Expectancy Scales.

Qualitative Questions: Please see article written by Mitchell & Gordon (2007) for the original scales.

**General Questions**

1. Have you ever recommended CCBT to any of your clients, who have symptoms of anxiety or depression? (Highlight one response)

Yes                       No

2. Have you ever tried any CCBT program yourself? (Highlight one response)

Yes                       No

- a. If so, which one? (open)

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**Qualitative Questions**

1. If you had a client who was suffering from anxiety or depression, which of the following options would you prefer to recommend, please highlight one of the following:

- a) CCBT
- b) self-help book
- c) counseling
- d) using the internet to find relevant information

Why would you prefer this option, over the others? (Open)

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2. What, if any advantages would you identify with your client using CCBT? (Open)

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3. What, if any disadvantages would you identify with your client using CCBT? (Open)

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4. If your client was going to use a CCBT program, would you prefer that they use it: (please highlight one of the following):

- a) in addition to speaking with a counselor or
- b) just using CCBT, without speaking with a counselor

What are your reasons for this choice? (Open)

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5. Do you have any other comments about CCBT that you would like to share with the researcher? (open)

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Thank you very much for your participation. Please return your signed and dated consent form, along with this completed survey to XXXXXX@XXXXXXXX.XXX. If you have any questions or concerns, please do not hesitate to contact the researcher Nivek Dunne (XXX) XXX-XXXX or XXXXXX@XXXXXXXX.XXX. Thank you for your participation.