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**THE ACCEPTABILITY AND EFFECTIVENESS OF
COMPUTERISED COGNITIVE-BEHAVIOURAL
SELF-HELP FOR DEPRESSION
IN PRIMARY CARE**

A thesis presented in partial fulfilment of
the requirements for the degree of
Doctor of Clinical Psychology
at Massey University

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Abstract

Cognitive Behavioural Therapy (CBT) is an effective treatment for depression; however lack of available practitioners and lack of resources in secondary mental health settings, mean patients often don't receive this treatment. Self-help approaches including computer-based self-help are one option to meet this unmet need. However there is little research examining the effectiveness of computer-based self-help in primary care, and no current research conducted in a New Zealand sample.

'Overcoming Depression', a six session computer-based Cognitive Behavioural Therapy (CBT) programme for depression has demonstrated effectiveness in significantly reducing symptoms of depression in a pilot study in a clinical psychology clinic (Whitfield, Hinshelwood, Pashely, Campsie & Williams, 2006). The current study investigated the acceptability and effectiveness of 'Overcoming Depression' in General Practice in New Zealand. The current study is divided into two parts. The first part of this research was a survey of patients in general practice which showed that computer-based self-help is acceptable and most patients would be willing to try this as a treatment for depression. The second part of the research involved a randomized controlled trial of 'Overcoming Depression' in general practice. In this study 'Overcoming Depression' was found to significantly reduce depression as measured by the Hospital Anxiety Depression Scale (HADS) and the Primary Health Questionnaire-9 (PHQ-9). However due to low statistical power no significant differences were found between the 'Overcoming Depression' and a waiting list control group. While all completers evaluated the programme positively, low up-take and high drop out rates suggest that there needs to be careful consideration of how best to integrate this type of treatment in to primary care settings.

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Chapter 1

Introduction

Overview

A Mental Health and General Practice Investigation in New Zealand found that 18.1 percent of people seeing their GP had a diagnosable depressive disorder in the previous year (Bushnell, 2003). Arroll, Goodyear-Smith and Lloyd (2002) screened patients in South Auckland and found that 13.8 percent of general practice patients were currently depressed. Untreated depression and anxiety can have a negative impact on general health status comparable to the effects of physical illness (Paykel, Ramana, Cooper, Hayhurst, Kerr & Barocka, 1995). There is also evidence that the longer the duration of the illness, the less likely a recovery becomes, making immediate treatment important (DeRubeis, Gelfand, Zang, & Simons, 1999).

While treatment of depression in primary care usually involves prescription of antidepressant medications (Hyde, Calnan, Prior, Lewis, Kessler, & Sharp, 2005); there is evidence that patients favour psychological and alternative approaches to pharmacological treatments (Tylee, 2001). There is also evidence suggesting that antidepressant medication is not superior to CBT (Blackburn & Moore, 1997), even for severely depressed patients (DeRubeis et al., 1999). Other research has also shown that CBT can reduce relapse rates and may be useful in treating residual symptoms (Ellis, Hickie & Smith, 2004; Paykel et al., 2005). However, a lack of available practitioners means that not all patients receive this treatment (Whitfield & Williams, 2004). A stepped care approach has been advocated to overcome this (Scogin, Hanson & Welsh, 2003) and computerised self-help may be one such possibility within this type of approach. Self-help has advantages over standard face-to-face treatment including convenience, reduced perceived stigma, consistency, and immediacy.

Written self-help approaches have demonstrated effectiveness in smoking cessation, weight control (Scogin, Bynum, Stephens & Culhoun, 1990), obsessive-compulsive disorder (Lovell, Ekers, Fulford, Baguley & Bradshaw, 2004), anxiety (White, 1998),

panic disorder (Hecker, Losee, Fritzler & Fink, 1996; Lidren, Watkins, Gould, Clum, Asterino & Tulloch, 1994), alcohol problems (Apodaca & Miller, 2003; Gould & Clum, 1993; Marrs, 1995; Scogin et al, 1990), and depression (Bowman, Scogin & Lyrene, 1995; Cuijpers, 1997; Floyd, 2003; Mains & Scogin, 2003; McKendree-Smith, Floyd & Scogin, 2003; Scogin, Jamison & Gochneaur, 1989; Whitfield, Williams & Shapiro, 2001).

A number of computer-based self-help approaches have demonstrated effectiveness in treating a range of problems including anxiety and depression (Cavanagh & Shapiro, 2004; Green & Iverson, 2009; Griffiths & Christensen, 2006; Przeworski & Newman, 2006). Most computer-based approaches use cognitive behaviour therapy (CBT) as the structure and effectiveness of CBT lends itself well to a self-help approach. Computer-based approaches have advantages over written approaches, including being easily updated and modified to be culturally and gender appropriate, more reliable in monitoring patients, and may be more engaging. However, most current research suggests that computer-based approaches are most effective with the addition of face-to-face therapy (Spek, Cuijpers, Nyklicek, Riper, Keyzer, & Pop, 2007); although the addition of face-to-face contact as an adjunct to written self-help does not increase effectiveness (Gold & Clum, 1993).

The effectiveness of any psychotherapy including CBT is affected by a number of factors including therapeutic alliance (Horvarth & Symonds, 1991; Krupnick et al., 1996), use of homework (Addis & Jacobson, 2000; Burns & Nolen-Hoeksema, 1991; Burns & Spangler, 2000; Kazantzis, Deane, & Ronan, 2000), and acceptability of the treatment (Reimers, Wacker, Cooper, & De Raad, 1992). More research is needed into how each of these factors affects the treatment outcome of self-help approaches. Research is also lacking in how much face-to-face contact is optimal in using self-help approaches, who is best to deliver this contact, and who is most appropriate for self-help treatment. In addition there has been little research investigating the use of self-help approaches within a primary care setting or in a New Zealand sample.

Organisation of the thesis

The first aim of this thesis is to investigate the acceptability of self-help approaches to the treatment of depression and anxiety in New Zealand, in particular computer-based approaches. Secondly it aims to investigate the effectiveness of a computer-based cognitive-behavioural self-help programme for depression as an adjunct to treatment in primary care in New Zealand. The following chapter explores the problem of depression including prevalence, co-morbidity, and theories of causation. Chapter 3 examines treatment approaches to depression including biological and psychological treatments. However despite a number of treatment approaches demonstrating effectiveness in the treatment of depression, large gaps in treatment access remain. Chapter 4 introduces self-help as an alternative to traditional treatment approaches to meet this unmet need. Empirical literature supporting the use of both written self-help and computer-based self-help approaches are presented. Chapter 5 explores factors that can affect treatment outcome including disorder co-morbidity, therapeutic alliance, acceptability, and the use of homework.

Chapter 6 acknowledges that there are a number of limitations in the current self-help literature and introduces the rationale for the present study. The first study of this thesis is presented in Chapter 7. The first study investigated the acceptability of self-help approaches to patients in primary care, in particular computer-based self-help for the treatment of depression and anxiety. Chapter 8 presents the second study of this thesis which involved an effectiveness trial of a computer-based self-help programme using cognitive behaviour therapy compared to a waiting list control group, as an adjunct to treatment for depression in primary care. Chapter 9 summarises the findings of the two studies and considers the implications of these findings. The thesis concludes with the contribution of this research to the current self-help literature.

Chapter 2

Depression

Diagnosis

A Major Depressive Disorder is diagnosed as one or more Major Depressive Episodes, which are characterised by a number of symptoms including depressed mood or loss of interest or pleasure nearly everyday, lasting for at least two weeks (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision, DSM-IV-TR). Table 2.1 shows the diagnostic criteria for a Major Depressive Episode (MDE) (American Psychiatric Association, 2000). A MDE can be described as mild, moderate or severe. A mild episode is characterised by few if any symptoms more than those required to meet diagnosis, or causing only minor impairment in functioning. A severe episode would be diagnosed as several symptoms in excess of those required for diagnosis and marked interference with functioning. Major Depressive Disorder can also be described as in partial remission, meaning that some symptoms are present but the full criteria for a MDE is not met; or there is a period without significant symptoms that is less than two months following the end of a MDE. Full remission is achieved with a period of two months with no significant symptoms of depression present. Recurrent depression is diagnosed after two or more MDEs.

It is important to be aware when comparing studies of depression, that in research and practice a large number of variations occur in definitions of terms such as response, relapse, remission, recurrence, and recovery (Riso, Thase, Howland, Friedman, Simons & Tu, 1997). When different definitions are used sample populations can be suffering from a different set of problems and it is difficult to compare treatment efficacy (Cuijpers, van Straten, Bohlmeijer, Hollon, and Andersson, 2010). Research with clear inclusion criteria help to ensure that the problem being treated is clinical depression with a clear indication of severity.

Riso and colleagues (1997) have proposed and demonstrated validity for definitions for common terms used to describe depression. These definitions are also defined by

scores on the Hamilton Rating Scale for Depression (HRSD) which limits the applicability as this is only one measure that can be used to measure depression. However the general description of the terms is useful. Response to treatment is defined as significant improvement (which can vary depending on the measure used); however remission would be greater than a response, with few signs of depression remaining. It must be noted that this definition differs significantly to criteria set out in the DSM-IV-TR, with remission defined as *no* significant symptoms for *two months*. Recovery is defined as a sustained period of remission (six months or more). Riso and colleagues (1997) define a relapse as an exacerbation of symptoms after a response but before remission is reached and recurrence as a new episode of depression following a period of recovery.

Table 2.1. Diagnostic Criteria for a Major Depressive Episode

<p>A. Five or more of the following nearly every day during the same two week period, and representing a change from previous functioning: (NB must include either including 1) depressed mood <i>or</i> 2) loss of interest or pleasure)</p> <ol style="list-style-type: none"> 1. Depressed mood 2. Loss of interest or pleasure 3. Significant weight loss or gain or increases or decreases in appetite 4. Insomnia or hypersomnia 5. Psychomotor agitation or retardation (observable by others) 6. Fatigue or loss of energy every day 7. Feelings of worthlessness or excessive or inappropriate guilt 8. Diminished ability to think or concentrate, or indecisiveness 9. Recurrent thoughts of death or suicidal ideation <p>B. Do not meet criteria for mixed episode</p> <p>C. Symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning</p> <p>D. Symptoms are not due to the direct physiological effects of a substance or general medical condition</p> <p>E. Symptoms are not better accounted for by Bereavement</p>
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Prevalence

Depression is a widespread and debilitating problem. By 2020 it is estimated that depression will be the second highest disease causing burden (World Health Organization, 2007). Lifetime prevalence rates of any mood disorder in New Zealand are 20.2 percent (Oakley-Browne, 2006), with 12 month prevalence of 7.9 percent (Wells, 2006). Similar prevalence rates are found around the Western world (Gwynn, et al., 2008; Kessler, et al., 1994). Major Depressive Disorder is the most prevalent of the mood disorders with lifetime prevalence in NZ of 16 percent, with 12 month prevalence rates of 5.7 percent (Wells, 2006). Rates in primary care can be higher, with a Mental Health and General Practice Investigation finding that 18.1 percent of people seeing their GP in New Zealand had a diagnosable depressive disorder in the previous year (Bushnell, 2003). A study of primary care patients in Germany found rates of 22.8 percent (Mergl, et al., 2007). Arroll, Goodyear-Smith and Lloyd (2002) screened patients in South Auckland and found that 13.8 percent of general practice patients were currently depressed. The number of Maori presenting with depression is substantially larger than New Zealand European, with 46.4 percent presenting with a depressive disorder in the previous year (Bushnell, 2003). These disproportionate rates cannot be accounted for by social deprivation (Bushnell, 2003). It is therefore important to find a treatment approach appropriate for this population.

Course of the illness

The course of a depressive episode depends on many factors such as the effectiveness of treatment (Simon, 2000), length of illness before treatment (Gormley, O'Leary, & Costello, 1999), illness severity (Ramana, et al., 1995), and co-morbid disorders (Gaynes, et al., 1999). Vuorilehto, Melartin, and Isometsa (2009) found that the mean duration of a first Major Depressive Episode is six months. Social functioning may take longer to improve than symptom reduction, with evidence that social functioning does not return to the normal range even while patients are in remission (Furukawa et al, 2001). However if remission is maintained for two months, social functioning may return to normal. Social functioning is therefore important to assess when evaluating treatment programmes.

Ramana and colleagues (1995) found that 70 percent of those treated for a major depressive episode achieved remission within six months, but 40 percent of these relapsed within ten months. Eaton and colleagues (2008) found that while half of a large population-based sample of people with first episodes of depression had no further episodes of depression within five years, the other half did; with 15 percent of those not having even one year free of depression. Another study has found a recurrence rate of 85 percent after fifteen years (Mueller, et al., 1999). Simon (2000) found that those who achieve remission in a three month period have a low risk of relapse; however of those with more persistent residual depression, only around 15 percent achieve remission. This suggests there may be two different patterns of depressive illness. Long-term prognosis was found to be positively impacted by early recognition and effective treatment (Simon, 2000). With about half of a community sample of people who have recovered from depression relapsing in one year, it is important that ways are found to maintain therapeutic gains and prevent relapse (Andrews, 2001).

Consequences of untreated depression

Untreated depression and anxiety can have a negative impact on general health status comparable to the effects of physical illness (Schonfeld, et al., 1997). The greatest negative effect is on the emotional capability to carry out daily activities, but it can also have negative effects on physical capabilities, social functioning capabilities, energy and vitality, perceived bodily pain, and general perceptions of overall health status (Schonfeld et al, 1997). Untreated depression also has negative effects on society as patients with untreated depression have more missed work days and decreased productivity (McQuaid, Stein, Laffaye, & McCahill, 1999). Untreated depression can also lead to reduced ability to fulfill role responsibilities and result in interpersonal difficulties (Schonfeld, et al., 1997).

There is also evidence that the longer the duration of the illness, the less likely recovery becomes, making early effective treatment important (Keller, 1994). Some research also shows that the more untreated days of depression, the more hippocampal loss in the brain, suggesting more long-term damage (Sheline, Gado, & Kramer, 2003). This

research only looked at the use of antidepressants and therefore suggested that antidepressants may have a protective effect. However it is possible that reductions in depression through other types of treatment such as CBT could have similar effects. Successful CBT has been found to be associated with increases in metabolism in the hippocampus and decreases in the frontal areas which is the opposite of that found in patients treated with paroxetine (Goldapple et al., 2004).

Untreated depression can result in a number of negative consequences which could be avoidable with effective treatment. However despite a number of available evidence based treatments, a large proportion of people with depression do not get the help they need.

Co-morbidity

Depression is often co-morbid with other disorders; with the most common being anxiety disorders (Scott, 2006). Co-morbidity of an anxiety disorder with any mood disorder in a twelve month period is 49.6 percent in New Zealand (Scott, 2006). Those with a co-morbid anxiety disorder tend to have poorer treatment outcomes (Lydiard & Brawman-Mintzer, 1998; Sherbourne and Wells, 1997) and exhibit greater rates of suicidal ideation, suicide plans, and suicide attempts (Beautrais, 2006). Those with a co-morbid anxiety disorder are also more likely to have persistent depression one year after first diagnosis (Gaynes, et al., 1999). Therefore when treating those with depression, anxiety should be assessed for, and treatment adapted accordingly (Rivas-Vazquez, Saffa-Billa, Ruiz, Blais, & Rivas-Vazquez, 2004). Those with a mood disorder also tend to have higher rates of physical problems such as chronic pain, cardiovascular disease, high blood pressure, respiratory conditions, diabetes, and cancer (Scott, 2006).

Theories of causation

Biological

Due to methodological difficulties, there is no evidence of clear biological substrates for depression (Beck & Alford, 2009). One of the major theories is that of the 'catecholamine hypothesis' which essentially suggests that depression is caused by a depletion of active norepinephrine (Schildkraut, 1965). However it is unclear how this occurs with serotonin and dopamine also implicated in studies of depression; evidenced in the effectiveness of selective serotonin reuptake inhibitors (SSRIs) and drugs that increase dopamine concentrations (Sadock & Sadock, 2003). Cortisol has also been associated with depression with findings that about 50 percent of depressed patients have high cortisol levels (Sadock & Sadock, 2003). These biological theories do not explain the fact that there are a number of people for whom antidepressants don't work (Beck & Alford, 2009).

Biopsychosocial

Biopsychosocial models of depression view the individual as having a vulnerability to depression that could be due to a range of early life experiences, for example childhood abuse or rejection (O'Connor, 2003). This vulnerability is then activated by stressors in the person's life which overwhelms their ability to cope. Cognitive or cognitive behaviour theory can be viewed as an extension of this stress-vulnerability model (Beck, 1991).

Cognitive and cognitive behavioural

Cognitive theories of depression view individuals as vulnerable to depression due to the negative view they have of themselves, the world, and the future (Beck, 1991). Through life experiences individuals with depression develop maladaptive beliefs which distort how experiences are viewed. Maladaptive beliefs remain unchallenged and are strengthened by a distorted view of the world; whereby the focus is on the negative aspects of experiences, and the positive aspects are minimised. This results in negative schemas which contribute to a cognitive vulnerability to depression which can then be activated by relevant experiences. Depression is then maintained by negative thinking and reduced activity which affects physical wellbeing and emotions as well as subsequent thinking and behaviour (Beck, 1991).

Integrated theories

Recently Beck (2008) has proposed an integrated model of the psychological and biological aspects of depression. In this model it is proposed that the presence of a short form of the 5-HTTLPR (serotonin transporter) gene, which has found to be associated with depression (Caspi et al., 2003), results in an overactivity of the amygdala in emotional events. This leads to the cognitive bias towards negative aspects of experience suggested by cognitive theory, and resulting in negative cognitive schemas. The continued stress that these schemas cause, leads to increased cortisol, which in turn affects the serotonergic system. Individual studies support parts of this theory, however more research is needed to support the model as a whole (Beck, 2008).

As knowledge about depression has advanced there has been a more integrated view of the causes of depression, incorporating biological, cognitive, and environmental factors. The theory of causation and maintenance of depression used is important as it will influence the type of treatment choice. Treatment options for depression will be discussed in the following chapter.

Chapter 3

Treatment for depression

Antidepressant medications

The treatment of depression often means the use of antidepressant medications; especially in primary care settings, where GPs have few other options (Hyde, Calnan, Prior, Lewis, Kessler, & Sharp, 2005). Common antidepressants include tricyclic antidepressants, monoamine oxidase inhibitors (MAOIs), and selective serotonin reuptake inhibitors (SSRIs) (Hollon, Thase & Markowitz, 2002); with SSRIs now the most commonly prescribed (McManus, Mant, Mitchell, Britt, & Dudley, 2003). Both tricyclic antidepressants and SSRIs have been found to be more effective than placebo in primary care; however SSRIs tend to have greater adherence as they produce fewer side effects (Arroll et al., 2005).

There is however evidence that patients favour psychological and alternative approaches to pharmacological treatments (Jorm, Mackinnon, Christensen, & Griffiths, 2005; Priest, Vise, Roberts, Roberts, & Tylee, 1996; Tylee, 2001; van Schaik, Klijn, van Hout, van Marwijk, Beekman, Haan, & van Dyck, 2004). There is also evidence suggesting that antidepressant medication is not superior to Cognitive Behaviour Therapy (CBT) (Antonuccio, Danton, & DeNelsky, 1995; Blackburn & Moore, 1997; Craske, et al.; 2005), even for severely depressed patients (DeRubeis, Gelfand, Tang & Simons, 1999). However research is mixed, with some evidence suggesting medication and psychological therapy are equivalent (Casacalenda, Perry, & Looper, 2002), and some evidence suggesting that medication can be more effective than psychological treatments (Miranda et al, 2003). Psychological therapies for the treatment of depression will now be discussed.

Psychological treatments for depression

Several types of psychotherapy show evidence of effectiveness in treating depression, including Interpersonal Therapy, Cognitive Behaviour Therapy, Mindfulness-based Cognitive Therapy, Acceptance and Commitment Therapy, and Dialectical Behaviour Therapy. Theory and evidence for each of these treatment approaches is briefly discussed below.

Interpersonal psychotherapy

Interpersonal Psychotherapy (IPT) is effective in treating depression both alone (Weissman, 2007) and combined with antidepressant medication (Schramm et al., 2008). The focus of IPT is not on the individual but on their interpersonal relationships and social supports (Stuart, 2008). IPT has a present focus and works on one of four different interpersonal problem areas – grief, interpersonal role disputes, role transitions, or interpersonal deficits (Weissman & Markowitz, 1994). Schramm and colleagues (2008) found IPT to be effective in treating chronic depression when combined with antidepressant medication. IPT has also been found to be as effective as CBT in mild to moderate depression, but not in severe depression (Luty et al., 2007).

Cognitive therapy and cognitive behavioural therapy (CBT)

Cognitive therapy works on the premise that a change in cognitions or thoughts will have beneficial effects on depressive symptomology (Beck, 1991). Cognitive techniques include identifying and challenging negative automatic thoughts, and working with maladaptive or unhelpful beliefs (Beck, 1991). Cognitive theory has also been integrated into more behavioural models of depression in cognitive-behavioural therapy. Cognitive behavioural therapy (CBT) incorporates more behavioural components such as behavioural activation; using activity scheduling to increase pleasurable events and sense of mastery, and encouraging patients to engage in behavioural experiments to test their beliefs (Hollon, Thase, & Markowitz, 2002). The behavioural components can be useful in the early stages of treatment to increase mood enough to complete more cognitive interventions that may require more concentration (Wright, 2003). Both pure cognitive therapy and cognitive behavioural therapy have

become so similar that often they are referred to interchangeably (Hollon & Beck, 2004).

A recent meta-analysis of CBT showed that it is effective for a range of psychological problems, including depression (Butler, Chapman, Forman, & Beck, 2006) and CBT has become the recommended psychological treatment for depression (National Institute for Clinical Excellence, 2004). CBT is also a cost-effective treatment for depression (Antonuccio, Thomas, & Danton, 1997) especially as a maintenance treatment (Vos, Corry, Haby, Carter, & Andrews, 2005). CBT has also been shown to be effective in treating the residual symptoms of depression and significantly reducing the risk of relapse (Fava, Grandi, Zielezny, Rafanelli, & Canestrari, 1996).

Cognitive versus behavioural treatment

Some research has shown that the cognitive component may not add anything more to treatment than the behavioural activation components (Longmore & Worrell, 2007), and that treatment may be more effective without the cognitive component (Dimidjian et al., 2006). However there is some evidence that changes in dysfunctional attitudes mediate reductions in depression, giving support to the cognitive model (Quilty, McBride & Bagby, 2008). Jacobson and colleagues (1996) however found that the cognitive component addressing core beliefs did not add any benefit over behavioural activation and modifying negative thoughts. Another study has shown that pharmacotherapy also produces cognitive changes (Garratt, Ingram, Rand, & Sawalani, 2007) suggesting that cognitive therapy does not have specific effects. However as previously discussed there is evidence that the cognitive components in CBT are effective in reducing symptoms of depression (Quilty et al., 2008) and that CBT is effective in treating depression (Butler et al., 2006), supporting the use of CBT for depression.

Treatment length

The recommended number of sessions of CT required to treat depression is 16-20 sessions (Beck, Rush, Shaw, & Emery, 1979) although those with residual symptoms may require a longer period of treatment (Thase et al., 1992). Despite this some research suggests that the most change occurs in the first four weeks of therapy (Ilardi & Craighead, 1994). Tang and DeRubeis (1999) suggest that there is no uniformity of when changes occur in therapy, but found evidence for sudden between session reductions in symptoms of depression that are associated with better outcomes. These sudden gains are also associated with greater cognitive shifts, giving more support to cognitive theory.

Moderating factors in CBT

There is evidence that individual factors such as learned resourcefulness, can moderate the effectiveness of CBT (Burns, Rude, Simons, Bates, & Thase, 1994), suggesting that more research may be needed into who CBT is best for. Addis and Jacobson (1996) found that response to treatment is moderated by explanations of illness, with those attributing depression to reasons such as problems in relationships or with other people, doing worse in cognitive therapy. However attribution of depression to childhood experience did not have an effect on treatment outcome. More research is also needed into who can deliver CBT and in what kind of treatment setting.

Some meta-analyses have shown that CBT is no more effective than other psychological therapies for depression (Cuijpers, van Straten, Andersson, & van Oppen, 2008; Wampold, Minami, Baskin, & Tierney, 2002). And a recent meta-analysis also suggests that the effects of CBT may have been overestimated and that more high quality research is needed to clarify its effectiveness (Cuijpers et al., 2010). When high quality studies were used, smaller effect sizes for CBT were found. Lower quality studies including non-manualized treatments, small sample sizes, no consideration of drop-outs, and non independent researchers may have lead to overestimates of the effectiveness of CBT (Cuijpers et al., 2010a).

Research into the effective components of CBT has seen new ‘third wave therapies’ emerge that are also showing promising results in treating depression. These include Mindfulness-based Cognitive Therapy (Teasdale, Segal, Williams, Ridgeway, Soulsby & Lau, 2000), Acceptance and Commitment Therapy (Hayes, 2004), and Dialectical Behaviour Therapy (Linehan, 1993).

‘Third wave’ cognitive based therapies

Mindfulness-Based Cognitive Therapy (MBCT)

Mindfulness-Based Cognitive Therapy (MBCT) is based on the assumption that recurrent depression is different from a first episode of depression. This is because with each relapse, less environmental stress is needed to trigger a depressive episode, as a more automated process of additive negative thinking and dysphoria is activated (Teasdale et al., 2000). Therefore patients with recurrent depression need to be taught to be aware of and deal with negative thoughts and feelings by disengaging from ruminative depressive processing. MBCT does not work on changing the content of thoughts, instead teaching patients to detach from thoughts and realize they are not aspects of the self. Teasdale and colleagues (2000) found evidence supporting the theory that recurrent depression is different from a first episode of depression. While their research did not find any significant difference between treatment as usual and MBCT for those with less than three episodes of depression, MBCT reduced relapse by half for those with three or more episodes (Teasedale et al. 2000; Ma & Teasedale, 2003). In a randomized controlled trial, Barnhofer and colleagues (2009) have also shown that MBCT can be effective in treating chronic depression.

Acceptance and Commitment Therapy (ACT)

Similar to MBCT, Acceptance and Commitment Therapy (ACT) encourages people to accept their thoughts and experiences and give up the struggle of trying to change these natural processes, by teaching people to ‘defuse’ from their thoughts (Hayes, 2008). ACT encourages people to develop more cognitive flexibility and refrain from experiential avoidance, or avoidance of emotions, through techniques such as mindfulness, defusion, and acceptance (Hayes, 2004; Hayes, Luoma, Bond, Masuda, & Lillis, 2006). ACT also encourages people to concentrate on their values and strive towards living in accordance with these. The effective component of ACT is thought to

be in decreasing experiential avoidance much like exposure in behavioural therapy (Forman, Herbert, Moitra, Yeomans, & Geller, 2007). ACT has been found to be as effective as CBT in the treatment of depression, and effective through use of different mechanisms such as decreases in experiential avoidance and acceptance (Forman et al., 2007). There is still limited evidence supporting the effectiveness of ACT for depression, but initial findings show potential.

Dialectical Behaviour Therapy (DBT)

Dialectical Behaviour Therapy (DBT) was originally designed for use with borderline personality disorder (Linehan, 1993), but has now been used in the treatment of other disorders including eating disorders (Safer, Telch, & Agras, 2001; Telch, Agras, & Linehan, 2001) and depression (Lynch, Morse, Mendelson, & Robins, 2003). DBT encourages a balance between acceptance and change, with a focus on dialectics or the synthesis between two extremes (Linehan, 1993). It is a skills based approach teaching skills in four basic areas – mindfulness, interpersonal skills, distress tolerance, and emotion regulation (Linehan, 1993). A Dialectical Behaviour Therapy skills based group for depression has been found to increase functional emotional processing and in turn result in decreases in depression (Feldman, Harley, Kerrigan, Jacobo, & Fava, 2009). However as this is the only research supporting DBT specifically for depression, evidence for its effectiveness in those without borderline personality disorder is still limited.

While there is emerging evidence that other cognitive-based therapies are effective in treating depression, CBT is still the most well-supported psychological therapy for depression (Butler et al., 2006). Due to its utility in treating depression, it has begun to be used not just in mental health services, but in primary care settings.

CBT in primary care

There is increasing evidence that CBT can be used in a primary care setting however more research is needed. In a meta-analysis of CBT for various problems in primary practice, Westbrook and Kirk (2005) found an uncontrolled effect size of 0.5 to 0.7. They also found that those with more severe problems initially, showed more change; with an effect size of 0.9 to 1.1. Another meta-analysis of CBT in primary care for depression, panic disorder and GAD found CBT to have an effect size of 0.68 (Haby, Donnelly, Corry & Vos, 2006). In addition the mode of therapy (i.e. face-to-face, bibliotherapy, or computer-based) has been shown to have no impact on effectiveness (Haby et al., 2006). Haby and colleagues (2006) do note however, that the evidence is limited for computer-based and telephone administered therapies. Other research on CBT in primary care has shown mixed results. Ward and colleagues (2000) found that CBT for depression delivered in primary care was better than routine care, however no more effective than non-directive counseling. There is potential for CBT to be delivered in primary care settings, however more research is needed to clarify how this is best delivered.

CBT versus antidepressant medication

Miranda and colleagues (2003) found that for low income minority women with depression, medication is more effective than CBT and also produces better treatment adherence. It is likely that medication was a more acceptable option to this sample as CBT may have been difficult due to the required time commitment. However a meta-analysis found that antidepressant medications have little effectiveness over placebo, and only for those with severe depression (Kirsch, Deacon, Huedo-Medina, Scoboria, Moore, & Johnson, 2008). Other recent meta-analyses of treatment for depression found psychological treatments and pharmacological treatments to be roughly equivalent in treating major depressive disorder but pharmacological treatments may be more effective in treating dysthymia and chronic depression (Cuijpers, van Straten, Andersson, & van Oppen, 2008; Cuijpers, et al., 2010b; Imel, Malterer, McKay, & Wampold, 2008).

The effectiveness of antidepressant medication can be reduced with patients often not adhering to treatment recommendations; however this can be mitigated by good collaborative communication from the GP (Bultman & Svarstad, 2000). There is also evidence that medication adherence is improved with GPs who also suggest cognitive behavioural strategies (Robinson, et al., 1995). Although there is no clear research supporting this idea, some have suggested that antidepressant medication may worsen the course of depression (Fava, 2003). Patients who discontinue antidepressants may become more vulnerable to relapse due to symptoms of withdrawal and may also develop a tolerance to the medication (Fava, 2003).

The medicalisation of depression as an illness could create dependency on health services and overload already stretched primary and secondary health services (Mulder, 2008). While antidepressant medication can be an effective option for treating depression, there can be other effective treatment options with fewer side effects. The Australian and New Zealand Treatment Guidelines for depression (Ellis, Hickie, & Smith, 2004) indicate that CBT or antidepressant medication are both effective treatment options for moderate depression. However for severe depression, the treatment guidelines indicate that medication is the first line of treatment and that CBT should only be used after response to medication or if residual symptoms remain. This is contrary to evidence showing that CBT alone can be effective in treating patients with severe depression (DeRubeis, Gelfand, Tang & Simons, 1999). However a recent meta-analysis of psychotherapy for depression suggests that the effects of psychological therapy have been overestimated (Cuijpers, van Straten, Bohlmeijer, Hollon, and Andersson, 2010). However CBT is just one of a number of effective psychological therapies for depression.

Combined treatment

Another option that has been explored is combined treatment. In a comparison of imipramine, interpersonal psychotherapy, and CBT, Agosti and Ocepek-Welikson (1997) found that although there was a 50% reduction in depression across all treatments, patients remained significantly depressed after treatment. They suggest that a combination of psychotherapy and medication may achieve greater results.

A meta-analysis of treatments for depression in primary care found that psychotherapy in addition to antidepressant medication was more effective than medication alone (Pampallona, Bollini, Tibaldi, Kupelnick, & Munizza, 2004). Craske and colleagues (2005) found that CBT in addition to medication produced both more statistically and clinically significant reductions in depressive symptoms than medication alone, and these gains were maintained at twelve month follow-up. A recent meta-analysis showed that combined treatment was superior to psychotherapy alone although these differences were not evident in long-term follow-up (Cuijpers, van Straten, Warmerdam, & Andersson, 2009). This research also found that the difference between combined treatment and psychotherapy alone was smaller when CBT is used.

CBT combined with fluoxetine has also been shown to be significantly superior to either treatment alone in adolescents (Treatment for Adolescents with Depression Treatment Study Team, TADS, 2004). Fluoxetine was more effective than CBT alone however the medication did not reduce suicide risk. The authors of this study suggest that combination treatment should be offered because medication and CBT target different domains and produce incremental improvements. In their study, they suggest that fluoxetine may increase suicide risk, but the addition of CBT can counteract this and protect the patient (TADS, 2004). CBT in addition to an SSRI was not significantly more effective than an SSRI alone for adolescent depression in primary care, although CBT showed advantages between the six and twelve month follow-up and significantly reduced healthcare visits and medication dispenses (Clarke et al, 2005). However the sample was small which may have reduced the power to find a significant difference.

When considering combined treatment, the additive costs need to be taken into account (Otto, Smits, and Reese, 2005). The addition of short-term psychologist delivered CBT for depression to the use of antidepressants in primary care may not be cost-effective for minor depression; but produces a modest increase in cost-effectiveness for major depression (Von Korff et al, 1998). One review suggests that combined treatment produced small increases in effectiveness over monotherapy and is more effective for those with moderate to severe depression (Friedman, et al., 2004). Combined treatment may not always be the best option, but it can be useful in chronic or medication non-

responders and effective in relapse prevention for medication responders (Otto, et al., 2005).

Combined treatment may also be useful for the residual symptoms of depression. Scott and colleagues (2000) found no significant difference between clinical management and 16 sessions of cognitive therapy (CT) in addition to antidepressant medication for residual depression, however there was a trend towards lower depression scores in the CT group. In addition there were greater changes in social functioning during the acute phase for the CT group although these differences did not appear at 17 month follow-up. There were also greater reductions in guilt, hopelessness and pessimism as well as greater increases in self-esteem among the CT group between weeks 20 and 44, but these differences did not remain at follow-up. This study involved the use of cognitive therapy, and it is possible the addition of more of the behavioural components of CBT may have enhanced the longevity of these treatment effects. Paykel and colleagues (2005) found that CBT in addition to medication and clinical management for depression reduced relapse and recurrence for patients with residual symptoms, and these additional effects remained until 3 ½ years after completion.

Although CT may not additionally reduce symptoms significantly in some combined treatment studies, it may be useful in reducing relapse by helping patients learn skills to cope and prevent relapse. The addition of CBT to maintenance treatment is also associated with lower relapse rates (Ellis, Hickie & Smith, 2004). CBT may help prevent relapse by teaching skills that help the patient to become a self-therapist. Glasman, Finlay and Brock (2004) found that three to ten months after completing CBT for depression, patients described themselves as self-therapists and evidenced the use of skills such as desensitization, challenging negative thoughts/automatic beliefs, tackling errors of thinking, learning to be assertive, problem-solving techniques, and activity scheduling. Fava, Rafanelli, Silvana, Conti, and Belluardo (1998) also found that the addition of CBT for residual symptoms after successful antidepressant treatment resulted in a statistically and clinically significant reduction in relapse rates compared to clinical management.

Combined treatment can be an effective option for treating severe depression, residual symptoms, and preventing relapse. However Fava and Ruini (2005) believe combined

treatment is not always indicated and suggests a sequential approach to treatment involving antidepressant medication in the acute phase of depression and cognitive behaviour therapy in the residual phase. They suggest that medication can help to reduce symptoms of depression so that CBT can be more effective (Fava & Ruini, 2005). Combined treatment is recommended for those with more severe chronic depression (Arnow & Constantino, 2003; Thase, et al., 1997).

While there is evidence of effectiveness both for antidepressant medication and psychological therapies, as well as combinations of these treatments, depression remains a significant burden in society. Often those suffering from depression do not access treatment and this can result in a number of negative consequences as discussed in chapter 2. Reasons for gaps in treatment access are explored below.

Gaps in usual treatment

Some research has found that only around 30-40 percent of those suffering from major depression receive any kind of treatment (Christiana et al., 2000; McQuaid, Stein, Laffaye, & McCahill, 1999; Wang, Demler, & Kessler, 2002; Young, Klap, Sherbourne, & Wells, 2001); with suggestions that only 17 percent of this treatment meets guidelines for effective treatment (Wang, Bergland, & Kessler, 2000). However many people suffering from depressive symptoms do not require treatment as stated in treatment guidelines and may benefit from more of a sequential approach to treatment including the use of self-help approaches as a first line of treatment (Mulder, 2008). Many of those with depressive symptoms do not seek treatment and this includes many who would benefit from treatment (Andrews, Issakadis & Carter, 2001; Andrews, Sanderson, Slade & Issakadis, 2000). However there is some evidence that only those with high severity receive treatment; which may mean that those who could benefit most from short-term psychotherapy are missing out (McQuaid et al., 1999).

Some reasons found for not seeking help included wanting to handle the illness on one's own, not knowing where to go, and financial barriers (Blumenthal & Endicott, 1996; Christiana et al., 2000). Perceived stigma of mental illness and self-stigma were also predictive of lower levels of help-seeking behaviour (Barney, Griffiths, Jorm, &

Christensen, 2006). Screening measures and public education about depression could reduce stigma and mean that those requiring help receive it before the symptoms become chronic (Andrews, Issakadis & Carter, 2001).

With evidence that there are a number of effective treatments that can reduce the symptoms and associated burden of depression, it is important to address ways the health care system can better meet this need.

The stepped care model

Due to increasing pressures on the healthcare system, stepped care is becoming a popular potential treatment model. Stepped care involves providing the most cost-effective and least invasive form of treatment first, and if that does not work then moving to the next most involved treatment (Scogin, Hanson & Welsh, 2003). Scogin and colleagues (2003) suggest a stepped care model for depression involving bibliotherapy as the first step, medication in addition to bibliotherapy as a second step, medication with psychotherapy as a third step, and as a final step, psychiatric referral. Before a stepped care model can be introduced it is important that steps have evidence of effectiveness, that there are clear guidelines about when to 'step up' care, that costs are not transferred to other areas (i.e. other healthcare costs), and that this approach is acceptable to patients (Bower & Gilbody, 2005). In stepped care models it is also important that patients are closely monitored so that patients can be "stepped up" to the appropriate level of care if they are not improving (Bower & Gilbody, 2005). This model of care may only be appropriate for disorders where adverse consequences are not likely or where 'failure' does not impact on future treatment (Bower & Gilbody, 2005). Therefore the stepped care model may be more appropriate for mild levels of depression.

A stepped care model of treatment for depression using mainly guided self-help, has been effective in the UK; with 56 percent of people entering the programme deemed as recovered at the time of leaving the service (Clark, Layard, Smithies, Richards, Suckling, & Wright, 2009). Computer-based self-help treatment has also been suggested as one option within a stepped care model of treatment to meet increasing

treatment need (Green & Iverson, 2009). Richards, Lovell, and McEvoy (2003) suggest that self-help needs to be seen as a more important and crucial part of treatment if the health system is to address access to mental health treatments. The following chapter outlines research in self-help treatments including both written and computer-based self-help.

Chapter 4

Self-help treatments

Self-help can play an important role in increasing the client's sense of control over and understanding of their mental health, preventing relapse, reducing the amount of time spent in therapy, and increasing motivation (Keeley, Williams, & Shapiro, 2002). Self-help differs from patient education in that self-help approaches attempt to both increase patient knowledge and teach skills (Williams & Whitfield, 2001). Self-help approaches go beyond patient education by also teaching skills to be able to self-manage illness (Williams & Whitfield, 2001). These approaches have many advantages including immediacy, cost-effectiveness, consistency, low stigma attached, are easily updated, and can be made more culturally and gender appropriate. Self-help approaches are flexible allowing the patient to complete it when convenient and at their own pace, and also allows the patient to take control of their own recovery, as well as consolidate gains by completing treatment again whenever they wish (Marks, Shaw & Parkin, 1998; Williams & Whitfield, 2001). Self-help may also mean that more people access care and earlier; reducing chronicity and disability (Marks, et al., 1998). With service delivery in mental health moving towards seeing patients as the experts in their own treatment (Barlow, Ellard, Hainsworth, Jones & Fisher, 2005), self-help approaches may be very important.

Written self-help

Written self-help (bibliotherapy) has been found to be effective for various problems including smoking, weight control (Scogin, Bynum, Stephens & Culhoon, 1990), assertion, and career choices (Marrs, 1995). There is also evidence that bibliotherapy can be helpful in treating clinical problems such as obsessive-compulsive disorder (Lovell, Ekers, Fulford, Baguley & Bradshaw, 2004), anxiety (White, 1998), panic disorder (Hecker, Losee, Fritzler & Fink, 1996), social phobia (Abramowitz, Moore, Braddock, & Harrington, 2009), and depression (Bilich, Deane, Phipps, Barisic, &

Gould, 2008; Bowman, Scogin & Lyrene, 1995; Cuijpers, 1997; Floyd, 2003; Liu, Chen, Li, Wang, Mok, & Huang, 2009; Mains & Scogin, 2003; McKendree-Smith, Floyd & Scogin, 2003; Scogin, Jamison & Gochneaur, 1989; Whitfield, Williams & Shapiro, 2001). Bibliotherapy can also be effective for the treatment of alcohol problems with an effect size of 0.80, and is not any more effective with the addition of face-to-face therapy (Apodaca & Miller, 2003; Gould & Clum, 1993; Marrs, 1995; Scogin et al, 1990). However in one study, bibliotherapy for depression has been found to be more effective if some contact is provided (Bilich et al., 2008). Bibliotherapy has also been found to be as effective as group therapy for panic disorder, with gains maintained at six month follow-up (Lidren, Watkins, Gould, Clum, Asterino & Tulloch, 1994). Another study using written self-help for anxiety found that gains continued after treatment, and were maintained after three years (White, 1998). Jorm and Griffiths (2005) suggest that evidence based information about self-help treatments disseminated to the general public may be useful in preventing the large amount of sub-clinical symptoms of depression in the general population from leading to major depression and suicide.

Meta-analyses of bibliotherapy find effect sizes of 0.56 to 0.96 (Cuijpers, 1997; Gregory, Schwer Canning, Lee & Wise, 2004; den Boer, Wiersma & Van den Bosch, 2004; Gould & Clum, 1993; Marrs, 1995; Scogin, Bynum, Stephens & Calhoun, 1990). However, there may be many factors influencing the effectiveness of bibliotherapy such as length of treatment, quality of treatment, as well as patient factors. Den Boer, Wiersma and Van den Bosch (2004) found that bibliotherapy lasting at least eight weeks seems to be more effective than shorter bibliotherapy. Bibliotherapy also appears to be a safe treatment with a finding of only 1 percent meeting negative response criteria by clinician-report, and 9 percent by self-report criteria (Scogin, Floyd, Jamison, Ackerson, Landreville & Bissonnette, 1996).

There have also been some less convincing results from bibliotherapy research. Non-guided bibliotherapy was used to treat anxiety and depression in primary care, and was found to be no more effective than the waitlist control, although a small sample size may have lowered the possibility of finding a significant difference (Fletcher, Lovell, Bower, Campbell & Dickens, 2005). Also despite high rates of satisfaction with the self-help book, the take up rate was only 5 percent. Salkovskis, Rimes, Stephenson,

Sacks, and Scott (2006) also found that the addition of bibliotherapy to antidepressant treatment for major depression in primary care was no more effective than antidepressant medication alone. They did however find high levels of satisfaction and hypothesize that self-help may be more effective in practices that are less well-resourced.

Simon and colleagues (1998) found that collaborative management using written and video education about depression, antidepressants, and self-management with cognitive-behavioural interventions reduced somatic distress and improved overall health, but did not significantly reduce functional impairment and lost productivity more than treatment as usual. However in this study, 30 percent of the treatment as usual group used specialty mental health services which may have obscured any differences. In addition the measures used were more about physical functioning (lost work days), than social and emotional functioning. As social functioning improvements may take longer (Furukawa et al, 2001) the seven month follow-up period may not have been long enough to detect significant changes. Smith and colleagues (2006) found that a Depression Relapse Programme involving three sessions with a prevention specialist, a book and a video using the principles of CBT on treatment options, relapse prevention, and self-management strategies failed to show significant benefits above treatment as usual. However this is not typical of CBT treatment and may not have been of sufficient treatment length to address all effective components of CBT. The recommended number of sessions for successful CBT for depression is thought to be 16-20 sessions (Beck, Rush, Shaw, & Emery, 1979).

One study did find that the addition of education about depression with the use of a video and a book may produce greater decreases in depression and better medication adherence than usual care in patients that had persistent symptoms (Katon et al, 1999). Katon and colleagues (1999) study included the addition of psychiatrist visits for medication management, so it is unclear whether benefits can be attributed to these visits or to the educational materials. Robinson and colleagues (1997) found that the majority of patients who received educational materials, including a booklet on CBT, a booklet on medications, and a video about behavioural strategies, viewed them as helpful. Patients were less likely to view the video and rate it as helpful as the booklets, and the authors suggest this may be because a video doesn't involve the patient enough.

Results not clearly showing the effectiveness of self-help suggest self-help treatment may not be suitable for all individuals.

Generally, research has found that self-help treatment is as effective as face to face therapy (den Boer, Wiersma & Van den Bosch, 2004; Gould & Clum, 1993; Marrs, 1995; Scogin, Bynum, Stephens & Calhoun, 1990; Williams & Whitfield, 2001) and it is not clear whether the addition of face to face therapy increases the effectiveness of bibliotherapy. The addition of face to face contact, may enhance motivation, and in turn reduce drop-out rates, while providing monitoring for safety. Gould and Clum (1993) found that the addition of a therapist did not improve the effectiveness of self-help treatment and that there was only a small difference in drop-out rates between self-help and therapist delivered treatment. A randomized controlled trial of a self-help book for panic disorder was found to be effective without any support but it did have a clear deadline which appeared to help with motivation (Nordin, Carlbring, Cuijpers, & Andersson, 2010). However, participants in Whitfield, Williams and Shapiro's (2001) study of a self-help room containing two self-help books for depression, indicated that face to face contact would have improved the self-help room. One study found that patients that received practice nurse facilitated cognitive behavioural self-help in general practice had a more immediate reduction in distress and were more satisfied than those receiving treatment as usual (Richards, Barkham, Cahill, Richards, Williams, & Heywood, 2003). While both groups had improved equally at three months, patients receiving supported self-help remained more satisfied and had reduced service use costs.

A survey of CBT practitioners in Britain found that 88.7 percent recommend self-help to clients and mostly for depression. Practitioners indicated that they mainly used CBT-based self-help approaches and most used written material (Keeley, Williams & Shapiro, 2002). Those who had training in the use of self-help were more likely to use it, however only 36.2 percent of the practitioners said they had any training. It is important if self-help is to be used most effectively, that practitioners get the appropriate training.

Written self-help approaches have been shown to be effective for a wide range of problems but also have shown less positive results. Could there be a more effective

approach than self-help books? The use of computerized self-help now has a large amount of supporting literature and computers have also been used successfully for a range of tasks in psychology which will be discussed next.

Computers in psychology

The first major successful use of computers in psychotherapy was in interviewing and assessment (Plutchik & Karasu, 1991). Advantages of computerized assessment include reliability, consistency, programming to ensure no questions are missed (Newman, Consoli, & Barr-Taylor, 1997), reductions in clinician time (Kobak, Reynolds, & Greist, 1994), they are non-judgemental (Barron, Daniels, & O'Toole, 1987), unbiased (Farrell, Stiles Camplair, & McCullough, 1987), and provide wider availability (Greist, Gustafson, Stauss, Rowse, Laughren, & Chiles, 1973). It has also been found that people often feel more comfortable sharing information with a computer than with a clinician (Kobak, Reynolds, & Greist, 1994), especially when asked about suicide (Greist et al, 1973; Petrie, & Abell, 1994). Computerized assessment measures may also be preferred to paper and pencil equivalents (Carr & Ghosh, 1983; Lukin, Dowd, Plake, & Kraft, 1985; Millstein, 1987). Although as with computer based treatment it seems that computerized assessment should be used in conjunction with therapist based assessment (Barron, Daniels, & O'Toole, 1987). Purely computerized assessment can miss important observational and non-verbal information (Erdman, Klein, & Greist, 1985; Lukin et al, 1985). It is also important that computer-based assessments, especially those used online are validated and normed for use on a computer as some instruments have shown different psychometric properties when completed online compared to paper and pencil versions (Buchanan, 2002). There is some evidence that computer anxiety has a negative effect on the assessment of mood and therefore can give differential results (Tseng, Tiplady, Macleod, & Wright, 1998). Also when assessment is completed over the internet it is difficult to control and assess for extraneous variables such as distractions and fatigue (Buchanan, 2002).

Computers can also be used for self-monitoring. This has the advantages of real time assessment which reduces memory biases and may also be more valid as it can occur in the person's usual environment (Newman, Consoli, & Barr-Taylor, 1997). Palm-top

computers have successfully been used to help monitor anxiety (Newman, Kenardy, Herman & Barr-Taylor, 1997) and have the potential to be used in monitoring moods in the treatment of depression. The advantage of computers for monitoring is that they can be programmed to remind the individual to record their mood and can reduce retrospective biases.

Computers have also been used in training. Fearfighter, a computer-based treatment programme for phobia and panic was used to teach exposure therapy to medical students and produced equivalent knowledge to a group based tutorial, however the group tutorial was preferred (McDonough & Marks, 2002). A programme for training to assess for anxiety has been shown to be equivalent to a lecture format in knowledge acquisition, and superior in skills acquisition (Williams, Taylor, Aubin, Harkin, & Cottrell, 2001; Williams & Harkin, 2000). However medical students were found to prefer the lecture format and thought that they learnt more from this format (Williams et al., 2001). Computer assisted instruction has also been shown to increase self-esteem (Robertson, Ladewig, Strickland, Boschung, 1987). Computers could be useful for training purposes but the acceptability of such approaches needs to be investigated.

With the increase in use of computers in everyday life and in psychology, computer based programmes have also been developed for treating a range of clinical and non-clinical problems. These computer-based self-help programmes will now be discussed.

Computer-based self-help programmes

Most research for computer-based self-help is using programmes for depression and anxiety disorders; including panic disorder, obsessive-compulsive disorder, phobias, and post-traumatic stress disorder. However computer based approaches have also been tried for bulimia nervosa, schizophrenia, encopresis, tinnitus, alcohol use, and health related problems.

A CD-Rom for the treatment of bulimia nervosa using CBT and other strategies has found significant improvements even for non-completers (Bara-Carril et al, 2004). The programme had a 78 percent take-up rate but a low completion rate of 42 percent.

Another trial of this programme found that the non take-up rate is related to negative expectations and misunderstandings about the programme and the authors suggest that careful explanation is needed to reduce the anxieties of clients (Murray et al, 2003). The addition of minimal therapist contact was not found to increase the effectiveness of this programme however contact given was restricted in time and given at only three times during the treatment (Murray et al., 2007). An internet based treatment for bulimia demonstrated that it was significantly more effective than a waiting list in reducing vomiting and bingeing behaviours (Fernandez-Aranda, et al., 2009). However this treatment also included weekly contact with a coach as well as two face-to-face sessions.

A ten week CBT self-help programme for binge-eating disorder has been found to be equivalent to group treatment and superior to a wait list control in reducing binge eating (Shapiro, Reba-Harrelson, Dymek-Valentine, Woolson, Hamer, & Bulik, 2007). In addition this programme appeared to be very acceptable to patients. An internet-based programme designed to improve body satisfaction has also been used in college students and while it did produce significant improvements in body image, these were not significantly different from the control group (Winzelberg, et al., 1998; Winzelberg et al., 2000). However compliance with treatment was low in both of these studies which may have reduced effectiveness. The programme has also been trialed as a preventative programme with adolescent girls and produced short-term reductions in eating restraint, but no long-term effects (Bruning Brown, Winzelberg, Abascal, & Barr Taylor, 2004).

A computer-based programme has also demonstrated effectiveness in treating depression and co-morbid substance use, with treatment effects taking longer than therapist-led treatment but being maintained more reliably at twelve month follow up (Kay-Lambkin, Baker, Lewin, & Carr, 2009). Also computer-based treatment was more effective than therapist-led treatment in reducing cannabis use. It may be that the responsibility for recovery encouraged in self-help treatment is beneficial in treatment for these problems. An internet-based programme for the treatment of problem drinking has demonstrated moderate decreases in problem drinking in users, however this was an uncontrolled study so it is unknown if this is attributable to the treatment programme (Riper, et al., 2009). A computer-based programme using a community reinforcement

approach has also been found to be equivalent to similar therapist delivered treatment in reducing the use of cocaine and opioids (Bickel, Marsch, Buchhalter, & Badger, 2007).

A computer-based cognitive rehabilitation programme was used with inpatients with schizophrenia. Although no outcome data is reported, the programme had high completion rates, increased self-esteem, and was viewed as positive by the patients (Burda, Starkey & Dominguez, 1991). There have been no further developments in computer-based treatments for schizophrenia.

Computer-assisted programmes have also been used for health related problems such as diabetes related depression (van Bastelaar, Pouwer, Cuijpers, Twisk, & Snoek, 2008), headaches (Andersson, Lundstrom & Strom, 2003; Devenini & Blanchard, 2005; Strom, Pettersson & Andersson, 2000; Trautmann, & Kroener-Herwig, 2010), insomnia (Strom, Pettersson & Andersson, 2004), heart disease (Steinmark, Dornelas, & Fischer, 2006), and weight loss (Tate, Jackovny, & Wing, 2003; Tate, Wing & Winett, 2001). Internet-based programmes have also been used successfully in the treatment of stress management (Zetterqvist, Maanmies, Strom & Andersson, 2003), distress related to tinnitus (Andersson & Kaldo, 2004; Andersson, Stromgren, Strom & Lyttkens, 2002) and child encopresis (Ritterband et al., 2003a).

People frequently use the internet for health related information and therefore websites with good quality information and psycho-education could be used to increase help-seeking behaviour (Chang, 2005). Sampson (1986) suggests that using a medium that most people get their information from may be most effective. While estimates of people using the internet for health information are high, Baker, Wagner, Singer, and Bundorf (2003) found that of a US sample of internet users only 40 percent reported using the internet for health information. In addition 90 percent of these people reported that this did not result in any changes to their use of health care services or health behaviour. In a review of the use of internet for health care services and information, Bessell, McDonalds, Silagy, Anderson, and Sanson (2002) found that there is little evidence that the use of the internet has positive effects on health outcomes.

ClimateGP is a programme designed to be used in General Practice to educate clients about their disorders and uses principles of CBT to help them manage their illness

(Andrews & Erskine, 2003). The programme has five modules for depression, two for anxiety, and additionally can help manage physical illness with modules for chronic heart failure, diabetes and asthma. This means GPs are likely to see it as more beneficial and it also may reduce the stigma of receiving treatment because the programme is not only for mental disorders (Andrews & Erskine, 2003). The ClimateGP six session panic programme has been shown to significantly reduce panic and agoraphobia in a small preliminary trial over the internet with the addition of therapist email contact (Wims, Titov, & Andrews, 2008) but there is no further outcome data for the other modules. However, it is noted in a recent article that this programme has been identified by the Australian and New Zealand government as a preferred option to disseminate in primary care (Andrews & Titov, 2009).

Jacobs, Christensen, Snibbe, Dolezal-Wood, Huber, and Polterek (2001) compared a generic computer-based programme for psychological problems with individual problem-focused therapy and found computer-based therapy to be as effective as face-to-face therapy in improving anxiety, depression, and scores on the Global Assessment of Functioning Scale. However they found that patient ratings of problem improvement were significantly better in the face-to-face therapy group and this group was also more satisfied with treatment. This study however cannot be compared to clinical groups as participants were recruited from the newspaper and most did not experience clinically significant problems.

While computer-based self-help has been trialed with a range of clinical and non-clinical problems, most of the evidence base for computer-based self-help is in the treatment of anxiety and depression. The research literature for computer-based self-help for anxiety will now be discussed, followed by computer-based self-help for depression.

Computer-based self-help for anxiety

Fearfighter is a computer-based programme using guided exposure therapy for phobia and panic, with six one hour sessions (Kenwright, Liness & Marks, 2001). Fearfighter can produce significant improvements in phobia and panic, comparable to therapist guidance, but with a saving of up to 86 percent of therapist time (Gega, Marks, & Mataix-Cols, 2004; Hayward, MacGregor, Peck & Wilkes, 2007; Kenwright, Liness & Marks, 2001; Kenwright, Marks, Gega & Mataix-Cols, 2004; Marks, Kenwright, McDonough, Whittaker, & Mataix-Cols, 2004). Fearfighter has also been found to have high levels of client satisfaction (MacGregor, Hayward, Peck & Wilkes, 2009), to be cost-effective (McCrone, Marks, Mataix-Cols, Kenwright, & McDonough, 2009), and has been recommended by the National Institute for Clinical Excellence (2006). An internet trial of Fearfighter, found it to be equivalent to that delivered by a CD-Rom in a clinic (MacGregor, Hayward, Peck & Wilkes, 2009), and it has also demonstrated effectiveness in rural areas (Hayward, MacGregor, Peck & Wilkes, 2007). Feedback from patients using FearFighter for panic and phobic anxiety indicated that while the majority would recommend the programme to a friend or try it again in the future, only a third felt that the programme had met most of their needs, and the majority felt they had only improved to a small extent (MacGregor, et al., 2009). However this is in contrast to the clinical outcome data which showed significant improvement after treatment (Hayward, et al., 2007).

Palm-top computers have also been used in the treatment of panic disorder with positive results. Newman, Kenardy, Herman and Barr-Taylor (1997) compared four weeks of therapist delivered CBT plus twelve weeks of CBT delivered on a palm-top computer with twelve weeks of therapist delivered CBT, and found that although therapist delivered CBT was superior on number of panic attacks post-treatment, no differences were found between the two treatments at six month follow-up. Palm-top computers can help the client to feel more empowered and to monitor their symptoms more accurately. Clients received face-to-face therapy in the first four weeks and then computer only. As other studies have found benefits of face-to-face contact, it may have been more effective if clients in the computer condition had minimal therapist contact for the last eight weeks to enhance motivation. Kenardy, Dow, Johnston, Newman, Thomson, and Barr Taylor (2003) found that six sessions of face-to-face CBT

augmented with a palm top computer was equally effective as twelve sessions of face-to-face CBT for panic. Palm-top computers have not been used in the treatment of depression but may be useful in monitoring moods and thoughts (Williams & Whitfield, 2001). Hand-held computers have the advantages of encouraging application of techniques and compliance with homework, as well as more accurate monitoring of symptoms (Newman, Consoli & Barr-Taylor, 1997).

Internet-based programmes for panic also have evidence of effectiveness in reducing panic related distress (Carlbring, Westling, Ljungstraand, Ekselius & Andersson, 2001; Richards & Alvarenga, 2002), reducing agoraphobia and number of visits to the GP (Richards, Klein, & Austin, 2006), and self-monitoring (Klein & Richards, 2001). These programmes are not significantly different in effectiveness from therapist led CBT when used in conjunction with email contact with a therapist (Carlbring et al., 2005). However the study showing equality with therapist led CBT had small sample sizes giving reduced power to detect a difference and participants were also self-selected through interest in an internet programme so may have been biased towards this intervention. Participants in the internet group were also required to participate in an online support group and this may have explained some of the therapeutic effects. A study with the same conditions comparing the internet treatment with a waiting list control found that the addition of a ten minute phone call by a therapist per week produced effect sizes more similar to therapist-led CBT and also resulted in a greater module completion rate (Carlbring, et al., 2006). Carlbring, Ekselius and Andersson (2003) tried to cut down clinician time in use of this programme by creating more standardized email responses and found that treatment effects were not significantly different to computerized applied relaxation suggesting more personal contact may be necessary. This is also indicated by the fact that only 56 percent of the treatment material was completed. Some therapist contact appears to lower attrition rates (Richards, Klein & Carlbring, 2003). However it appears that GPs with some training in CBT can provide support in using this programme equivalent to email contact with a clinical psychologist, suggesting this could be delivered solely in primary care (Shandley et al., 2008).

BTSteps is an interactive voice response system using a computer for the treatment of obsessive-compulsive disorder and has been found to significantly reduce obsessions

and compulsions and improve work and social adjustment (Gega, Marks, & Mataix-Cols, 2004; Greist et al., 2002; Kenwright, Marks, Graham, Franses, & Mataix-Cols, 2005; Marks et al., 2003). BTSteps was not equivalent in effectiveness to clinician guided exposure but was shown to be equivalent if more than one session of self-exposure was completed (Greist et al., 2002). This programme is now also being offered through the internet (Kenwright, et al., 2005).

An uncontrolled study using University students found that internet based treatment for post traumatic stress disorder (PTSD) could be effective in reducing depression, anxiety, somatization, and sleeping problems (Lange et al., 2000). This study also found that those with more severe problems improved the most. Another study using a University sample also found that an eight week internet-based CBT programme, including relaxation skills training, cognitive restructuring, and written exposure exercises is effective in reducing PTSD related distress (Hirai, & Clum, 2005).

An internet-based CBT programme for social phobia has been found to be effective in treating social phobia but findings indicate that this is more effective with some therapist contact through email (Titov, Andrews, Choi, Schwenke, & Mahoney, 2008). Unguided self-help also showed higher drop out rates with only 33 percent completing the programme compared with 77 percent of those who received clinician assistance (Titov et al., 2008a). This six session programme including an online discussion group has demonstrated large within and between group effect sizes of 1.15 and 0.95 (Titov, Andrews, Schwencke, Drobny, Einstein, 2008) and this has been replicated (Titov, Andrews, Schwencke, 2008). This programme also has evidence of effectiveness in treating social phobia with co-morbid depression and co-morbid generalized anxiety disorder; with the co-morbid disorders also improving with this treatment (Titov, Gibson, Andrews, & McEvoy, 2009). Another nine session internet-based programme for social phobia has also demonstrated effectiveness; however this also included two group exposure sessions as well as therapist email contact (Anderrson, et al. 2006). The in vivo exposure sessions were found to be very important in the success of this treatment. A written self-help programme delivered over the internet including therapist email contact and online discussion groups has also resulted in reductions in social anxiety as well as increasing overall life satisfaction in social phobia (Carlbring,

Furmark, Steczko, Ekselius, & Andersson, 2006). Internet-based programmes may be a viable alternative for a disorder in which it is difficult to engage in face-to-face therapy.

Coordinated Anxiety Learning and Management (CALM) Tools for Living is a 6-8 session computer-based treatment programme using CBT designed to be used in primary care for four main anxiety disorders – panic disorder, generalized anxiety disorder, social anxiety disorder, and post-traumatic stress disorder. It was acceptable to both patients and clinicians and also produced reductions in anxiety and depression (Craske et al., 2009). Results from a randomized controlled trial are yet to be published.

A computer-assisted CBT anxiety prevention programme designed for people at risk of developing an anxiety disorder was trialed with University students and was found to reduce anxiety cognitions and negative affect, however had no effect on body sensations and catastrophic interpretations (Kenardy, McCafferty & Rosa, 2003; Kenardy, McCafferty & Rosa, 2006). It is hypothesized that interoceptive exposure may not be suitably practiced in a self-help form, again suggesting that some therapist involvement may be beneficial in self-help approaches. However computer-based programmes have successfully been used to carry out systematic desensitization (Chandler, Burck, Sampson, & Wray, 1988) and vicarious exposure for OCD (Clark, Kirkby, Daniels, & Marks, 1998; Kirkby, Berrios, Daniels, Menzies, Clark, & Romano, 2000), acrophobia (Rothbaum, Hodges, Kooper, Opdyke, Williford, & North, 1995), and spider phobia (Smith, Kirkby, Montgomery, & Daniels, 1997). An internet-based programme providing guided exposure therapy for spider phobia has also demonstrated equivalence to therapist guided exposure (Andersson, Waara, Jonsson, Malmaeus, Carlbring, & Ost, 2009).

Computer-based self-help programmes have evidence of effectiveness for a range of anxiety disorders. Another promising area of development is computer-based self-help for depression which will now be discussed.

Computer-based self-help for depression

Most current computer-based self help programmes use cognitive behaviour therapy (CBT). Because of its clear treatment structure, CBT is very suitable for self-help. Computerized Cognitive Behaviour Therapy (CCBT) can be defined as “computer programmes that present the principles and methods of CBT in an interactive manner via a computer interface in two or more sessions” (Titov, 2007, pg 96). They assist the patient to make decisions about how therapy should progress rather than a therapist making the decisions (Gega, Marks & Mataix-Cols, 2004). CCBT can be useful for patients who are reluctant to seek treatment, for those who have more mild symptoms, and as a useful adjunct to face-to-face therapy (Green & Iverson, 2009). One advantage of computerised self-help over written self-help approaches is that it is easier to monitor patients (Marks, Mataix-Cols, Kenwright, Cameron, Hirsch, & Gega, 2003). Computers may also be more engaging than self-help books with the modelling of techniques through real-life examples using video. CCBT could also be used as a relapse prevention strategy or tool (Cavanagh & Shapiro, 2004).

The first computer-based self-help programme was the PLATO Dilemma Counseling System (PLATO-DCS) which was designed to help people solve their problems by formulating a forced choice (Wagman, 1980). This programme was rated positively by users and helped to significantly improve problems and reduce their troublesomeness (Wagman, 1980). However many early computer programs were criticized as they failed to simulate a therapist due to their inability to process natural language (Bloom, 1992; Lawrence, 1986; Plutchik & Karasu, 1991; Sampson, 1986; Weizenbaum, 1965; Wright, Wright, Salmon, Kuykendall, Goldsmith & Zickel, 2002) and to take into account context and personal factors (Murphy & Pardeck, 1988). Computer based treatments were believed to be limited in treating psychological problems due to their inability to provide an interpersonal process (Lawrence, 1986). Others were concerned about confidentiality (Plutchik & Karasu, 1991) and patient safety (Kirkby & Lambert, 1996). More recent computer-based self-help programmes do not try to completely replace a therapist but are instead ‘clinician extenders’ (Marks, Mataix-Cols, Kenwright, Cameron, Hirsch & Gega, 2003), reducing the amount of face-to-face time needed with a therapist (Marks, Shaw & Parkin, 1998), and forming a part of a stepped care model of treatment (Kaltenthaler, Parry & Beverley, 2004).

As previously mentioned more recent computer-based approaches have used CBT. Colby (1995) created an early programme called 'Overcoming Depression' which included a cognitive therapy based educational text component as well as a dialogue component which allowed the patient to have a therapeutic exchange. It is reported to be satisfactory to users and with thousands of users has no reports of harm, however there are no outcomes reported (Colby, 1995). Selmi, Klein, Greist, Sorrell, and Erdman (1990) found that a six session CCBT programme for depression was equivalent to six sessions of therapist lead CBT in reduction of both depressive symptoms and negative automatic thoughts. This programme checked patient's understanding of the material during sessions, provided a rationale for and adjusted homework assignments according to the patient's needs, and averaged only 20 minutes face-to-face contact time per patient. However the generalizability of this study is low as all participants were non-minorities, well educated, and self-selected through a newspaper advertisement.

Wright and colleagues (2002) found that a six session computer-based cognitive therapy programme including changing automatic thoughts, behavioural activation, and changing schemas could be helpful in improving depression, anxiety, automatic thoughts, and cognitive therapy knowledge. However because this study was uncontrolled and patients may have had additional pharmacotherapy and psychotherapy, it is unclear what part the computer programme played in the improvements. Wright and colleagues (2005) also found an adjunctive nine session computer-based cognitive therapy programme to be significantly better at reducing depression than a waiting list control and not significantly different from standard face to face cognitive therapy. In addition the computer-based cognitive therapy produced significantly greater changes in dysfunctional attitudes and cognitive therapy knowledge than standard cognitive therapy. This computer programme was based on cognitive therapy described in *Cognitive Therapy: Basics and Beyond* (Beck, 1995) including introduction to cognitive model, identifying and challenging automatic thoughts and cognitive errors, behavioural activation, and modifying core beliefs (Wright et al., 2005). It may be that the multi-media format and consistency of the computer programme help to reinforce cognitive therapy skills more than a therapist.

Cope is a self-help programme using CBT for depression/anxiety that uses a computer activated voice response system in a computer. It has been found to significantly reduce depression and improve work and social adjustment (Gega, Marks, & Mataix-Cols, 2004; Marks, et al., 2003; Osgood-Hynes, et al., 1998). Users of this programme made most calls to the voice response system outside of office hours, highlighting the convenience aspect of self-help (Osgood-Hynes, et al., 1998). Balance is a simpler CD-ROM based CBT programme for depression which has been shown to produce some improvements in depression and work and social adjustment; but is not as effective as other programmes, and may require more face-to-face time (Marks et al, 2003). Both programmes help users work through CBT tasks and aid in relapse prevention but little information is given about CBT techniques used.

Computerized CBT has also been trialed with adolescents with depression with positive results. 'Stressbuster' is an eight session computer-based CBT self-help programme designed for adolescents with depression including behavioural activation, emotion recognition, identifying and challenging thoughts, problem solving, social skills training, and relapse prevention (Abeles, et al., 2009). In a preliminary study Abeles and colleagues (2009) found that 'Stressbusters' resulted in significant reductions in depression and anxiety, as well as decreases in depressive cognitions and improvements in global functioning. Although the sample was small, an impressive 80 percent of those completing the treatment no longer met diagnosis for depression at post-treatment follow-up. It is suggested that computer-based treatment may be particularly suitable for young people who have familiarity with computers and may prefer to interact with a computer than have to talk to an adult (Abeles et al., 2009).

Computer-based programmes are now also being completed through the internet which raises more concerns about adequate monitoring and the need for careful assessment to judge suitability for treatment (Carlbring & Andersson, 2004). There is a potential for people to misdiagnose their problems and get inappropriate treatment, as well as issues with compliance (Ritterband, Gonder-Frederick, Cox, Clifton, West & Borowitz, 2003). There is also some concern over the quality of websites, with an audit of 21 popular sites about depression showing most did not give information relevant to current clinical guidelines (Griffiths & Christensen, 2000).

An Australian internet based programme providing CBT for depression (MoodGYM) has demonstrated effectiveness in reducing depression (Christensen, Griffiths, & Korten, 2002), although a website giving education about depression and its treatment (Bluepages) was equally effective (Christensen, Griffiths, & Jorm, 2004). MoodGYM includes five modules covering cognitive restructuring, pleasant activities, problem solving, assertiveness training, and relaxation (MacKinnon, Griffiths, & Christensen, 2008). Bluepages provides information about depression including symptom, diagnosis, and medical, psychological, alternative and lifestyle interventions, as well as links to resources (MacKinnon et al., 2008). Both of these interventions showed greater effectiveness than an attention control and these effects were maintained at six and twelve month follow-up (MacKinnon et al., 2008). This study had a large sample size but participants were self-selected and highly educated which limits the ability to generalize the results. Both MoodGYM and Bluepages have also been found to reduce personal stigma towards depression (Griffiths, Christensen, Jorm, Evans, & Groves, 2004). However MoodGYM also increased perceived stigma from others. This may be because CBT teaches that thoughts can be changed which makes the person feel that depression is in their control and is therefore their fault (Griffiths et al, 2004). Another study using different components of MoodGYM found that the most useful parts of the programme seem to be education about CBT and working with thinking (Christensen, Griffiths, MacKinnon & Brittliffe, 2006). Open access internet treatment in this study had high attrition rates and rates were especially high for the full five module programme. The addition of phone or email contact may improve completion rates and effectiveness of this programme. This programme appears also to be used by health practitioners with 18.6 percent of users indicating they were referred by their health practitioners (Griffiths & Christensen, 2007).

Andersson and colleagues (2005) found a five session cognitive-behavioural self-help programme for depression delivered over the internet to be effective in reducing depression and anxiety compared to a control group participating in a web-based discussion group. This programme included behavioural activation, cognitive restructuring, taking care of sleep and physical health, relapse prevention, and goal setting (Andersson et al., 2005). An eight module computer-based self-help CBT programme covering psycho-education, cognitive restructuring, behaviour change, and relapse prevention delivered over the internet has also demonstrated evidence of

effectiveness in treating sub-threshold depression in people over 50 years old (Spek et al., 2007) and these treatment gains are maintained at one year follow-up (Spek et al., 2008). However it is difficult to reconcile purely internet based treatments, with the evidence showing that some face-to-face contact is necessary.

A meta-analysis of internet-based treatment programmes for depression or anxiety showed that those with some therapist support have large effect sizes; while those without any support have only small effect sizes (Spek, et al., 2007). An eight session internet-based programme for sub-threshold depression based on the principles of CBT, 'Colour Your Life', has not been found to be more effective than treatment as usual in primary care (de Graaf et al., 2009). Another internet-based CBT programme for depression focusing mainly on cognitive restructuring, 'Overcoming Depression on the Internet (ODIN),' also failed to find significant treatment effects and also had a low take up rate of 3.2 percent (Clarke, et al., 2002). It may be that some face-to-face contact may be necessary for effectiveness and motivation of participants. As these programmes include a limited range of CBT techniques they also may not adequately treat depression.

Beating the Blues (BtB, Proudfoot et al., 2003b) is an eight session computer based cognitive behavioural self-help programme for depression focusing on problem definition, pleasurable events, automatic thoughts, thinking errors, distraction, challenging unhelpful thinking, core beliefs, attributional style, and action planning. This programme was carefully designed to include non-specific factors in the therapeutic process, such as empathy, motivation, and hope (Proudfoot, et al., 2003b). Proudfoot and colleagues (2003a) compared BtB to treatment as usual in General Practice, and found BtB resulted in significantly greater reductions on the Beck Depression Inventory, Beck Anxiety Inventory, and the Work and Social Adjustment Scale, independent of depression severity; and this was maintained at six month follow-up. This evaluation of BtB was replicated and similar results were found (Proudfoot et al., 2004). The second study also found that BtB significantly increased positive attributions and decreased negative attributions. Anxiety was found to only be reduced in those with more severe anxiety. BtB has also been supported by an effectiveness study in routine care suggesting it can be generalized to routine settings (Cavanagh, et al., 2006) and the gains achieved with BtB are similar to those achieved with face-to-

face therapy (Cavanagh et al, 2006). Dropout rates for this programme range from 22 percent to 35 percent (Learmonth, Trosh, Rai, Sewell, & Cavanagh, 2008; Proudfoot, et al., 2003a; Proudfoot et al., 2004).

Van den Berg, Shapiro, Bickerstaffe and Cavanagh (2004) also found significant changes in self-reported anxiety and depression, wellbeing and functioning after completion of BtB in a Community Mental Health setting but dropout was also a problem, with 45 percent not completing the programme. They argue however that this does not necessarily mean it was unacceptable, but may mean that these clients received enough benefit from fewer sessions. However in another study, only 5 percent of drop-outs indicated that they dropped out due to improvement (Marks, et al., 2003). Most studies do not report why participants dropped out of treatment but one study found that only half of the drop outs reported it was because of treatment dissatisfaction (van den Berg, et al., 2004). While some people may drop out of treatment due to improvement, the final sessions of most programmes usually include relapse prevention strategies which are important if gains are to be maintained (Waller & Gilbody, 2009).

In a Community Mental Health Setting BtB allowed the service to offer treatment to those who would normally be referred back to their GP due to insufficient severity for that required in these settings due to high demand (van den Berg et al, 2004). In addition BtB has been successfully used in the National Health Service to treat patients with depression including co-morbid anxiety (Learmonth & Rai, 2008; Learmonth, Trosh, Rai, Sewell, & Cavanagh, 2008). Patient evaluations of the programme have been positive with some indicating it was as good as or better than previous face-to-face therapy (Proudfoot, et al., 2003b). BtB has also been used in the workplace for work stress and absenteeism, producing significantly lower depression and negative attributions compared to conventional care; however these differences were not significant at three and six month follow-ups (Grime, 2004). Support has also been found for the cost-effectiveness of BtB, although there is no research directly comparing its cost-effectiveness to face-to-face therapy (McCrone, et al., 2004).

'Overcoming Depression'

'Overcoming Depression' is a six session interactive CD-Rom for depression using CBT (Williams, Taylor, Aubin, Harkin & Cottrell, 2002). Its five area approach deals

with the problematic situation, altered thinking, altered feelings, altered physical symptoms, and altered behaviour that accompany depression. The six sessions cover what depression is, how to identify and challenge extreme and unhelpful thoughts, problem solving, and relapse prevention/goal setting. In an uncontrolled pilot study this programme was found to significantly reduce depression, increase subjective knowledge about depression, and viewed positively by patients (Whitfield, Hinshelwood, Pashely, Campsie & Williams, 2006). These gains were achieved in a mixed sociodemographic sample and were maintained at 3 month follow-up. Interestingly results also showed that the most gains occurred after session one, consistent with what is found in face-to-face CBT (Haas, Hill, Lambert, & Morrell, 2002). While this programme looks promising, there have been no randomized controlled trials to support its efficacy published to date.

Numerous reviews and meta-analyses have shown CCBT to be effective (Cavanagh & Shapiro, 2004; Griffiths & Christensen, 2006; Przeworski & Newman, 2006). A recent review of CCBT found that it is effective in anxiety and depression and it is acceptable to patients and clinicians (Green & Iverson, 2009). These types of programmes also appear to be a cost-effective treatment option (Bower, Richards, & Lovell, 2001). Computer-based self-help programmes have been used successfully to treat depression and anxiety, however it is clear further research is needed.

While computer-based self-help programmes have been shown to be effective for a wide range of problems, there is still more research needed to find out what makes an approach effective and how best they should be used.

Who is self-help best for?

It is clear that self-help is not suitable for everyone and care must be taken in selecting patients suitable for self-help treatment (Erdman, Klein, & Greist, 1985; Sampson, 1986; Zarr, 1984). Gega, Kenwright, Mataix-Cols, Cameron, and Marks (2005) have created a screening questionnaire for suitability for self-help that shows promise, with high sensitivity but low specificity. The questionnaire only has the ability to detect 38-50 percent of unsuitable patients. However, with further refinement this may be a useful measure.

Mains and Scogin (2003) suggest that all types of self-help treatment are not for individuals with co-morbid disorders, personality disorders, emotional avoidance, interpersonal problems, low motivation, lack of learned resourcefulness, externalized coping, defensiveness, or suicidality. Because self-help treatment requires high self-motivation and generally provides no monitoring of safety, it is suggested that self-help treatment is not suitable for those with problems of high severity (Mains & Scogin, 2003; McKendree-Smith, Floyd & Scogin, 2003). In contrast, den Boer, Wiersma, and Van den Bosch (2004) found that the effectiveness of bibliotherapy was not influenced by the duration of illness.

Indications are that self-help is not suitable for more severe problems (Mains & Scogin, 2003; McKendree-Smith, Floyd & Scogin, 2003). In a review of bibliotherapy studies for the treatment of alcohol problems, Apodaca and Miller (2003) found that self-help was not effective for patients screened in general practice, that is those not seeking help, suggesting that motivation may also be needed for successful self-help treatment. It may also not be suitable for patients who are unable to concentrate, and care must be taken that the patient does not get a sense of failure potentially increasing dependency (Sampson, 1986b; Williams & Whitfield, 2001). Newman, Erickson, Przeworski, and Dzus (2003) in a review of self-help for anxiety disorders, suggest that self-help is most suitable for less severe, younger patients. However bibliotherapy can also be effective for older adults (Brenes, McCall, Williamson, & Stanley, 2010; Scogin, Jamison & Gochneaur, 1989).

Computerized assessment has been found to be very acceptable to elderly people (Merrick, Secker, Fright, & Melding, 2004). Laguna and Babcock (1997) found that older people have higher anxiety about using computers than younger people but this did not affect their overall performance. However it did contribute to a slower response time. Dyck and Smither (1994) found that older people had more positive attitudes to computers than younger people and hypothesise that this may be because they use computers more for pleasure than for work. Older people have an interest in using the computer but have a fear of doing something wrong or looking stupid so keeping it simple and giving good instructions is useful (Saunders, 2004). Other research has shown that older people underestimate their computer knowledge and therefore have low confidence in using computers (Marquie, Jourdan-Boddaert, & Huet, 2002). However an internet-based programme for depression was found to be as effective as a group based programme in treating sub-threshold depression in individuals over the age of 50 (Spek et al., 2007b). Other research has found that older people find CCBT more difficult (Waller & Gilbody, 2009). With a rapidly aging population it is important to consider how computer-based programmes can be effectively used with older persons.

Education level may also be a factor affecting the effectiveness of self-help, with those with more education more likely to complete treatment (Scogin, Jamison & Gochneaur, 1989). Initial inexperience with a computer has not been found to affect outcome in computer-based self-help treatment (Lange et al., 2000; Marks, et al., 2003), suggesting lack of computer experience is not a barrier to computer-based treatment.

Limitations of self-help and self-help research

There have been concerns from many clinicians about the use of computer-based self-help programmes (Whitfield & Williams, 2004). Sampson (1986) suggests that these programmes will become increasingly available and widely used, so psychologists should become more knowledgeable about them so that they can recommend the most appropriate programmes. Chang (2005) suggests that the internet is increasingly used to solve mental health problems and psychologists need to prioritize internet self-help as a research agenda. In addition programmes have been positively rated by users

(Proudfoot et al., 2003b; Wagman, 1980; Whitfield, Hinshelwood, Pashely, Campsie, & Williams, 2006) and resistance has been from clinicians not patients (Bloom, 1992).

For an effective computer-based treatment programme to be created first it must be known what elements of treatment bring about change (Marks, Shaw & Parkin, 1998). However, CCBT can also give the opportunity to delineate which parts of the therapeutic process lead to change (Cavanagh & Shapiro, 2004; Lange et al., 2000; Kirkby & Lambert, 1996).

It is important that programmes incorporate non-specific factors of therapy such as showing empathy, maintaining motivation, and instilling hope (Proudfoot, et al., 2003b). To be successful, computer-based programmes need to take into account non-specific factors involved in the therapeutic relationship including empathy, positive regard, hope, motivation, and monitoring understanding and satisfaction (Proudfoot, 2004). In an internet-based CBT programme for distress associated with tinnitus, a therapeutic alliance was developed through the use of email to give feedback on training diaries (Andersson & Kaldø, 2004). An internet-based behaviour therapy programme for weight loss found that the addition of weekly email contact with a counselor significantly improved weight loss (Tate, Jackovny, & Wing, 2003). Another study using BTSteps to treat OCD found that a scheduled support phone call throughout treatment reduced dropout rates, and improved compliance and reduction in obsessions and compulsions more than unscheduled support (Kenwright, Marks, Graham, Franses, & Mataix-Cols, 2005). A meta-analysis of self-help studies showed overall a moderate effect size, but when only guided self-help approaches were used a large effect size was found (Gellatley, Bower, Hennessey, Richards, Gilbody, & Lovell, 2007).

Most research also advocates that some face-to-face contact is necessary (Gega, Marks, & Mataix-Cols, 2004; Marks, Kenwright, McDonough, Whittaker & Mataix-Cols, 2004; Marks et al, 2003; Marks, 1999; Marks, Shaw, & Parkin, 1998; National Institute of Clinical Excellence, 2003; Richards, Klein & Carlbring, 2003; Sampson, 1986; Waller & Gilbody, 2009), but there are no guidelines on the quality and quantity of contact required. Richards, Klein and Carlbring (2003) found that the addition of therapist assistance to internet-based self-help reduced attrition rates. It appears that while CCBT without therapist contact may be useful for some people, better results

have been achieved with some form of therapist contact, similar to those in therapist led CBT (Titov, 2007). Therapist contact may reduce dropout rates as a trial of computer-based cognitive therapy with 30 minutes contact time per session showed much lower dropout rates (Wright et al., 2005). Feedback from patients has also indicated that face to face contact is missed and that it is hard to stay motivated (MacGregor, Hayward, Peck & Wilkes, 2009). Further research is needed to discover the optimum amount of therapist time and whether this support can be given by other professionals (Whitfield & Williams, 2004).

There also need to be some guidelines around the use of computer-based self-help. Sampson and Pyle (1983) suggest that psychologists should be at the forefront of evaluating programmes and creating ethical guidelines around their use. Programmes need to keep confidentiality, and clinicians need to assess the client for appropriateness for self-help before recommending it, prepare the client so they do not have unrealistic expectations, and be adequately trained in the use of self-help (Sampson, 1986). The National Institute for Clinical Excellence (NICE, 2002) recommend pre-therapy assessment as well as ongoing monitoring and support.

More research is also needed into the acceptability of self-help to users (Kaltenthaler, Parry & Beverley, 2004). A median of 38 percent of people offered CCBT actually start treatment and in addition a median of only 56 percent of these complete CCBT programmes (Waller & Gilbody, 2009). Some of the barriers to uptake and completion are travel, time, lack of computer skills, and lack of motivation. Take-up rates may depend on how the treatment is presented with people more likely to engage in CCBT if it is offered as a first line of treatment (Williams & Martinez, 2008). Many implementation challenges also need to be overcome before computer-based treatment will be integrated into our care systems such as issues of funding, confidentiality, adequate training, and acceptability to clinicians, requiring randomised controlled trials (Marks, Shaw & Parkin, 1998).

The National Institute for Clinical Excellence (2002) recognize the potential effectiveness of computerized cognitive behavior therapy; however also suggest the need for more information on cost-effectiveness, the level of training required, and about which client groups it is suitable for. Research into cost-effectiveness should also

include the costs of use of other health services as it may be that those with briefer interventions access help from other areas (Bower & Gilbody, 2005). More research is needed into computer-based self-help, in particular the amount and quality of guidance required, what the characteristics of successful clients are, qualitative studies of how clients rate programmes, research into which components lead to change, and assessment of the effects on social functioning and quality of life, not just symptom reduction (Kaltenthaler, Parry & Beverley, 2004). Small sample sizes in many computerized CBT studies may lack the power to find significant differences between CCBT and therapist led CBT and therefore it cannot be concluded that they are equivalent (Bower & Gilbody, 2005).

Most research into CCBT has not been carried out in primary care settings where anxiety and depression are prevalent and most also do not include patients with comorbid disorders (Kaltenthaler, et al., 2004). More independent research is also needed with most evaluation studies being carried out by developers of the programme which can introduce biases (Kaltenthaler, et al., 2004). In addition there is a lack of research comparing CCBT to bibliotherapy. There is currently no evidence that CCBT is more effective than bibliotherapy (Kaltenthaler, et al., 2002), with a recent meta-analysis finding no difference in effect sizes between bibliotherapy and computer-based approaches (Gellatley, et al., 2007). A large amount of research into self-help approaches have used US based non-clinical populations which tend to have lower drop-out rates (Williams & Whitfield, 2001) and do not generalise well to clinical or New Zealand populations. In addition most trials have large exclusion criteria that do not correspond to everyday practice.

Conclusion

With increasing demands on primary and secondary health care services seeing a move to stepped care approaches, self-help can be very valuable in a stepped care approach. Self-help programmes have many advantages including convenience, clients can work at their own pace, earlier access which helps prevent disability and chronicity and in turn reduces costs, less stigma, treatment consistency, and enhancement of the client's sense of control and motivation, (Marks, Shaw & Parkin, 1998; Marks, 1999; Proudfoot, et al., 2003a). Written self-help approaches have evidence of effectiveness for a wide range of clinical and non-clinical problems without the need for face-to-face contact. Computers have also become a useful tool in psychology for assessment, training, monitoring, and most notably for treatment. Although computer based self-help programmes have been developed for a range of problems, the strongest evidence base is in the use of computer-based self-help programmes using a CBT approach for the treatment of anxiety and depression. Although computer-based approaches have advantages including being more interactive through the use of multimedia and able to be more easily updated, written self-help shares many of the advantages and there is little research comparing whether computer-based self-help is more effective than written self-help approaches (Marks, et al., 1998). More research is needed to clarify who self-help is best for, how much support is necessary, and who can offer that support. The following chapter discusses some of the common factors that may moderate treatment effects including self-help approaches.

Chapter 5

Factors affecting treatment outcome

There can be a range of factors that may affect treatment effectiveness. Among the more researched factors are co-morbid disorders, the therapeutic alliance, therapist competence and adherence to treatment protocol, the use of homework or between session tasks, and the acceptability of treatment.

Disorder co-morbidity

Depression is often co-morbid with anxiety disorders (Scott, 2006) and this can reduce the effectiveness of treatment (Brown et al., 1996; Lydiard & Brawman-Mintzer, 1998; Sherbourne and Wells, 1997). Those with a co-morbid anxiety disorder are less likely to exhibit recovery from depression one year after diagnosis (Gaynes, et al., 1999). In treating those with a co-morbid anxiety disorder, clinicians also need to be aware that these patients have higher rates of suicidal ideation, suicide plans, and suicide attempts (Beautrais, 2006; Clayton et al., 1991). Those with co-morbid substance abuse disorders also tend to have poorer treatment outcomes (Howland et al., 2009). The higher rates of physical health problems found in co-morbid depression and anxiety disorders can also negatively affect treatment outcome (Scott, 2006).

There is little research on the effects of disorder co-morbidity on the effectiveness of self-help approaches although a number of studies have shown that self-help approaches can be effective without excluding participants with co-morbid anxiety disorders (Andersson, et al., 2005; Cavanagh, et al., 2006; Christensen, Griffiths, & Jorm, 2004; Christensen, Griffiths, MacKinnon, & Britliffe, 2006; Learmonth, Trosh, Rai, Sewell, & Cavanagh, 2008; Proudfoot, et al., 2003a; Proudfoot et al., 2004). However most research has excluded patients with other co-morbid disorders, such as substance use disorders, so little is known about the effects of these on the effectiveness of self-help. Mains and Scogin (2003) have suggested that those with co-morbid disorders are less

suitable for self-help approaches however there is little empirical basis for this to date. The negative effects of co-morbid anxiety disorders may be reduced by attention to other factors such as the therapeutic alliance.

Therapeutic alliance

The therapeutic alliance has consistently been found to predict therapy outcome and this does not differ as a function of the type of therapy used (Horvarth & Symonds, 1991). Krupnick and colleagues (1996) found that the therapeutic alliance is a common and important factor across treatment modalities including cognitive behaviour therapy, interpersonal therapy, and pharmacotherapy. Early and mean therapeutic alliance scores were both related to treatment outcome and accounted for 19 percent of the outcome variance. In Krupnick and colleagues' study more of the treatment outcome was attributed to therapeutic alliance than treatment method. Therapeutic empathy is also found to have a positive effect on treatment outcome when controlling for depression severity or homework compliance (Burns & Nolen-Hoeksema, 1992).

Glasman, Finlay and Brock (2004) found that patients who completed CBT for depression 3-10 months ago, still used the therapeutic alliance to help with their problems, for example by thinking 'what would the therapist do?' Gershefski, Arkoff, Glass and Elkin (1996) found evidence that a focus on interpersonal elements would be a useful addition to CBT. Ilardi and Craighead (1994) suggest that non-specific factors such as the therapeutic relationship, the healing setting, treatment rationale and the expectancy that a treatment procedure is believed to help, can account for improvement in the first few weeks. In a review of CBT studies, they found that 60-75 percent of improvement occurred by week four of treatment, which suggests non treatment specific factors play an important role in recovery. This does not mean that CBT specific factors that come later in therapy are not important, but it may be that those who respond to the non-specific factors at the beginning of therapy are in a better position to learn the techniques and maintain improvements (Ilardi & Craighead, 1994). Factors that improve the therapeutic alliance include individualizing the treatment to the patient, finding out about previous experience in treatment, engendering hope, genuine caring,

and considering the individual in context (Macneil, Hasty, Evans, Redlich, & Berk, 2009).

With evidence that the therapeutic alliance is an important factor across different therapies, how can computer-based treatment provide an adequate therapeutic alliance? (Macneil et al., 2009). It has been suggested that this may explain why guided self-help or self-help with some face-to-face contact is better than unguided self-help (Richardson, Richards, & Barkham, 2010). However Richardson and colleagues (2010) analysed three popular self-help books and found evidence of efforts to establish a therapeutic relationship showing it may be possible. However they found little evidence of techniques to develop and maintain the therapeutic relationship such as responsiveness, flexibility, and rupture repair, suggesting self-help could be improved. There is currently no research investigating these factors in computer-based self-help. The majority of self-help research has not investigated the therapeutic alliance as a factor in treatment outcome (Newman, Erickson, Przeworski, & Dzus, 2003).

Positive therapeutic alliances can be developed through online therapy (Hanley, 2009; Knaevelsrud & Maercker, 2006, 2007) and these are comparable to alliances developed in face-to-face therapy (Reynolds, Stiles, & Grohol, 2006) or even higher than in face-to-face therapy (Cook & Doyle, 2002). There is little research investigating whether therapeutic alliance in online therapy affects treatment outcome but Knaevelsrud and Maercker (2006) found that the therapeutic alliance had only a low influence on treatment outcome. This differs from what is found in face-to-face therapy and it is suggested that different treatment factors may be more important in online therapy, such as structure and self-efficacy. However in a later study the therapeutic alliance was found to have a relationship to treatment outcome, although causality could not be established (Knaevelsrud & Maercker, 2007). It could be that those with symptom improvement rate the alliance more positively. It seems that a strong therapeutic alliance can be developed between a therapist and client across the internet but self-directed self-help is very different. More research is needed to investigate therapeutic alliance with self-help materials.

The therapeutic alliance has consistently been found to be important in predicting treatment outcome across a range of therapy types. Computer-based treatment is argued to be lacking this important treatment component; however there is some evidence that a relationship can be established in a self-help medium. Trepka, Shapiro, Hardy, and Barkham (2004) found that both therapeutic alliance and therapist competence make independent contributions to treatment outcome in cognitive therapy for depression. One advantage of self-help is adherence to treatment protocol and consistent structure. The literature exploring therapist competence and adherence to treatment protocol is explored below.

Therapist competence or adherence to treatment protocol

There are very few studies investigating the effects of therapist competence and adherence to treatment protocol on treatment outcome but these non-specific factors should be included in psychotherapy studies (Chatoor & Krupnick, 2001). Cuijpers, van Straten, Bohlmeijer, Hollon, and Andersson (2010) found that few studies of psychotherapy for depression investigated adherence to treatment protocol. Those studies that did adhere to a manualized treatment however, demonstrated larger effect sizes than those not using manualized treatment (Cuijpers et al., 2010b).

Shaw and colleagues (1999) found that therapist competence or ability to adhere to treatment protocol explained a significant amount of variance in treatment outcome using therapist symptom ratings. However this was not significant when using patient self-ratings of symptoms. The most important treatment factor in explaining outcome was ability to structure sessions and assign homework (Shaw et al., 1999). Self-help approaches have advantages in this area as they are consistent and through a structured approach adhere to treatment protocols. One computer-based programme using cognitive therapy was found to be more effective than standard face-to-face cognitive therapy (Wright et al., 2005) and this may have been due to the consistency of this approach. However there is little research directly comparing the relationship of consistency and effectiveness between self-help and face-to-face CBT. The use of

homework in therapy is also an important factor affecting treatment outcome which is explored below.

Homework or between session tasks

It is known that for therapy to be effective, clients must engage in therapeutic activity outside of therapy. Homework in therapy can be considered a way of encouraging generalization outside of the therapy hour and can be useful to internalize skills and aid relapse prevention. Homework has been defined as “any out-of-office activity directed by a therapist and intended to have a therapeutic effect if undertaken during the course of therapy” (Neimeyer, Kazantzis, Kassler, Baker, & Fletcher, 2008, pg 199). Homework is commonly used in therapy and has been found to be used by 98 percent of therapists surveyed in New Zealand (Kazantzis & Deane, 1999). However it was also found that those who described themselves as CBT practitioners used homework more often and as most of the sample did identify as CBT practitioners this may have influenced the results (Kazantzis & Deane, 1999). However using a more representative U.S. sample of theoretical orientations, Kazantzis, Deane and Lampropoulos (2005) also found that 98 percent of psychologists use between session activities, with 68 percent using them often or always. While a very important component in CBT, homework is also used in many other therapy orientations (Kazantzis & Ronan, 2006a). Kazantzis, Busch, Ronan and Merrick (2006) found that practitioners from a range of theoretical orientations use homework; however CBT practitioners used homework more often and more systematically. The way homework is used in therapy can vary greatly, ranging from therapist-led to client-led (Kazantzis & Ronan, 2006b).

A meta-analysis of homework studies has shown that homework enhances effectiveness in psychotherapy, showing an effect size of 0.36 (Kazantzis, Deane, & Ronan, 2000). Other studies have found that in those being treated for depression using CBT, those that completed homework tasks did better than those who did not (Addis & Jacobson, 2000; Burns & Nolen-Hoeksema, 1991; Burns & Spangler, 2000). There is also evidence that the severity of depression has no negative effects on homework compliance (Burns & Spangler, 2000). Willingness to complete homework, homework compliance, and cognitive skill acquisition were all found to predict a more positive

outcome in group CBT for depression (Neimeyer et al., 2008). Research is lacking on the use of patient-instigated homework activities and on the quality of homework completed (Kazantzis & Lampropoulos, 2002) as some research suggests that clients often modify therapy assigned tasks (Helbig & Fehm, 2004). Rees, McEvoy, and Nathan (2005) found that both quality and quantity of homework were predictive of therapy outcome; however quantity was a stronger predictor suggesting any attempt at homework should be encouraged. However in group therapy for panic disorder quality of homework was a stronger predictor of outcome than quantity completed (Schmidt & Woolaway-Bickel, 2000).

Important factors in setting homework include providing a rationale, ensuring the task is relevant to the patient's goals, current functioning, and the current session content; identifying the client's beliefs about and barriers to homework; setting simple, specific, and realistic tasks; and setting homework collaboratively (Broder, 2000; Kazantzis & Lampropoulos, 2002; Scheel, Hansen, & Razzha Vaikina, 2004; Tompkins, 2002). Detweiler-Bedell and Whisman (2005) found that homework had a more positive effect on outcome in treatment for depression if the client was more involved in discussions about homework, therapists set concrete goals, and written reminders are given. Fehm and Mrose (2008) found that few therapists follow recommended guidelines when setting homework in practice however these techniques were not correlated with homework compliance. It is also important that the therapist reflect on their own therapist self-concept (how they see themselves as a therapist and view therapy), as well as their own beliefs about homework non-adherence, as this can affect the way they use homework in therapy (Haarhoff & Kazantzis, 2007).

Homework also needs to be adapted to the client, especially in older adults. In older adults it is important to consider sensory and physical difficulties, beliefs about therapy and the causes of their illness, memory and cognitive impairments, and the effects of medications (Kazantzis, Pachana, & Secker, 2003). It is also important to review and set homework at every session so that the importance of homework is reinforced (Kazantzis & Lampropoulos, 2002). If completed homework is not reviewed it can be demoralizing and discourage the client from attempting homework in the future (Garland & Scott, 2002).

Task related features such as difficulty and time required to complete the task do not appear to be related to homework compliance (Helbig & Fehm, 2004). Factors found to be related to homework compliance include being in a later stage of therapy, having a female therapist, having motivation to do homework, and receiving written instructions (Helbig & Fehm, 2004). Mostly patients are accepting of homework and largely compliant (Fehm & Mrose, 2008).

It is also important to identify barriers to homework completion which may include conditional and unconditional beliefs such as 'if I don't do things perfectly, I will be criticized by others' (Garland & Scott, 2007). Addressing these barriers can add to the formulation of the problem and be another helpful opportunity to work on what has brought the person to therapy (Garland & Scott, 2007). The non-completion of homework may be a useful opportunity to discuss negative automatic thoughts and beliefs that may be preventing the client doing homework (Garland & Scott, 2002). Other barriers to homework completion include the balance of perceived benefits and costs of completing homework, the client's belief about their ability to complete the task, lack of therapeutic collaboration, and lack of therapist competence in homework setting (Kazantzis & Shinkfield, 2007). Detweiler-Bedell and Whisman (2005) found that discussing barriers with less engaged clients created more positive outcomes.

Kenwright, Marks, Graham, Franes, and Mataix-Cols (2005) found that among those completing computer-guided self-help for obsessive-compulsive disorder, patients who did more homework tasks showed significantly greater improvement. In a study of a computer-based self-help programme for irritable bowel syndrome no differences were found between improvers and non-improvers in quantity or quality of homework tasks completed (Bogalo & Moss-Morris, 2006). However at three month follow-up those that had completed a greater quantity and quality of homework were significantly more likely to have maintained improvements suggesting homework is an important factor in self-help. Some of the factors discussed above such as providing written instructions, reviewing homework at the beginning of every session, and addressing barriers to homework completion can be easily be incorporated into self-help programmes. Patients can also be guided to set their own homework tasks. Homework adherence is also likely to be affected by the acceptability of the treatment approach which is another important factor that can affect treatment effectiveness.

Acceptability of treatment

The acceptability of treatment is going to affect the adherence to treatment recommendations (Reimers, Wacker, Cooper, & De Raad, 1992) and is likely to lead to greater treatment effectiveness. Kazdin (2000) states that for a treatment to be acceptable, it needs to be fair, reasonable, justified, and palatable. A treatment is also more acceptable if it has evidence of effectiveness (Cross-Calvert & Johnson, 1990; Kazdin, 2000). However this is not always the case. Hecker, Fink, and Fitzler (1993) asked general practitioners to rate various treatments for panic disorder and found that cognitive-behaviour therapy was rated as the most acceptable, despite drug use being rated the most effective. This shows effectiveness is only one factor influencing treatment acceptability. The causal relationship is also unclear. It may be that acceptability affects the adherence to and therefore effectiveness of the treatment. However, Kazdin (2000) found only a small relationship between treatment acceptability and therapeutic change. Cross-Calvert and Johnson (1990) hypothesise that treatment acceptability may also be useful in predicting compliance and attrition.

Despite the importance of acceptability there are few empirical studies of treatment acceptability and outcome for depression (Hamilton & Dobson, 2002). However Addis and Jacobson (1996) did find that those for which the treatment fitted their models of illness achieved better outcomes suggesting acceptability of treatment may affect outcome.

The acceptability of self-help approaches including computer-based approaches is explored more in chapter 7. However there is limited research investigating the effect of acceptability on the effectiveness of self-help approaches.

Conclusion

There are many factors that can affect treatment effectiveness including disorder co-morbidity, therapeutic alliance, therapist competence and adherence to protocol, homework compliance, and acceptability of treatment. This is not an exhaustive review of treatment moderators but some common factors that can reduce the effectiveness of CBT. These factors are all important when designing research into the effectiveness of any treatment, however are often neglected. There is little research directly investigating the effects of co-morbid disorders on the effectiveness of self-help. The limited research on homework compliance and therapeutic alliance in self-help approaches does suggest these can enhance the effectiveness of self-help. There is also limited research directly examining the effects of acceptability on effectiveness. The following chapter will discuss the need for the current research study.

Chapter 6

Overview of this research

Computer-based CBT has demonstrated effectiveness in treating depression and anxiety (Grime, 2004; Kenwright, Liness & Marks, 2001; Marks, Kenwright, McDonough, Whittaker & Mataix-Cols, 2004; Proudfoot et al, 2003a; Proudfoot, et al., 2003b; Van den Berg, Shapiro, Bickerstaffe and Cavanagh, 2004; Whitfield, Hinshelwood, Pashley, Campsie, & Williams, 2006), and may be a viable adjunct to treatment in primary care. The use of such programmes may save General Practitioner's time, and in addition help to treat residual symptoms and reduce relapse rates. Self-help is compatible with the focus on recovery of mental health care in New Zealand which takes a recovery focus, encouraging responsibility and taking control of your own wellness (Mental Health Commission, 1998).

The acceptability of a treatment is important for adherence (Reimers, Wacker, Cooper, & De Raad, 1992) and effectiveness (Kaltenthaler, Sutcliffe, Parry, Beverley, Rees, & Ferriter, 2008), and is therefore important to assess. Computer-based self-help has been evaluated positively by treatment users, however it appears there may be a preference for face-to-face therapy (Gega, Marks & Mataix-Cols, 2004; Marks, Mataix-Cols, Kenwright, Cameron, Hirsch & Gega, 2003; Newman, Kenardy, Herman & Barr-Taylor, 1997; Van den Berg, Shapiro, Bickerstaffe & Cavanagh, 2004; White, Jones & McGarry, 2000). One limitation of current evaluations is that they occur post-treatment and generally only include treatment completers, so may not be an unbiased reflection of satisfaction levels (Kaltenthaler et al., 2008b).

Research into the effectiveness of treatments for depression is often conducted in very controlled conditions that are not applicable to actual clinical practice. In actual clinical practice often patients do not take their medication as prescribed, or seek additional treatment (Wampold, 2001). This study aimed to capture how effective computer-based self-help treatment would be in real life practice. Wampold (2001) suggests that research in psychotherapy should focus more on trials of effectiveness than efficacy; however it is likely that both types of research are important for different reasons

(Barkham & Mellor-Clark, 2003; Shadish et al, 1997). Effectiveness trials approximate conditions as close to actual clinical practice as possible (Wells, 1999), and therefore in general provide greater external validity than efficacy trials. Although effectiveness trials may be less stringent in terms of exclusion criteria, it is still very important that they are well designed by selecting a representative setting and patient sample, suitable control condition, an answerable research question, controls for biases, and considers treatment adherence (Tansella, Thornicroft, Barbui, Cipriani, & Saraceno, 2006). A recent review of computer-based CBT recognised the need for more randomized controlled trials within routine practice (Kaltenthaler, Beverley, Parry, & Ferriter, 2008).

To date no research has been completed on the use of computer-based self-help in a New Zealand sample so this study aims to investigate how applicable a computer-based self-help programme would be in NZ primary care. This study used the 'Overcoming Depression' programme in CD-Rom form; however the programme is now also available on the internet. A small UK based pilot study of 20 people with mild to moderate depression on a psychology clinic waiting list showed that symptoms of depression significantly improved after using 'Overcoming Depression' (Whitfield, Hinshelwood, Pashely, Campsie, & Williams, 2006). In addition patients rated the programme highly and stated that they would recommend it to others. However significant improvements were not seen in anxiety or social functioning. In addition, only 26 percent of those offered the programme chose to participate, and of this only 70 percent completed the treatment programme. It would be useful to get information about the reasons for low take-up and completion. Low take-up rates may have been because they were referrals to a psychology clinic, who had expectations of seeing a person; as well as the short waiting list time at this particular clinic (Whitfield et al, 2006).

National guidelines in the United Kingdom suggest that the CCBT programme, Beating the Blues, is effective in treating depression but indicates that a randomised controlled trial needs to be completed with the Overcoming Depression programme before supporting its use (National Institute for Clinical Excellence, 2006). More independent research is also needed with most evaluation studies being carried out by developers of the programme which can introduce biases (Kaltenthaler, Parry & Beverley, 2004).

Previous research into computer-self-help approaches have mainly used secondary treatment providers such as Mental Health Services, however most depression is seen by general practitioners and most patients do not meet criteria for Mental Health Services. In New Zealand the Ministry of Health states that only the three percent of the population with the most severe mental disorders will receive specialist services, while the 17 percent of the population that has mild to moderate mental health difficulties should be managed in primary care (Ministry of Health, 2002). Therefore self-help treatment approaches need to be trialled in primary care where they may be most useful. No randomised controlled trials have been conducted using CCBT in New Zealand and the preliminary study of 'Overcoming Depression' was also conducted within a secondary care setting. It would therefore be useful to trial 'Overcoming Depression' to investigate whether it would be a viable treatment option for patients with depression in primary care.

The present research was conducted in two parts. The first part of the study was a survey of patients attending a general practice to investigate the prevalence of anxiety and depression, and investigate the acceptability of self-help treatment approaches for anxiety and depression, in particular computer-based self-help. The second part of the study trialled one of the available computer-based self-help treatments using CBT for depression – 'Overcoming Depression'. This programme was chosen because of promising preliminary results (Whitfield et al., 2006) and the need for further research on this programme. The five part model used in this programme is also familiar to many practitioners in NZ and therefore makes this programme more accessible to clinicians. This second study was an effectiveness study which aimed to investigate how successful a computer-based self-help programme would be in an everyday general practice setting with few exclusion criteria and few limits put on patients. Patients could be on medication and no limits were put on receiving treatment outside of the study.

The following two chapters outline the aims, methods and results of the two parts of the study, and lead in to a discussion of the findings and their implications. As such, chapter 7 outlines the first part of the study which investigated the acceptability of self-help including computer-based self-help in patients in primary care. Chapter 8 describes the second part of the study which was an effectiveness study using the

computer-based self-help programme, 'Overcoming Depression', to treat depression in primary care. Chapter 9 discusses the implications of these two studies and suggests future research directions.

Chapter 7

Study one:

The acceptability of self-help approaches in the treatment of mood issues

The acceptability of a treatment is important to consider as there is some evidence that treatment recommendations are more likely to be adhered to if the treatment is acceptable to the patient (Reimers, Wacker, Cooper, & De Raad, 1992). Treatment adherence is likely to lead to greater treatment effectiveness which must be the goal of all treatment providers. If a treatment is not acceptable to patients it is going to be less effective in treating those in need of treatment (Kaltenthaler et al., 2008b). Computer-based CBT has demonstrated effectiveness in treating depression and anxiety and may be a viable adjunct to treatment in primary care, however there is little research into its acceptability.

Treatment is rated as more acceptable if a rationale is provided, and it has fewer associated side effects (Cross-Calvert & Johnson, 1990; Miltenberger, 1990). Miltenberger (1990) found that more acceptable treatments are less disruptive and take less time. In addition, treatments that try to increase a positive behaviour have been found to be more acceptable to consumers than those that work to reduce a negative behaviour (Cross-Calvert & Johnson, 1990; Miltenberger, 1990). Self-help approaches could be an acceptable option as they can be completed at the patient's own convenience, are less disruptive, and have evidence of effectiveness (Cuijpers, 1997; Gregory, Schwer Canning, Lee, & Wise, 2004; den Boer, Wiersma, & Van den Bosch, 2004; Gould & Clum, 1993; Marrs, 1995; Scogin, Bynum, Stephens, & Calhoun, 1990).

Post-treatment evaluations of bibliotherapy, or written self-help, have found it to be acceptable to patients (Fletcher, Lovell, Bower, Campbell, & Dickens, 2005; Lidren et al., 1994; Salkovskis, Rimes, Stephenson, Sacks, & Scott, 2006), and some claim that the existence of so many self-help books indicates the acceptability of self-help (Mains & Scogin, 2003). Post-treatment client evaluations of computerized self-help programmes have been mainly positive, but there is a marginal preference for face to

face therapy (Gega, Marks, & Mataix-Cols, 2004; Marks, et al., 2003; Newman, Kenardy, Herman, & Barr-Taylor, 1997; Van den Berg, Shapiro, Bickerstaffe, & Cavanagh, 2004; White, Jones, & McGarry, 2000). Post-treatment evaluations usually survey only those that have completed treatment and so can be biased towards positive evaluation (Kaltenthaler et al., 2008).

Take-up rates also give some evidence of acceptability. The take-up rate of bibliotherapy ranges from 25 percent (Fletcher et al, 2005) to 53 percent (Whitfield, Williams, & Shapiro, 2001). The take up rate for computer-based self-help has been shown to be much higher with rates of up to 91 percent (Kenwright, Marks, Gega & Mataix-Cols, 2004) suggesting greater acceptability of computer-based self-help compared to written self-help. However one study of a computer self-help programme found a low take-up rate of 26 percent (Whitfield, Hinshelwood, Pashley, Campsie, & Williams, 2006) suggesting there may be some moderating factors affecting acceptability and take-up. In a review, Waller and Gilbody (2009) found that take-up rates in CCBT range from 4 to 84 percent with a median take-up rate of 38 percent. The take up rate for CCBT offered to patients in the National Health Service in the UK over a five year period, was 67 percent (Learmonth, Trosh, Rai, Sewell, & Cavanagh, 2008).

A post-treatment evaluation (Whitfield et al., 2006) of 'Overcoming Depression', a cognitive-behavioural self-help CD-Rom for depression, found that 80 percent preferred the CD-Rom to a book, all rated it as effective or very effective, all said it was easy to understand, all rated it as acceptable or very acceptable, and all completers said they would recommend it to others. An internet based CBT programme for depression has also been rated as acceptable by users post-treatment (De Graaf, Huibers, Riper, Gerhards, & Arntz, 2009).

Although there have been evaluations of satisfaction with computerized self-help approaches post-treatment (Newman, Kenardy, Herman, & Barr-Taylor, 1997; White, Jones, & McGarry, 2000; Whitfield et al., 2006), there has been little research on the acceptability of these approaches pre-treatment. A pre-treatment evaluation of a self-help room containing written self-help found that although 50 percent of participants were not sure how helpful it would be 45 percent thought it would be helpful in some way (Whitfield, Williams, & Shapiro, 2001). A survey conducted on an internet BBC

teletext community found that 91 percent of those surveyed would like access to computer-based self-help (Graham, Franes, Kenwright & Marks, 2000). However 62 percent said they would prefer a self-help book, while 43 percent wanted a CD-Rom at home, 34 percent access via the internet, and only 22 percent wanting a CD-Rom in their GP's surgery (Graham et al., 2000). Mitchell and Gordon (2007) found that University students had a low expectancy that CCBT would be effective, and the likelihood that they would use it was also low. In addition there was not a clear preference for CCBT over a self-help book. However when they were given a demonstration of the CCBT programme 'Overcoming Depression,' expectancy of effectiveness and likelihood they would use it increased significantly (Mitchell & Gordon, 2007). Concerns about CCBT included being too impersonal and the need to talk to someone. Most students indicated that they would be more likely to use CCBT if counseling was also offered. A recent review of the CCBT literature suggests that computer-based self-help is acceptable and has high satisfaction rates, but that the evidence is limited (Kaltenthaler et al., 2008b). There is also little evidence on the acceptability of CCBT programmes to clinicians (Titov, 2007).

Whitfield and Williams (2004) surveyed 323 cognitive-behaviour therapists and found that the majority did not know about the effectiveness of computer self-help programmes, but overall believed they are most effective for anxiety disorders, less effective for depression, and least effective for social phobia and alcohol/substance abuse. Of these therapists, 39.2 percent thought clients would prefer face to face therapy, 19.9 percent believed computer self-help would be more effective than written self-help, and 23.8 percent believed clients would be more satisfied with computer self-help than written self-help. However, the majority of therapists said that they did not know highlighting the need for more research and training in computer self-help approaches. A more recent study of CBT practitioners found that 99.6 percent recommended self-help, however only 10.6 percent used computer-based self-help (MacLeod, Martinez, & Williams, 2009). Also few therapists recommend this as an alternative to a therapist, with most using it as an adjunct to individual therapy or to aid in relapse prevention. Another study found that while service users view self-help more positively; professionals, especially GPs, are reluctant to use self-help believing that self-help cannot address the complex needs they see in their practice (Pratt, Halliday, &

Maxwell, 2009). Patients also indicated that it can be hard to find motivation and say they may be demoralized by not being able to complete materials (Pratt, et al., 2009).

Depression is a widespread problem and due to a lack of resources is often undetected and untreated. Self-help may be a viable treatment alternative, with evidence it can be both effective and acceptable. Computer-based self-help has shown even more promising results, however previous research has shown low take-up rates. Therefore the acceptability of computer-based self-help for potential patients needs to be evaluated.

AIMS AND HYPOTHESES

Aims of the acceptability study

1. To investigate the acceptability of self-help, particularly computer-based self-help, as an adjunct to treatment for depression/anxiety for general practice patients.
2. To investigate the relationship between depression and anxiety and the perceived effectiveness of self-help treatments for depression and anxiety.
3. To investigate the relationship between depression and anxiety and willingness to use self-help treatments for depression and anxiety.

Hypotheses of the acceptability study

1. Computer-based self-help will be perceived as effective as an adjunct for treating depression/anxiety in general practice patients.
2. Patients will be willing to try a computer-based self-help programme as an adjunct to treatment for depression/anxiety.
3. Computer-based self-help will have the same acceptability as written self-help.
4. Willingness to use a self-help approach will be correlated with perceived effectiveness of the self-help approach.

5. Higher levels of depression and anxiety will be negatively correlated with perceived effectiveness of self-help treatments for depression and anxiety.
6. Higher levels of depression and anxiety will be negatively correlated with willingness to use self-help treatments for depression and anxiety.
7. The perceived effectiveness and willingness to use a self-help approach will not be affected by age or gender.

METHOD

Participants

Participants were patients attending a general practice in South Auckland over four days during the end of November 2006. This is a mixed socioeconomic urban area. 101 people completed the questionnaire (33 male, 63 female, 5 did not indicate gender). Participants ranged in age from 15 to 79 years with the average age of participants being 44 years (SD= 16.19).

Of those patients that were asked, 64.7 percent chose to complete the questionnaire. Reasons for refusal to complete the questionnaire included feeling too sick, not enough time, not depressed, no reading glasses, poor English, and being unable to write due to physical ailments.

Measures

Demographic information

Demographic information was obtained on age, gender, and occupation via a questionnaire (Appendix A-2). Patients were also asked if they were currently suffering from depression or anxiety, if they were currently receiving any type of talking treatment, and if they were currently on any medication for depression or anxiety.

Acceptability questionnaire

Patients completed a short questionnaire designed by the researcher asking them about the effectiveness of self-help treatments including computer self-help, and about their willingness to try this sort of treatment (Appendix A-2). The questionnaire has nine items which are answered on a 10 point Likert scale; with 1 indicating definitely, 5 unsure, and 10 indicating not at all. Participants were also asked if they had used a self-help approach before and whether they found this helpful.

Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale was originally designed for use with general medical outpatients (Zigmond & Snaith, 1983). It is a 14 item measure with a 7 item subscale measuring depression and a 7 item subscale measuring anxiety. Each item is scored on a 4 point scale from 0 to 3. It has good reliability and validity and is useful as a screening measure (Bjelland, Dahl, Haug, & Neckelmann, 2002; Herrmann, 1997). Zigmond and Snaith (1983) suggested that a cut-off score of 7-8 indicates possible depression and a score of 10-11 indicates probable depression. Although some normative data suggests 10-11 is a good cut-off score (Crawford, Henry, Crombie & Taylor, 2001), most research has indicated that for an optimal balance of sensitivity and specificity a cut-off score of 7 or 8 should be used (Bambauer, Locke, Aupont, Mullan & McLaughlin, 2005; Bjelland et al., 2002; Lowe et al, 2004). A cut-off score of 8 generally gives sensitivity and specificity of between 70 percent and 90 percent (Bjelland et al, 2002; Löwe et al, 2004).

The HADS was chosen as it is a good screening measure for use in general practice settings as it is not inflated by symptoms of poor health and because it will also be used in the second part of the study (a trial of the computer-based self-help programme 'Overcoming Depression').

Procedure

Before recruitment began, ethical approval was obtained from the Northern X Health and Disability Ethics Committee (Appendix C-1). Patients attending a general practice located in South Auckland over a one week period were approached by the researcher in the waiting room to complete an acceptability questionnaire (Appendix A-2), and the Hospital Anxiety and Depression Scale (HADS). The researcher explained that there was no implication that the patient was depressed or anxious but that a more general sample of people was sought. If willing to complete the questionnaires, patients were given a clipboard and pen and completed the questionnaires while waiting for their appointment in the waiting room. An Information Sheet (Appendix A-1) was attached to the front of the questionnaire explaining the research, and participants understood that by completing the questionnaires, they were implying consent. The questionnaires were collected from the patient by the researcher once complete.

Design

This study was used to investigate the acceptability of self-help, and in particular computer-based self-help, for the treatment of depression and anxiety in general practice patients. The acceptability measure was designed by the researcher and has not been used before, however reliability analyses show it is internally consistent. Factor analyses are also presented showing the scale to be represented by two factors. The Hospital Anxiety and Depression Scale (HADS) was also used in this study as a screening measure for depression and anxiety in the general practice patients. Correlation analyses were conducted to explore the relationships between perceived effectiveness of self-help and depression, perceived effectiveness and anxiety, perceived effectiveness and willingness to try self-help, and between age and the perceived effectiveness of and willingness to try self-help. One way ANOVA was used to investigate differences between males and females in the perceived helpfulness of and willingness to use self-help. Data was analyzed using SPSS® for Windows Rel. 17.0 (SPSS Inc., 2008).

RESULTS

The acceptability scale

Reliability analyses

The internal consistency of the acceptability scale was estimated using Cronbach's alpha. The internal consistency of the acceptability scale was acceptable ($\alpha = .77$) but improved when items 6 and 8 were removed ($\alpha = .85$). Item 6 ('I would prefer talking to someone face to face more than a *computer-based* self-help programme') and item 8 ('It would be difficult to find the motivation required for self-help treatment') were removed after the corrected item total correlation for both of these items was found to be lower than .3 (Pallant, 2005). Items 6 and 8 may have been measuring something different from the rest of the scales such as barriers to self-help treatment.

Factor analysis

For the purposes of Factor Analysis the nine items were retained. The nine items of the Acceptability Scale were subjected to principal components analysis (PCA) using SPSS Version 17. Prior to performing the PCA the suitability of data for factor analysis was assessed. The results of the factor analysis must be taken with caution, as the sample size is relatively small. Tabachnick and Fidell (2001) suggest that at least 300 cases are needed for satisfactory factor analysis; however Nunnally (1978) recommends that 10 cases for each item in the measure is sufficient. With nine items in the acceptability measure and 101 cases, our sample is sufficient for Nunnally's recommendations. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above (see Table 7.1). The Kaiser-Mayer-Olkin measure of sampling adequacy was over .6 (.750), and the Bartlett's Test of Sphericity reached statistical significance suggesting factor analysis is appropriate (Tabachnick & Fidell, 2001).

Principal components analysis revealed the presence of three components with eigenvalues exceeding 1, explaining 42.3 per cent, 17.5 per cent, and 11.6 per cent of the variance respectively. Parallel analysis was conducted using Monte Carlo PCA for Parallel Analysis (Watkins, 2000). This showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of

the same size (9 variables x 101 respondents), suggesting that two factors should be retained.

Table 7.1
Correlation matrix for the acceptability questionnaire

	A1	A2	A3	A4	A5	A6	A7	A8	A9
A1	1.00								
A2	.645	1.00							
A3	.641	.540	1.00						
A4	.430	.565	.730	1.00					
A5	.030	.158	.233	.370	1.00				
A6	.095	.059	-.025	-.110	.189	1.00			
A7	.416	.352	.582	.555	.402	.362	1.00		
A8	-.203	-.243	-.166	-.054	.152	.114	.069	1.00	
A9	.417	.276	.517	.480	.288	.273	.684	-.017	1.00

To aid in the interpretation of these two components, Varimax rotation was performed (see Table 7.2). The rotated solution revealed that most of the variables loaded onto the first factor. Items 7, 8 and 9 loaded onto both factors and this may indicate that they are measuring a more general factor. The other items to load on the second factor were items 5 and 6. The two-component solution explained a total of 59.8 per cent of the variance, with Component 1 contributing 39.0 per cent and Component 2 contributing 20.8 per cent. Component 1 seems to be measuring willingness and perceived effectiveness of self-help approaches, while Component 2 appears to measure individual preferences.

Table 7.2
Pattern/structure coefficients for the acceptability questionnaire

Varimax Rotation of Two Factor Solution for Acceptability Items		
Item	Component 1	Component 2
Willing to try computer-based	.870	
Willing to try self-help	.800	
Computer-based is effective	.792	
Self-help is effective	.791	
Willing if no other option	.574	.535
Willing to try computer-based with face to face	.600	.646
Prefer face to face		.641
Prefer computer-based in surgery		.629
Motivation difficult	-.357	.546

Depression and anxiety

Self--reported depression and anxiety

Twenty percent of the sample indicated that they were currently suffering from depression or anxiety. Of this, 25 percent indicated that they were receiving talking treatment for depression or anxiety. By contrast, 55 percent of those suffering from depression or anxiety indicated that they were receiving medication for depression or anxiety.

Hospital Anxiety and Depression Scale (HADS)

Reliability

The internal consistency of the HADS was calculated using Cronbach's alpha. The HADS showed excellent internal consistency in this sample ($\alpha = .90$), which is consistent with the scale's reliability in the literature.

Scale scores

A cut off score of 8 or more on the anxiety and depression subscales of the HADS was used to indicate significant anxiety or depression. The balance between sensitivity and specificity is most often achieved at a cut-off of 8 (Bjelland, Dahl, Haug & Neckelmann, 2002). Using these cut off scores, 11.1 percent of the sample showed significant anxiety ($M = 5.60$, $SD = 3.76$, $N = 90$), 3.3 percent of the sample showed significant depression ($M = 3.30$, $SD = 3.73$, $N = 91$), and 8.9 percent of the sample showed both significant anxiety and significant depression (see Table 7.3). Using Zigmond and Snaith's (1983) cutoff scores of 8-10 for mild depression, 11-15 for moderate depression, and 16 or more for severe depression; 6.7 percent showed mild depression, 2.2 percent showed moderate depression, and 3.3 percent showed severe depression. Using the same cut-off scores for anxiety; 7.8 percent showed mild anxiety, 8.9 percent showed moderate anxiety, and 3.3 percent showed severe anxiety. As expected, both anxiety and depression sub-scale scores on the HADS correlated with self-reported anxiety or depression (see Table 7.4).

Table 7.3
Scale scores for the Hospital Anxiety and Depression Scale (HADS)

	Mean	SD	Min	Max	N
HADS Total	8.93	6.74	0	33	90
Anxiety	5.60	3.76	0	17	90
Depression	3.30	3.73	0	16	90

Table 7.4

Correlations between self-reported anxiety or depression and anxiety and depression sub scores

		Self-report	Anxiety sub score	Depression sub score
Self-report	Pearson's Correlation	1	.435**	.480**
	Sig. (2-tailed)		.000	.000
	N		88	89

** Correlation is significant at the 0.01 level (2-tailed).

Acceptability of self-help

Average responses indicated that patients thought that self-help in general, including computer-based self-help, would be helpful in treating depression and anxiety; and would be willing to try these approaches if they were suffering from depression or anxiety (Table 7.5). A response of 1 indicated definitely, and a response of 10 indicated not at all. There was some indication that patients would prefer to talk to someone face to face more than a computer-based self-help programme, and would be more willing to try a computer-based self-help programme if additional brief face-to-face contact was provided. Patients also have a slight preference for a self-help book at home rather than a surgery based computer self-help programme, although it is unclear whether this is because of the need to travel to the surgery, or a resistance to the computer. Only 20 percent of patients had used self-help approaches for depression or anxiety in the past; but of these, most thought that self-help treatments had helped them.

Table 7.5

Descriptive statistics for individual items on the acceptability questionnaire

Scale item	Mean¹	Standard deviation
1. I would be willing to try a self-help approach (e.g. self-help book or tape) to treat my depression/anxiety	3.51	2.80
2. A self-help approach would help my depression/anxiety	4.02	2.29
3. I would be willing to try a <i>computer-based</i> self-help programme to treat my depression/anxiety	3.72	2.87
4. <i>Computer-based</i> self-help could help to improve my depression/anxiety	4.65	2.50
5. I would prefer a <i>computer-based</i> programme in a doctor's surgery more than a self-help book at home	5.66	2.95
6. I would prefer talking to someone face to face more than a <i>computer-based</i> self-help programme	3.09	2.42
7. I would be willing to try a <i>computer-based</i> self-help programme for depression/anxiety if I had someone to talk to as well, even if only briefly	3.50	2.70
8. It would be difficult to find the motivation required for self-help treatment	5.74	2.78
9. If there were no other treatments available, I would be willing to try a <i>computer-based</i> self-help programme	2.83	2.42
10b. Do you think the self-help treatments you have used in the past have helped you?	3.00	3.02

¹ 1 = Definitely 10 = Not at all

Correlations between willingness and perceived effectiveness

The relationship between willingness to try a self-help approach and the perceived effectiveness of self-help was investigated using a Pearson product-moment correlation coefficient. A significant correlation was found between willingness to try a self-help approach (item 1) and the perceived effectiveness of a self-help programme to treat depression or anxiety (item 2) ($r = .652$, $n = 99$, $p < .0001$; see Table 7.6). There was also a significant correlation between willingness to try a *computer-based* self-help programme (item 3) and the perceived effectiveness of this approach to treating depression and anxiety (item 4) ($r = .727$, $n = 98$, $p < .0001$; see Table 7.7).

Table 7.6
*Correlations between items 1 and 2 on the acceptability scale
(willingness to try and perceived effectiveness of written self-help)*

		Item 1	Item 2
Item 1	Pearson Correlation	1	.652**
	Sig. (2-tailed)		.000
	N	100	99

** Correlation is significant at the 0.01 level (2-tailed).

Table 7.7
*Correlations between items 3 and 4 on acceptability scale
(willingness to try and perceived effectiveness of computer-based self-help)*

		Item 3	Item 4
Item 3	Pearson Correlation	1	.727**
	Sig. (2-tailed)		.000
	N	98	98

** Correlation is significant at the 0.01 level (2-tailed)

Correlations between anxiety or depression and perceived effectiveness

The relationship between anxiety or depression and perceived effectiveness of self help and computer-based self-help was investigated using Pearson product-moment correlation coefficients. There was no significant correlation found between anxiety or depression and the perceived effectiveness of self-help in general or computer based self-help (Appendix D-1).

Correlations between anxiety or depression and willingness to try self-help

The relationship between anxiety or depression and willingness to try a self help or a computer-based self-help approach was investigated using Pearson product-moment correlation coefficients. There was no significant correlation found between anxiety or depression and willingness to try self-help in general or computer based self-help (Appendix D-1).

Correlations between perceived effectiveness or willingness to use self-help and age

The relationship between age and perceived effectiveness of self-help and a computer-based self-help approach was investigated using Pearson product-moment correlation coefficients. No correlation was found between age and perceived effectiveness of a self-help approach ($r = -.192$, $n = 97$, $p >.05$), or between age and perceived effectiveness of a *computer-based* self-help approach ($r = -.128$, $n = 97$, $p >.05$), (see Table 7.8).

Table 7.8
Correlations between perceived effectiveness of self-help and age

		Age	Self-help	Computer self-help
Age	Pearson's Correlation	1	-.192	-.128
	Sig. (2-tailed)		.060	.215
	N	97	96	95

The relationship between age and willingness to try self-help and a computer-based self-help approach was investigated using Pearson product-moment correlation coefficients. A Pearson product-moment correlation coefficient showed no significant correlation between age and willingness to try computer-based self-help (item 3) ($r = -.145$, $n = 97$, $p >.05$), but a significant correlation between age and willingness to try any type of self-

help approach, showing younger people were more willing to use self-help in general ($r = -.202$, $n = 97$, $p < .05$) (see Table 7.9).

Table 7.9
Correlations between willingness to try self-help, age and gender

		Age	Self-help	Computer self-help
Age	Pearson's Correlation	1	-.202*	-.145
	Sig. (2-tailed)		.047	.155
	N	97	97	97

* Correlation is significant at the 0.05 level (2-tailed).

Differences in perceived effectiveness and willingness to use self-help between males and females

One-way ANOVA was used to investigate whether there is a difference between males in females in perceived effectiveness of self-help or computer-based self-help. No significant difference was found between males and females in perceived effectiveness of self-help approaches in general ($F(1, 93) = .838$, $p = .362$), or in perceived effectiveness of computer-based self-help approaches ($F(1, 92) = 2.52$, $p = .116$),

One-way ANOVA was also used to investigate whether there is a difference between males in females in willingness to try self-help or computer-based self-help. No significant difference was found between males and females in willingness to use self-help approaches in general ($F(1, 94) = 2.01$, $p = .159$), but a significant difference for willingness to try computer-based self-help ($F(1, 94) = 5.00$, $p = .028$), with males more willing to try computer-based self-help ($M = 2.70$, $SD = 2.24$) than females ($M = 4.02$, $SD = 2.97$).

DISCUSSION

Patients in the waiting room of a General Practice in South Auckland were surveyed using the HADS and a self-help acceptability questionnaire designed by the researcher. Levels of depression and anxiety found in this sample are similar to what has been found in previous screening studies in New Zealand (Bushnell, 2003). Twenty percent of the current sample indicated that they were suffering from anxiety or depression, and scores on the Hospital Anxiety and Depression Scale (HADS) indicated that 11.1 percent of the sample was suffering from significant anxiety, and 3.3 percent were suffering from significant depression. Arroll, Goodyear-Smith and Lloyd (2002) screened patients in South Auckland and found that 13.8 percent of the general practice patients were currently depressed. A Mental Health and General Practice Investigation (MaGPIe) found that 18.1 percent of people seeing their General Practitioner had suffered from depression and 20.7 percent from anxiety in the previous 12 months (Bushnell, 2003). Self-reported levels of depression and anxiety ('I am currently suffering from depression or anxiety') were higher than indicated by the HADS, which showed lower estimates than the MaGPIe study. The MaGPIe study used the Composite International Diagnostic Interview (CIDI) which was likely to identify more cases than the self-report measure used in this study. The HADS is a brief tool which does not aim to give the comprehensiveness of a diagnostic interview. Also the HADS asks about how the person has felt in the past week, which does not indicate whether the person may have suffered from depression or anxiety in the past twelve months, which may help to explain the lower rates of detected anxiety and depression in this sample. The MaGPIe sample was also of a highly educated and high sociodemographic level, which may differ from the sample in this study. There was no sociodemographic measure in the current study.

Twenty-five percent of those indicating that they were currently suffering from depression or anxiety were receiving some kind of talking treatment for their problem. Fifty-five percent of those currently suffering from self-reported depression or anxiety were taking medication for these problems. Treatment of depression in primary care usually involves prescription of antidepressant medications; however there is evidence that antidepressant medication is not superior to CBT (Blackburn & Moore, 1997; Craske et al., 2005), even for severely depressed patients (DeRubeis, Gelfand, Tang &

Simons, 1999). There is also some evidence that patients favour psychological and alternative approaches to pharmacological treatments (Tylee, 2001). This preference was not investigated in this study.

The acceptability questionnaire designed for this study showed acceptable internal consistency, however test-retest reliability was not investigated. Two items in the scale ('I would prefer talking to someone face to face more than a *computer-based* self-help programme' and 'It would be difficult to find the motivation required for self-help treatment') did not fit the overall structure of the measure, and internal consistency improved when these items were removed. Exploratory factor analysis indicated that the acceptability questionnaire contained two components; the first relating to the perceived effectiveness of self-help and willingness to use it, and the second relating to individual preferences for treatment.

Patients indicated that they would be willing to try self-help approaches if they were suffering from depression or anxiety. Patients also on average believed that self-help approaches could be effective in treating depression and anxiety, however had weaker beliefs about this. Beliefs about computer-based self-help did not differ significantly from beliefs about written self-help approaches. A survey of University students previously found that the acceptability of written and computer based self-help approaches did not differ significantly (Mitchell & Gordon, 2007). However the results of the present study indicate that attitudes to CCBT in the general practice sample are more positive than the previous University sample.

Take-up rates can indicate the acceptability of a treatment and previous research has found the take-up rate of bibliotherapy to range from 25 percent (Fletcher et al, 2005) to 53 percent (Whitfield, Williams & Shapiro, 2001). The take up rate for computer-based self-help has been shown to be much higher with rates of up to 91 percent (Kenwright, Marks, Gega & Mataix-Cols, 2004), suggesting greater acceptability of computer-based self-help compared to written self-help. This preference was not found in the current study. However one study found a low take-up rate of 26 percent (Whitfield et al, 2006) suggesting there may be some moderating factors affecting acceptability and take-up.

Despite these positive attitudes towards self-help, patients indicated that they would prefer to get face-to-face treatment, and would be more willing to try a computer-based self-help approach if they had someone to talk to as well, even if only briefly. Mitchell and Gordon (2007) also found CCBT to be more acceptable if additional face-to-face counseling is offered. This is also consistent with previous research on self-help showing a marginal preference for face-to-face therapy (Gega, Marks & Mataix-Cols, 2004; Marks et al., 2003; Newman, Kenardy, Herman & Barr-Taylor, 1997; Van den Berg, Shapiro, Bickerstaffe & Cavanagh, 2004; White, Jones, & McGarry, 2000). There was some indication that patients would prefer a self-help book at home more than a computer-based programme in the doctor's surgery; however the reasons for this were not investigated, so no conclusions can be drawn. It may be that travel into the doctor's rooms is a potential barrier for this type of treatment, or that patients feel more comfortable at home. Waller and Gilbody (2009) note that patients have only a 38% chance of starting CCBT and suggest barriers to this need to be investigated further. Travel, time, and lack of support are suggested as potential barriers to this type of treatment (Waller & Gilbody, 2009). Future use of this acceptability questionnaire may include questions to clarify these possibilities.

Most patients were unsure whether lack of motivation would be a barrier to the use of self-help. One of the common symptoms of depression is lack of motivation; however results indicated that the presence of depression was not related to willingness to try a self-help approach. There was a strong indication that patients would be willing to try computer-based self-help if there were no other treatments available. A pre-treatment evaluation of a self-help room containing written self-help found that although 50 percent of participants were not sure how helpful it would be 45 percent thought it would be helpful in some way (Whitfield, Williams & Shapiro, 2001). There are no studies evaluating the pre-treatment acceptability of computer-based self-help; however one study found a low take-up rate suggesting low acceptability (Whitfield et al., 2006).

Only 20 per cent of the patients had used self-help approaches for depression and anxiety in the past, however most thought these had helped them. This question was only asked of those indicating that they suffered from anxiety or depression. Only 20 per cent of the sample indicated that they were suffering from depression or anxiety, and so this may explain the low number of people indicating they had used self-help in

the past. These figures may be an indication that many of those who suffer from depression or anxiety have used self-help approaches.

As expected, significant correlations were found between the perceived effectiveness of both written and computer-based self-help and willingness to try this type of treatment. Research has found that a treatment is more acceptable if it has evidence of effectiveness (Cross-Calvert & Johnston, 1990; Kazdin, 2000), however interestingly no evidence of effectiveness was given to participants in the current study. These results should be taken with caution as results indicated that the mean response for both effectiveness and willingness was close to the middle of the scale, indicating uncertainty.

No relationship was found between the presence of depression or anxiety and the perceived helpfulness of or willingness to try self-help approaches. Depressed or anxious patients were no more or less likely to view self-help treatment as more or less helpful. The presence of depression or anxiety does not appear to be a barrier to self-help treatment. This result is unexpected as depressed patients could be expected to find treatment less acceptable due to lack of motivation. By contrast, anxious patients may be expected to find self-help more acceptable as the format may be less confrontational and anxiety provoking.

There was a significant but small relationship between age and willingness to use self-help showing younger people being more willing to try self-help. There was no relationship between age and willingness to use computer-based self-help, indicating that concerns that older people may not want to try computer-based self-help may be unfounded. Merrick, Secker, Fright, and Melding (2004) found that older New Zealand adults found the use of a computer for a computerized neuropsychological test quite enjoyable. Eastman and Iyer (2004) found that over 65 year olds have similar usage of the internet to other age groups. However, Laguna and Babcock (1997) did find that older adults have greater anxiety about the use of a computer.

A significant but small relationship was found between gender and willingness to use computer self-help, with males more likely to want to try computer-based self-help. This is consistent with Whitfield and colleagues (2006), who found that males were

more likely to complete the computer-based programme '*Overcoming Depression*' than females. There is a possibility this could be because males have greater familiarity with computers, however previous research has indicated that previous experience with computers did not affect outcome in computer-based self-help treatment research (Lange et al., 2000; Marks et al., 2003). However there was no relationship between gender and perceived effectiveness of self-help in general or computer-based self-help.

The results of this study should be taken with caution as it has a small sample size, and the sample was taken from only one General Practice in South Auckland, at one time in the year, meaning the sample may not be representative of the rest of Auckland, or New Zealand. In addition the participants were patients visiting their GP and not specifically patients who were seeing their GP for depression or anxiety. The results may have differed if anxious or depressed patients were surveyed. A future study investigating this population would be of interest.

The possibility that participants were answering in a socially desirable way must also be taken into account. Nederhof (1985) suggests that socially desirable responding can be substantially reduced by self-administration of the questionnaire, especially when the researcher is not present. In the present study, participants did self-administer the questionnaire, and the researcher was not present while they were completing the questionnaire. The participants did not have to provide their personal details if they were not comfortable, however these details were asked for, meaning anonymity was not given. Future research could include a measure of socially desirable responding; however in the interests of this study, a measure was not included to keep administration time short. Because the questionnaire was worded as a hypothetical situation, there is a possibility that patients may act differently to how they responded if actually faced with these treatment options. Also the test-retest reliability or the face validity of the acceptability questionnaire was not investigated.

Conclusion

Self-reported depression and anxiety was found to be similar to previous levels found in New Zealand general practice patients, however the HADS detected slightly lower levels. The self-help acceptability questionnaire designed for this study showed that in general patients believed both written and computer-based self-help are effective and would be willing to try these treatments if they were suffering from anxiety or depression. This willingness was not affected by age or presence of anxiety or depression; however males were more willing to try computer-based self-help than females. There was some indication that patients would prefer some face-to-face contact, but were willing to try computer-based self-help if no other treatment options were available. These results indicate that computer-based self-help may be a viable treatment option to introduce CBT in primary care settings.

Chapter 8

Study two:

Effectiveness of ‘Overcoming Depression’

A preliminary study has found that ‘Overcoming Depression’ significantly reduces depression as measured by the Beck Depression Inventory-II and is rated positively by completers (Whitfield, Hinshelwood, Pashely, Campsie, & Williams, 2006). However, only 26 percent of those offered the programme chose to participate, and of this only 70 percent completed the treatment programme. It would be useful to get information about the reasons for low take-up and completion. In addition, this programme has not been trialled in New Zealand and it is therefore unclear whether it will be suitable for this population. The preliminary study was also conducted within a secondary care setting. It would therefore be useful to trial ‘Overcoming Depression’ to investigate whether it would be a viable treatment option for patients with depression in primary care.

AIMS AND HYPOTHESES

Aims of the effectiveness trial

The aims of the second study in this thesis were to evaluate whether the computer-based self-help programme, ‘Overcoming Depression’, can significantly reduce symptoms of depression in patients with mild to moderate depression in primary care. Depression can also cause significant problems in functioning in many areas of a person’s life therefore it is important to assess whether treatment can increase social functioning. To assess whether changes in depression and social functioning were due to spontaneous remission rather than treatment, patients receiving computer self-help treatment were compared to a waiting list control. It was hypothesised that those receiving the self-help treatment ‘Overcoming Depression’ would have a significantly greater reduction in symptoms of depression and increases in social functioning compared to the waiting list control group. Changes in social functioning often take longer to appear so it was hypothesised that changes in social functioning may not be shown until the six month

follow-up period. It was also hypothesised that due to the positive skills learnt during self-help treatment using CBT, gains would be maintained at six month follow-up.

Of course there are many other variables that may explain a person's improvement in symptoms of depression and in social functioning; such as antidepressant medication, contact with the GP, significant life events, and other efforts to help one self. This study attempted to take into account these factors by asking about medication compliance, significant life events, visits to the GP, and about anything patients may have done to help themselves each week they were receiving treatment. It was hypothesised that 'Overcoming Depression' would produce significant improvements in depression and social functioning independent of these factors. Tasks completed outside of treatment sessions (homework) have been shown to be important in predicting gains in treatment (Kazantzis & Lampropoulos, 2002) and it was hypothesised that those patients who completed more homework tasks would improve significantly more than those who did less.

Hypotheses of the effectiveness trial

1. Patients who complete the 'Overcoming Depression' programme will show significant reductions in depression, compared to the waiting list control group.
2. Patients who complete the 'Overcoming Depression' programme will also show significantly greater increases in social functioning than the waiting list control group; however these differences may not be evident until the six month follow-up.
3. Reductions in depressive symptoms and increases in social functioning will occur independently of antidepressant medication use, contact with the GP, significant life events, and other self-help methods.
4. Those patients who complete more homework tasks from 'Overcoming Depression' will improve significantly more than those who do less homework tasks.

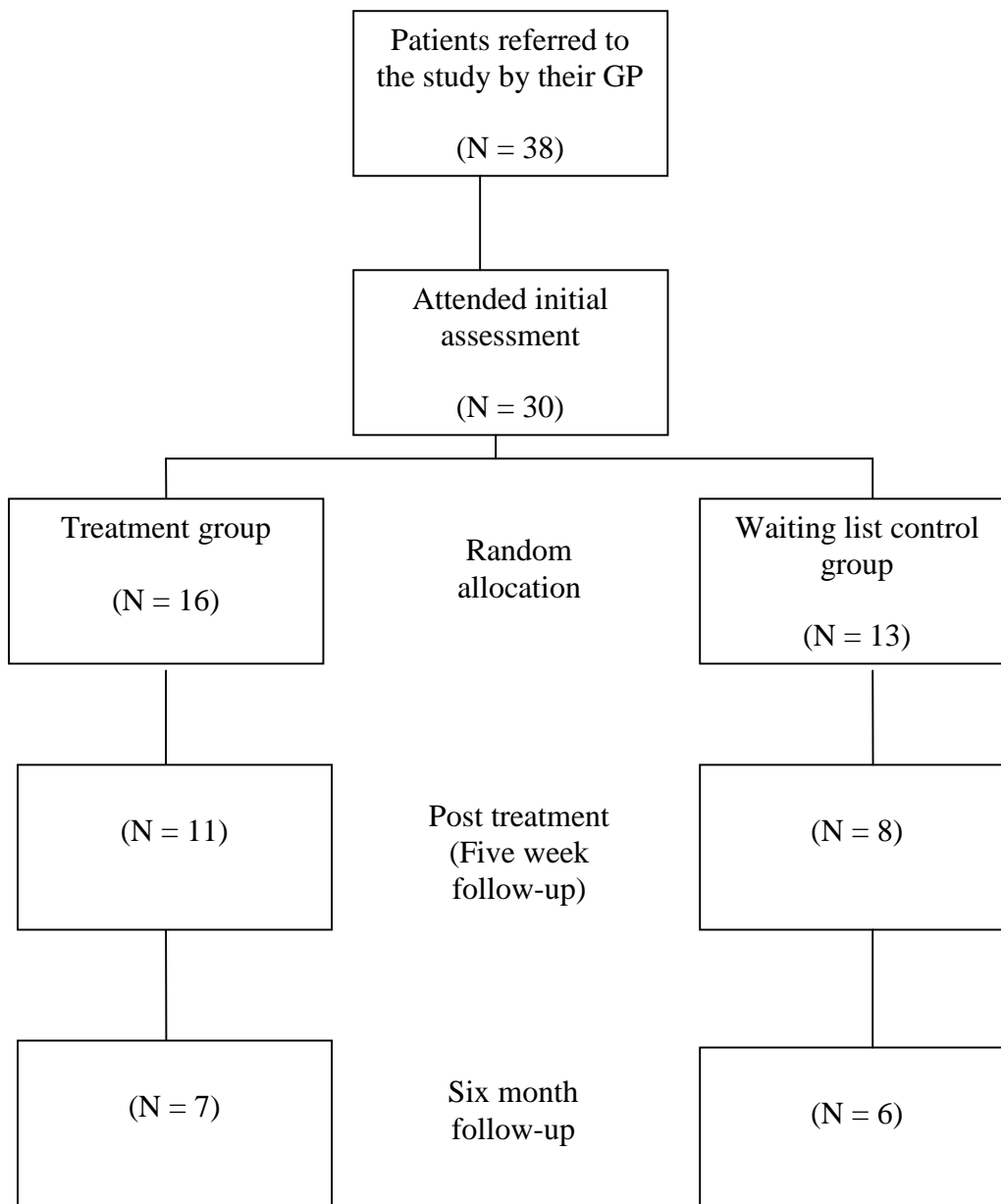
METHOD

Sample

The sample consisted of patients attending a general practice in South Auckland. This is a mixed socioeconomic urban area. The practice was also used as a teaching facility for medical students aligned with the University of Auckland medical school. The clinic had four permanent general practitioners. The GP identified that the patient was depressed and then referred them to the study if the patient was interested and met study criteria. Participants were excluded from the study if they were under 16 years of age, had current suicidal intent, were suffering from psychosis, or were unable to read or understand English. As there were a number of different GPs working at this practice it is unknown how many patients in total were invited to enter the study; however one of the GPs indicated that 90 percent of those invited were interested in entering the study. A total of 38 patients were referred to the study by their GP over a period of 16 months. Eight of the patients who were referred to the study did not attend their initial appointment and did not enter the study. One of these patients did not meet the threshold of a score of 7 on the HADS depression subscale to enter the study. Of the 29 patients who did enter the study, 16 were randomized to the self-help treatment group and the remaining 13 were randomized to the waiting list control group. Of the 16 who began treatment, 11 completed all six sessions of the programme and completed post-treatment measures. Of the five that dropped out of treatment, two dropped out after session one, one after session two, one after session three, and one dropped out after session four. Of the control group, five did not attend a follow-up appointment and therefore did not complete measures at the end of the waiting list period. This leaves a total of 19 patients with complete data available for analysis; 11 in the treatment group and 8 in the control group. In the control group there were also four patients who chose to complete the self-help computer programme after five weeks in the waiting list control group. Of these only one completed the treatment programme with one dropping out after session one and the other two dropping out after session three (See Figure 8.1). Independent sample t-tests and chi-square were conducted to see if there were any differences between dropouts and completers. Dropouts had significantly lower scores on the SASS however did not significantly differ in depression or any other demographic characteristics. Most dropouts were lost to follow-up so reasons for

dropout are unknown. Seven of the treatment completers and six of the control group completed six month follow-up measures.

Figure 8.1 Flow chart of patients' progression through the study



At the beginning of the study it was expected that there would be higher numbers of participants so randomization was stratified for antidepressant use. As it became clear that there were too few participants, the medication and non-medication groups were collapsed into one treatment group and one control group. However due to the stratification by medication use this resulted in uneven numbers in the control and treatment groups. 62 percent of the sample was on antidepressant medication. Randomization of treatment group was completed by one of the GPs who provided numbered envelopes indicating either waiting list control or treatment. Independent samples t-tests and chi-square were used to test for differences between the two groups in demographic characteristics and baseline scores on the PHQ-9, HADS depression subscale, and the SASS. No significant differences were found suggesting that randomization was successful. Demographics of the sample can be seen in Table 8.1 and Table 8.2.

Table 8.1 Age, gender, duration of depression, and use of treatment for the sample

	TREATMENT (N)		CONTROL (N)		TOTAL (N)	
	Mean	Range	Mean	Range	Mean	Range
Age (years)	40	20-77	46	19-68	43	19-77
Gender	Male	Female	Male	Female	Male	Female
	4	12	1	12	5	24
Duration of depression (years)	Mean	Range	Mean	Range	Mean	Range
	7	0-23	11	0-40	8	0-40
Time receiving treatment (years)	Mean	Range	Mean	Range	Mean	Range
	3	0-23	4	0-23	3	0-23
Antidepressant Medication	Yes	No	Yes	No	Yes	No
	9	7	9	4	18	11
Talking treatment received	Yes	No	Yes	No	Yes	No
	6	10	8	5	14	15
Self-help treatments used	Yes	No	Yes	No	Yes	No
	1	15	2	11	3	26

Eighty three percent of the sample was female and seventeen percent were male. The age ranged from nineteen to seventy-seven years old with the average age being forty-three. Seventy one percent of the sample identified as New Zealand European, eighteen percent as New Zealand Maori, and eleven percent as 'other' ethnicity. Thirty one percent said they were single, forty one percent married, fourteen percent de-facto,

seven percent divorced, and seven percent identified as widow/widower. Forty-one percent were employed; fourteen percent unemployed, twenty-four percent retired, fourteen percent mother/homemaker, and seven percent were students.

The duration of depression ranged from zero to forty years with the mean duration being eight years. Time receiving treatment for depression ranged from zero to twenty-three years, with the average time receiving treatment being three years. Forty eight percent of the sample indicated that they had received some kind of talking treatment for their depression in the past and only ten percent indicated that they had ever used any type of self-help treatment.

Table 8.2 Ethnicity, occupation and relationship status of the sample

ETHNICITY (N)			
	TREATMENT	CONTROL	TOTAL
NZ Euro	10	10	20
Maori	3	2	5
Other Pacific	0	0	0
Asian	0	0	0
Other	2	1	3
OCCUPATION (N)			
	TREATMENT	CONTROL	TOTAL
Employed	6	6	12
Un-employed	1	3	4
Retired	4	3	7
Mother/ Homemaker	3	1	4
Student	2	0	2
RELATIONSHIP STATUS (N)			
	TREATMENT	CONTROL	TOTAL
Single	4	5	9
Married	7	5	12
De facto	3	1	4
Divorced	1	1	2
Widow/ Widower	1	1	2

Treatment

‘Overcoming Depression’ is a computer-based self-help programme that uses the principles of cognitive behavioural therapy to treat depression (Williams, Taylor, Aubin, Harkin, & Cottrell, 2002). Its five area approach deals with the problematic situation, altered thinking, altered feelings, altered physical symptoms, and altered

behaviour that accompany depression. It is a six session interactive programme in which clients answer questions, complete homework activities and watch short video segments of people putting the principles into practice. Each session takes approximately 50 minutes to complete and sessions are designed to be completed one every 1-2 weeks. The six sessions cover what depression is, how to identify and challenge extreme and unhelpful thoughts, problem solving, and relapse prevention/goal setting. This programme was chosen as it showed promising results in a preliminary trial (Whitfield et al., 2006). The programme requires patients to select multiple choice answers as well as typing in responses which are then summarized and presented to the patient to reinforce points.

Measures

The Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale was originally designed for use with general medical outpatients (Zigmond & Snaith, 1983). It is a 14 item measure with a 7 item subscale measuring depression and a 7 item subscale measuring anxiety. Factor analyses have suggested a two factor solution supporting these subscales (Bjelland, Dahl, Haug, & Neckelmann, 2002; Dagnan, Chadwick & Trower, 2000). Zigmond and Snaith (1983) suggested that a cut-off score of 7-8 indicates possible depression and a score of 10-11 indicates probable depression. Although some normative data suggests this is a good cut-off score (Crawford, Henry, Crombie & Taylor, 2001), most research has indicated that for an optimal balance of sensitivity and specificity a cut-off score of 7 or 8 should be used (Bambauer, Locke, Aupont, Mullan & McLaughlin, 2005; Bjelland et al., 2002; Löwe et al, 2004). A cut-off score of 8 generally gives sensitivity and specificity of between 70% and 90% (Bjelland et al, 2002; Löwe et al, 2004).

The HADS has shown internal consistency between $\alpha = .63$ and $.93$ (Bjelland et al, 2002), test-retest reliability of $r = >.80$ (Herrmann, 1997), and shows good concurrent validity (Bjelland et al, 2002). The HADS is a good screening measure but performs poorly at differentiating different types of depression (Herrmann, 1997). The HADS is also useful in measuring treatment effects (Herrmann, 1997). The depression subscale

of the HADS is the chosen measure as it has good psychometric properties and is built into the computer programme as an assessment.

Patient Health Questionnaire Depression Scale (PHQ-9)

The PHQ-9 is the depression scale from the full PHQ which is a 3-page self-administered version of the PRIME-MD (Kroenke & Spitzer, 2002). The PHQ-9 is a nine item self-report measure of depression that assesses both diagnostic criteria and severity of depression (Nease & Maloin, 2003). The nine items are taken from the DSM-IV diagnostic criteria for depression and patients are asked to identify how often they have been troubled by these symptoms in the past two weeks ('not at all', 'several days', 'more than half the days,' or 'nearly every day'). Possible scores range from 0-27 with each item rated 0-3. It is suggested that a score of 5 indicates mild depression, 10 indicates moderate, 15 moderately severe, and 20 indicating severe depression (Kroenke & Spitzer, 2002). A cut-off score of 10 gives the greatest sensitivity and specificity for major depression (Kroenke & Spitzer, 2002). It has been found to differentiate between depressed and non-depressed individuals (Martin, Rief, Klaiberg, & Braehler, 2006) and compare well with other measures of depression (Löwe et al, 2004). It has also been shown to be responsive to treatment change (Lowe, Schenkel, Doebbeling & Gobel, 2006). This measure was used because it is quick to administer and is commonly used as a screening tool by GPs in New Zealand.

Social Adaptation Self-Evaluation Scale (SASS)

The Social Adaptation Self-Evaluation Scale (SASS) is a 21 item self-report social motivation and behaviour measure (Bosc, Dubini & Polin, 1997). Each item is scored 0-3 and total scale scores are between 0 and 60, with higher scores indicating greater social functioning. The normal range of scores on the SASS was defined by the authors as 35-52 (Bosc et al., 1997).

It has been validated with a large general population study and shows good reliability and validity (Bosc et al, 1997). It is useful as it gets the patient's view and covers work and leisure, relationships, satisfaction with roles, and perception of management and control of one's environment (Bosc et al, 1997). The scale only takes 5-10 minutes to complete (Bosc, 2000) and is acceptable to patients (Weissman, Olfson, Gameraff, Feder, & Fuentes, 2001). The SASS is also sensitive to treatment effects (Bosc et al,

1997), and has shown the differential effects of different antidepressant drugs (Bech, Lunde, & Uden, 2002).

The SASS was chosen as a social functioning measure for its excellent psychometric properties and its brevity and ease of use. It is important to measure social functioning as social functioning may be impaired beyond symptom reduction (Bech et al, 2002).

Client Satisfaction Questionnaire (CSQ-8)

The Client Satisfaction Questionnaire (CSQ) was originally developed as an 18 item self-report questionnaire that asks clients about the quality, satisfaction with, and effectiveness of the service they received (Larsen, Attkisson, Hargreaves & Nguyen, 1979). Each item is rated from 0-4 with higher scores indicating greater levels of satisfaction. In this study an eight item version was used as research has found that an eight item version performs as well or better than the full version (Attkisson & Zwick). The eight item version has excellent internal consistency and has been found to correlate with drop-out rates, number of sessions attended, and self-reported symptom improvement (Attkisson & Zwick, 1982). As well as giving an overall score (0-32), individual items on this measure can give an indication of what was valued about the service. This measure was used in a previous trial of 'Overcoming Depression' (Whitfield et al, 2006).

Procedure

Before the study began, ethics approval was obtained from the Northern X Health and Disability Ethics Committee (Protocol No. NTX/06/08/105, see Appendix C-1). Once participants had been referred to the study, they made an appointment for an initial assessment at the clinic. At this initial assessment, the study was explained to the participant, information sheet (Appendix B-1) given, and consent form (Appendix B-2) completed. The participant then completed the Depression subscale of the HADS, the PHQ-9, and the SASS. Participants were assessed for suicide risk and if showing suicidal intent could not enter the study. There were no participants unable to continue for this reason. Once all of this was completed, the participant was then randomized to one of the two groups. If the participant was randomized to the waiting list control

group they were given a six page information sheet about depression and some common self-help techniques (Appendix B-4). This was introduced as some information for them to read about depression that might be helpful. If the participant was randomized to the treatment condition, they were given a unique log-in, shown how to use the programme, and began the first session of the computerized self-help programme, 'Overcoming Depression'. Participants in the treatment group were also given the three page information sheet about depression. Participants in the treatment group continued to come into the clinic every week for five weeks to complete a 45-60 minute session on the computer. Each week they answered a short questionnaire asking them about contact with their GP, medication, homework compliance, significant life events occurring that week, and other self-help techniques used (Appendix B-6). The researcher or a research assistant was available at each appointment to help the participant log on to the computer and to be available for technical assistance if needed. No other face-to-face assistance was provided. At the completion of the six computer sessions, the participant completed the initial measures again as well as the Client Satisfaction Questionnaire. Participants in the control group were asked to come back to the clinic for a follow-up appointment five weeks later. At this appointment they completed the depression subscale of the HADS, the PHQ-9, and the SASS. They were also asked how many times they had seen their GP, taken medication, whether they had anything significant happen in their lives to impact on their depression, or done anything else to help their depression over the past five weeks. At this point they were also given the opportunity to begin the self-help computer programme if they wished. Only three patients from the control group chose to complete the 'Overcoming Depression' programme and only one of these actually completed all six sessions.

Design

Independent sample t-tests were used to compare change scores on all three outcome measures for the CCBT group and the waiting list control group. Paired sample t-tests were used to assess whether significant changes occurred in the three outcome measures after completing the 'Overcoming Depression' programme. Independent sample t-tests were also conducted to compare the two groups on change scores between baseline and six month follow-up. A paired sample t-test was conducted for the control group and

the treatment group separately to assess whether gains at post-intervention were maintained at six month follow-up. Multiple regression was used to assess the contribution of homework to change in outcome measures in the treatment group. Another multiple regression model was used to assess the contribution of use of other self-help and contact with the GP to change in outcome measures in both groups. All analyses were conducted using both Intention to Treat (last observation carried forward) and with completers only.

RESULTS

Preliminary data screening

Missing data

Missing values analyses were conducted using SPSS to explore the extent and type of missing data. When not considering data missing due to attrition, missing data in the sample was generally low ranging from 3.3 to 5.3 %. Little's MCAR test showed that the missing data was missing completely at random. Because the amount of missing data was low, missing data was replaced using imputation. The value was calculated using the average value for that item from the four participants with the closest match in scores. This method has been found to be superior to other methods in dealing with missing data (Elliott and Hawthorne, 2005). This only had to be done for four participants, two of which had missed five questions on one of the measures and the other two had each missed one question in one of the measures. Analyses were conducted using both LVCF (Intention to Treat analyses) as this is the current standard, and using completers only.

Normality and outliers

The data was screened for normality and outliers. Normality was assessed using skewness and kurtosis values and using the Kolmogorov-Smirnov statistic. Most measures were found to be normally distributed. Post-intervention outcome measures were positively skewed (negatively in the social functioning measure), however this is to be expected with treatment improvement; therefore this data was not transformed.

Reliability analyses

Cronbach's alpha was calculated for each of the outcome scales for the current sample. Each scale was found to have acceptable internal consistency with a Cronbach's alpha of .87, .845, and .849 for the PHQ-9, HADS depression subscale, and SASS respectively. This is comparable to other studies using these measures (Bjelland, Dahl, Haug, & Neckelmann, 2002; Bosc, Dubini & Polin, 1997; Cannon, Tiffany, Coon, Scholand, McMahon & Leppert, 2007).

Effectiveness of the 'Overcoming Depression' Programme

Changes in depression

Completers only

Using completers only, an independent t-test showed no significant differences between the CCBT treatment group and the waiting list control group in reduction of depression as measured on the HADS ($t = .811$, $df = 17$, $p = .429$, two-tailed, $d = 0.38$). Although not significant, the CCBT group showed greater reductions in depression scores with a mean reduction on the HADS of 3.36 (SD = 4.78) for the CCBT group and 1.75 (SD = 3.45) for the control group. For the mean scores on all outcome measures refer to Table 8.3.

An independent t-test also showed no significant differences between the CCBT treatment group and the waiting list control group in reduction of depression as measured on the PHQ-9 ($t = .790$, $df = 17$, $p = .440$, two-tailed, $d = 0.37$). Although not significant, the CCBT group showed greater reductions in depression scores with a mean reduction on the PHQ-9 of 6.14 (SD = 4.21) for the CCBT group and 4.38 (SD = 5.53) for the control group. For the mean scores on all outcome measures refer to Table 8.3.

A paired sample t-test using the treatment group showed that there were statistically significant reductions on both depression outcome measures (HADS – $t = 2.334$, $df = 10$, $p = .042$, two-tailed, $d = 0.80$; PHQ-9 – $t = 4.837$, $df = 10$, $p = .001$, two-tailed, $d = 0.98$). However paired sample t-tests on the control group showed no significant reductions in depression on either outcome measure (HADS – $t = 1.433$, $df = 7$, $p = .195$, two-tailed, $d = 0.44$; PHQ-9 – $t = 2.239$, $df = 7$, $p = .060$, two-tailed, $d = 1.07$).

Intention to treat

Using intention to treat analysis (last observation carried forward), an independent t-test showed no significant differences between the CCBT treatment group and the waiting list control group in reduction of depression as measured on the HADS ($t = 1.675$, $df = 25$, $p = .107$, two-tailed, $d = 0.57$). Although not significant, the CCBT group showed greater reductions in depression scores with a mean reduction on the HADS of 3.44 (SD = 4.72) for the CCBT group and 1.08 (SD = 2.78) for the control group. For the mean scores on all outcome measures refer to Table 8.3. Figure 8.2 shows the scores on the HADS at each time point for both groups.

An independent t-test also showed no significant differences between the CCBT treatment group and the waiting list control group in reduction of depression as measured on the PHQ-9 ($t = .883$, $df = 27$, $p = .385$, two-tailed, $d = 0.33$). Although not significant, the CCBT group showed greater reductions in depression scores with a mean reduction on the PHQ-9 of 4.22 (SD = 4.52) for the CCBT group and 2.69 (SD = 4.77) for the control group. For the mean scores on all outcome measures refer to Table 8.3. Figure 8.3 shows the scores on the PHQ-9 at each time point for both groups.

Figure 8.2. Mean HADS depression subscale scores at each time point (ITT) for the CCBT group and the waiting list control.

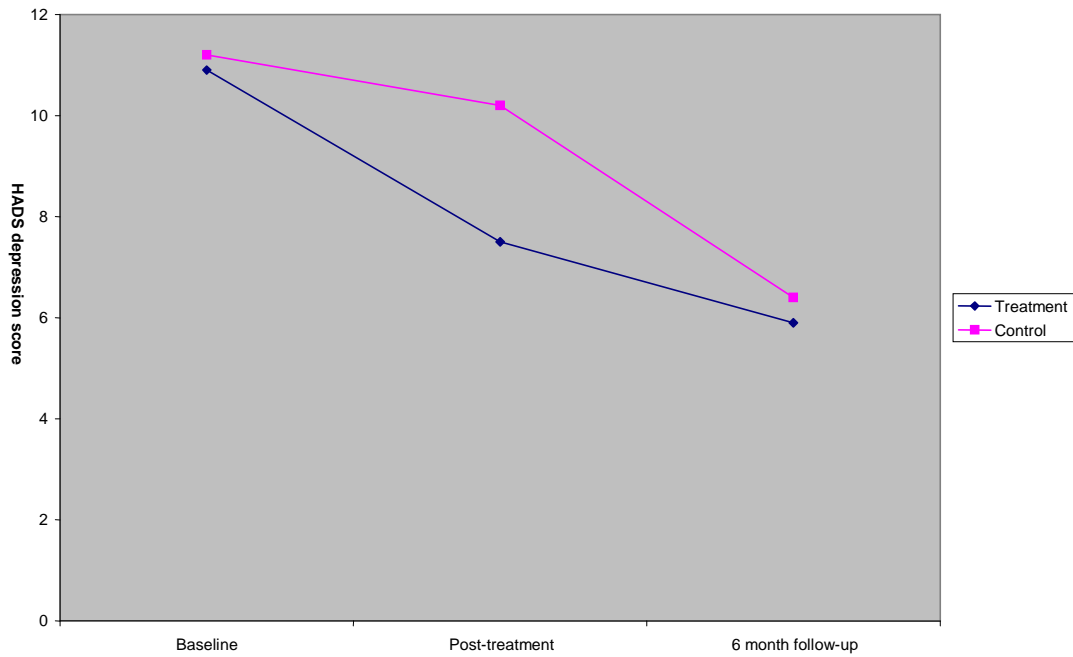
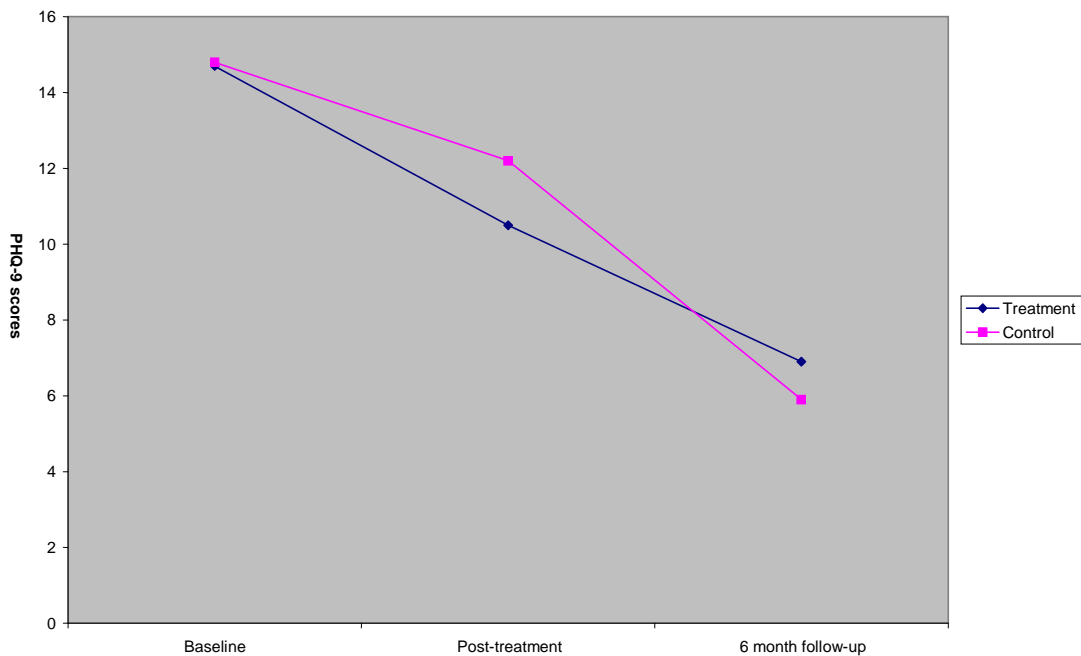


Figure 8.3. Mean PHQ-9 scores at each time point (ITT) for the CCBT group and the waiting list control.



A paired sample t-test using the treatment group showed that there were statistically significant reductions in depression on both depression outcome measures (HADS – $t = 2.914$, $df = 15$, $p = .011$, two-tailed, $d = 0.84$; PHQ-9 – $t = 3.733$, $df = 15$, $p = .002$, two-tailed, $d = 0.61$) However paired sample t-tests on the control group showed no significant reductions in depression on either outcome measure (HADS – $t = 1.395$, $df = 12$, $p = .188$, two-tailed, $d = 0.30$; PHQ-9 – $t = 2.036$, $df = 12$, $p = .064$, two-tailed, $d = 0.60$).

Changes in social functioning

Completers only

Using completers only, an independent t-test showed no significant differences between the CCBT treatment group and the waiting list control group in increases in social functioning as measured on the SASS ($t = 1.148$, $df = 17$, $p = .267$, two-tailed, $d = 0.53$). Although not significant, the CCBT group showed greater increases in social functioning scores with a mean increase on the SASS of 5.91 ($SD = 8.60$) for the CCBT group and 2.13 ($SD = 4.09$) for the control group. For the mean scores on all outcome measures refer to Table 8.3.

A paired sample t-test using the treatment group showed that there were statistically significant increases in social functioning as measured by the SASS ($t = -2.280$, $df = 10$, $p = .046$, two-tailed, $d = 0.82$). However paired sample t-tests on the control group showed no significant increases in social functioning as measured by the SASS ($t = -1.471$, $df = 7$, $p = .185$, two-tailed, $d = 0.28$).

Table 8.3. Mean scores on the outcome measures at each of the time points.

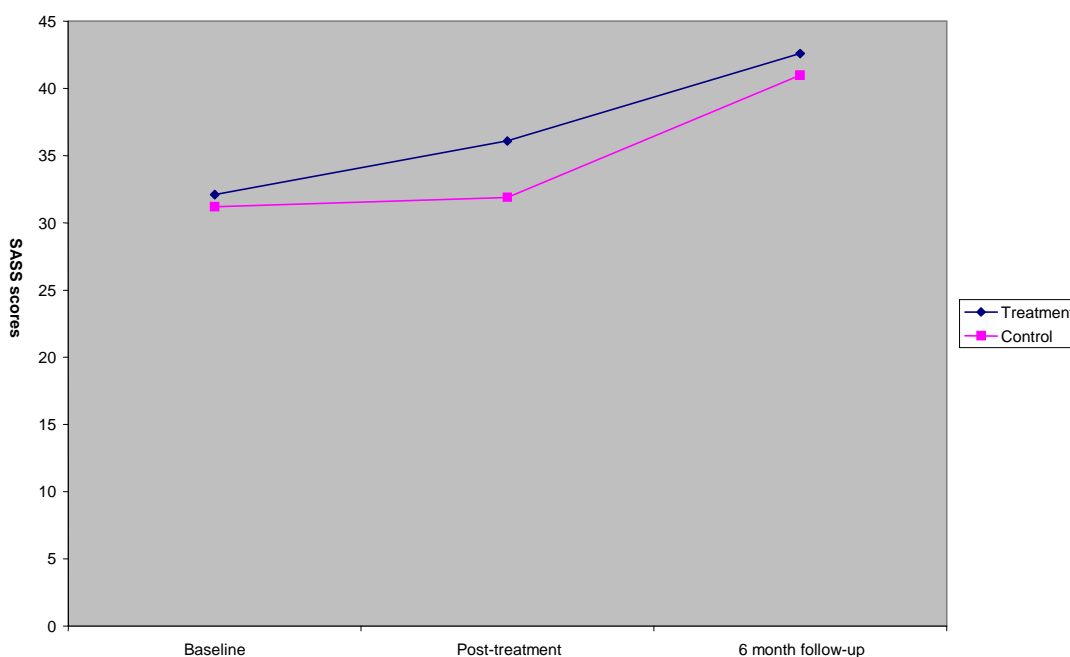
			Baseline Mean (SD)	Post- intervention Mean (SD)	6 month follow-up Mean (SD)
HADS depression	Treatment	ITT	10.9 (3.5)	7.5 (4.7)	5.9 (6.1)
		Dropouts removed	10.1 (3.3)	6.7 (5.2)	5.9 (6.1)
	Control	ITT	11.2 (2.9)	10.2 (4.3)	6.4 (5.1)
		Dropouts removed	10.8 (3.2)	9.0 (4.9)	6.7 (5.6)
PHQ-9	Treatment	ITT	14.7 (5.9)	10.5 (7.9)	6.9 (7.3)
		Dropouts removed	14.2 (5.4)	8.0 (7.1)	6.9 (7.3)
	Control	ITT	14.8 (3.8)	12.2 (5.1)	5.9 (4.0)
		Dropouts removed	13.9 (4.0)	9.5 (4.2)	6.5 (5.3)
SASS	Treatment	ITT	32.1 (5.4)	36.1 (9.2)	42.6 (10.3)
		Dropouts removed	33.4 (5.2)	39.3 (9.1)	42.6 (10.3)
	Control	ITT	31.2 (8.7)	31.9 (8.2)	41.0 (5.6)
		Dropouts removed	34.0 (8.7)	36.1 (6.4)	42.6 (5.9)

Intention to treat

Using intention to treat analysis (last observation carried forward), an independent t-test showed no significant differences between the CCBT treatment group and the waiting list control group in increases in social functioning as measured on the SASS ($t = 1.240$, $df = 22$, $p = .228$, two-tailed, $d = 0.53$). Although not significant, the CCBT group showed greater increases in social functioning scores with a mean increase on the SASS of 4.06 (SD = 7.57) for the CCBT group and 1.42 (SD = 3.42) for the control group. For the mean scores on all outcome measures refer to Table 8.3. Figure 8.4 shows the scores on the SASS at each time point for both groups.

A paired sample t-test using the treatment group showed that there were statistically significant increases in social functioning as measured by the SASS ($t = -2.147$, $df = 15$, $p = .049$, two-tailed, $d = 0.82$). However paired sample t-tests on the control group showed no significant increases in social functioning as measured by the SASS ($t = 1.434$, $df = 11$, $p = .180$, two-tailed, $d = 0.17$).

Figure 8.4 Mean SASS scores at each time point (ITT) for the CCBT group and the waiting list control.



Six month follow-up

A paired samples t-test showed no significant differences between scores on each of the outcome measures at post-intervention and six-month follow-up in the treatment group (HADS – $t = .694$, $df = 6$, $p = .513$, two-tailed; PHQ-9 – $t = 1.230$, $df = 6$, $p = .265$, two-tailed; SASS – $t = -2.225$, $df = 6$, $p = .068$, two-tailed) suggesting that gains were maintained. There were also no significant differences on each of the outcome measures at post-intervention and six-month follow-up in the control group (HADS – $t = 1.584$, $df = 6$, $p = .164$, two-tailed; PHQ-9 – $t = 1.344$, $df = 6$, $p = .227$, two-tailed; SASS – $t = -1.945$, $df = 6$, $p = .100$, two-tailed). Table 8.3 shows the mean scores on each of the measures at each time point for both groups.

Clinically significant change

The computer-based self-help programme 'Overcoming Depression' resulted in clinically significant change for the majority of those who completed the programme. Six of the patients who completed the programme no longer met the threshold for depression (using Zigmond and Snaith's cut-off points) and another two patient's scores indicated they had gone from 'probable depression' to 'possible depression.' Five patients who completed 'Overcoming Depression' no longer met the criteria for depression on the PHQ-9, and two others went from the moderate to mild depression range. In the control group, only two patients no longer met the threshold for depression on the HADS at six week follow-up, with three of these still meeting the criteria for probable depression. There were no patients in the control group below the threshold for depression on the PHQ-9 and one still met the criteria for moderately severe depression. However three of the patients had gone from moderate to mild depression on the PHQ-9.

The majority of patients in the current sample had scores below the normal range on the social functioning measure at baseline. However 73 percent of treatment completers achieved scores within the normal range post-treatment, and 86 percent of those available at six month follow-up had scores within the normal range. By comparison only 50 percent of the control group had scores within the normal range at six week follow up; however 100 percent of those in the control group available at six month follow-up had scores within the normal range.

Power calculations

Power to detect a difference between the two groups was unfortunately low with power of less than 0.20 to detect a difference using ITT analyses for the PHQ-9 and the SASS and only 0.32 for the HADS. However power calculations for the power to detect a difference between baseline and post intervention scores (treatment group) are more positive with power calculations of 0.92, 0.69, and 0.61 for the HADS, PHQ-9, and the SASS respectively. Power to detect a difference between baseline and 5 week follow-up in the control group was also low with power calculations of less than 0.20, except for on the PHQ-9 with a power calculation of 0.58.

Moderating factors

Multiple regression was used to explore the relationship between possible moderating factors and change scores. Due to a small sample not all moderating factors measured could be added to the model. Brace, Kemp, Snelgar (2006) suggest for multiple regression analyses that an N of ten times the number of predictors is needed. Therefore certain predictors were prioritised according to hypotheses and previous research. Multiple regression models were used to find out how much of the change scores on each measure were predicted by homework completed in the treatment group. Multiple regression models were also used to find out how much change scores on each measure were predicted by the use of other methods of self-help and contact with the GP in both the treatment and control groups. As in the other analyses as there were no differences between intention to treat and per protocol analyses, only ITT analyses were used for the multiple regression. Data was checked for outliers, normality and homoscedasticity of residuals, with no violations of assumptions.

Homework

Using the enter method, homework was entered and a non-significant model emerged for the HADS ($F(1, 10) = 1.331, p = .276$); however both the PHQ-9 ($F(1, 10) = .8785, p = .014$) and the SASS ($F(1, 10) = 4.769, p = .054$) produced a significant model. The model explained only 2.9% of the variance (Adjusted $R^2 = .092$) for the HADS; however 41.4% (Adjusted $R^2 = .414$), and 25.5% of the variance (Adjusted $R^2 = .255$) for the PHQ-9 and the SASS respectively. Table 8.4 gives information for the predictor variables entered into the model. However caution must be taken in interpreting this result as the treatment group was only a small sample.

Table 8.4 The unstandardised and standardised regression coefficients for homework entered into the model for both groups.

	Variable	B	SE B	β	<i>p</i>
HADS	Homework	.912	.790	.343	.276
PHQ-9	Homework	1.706	.576	.684	.014
SASS	Homework	-2.706	-.239	-.568	.054

GP contact and use of self-help

Using the enter method, GP contact and self-help used were entered and a non-significant model emerged for each of the outcome measures: HADS – $F(2, 17) = 1.958, p = .172$; PHQ-9 – $F(2, 17) = .734, p = .494$; SASS – $F(2, 17) = 2.750, p = .092$. The model explained only 9.2% (Adjusted $R^2 = .092$), 2.9% (Adjusted $R^2 = -.029$), and 15.6% of the variance (Adjusted $R^2 = .156$) for each of the outcome measures respectively. Table 8.5 gives information for the predictor variables entered into the model. Neither GP contact nor self-help used were significant predictors of HADS or PHQ-9 scores. However self-help used was a significant predictor of change in social functioning as measured by the SASS. However caution must be taken in interpreting this result as only a small amount of variance was accounted for and the model overall was not significant.

Table 8.5 The unstandardised and standardised regression coefficients for GP contact and self-help used entered into the model for the treatment group.

	Variable	B	SE B	β	<i>p</i>
HADS	GP contact	-.828	.808	-.294	.319
	Self-help used	1.339	.685	.561	.067
PHQ-9	GP contact	-.869	.967	-.275	.381
	Self-help used	.986	.821	.367	.246
SASS	GP contact	-2.539	1.291	.544	.066
	Self-help used	-2.463	1.096	.622	.038

Patient satisfaction with the programme

Scores on the Client Satisfaction Questionnaire ranged from 23 to 32 with the average score being 27 out of 40 (higher scores indicate greater satisfaction). Most rated the quality of service as good or excellent, with only one patient rating it as poor. Most indicated that most of their needs had been met; however four patients indicated that the programme only met a few of their needs, and one patient said that it met none of their needs. However all patients indicated that they got the kind of service that they wanted and that they would recommend it to a friend. Most indicated that they were satisfied with both the amount of help that they received and the service they received; however one indicated they were dissatisfied with the service, and one was dissatisfied with the amount of help received. The majority of patients said that the programme helped them and that they would use the programme again. One patient said that the programme made things worse and two indicated that they would not wish to use the programme again. Reasons for dissatisfaction were not given and in future research it would be useful to ask about parts of the programme both completers and non-completers liked and disliked.

Feedback from general practitioners

GPs in the practice were asked to complete a short questionnaire about the study and the treatment programme (Appendix B-7). Of four GPs only one returned the questionnaire which limits the applicability of these results. However it was indicated in this feedback that the programme was suitable for use in general practice, easy to refer patients to, good improvements were noted, and good feedback was received from patients. The practice indicated that they would be interested in using the programme in the future and saw the possibility of training practice nurses to facilitate this.

Chapter 9

Discussion

The current research investigated whether computer-based self-help is acceptable to patients and effective as an adjunct to treatment for depression in primary care. Self-help has been well-accepted by users in past studies however some studies have shown high dropout rates from self-help treatment. The first study in the present research found that potential users of self-help for depression or anxiety believe that self-help based approaches could be effective in treating depression and anxiety; and would be willing to try self-help, including computer-based self-help. However consistent with past research, most indicated that they would prefer some face-to-face contact. While there are limitations with the sample used and the self-report nature of the questionnaire, these results do not show the biases inherent in past research asking participants who may have volunteered to be part of a study using self-help. The acceptability of a treatment is an important factor as those treatments that are more acceptable are likely to have lower dropout rates and greater effectiveness.

Computer-based self-help has been used for a wide range of clinical and non-clinical problems with positive results (Cavanagh & Shapiro, 2004; Green & Iverson, 2009; Griffiths & Christensen, 2006; Kaltenthaler, Parry & Beverley, 2004; Przeworski & Newman, 2006; Titov, 2007). ‘Overcoming Depression’ is just one of the cognitive-behavioural computer-based self-help programmes for depression on the market but was chosen due to the promising preliminary findings in a pilot study (Whitfield et al., 2006). The second study in the present research found that ‘Overcoming Depression’ significantly reduced depression in a primary care sample of patients with depression and gains were maintained at six-month follow-up. However the programme did not reduce symptoms of depression significantly more than a waiting list control. There may be several reasons for achieving these results. The small sample size of this study gives low power to detect a significant difference. Another possibility is that the treatment given to the waiting list control group was also effective in reducing depression. Results indicate that the control group did not show significant reductions in depression; however there was evidence of improvement in social functioning and depressive symptoms. It must be noted that the control group were on a waiting list for

the self-help treatment but were also receiving treatment as usual. TAU was standard GP care which could include antidepressant medication; and no restriction was put on receiving treatment outside of GP care, such as other types of talking treatment. No patients identified that they received other talking treatments but some did use self-help techniques, including some of those strategies included in the programme, such as increasing activity. It must also be noted that the general practice in which the trial occurred is a teaching practice aligned with the University medical school and because of this has a high quality of care. A different practice which is unable to provide these standards of care may have provided different results.

The control group were also given a six page information sheet about depression and some common self-help techniques to try, including websites they could look at. None of the patients indicated that they used the internet to help their depression, however they were not directly asked. Therefore they were not strictly a waiting list control group as they did receive information which may have benefited them, and may be considered another self-help group. However Marks and colleagues (2009) suggest that waiting list control groups should include a good attention-placebo as in trials of psychotherapy. The information given to the control group could be considered a type of self-help placebo. It is also known that often people seek additional help when in a waiting list group, as well as having treatment anticipation and therefore can never be considered a strict waiting list control (Wampold, 2001). Previous research has also indicated that information about depression is as effective as computer-based CBT for depression (Christensen, Griffiths, & Jorm, 2004). It could be argued that the use of any self-help and taking control of one's own recovery could be an important part of symptom reduction in depression. However the results in the present study indicated that those receiving the information sheet on depression and self-help did not achieve significant reductions in depression. A more structured approach such as CBT might be needed. A review of self-help studies showed that approaches using CBT are more effective than those giving information (Gellatley et al., 2007). However it is also interesting to note that despite 100 percent take up rate for those offered the 'Overcoming Depression' programme when referred to the study, only 12.5% of those offered the programme at five week follow-up chose to complete the programme. This suggests that something may have helped over that five week period or had made the programme less attractive.

It must also be noted that depression often remits without treatment, however with a mean duration of depression of 11 years in the present study, spontaneous remission is unlikely. However some research has shown that placebo effects commonly occur in depression trials. Posternak and Miller (2000) found that 20 percent of those in waiting list control groups improve to the point of a positive response; and suggest that 10-15 percent of decreases in symptoms can be expected without treatment. Up to 35 percent of those given a placebo in antidepressant trials get better (Enserink, 1999). This makes it difficult to show a significant difference between treatment and control groups and may have reduced the power to find a significant difference in the present study. Most of the patients in the present study were suffering from mild levels of depression which may have reduced the amount of improvement that could occur in treatment.

Although two measures of depression were used in the present study which both have good psychometric properties and have demonstrated validity and reliability in measuring depression and treatment change, it is possible that other measures may have measured treatment change more reliably. The BDI-II (Beck, Steer, & Brown, 1996) is a well used instrument which may have been more sensitive to treatment change than the short measures used in this study. However the BDI-II also takes longer to complete and is a considerable extra cost. The HADS is a good measure to use in primary care settings as it is not biased by physical symptoms as much as the BDI-II (Zigmond & Snaith, 1983). The PHQ-9 was used as it is a well-known and well-used measure by general practitioners who may be interested in this research. The use of visual analogue scales to measure self-reported depression may also have given useful information about improvement also and could be used in future research.

In the present study, there was no measure of anxiety. Anxiety is commonly co-morbid with depressive disorders and can limit the effectiveness of standard treatment for depression (Gaynes et al., 1999). It may be that those in the present study were suffering from significant anxiety that limited the effectiveness of 'Overcoming Depression'. However despite anxiety being measured in a previous trial of 'Overcoming Depression' the effect of anxiety on depression outcome was not explored (Whitfield et al, 2006). Future research should explore the relationship between anxiety and treatment outcome.

It is also important that research includes ecologically valid instruments as well as symptom reduction to assess whether meaningful life changes are achieved within the patient's own social context (Higginson & Carr, 2001). One of the strengths of this study is that quality of life was also measured using the Social Adaptation Self-evaluation Scale (SASS) which allowed assessment of changes that may be more important and meaningful than symptom reduction.

Often improvements in social functioning take longer to occur than symptom reduction in treatment for depression (Furukawa et al., 2001); however this was not found in the present study. Significant reductions in social functioning were seen after six weeks of CCBT, and improvements continued to occur until six month follow up. This differs from a previous trial of 'Overcoming Depression' which found no significant difference in social functioning after six sessions (Whitfield et al, 2006). The majority of patients in the current sample had scores below the normal range at baseline, with the majority having scores within the normal range post-treatment, and the number of patients in the normal range had increased by six month follow-up. By comparison only 50 percent of the control group had scores within the normal range at six week follow up; however all of those available at six month follow-up had scores within the normal range. Those who did not have clinically significant change in social functioning also did not achieve clinically significant reductions in depression, suggesting it was about treatment non-response rather than just a failure to improve social functioning.

The dropout rate from treatment was also quite high at 31 percent, however not higher than that found in other CCBT studies, or for traditional CBT. A drop out rate of 30% in a previous study of 'Overcoming Depression' is also comparable to the current study (Whitfield et al., 2006). Drop out rates for CCBT have been found to range from 0-75 percent with an average of 31.75 percent ((Kaltenthaler et al., 2008b). Waller & Gilbody (2009) report rates of drop-out in CCBT studies ranging from 0-74 percent with a median of 17 percent drop-out. Drop out is not substantially different between CCBT and control groups so it is possible that dropout is to do with being in a research trial rather than type of treatment (Waller & Gilbody, 2009). However dropout may also have been reduced with more face-to-face support. Attrition rates are often lower

when some therapist time is provided (Kenwright, Marks, Graham, Franses, & Mataix-Cols, 2005; Klein & Carlbring, 2003).

Past research has also indicated that computer-based self-help programmes are more effective when some face-to-face contact is given (Gellatley et al., 2007; Spek et al., 2007a; Tate, Jackovny & Wing, 2003; Titov, 2007). Patients indicate that it is hard to stay motivated without face-to-face contact (MacGregor, Hayward, Peck, & Wilkes, 2009). The present study provided only technical assistance with the use of the programme and did not provide any type of face-to-face therapy. The use of limited face-to-face therapeutic support may have improved the effectiveness of this treatment in the present study.

It is unknown in the present study how many of those invited to enter the study actually took the opportunity, so take-up rates are unknown. However with rates of depression previously found to be around 18 percent in primary care settings (Bushnell, 2003) and the small number referred to the study, take up rates are suspected to be low. It would be useful to know in future research what the barriers to computer self-help treatment are. An expectation of face-to-face contact may be one of the barriers as those offered CCBT as a first line of treatment in a previous study, were more likely to take up this treatment than those offered face-to-face contact (Williams & Martinez, 2008). It must also be noted that in the first part of the current study, patients in general practice were eager to engage in self-help treatment for depression or anxiety. It is suspected that within this busy general practice, GPs were not utilising the treatment programme to its capacity and reasons for this could be explored in future research. One of the GPs did indicate that approximately 90 percent of patients invited to participate did so, indicating willingness to engage was high. It would be useful to look at ways to increase GPs' awareness of the programme, for example with pop-up reminders about the study when the GP prescribes or reviews antidepressants. Advertisements in the patient waiting room may also have encouraged patients to ask their GP about the programme.

As most dropouts were lost to follow-up, there is no information about why patients dropped out of treatment. However feedback from some of the patients during the trial indicated that barriers to treatment included only being available during office hours,

child care difficulties, and difficulty in transport. Bayliss and Willis (2010) found that dropouts from the computer-based CBT programme 'Beating the Blues' were more likely to be men and this is suggested to be because of difficulty scheduling treatment around work commitments. Users of COPE, a voice response activated system for depression, made most calls to the voice response system outside of office hours, highlighting the convenience aspect of self-help (Osgood-Hynes, et al., 1998). The 'Overcoming Depression' treatment programme is now available as an internet-based programme which may help to overcome these barriers. Future research should attempt more assertive follow-up of those who drop out of treatment as reasons for dropout provide important information about the acceptability of the treatment, and may help to identify those who self-help may not be suitable for. Atkisson and Zwick (1982) found that satisfaction as measured by the CSQ-8 was highly correlated with drop-out and number of sessions attended. However, it has been suggested that some patients actually dropout of self-help treatment because they feel they have already received enough benefit from the treatment and not because they found it unacceptable (Van den Berg, Shapiro, Bickerstaffe and Cavanagh, 2004). However with later sessions in the programme including planning to prevent relapse, it is important patients complete the full treatment. Previous research has found no differences between dropouts and completers in anxiety or depression severity (Bayliss, & Willis, 2010).

It would also be useful to know more about what patients did like about the treatment programme and what parts they did not like. Overall patients were quite positive about 'Overcoming Depression' with most indicating that most of their needs had been met, that the programme had helped them, they got the kind of service that they wanted, and that they would recommend it to a friend. However little is known about which parts they found more useful or unhelpful.

Another increasingly important aim in research is to identify which parts of treatment produce the most change. Unfortunately the weekly HADS depression scales completed within the 'Overcoming Depression' programme were unable to be accessed in the CD-Rom version of this programme and so there is no indication of where change occurred. However in a previous trial using 'Overcoming Depression' it was found that the greatest reduction in symptoms of depression occurred after the first session (Whitfield et al., 2006), which is also similar to what is found in standard CBT (Haas,

Hill, Lambert, & Morrell, 2002). Future research should use weekly monitoring to identify where change occurs. Weekly monitoring has also been used in other research to reduce the effects of high drop out (Clark et al., 2009).

It would also be useful to investigate who this treatment is best for by measuring characteristics such as age, gender, and personality factors. There is no research identifying demographic characteristics of those who do best with self-help however there is some suggestion that self-help is better for younger populations (Newman, Erickson, Przeworski and Dzus, 2003), and that those with more education are more likely to complete treatment (Scogin, Jamison & Gochneaur, 1989). There are also indications it may not be suitable for more severe problems (Mains & Scogin, 2003; McKendree-Smith, Floyd & Scogin, 2003), or for those with low motivation (Apodaca & Miller, 2003). Although a number of characteristics were known in the current sample, the small sample size meant the effects of these characteristics on treatment outcome were unable to be investigated. Self-help is not suitable for everyone and assessment for treatment fit and consumer choice is important. Gega, Kenwright, Mataix-Cols, Cameron, and Marks (2005) have created a screening questionnaire for suitability for self-help that shows promise, and with further refinement this may be a useful measure.

A number of moderating factors may also have had an impact on treatment outcome such as homework compliance, visits to GP, use of other treatments, and use of medication. Although measured each week, due to the small sample size, the effect of these variables on treatment outcome was unable to be measured. The small sample size meant it was not possible to control for all confounding variables simultaneously. However results indicate that homework compliance did not significantly predict treatment outcome which is contradictory to previous research, finding homework an important factor in treatment (Burns & Spangler, 2000; Kazantzis, Deane, & Ronan, 2000; Kazantzis & Lampropoulos, 2002). Homework completion was found to be important in predicting long-term improvement after internet-based CBT for depression (De Graaf, Huibers, Riper, Gerhards, & Arntz, 2009). However caution must be taken when interpreting these results as the small sample size may have obscured results. Also the homework compliance was not quantified, as compliance was counted if any homework had been completed that week. Homework quality is an important factor

(Kazantzis & Lampropoulos, 2002) that was not assessed. Homework compliance was also low in general, with only 20 percent indicating that they completed homework every week, and an average of 70 percent each week indicating they completed any homework. This also may have been improved by the provision of more face-to-face support. This and all of the other confounding variables were also self-report so may be subject to self-serving biases (Westen & Weinberger, 2004). Previous research has found that patients can report doing more homework than they actually completed to please the therapist (Hoelscher, Lichstein, & Rosenthal, 1984). The effects of medication were also not investigated. Some of the patients had just begun antidepressant medication when referred to the study and some had been taking antidepressants for a long period of time. There is some evidence that combined antidepressant treatment and CBT can be more effective than either treatment alone (Craske, et al., 2005; Pampallona, Bollini, Tibaldi, Kupelnick, & Munizza, 2004), especially for chronic or severe depression (Friedman et al., 2004).

Follow-up was limited to six-months which is a relatively short period after treatment. Future research could aim for longer periods of follow-up to assess whether treatment gains can be maintained for clinically significant periods of time. Research indicates that average time to reach remission is six months (Ramana et al., 1995; Vuorilehto, Melartin, and Isometsa, 2009), and that 40-50 percent relapse within one year (Andrews, 2001; Ramana et al, 1995). A limited amount of research has included follow-up periods, with none extending beyond six months. Thus it is unclear whether the symptom reductions achieved are more than the natural course of the illness, or if CCBT can be effective for relapse prevention. It would also be useful to have a greater number of follow-up intervals such as follow-up after one and three months. In the present study reductions in symptoms of depression and increases of social functioning continued to occur after treatment ended. It would be useful to know whether these gains occurred gradually over time or closer to the end of treatment. Improvements occurring longer after the end of treatment may be due to other factors, such as additional help sought. However most in the present study most patients did not indicate that they received additional treatment after the treatment programme ended, suggesting gains are more likely to be a result of skills learnt from the 'Overcoming

Depression' programme. It would be useful to ask patients at follow-up assessments, what has been helpful in maintaining their wellness.

There is increasing evidence that some of the newer 'third wave' therapies, such as Mindfulness-based CBT (Barnhofer et al., 2009), DBT (Feldman, Harley, Kerrigan, Jacobo, & Fava, 2009; Lynch, Morse, Mendelson, & Robins, 2003), and Acceptance and Commitment Therapy (Forman, Herbert, Moitra, Yeomans, & Geller, 2007) are effective in treating depression. There is currently no computer-based self-help approaches using these types of therapies but future developments may include these and might add further to the effectiveness of computer-based CBT. An online programme using problem-solving therapy has been found to be equivalent in effectiveness to an online CBT programme (Warmerdam, van Straten, Jongasma, Twisk, & Cuijpers, 2010). CBT is often used in self-help approaches due to its structure, however acceptance based therapies could be very suitable for self-help approaches, with the skills offered also able to be generalized for a wide range of difficulties, and also being very empowering.

Limitations

There are several limitations in the present study. As previously mentioned the sample was very small giving little power to detect significant differences. Despite this there were strong indications that 'Overcoming Depression' could reduce symptoms of depression and increase quality of life. The small sample size and that it was taken from one general practice in one part of New Zealand also limit the ability to generalise the results. However the sample did include a wide age range and different cultural backgrounds and the trial did occur in a naturalistic setting meaning the ability to generalise is much higher than previous efficacy studies. High dropout rates may also have biased the results however no difference was found between intention to treat analyses and per protocol analyses. There were also no statistically significant differences found between dropouts and completers.

Another limitation is the self-report nature of all of the measures used. Self-report measures have a number of inherent biases such as under-reporting and over-reporting

of symptoms (Duberstein & Heisel, 2007). Hunt, Auriemma, and Cashaw (2003) found an under-reporting of symptoms on the BDI-II, especially among male patients. As the measures ask about symptoms experienced over the past week or two weeks, memory biases may also have influenced participants' answers. The diagnosis of patients was not checked before entering the study meaning that some of the patients may not have met diagnostic criteria for depression. However, GPs were asked to refer patients to the study who had a diagnosis of depression of mild to moderate severity so diagnosis was assumed. In future research it would be advisable to check participants meet diagnostic criteria prior to entering the study, as delays between referral and appointment times may mean that depressive symptoms have reduced in the interim, therefore not meeting diagnostic criteria when entering the study. It would also be advisable to have both self-report and other types of measurement, such as clinician-based assessment.

Future research

There are several areas that still need to be explored within the self-help literature including further treatment comparisons with CCBT, research investigating optimal conditions including how much face-to-face support should be given, the most suitable candidates for computer-based CBT, and exploring how and when change occurs.

Future research could compare 'Overcoming Depression' with a true treatment as usual control group as well as with standard CBT. Research is also needed to compare computer-based CBT with written self-help. Computer-based CBT can have many advantages over written self-help such as easier dissemination; however the cost of the development of these programmes may not be warranted if CCBT is not significantly more effective than written self-help approaches. Ghosh, Marks, and Carr (1988) found no difference in effectiveness for book, computer, or therapist in guiding self-exposure for phobia. It is also unknown how much face-to-face support is needed when using computer-based self-help, although indications are that some support is beneficial. One of the reasons the present study failed to find significant differences between the 'Overcoming Depression' programme and TAU control group may have been because of a lack of face-to-face support. Future research could compare different quantities of support, as well as support provided by different professionals such as practice nurses

versus psychologists. In previous research into computer-based CBT, GPs with some training in CBT have given effective support (Shandley et al., 2008). More research is also needed into the cost-effectiveness of treatments as this is an important factor in managing scarce resources within the health care system. Assessment of the cost-effectiveness of 'Overcoming Depression' in primary care treatment for depression would also be useful.

It is important that future research also includes measures of social functioning and anxiety, not just symptoms of depression. Measurement of quality of life indicate more meaningful improvements to the patient's overall functioning so are important to assess. The present study included one measure of social functioning however measures such as physical health status, missed work days, and ability to fulfil other roles may also be useful. Untreated depression has been associated with more missed work days (McQuaid, Stein, Laffaye, & McCahill, 1999) and difficulties in interpersonal functioning (Schonfeld et al., 1997).

More symptom measurement points will show when treatment gains are happening and longer follow-up periods will help to see if treatment gains are maintained. The present study indicated that reductions in symptoms of depression and increases in social functioning were maintained at six-month follow-up; however it is unclear whether these remained in the longer term. It is also important to use both clinician based and self-report measures to assess accurately. The present study only used self-report measures which may be sensitive to self-report biases (Duberstein & Heisl, 2007). In addition to psychometric measures, it is important that diagnosis is checked. In the present study it is possible that between referral to the study by the GP and first treatment session that depression had remitted. The HADS was used as a self-report measure of depression but a clinical interview to confirm diagnosis of depression would have ensured diagnostic accuracy. The use of visual analogue scales to rate severity of depression could also give useful information.

Acceptability and treatment satisfaction are important as programmes are more likely to be effective if they are acceptable to patients and result in lower dropouts (Kaltenthaler et al., 2008b). Future research should aim to gather more qualitative information including what patients like and dislike, as well as reasons for dropout. The present

study indicated that patients like the 'Overcoming Depression' programme and would recommend it to others, however it is unknown why patients dropped out or which parts of the programme were disliked. Future research could also record if there are any side effects and adverse consequences of treatment.

In any effectiveness research it is not clear whether the treatment is responsible for the significant changes occurring. There may be moderating factors that influence the effectiveness of treatment. Future research with larger sample sizes might usefully investigate possible confounding variables such as homework, visits to the GP, positive and negative life events, and use of other self-help techniques. Although these factors were measured, the small sample size in the present study meant that the effects on treatment effectiveness could not be investigated. Homework is an important part of effective therapy (Burns & Spangler, 2000; Kazantzis, Deane, & Ronan, 2000; Kazantzis & Lampropoulos, 2002); however the current study failed to find homework effects.

GP visits could also impact on improvement and could be seen as a treatment. GPs could also potentially be a way of providing face to face contact and support, which has previously increased the effectiveness of self-help programmes (Spek et al., 2007a). It is also possible that patients seek additional help including self-help which can also better explain improvement. The patients in the present study did not indicate that they used any other self-help approaches while receiving the computer-based self-help treatment however this was self-report so could be vulnerable to biases. According to cognitive behavioural theory, positive and negative life events can affect thinking and therefore influence depression also (Beck, 1991) so would be important to assess as an influence on treatment outcome. It would also be useful to investigate if there are differential effects of computer-based self-help programmes for those on antidepressant medication compared to those not on medications. In the present study due to small sample size, it was not possible to explore the effects of antidepressant medication on reductions in depression. Some research suggests that a combination of medication and CBT may have greater effectiveness than either alone (Craske, et al., 2005; Pampallona, Bollini, Tibaldi, Kupelnick, & Munizza, 2004).

While there is an increasing amount of research on computer-based CBT and knowledge of how it works and under what conditions, more research is clearly needed before it can become an accepted part of treatment for depression.

Conclusion

The first part of the present research provided evidence that self-help approaches including computer-based self-help approaches are perceived by patients to be effective and that patients would be willing to use a self-help approach as an adjunct to treatment for depression. As the first trial of computer-based CBT in New Zealand and the first randomized controlled trial of the 'Overcoming Depression' self-help programme in a naturalistic primary care setting, it represents a preliminary evaluation of the effectiveness of this programme and as such represents a significant contribution to the computer-based self-help literature. Results indicate that the computer-based CBT self-help programme, 'Overcoming Depression', is effective in reducing symptoms of depression and improvements in social functioning, however may be improved by the addition of brief face-to-face support. Although further research is needed, the present research indicates that computer-based self-help may be a viable option to meet the increasing need for psychological therapy for mild to moderate depression in primary care.

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APPENDIX A-1

Acceptability Study Participant Information Sheet



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PARTICIPANT INFORMATION SHEET

The acceptability of a computer-based self-help programme as an adjunct to treatment for mood issues

Principal researcher: Rebecca Scheibmair, rebeccascheibmair@free.net.nz

Supervisor: Associate Professor Paul Merrick, School of Psychology, Massey University, Private Bag 102904, North Shore MSC, Auckland; telephone (09) 414 0800 extn 41231, or email P.L.Merrick@massey.ac.nz

We are looking to get your opinion about how useful self-help materials are for the treatment of mood issues. I invite you to participate in this study by filling out two short questionnaires. This will take no longer than 10 minutes. The first questionnaire asks you about some of your attitudes and beliefs about self-help treatments and if you've used them in the past. The second questionnaire asks you a bit about how you have been feeling recently.

A computer-based self-help programme for depression/anxiety, involving six one hour sessions, may soon be trialed in your doctor's rooms. Computer-based self-help for depression has been shown to significantly improve the symptoms of depression and anxiety in Britain. We would like to get an indication of whether this would be something you would consider using as part of the treatment your doctor would prescribe, if you were suffering from depression or anxiety.

There are also a few demographic questions to answer, so that we can get a better idea of our sample. There is also a space for you to put your contact details, so that we can contact you to let you know the results of the study. If the scores on the mood questionnaire indicate that you may be showing signs of depression or anxiety, we will send you a letter advising you of this and suggest that you see your doctor regarding these issues.

Completion and return of the questionnaires implies consent. You have the right to decline to answer any particular question. Your participation in this study is entirely voluntary. Any information you provide for this study will only be seen by the researcher. The information will be kept on a computer disk in a locked file and will be kept in this file for 10 years, after which it will be destroyed.

If any of the questionnaires highlight any concerns you may have about how you have been feeling, please talk to your doctor.

In the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation and Compensation Act. If you have any questions about ACC, contact your nearest ACC office or consult the website www.acc.co.nz/claimscare/making-a-claim/medicalmisadventure

If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact the Advocacy Network Services Trust (ADNET) ph:

Northland to Franklin	0800 423 638
Free fax	0800 2787 7678
Email:	advocacy@hdc.org.nz

I am undertaking this research as part of my Doctorate at Massey University, supervised by Associate Professor Paul Merrick. If you have any questions about this research, please feel free to contact the researcher.

This study has received ethical approval from the Northern X Ethics Committee.¹ Protocol No. NTX/06/08/105

¹ Overcoming Depression – The acceptability of a computer-based self-help programme as a treatment for depression and anxiety (Information Sheet Version 4 – 20/11/06)

APPENDIX A-2

Acceptability Questionnaire

The acceptability of a computer-based self-help programme for the treatment of mood issues²

A questionnaire for all patients

A computer-based self-help programme for depression/anxiety, involving six one hour sessions, may soon be trialed in New Zealand. Computer self-help for depression and anxiety has been shown to significantly improve the symptoms of depression and anxiety in Britain. We would like to get an indication of whether this would be something you would consider using to treat depression and anxiety (*if you were suffering from depression or anxiety*). Please indicate how strongly you agree or disagree with the following statements.

1. I would be willing to try a self-help approach (e.g. self-help book or tape) to treat my depression/anxiety.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

2. A self-help approach would help my depression/anxiety.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

3. I would be willing to try a *computer-based* self-help programme to treat my depression/anxiety.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

4. *Computer-based* self-help could help to improve my depression/anxiety.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

5. I would prefer a *computer-based* programme in a doctor's surgery more than a self-help book at home.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

² Participant Questionnaire

6. I would prefer talking to someone face to face more than a *computer-based* self-help programme.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

7. I would be willing to try a *computer-based* self-help programme for depression/anxiety if I had someone to talk to as well, even if only briefly.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

8. It would be difficult to find the motivation required for self-help treatment.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

9. If there were no other treatments available, I would be willing to try a computer-based self-help programme.

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

10a. I have used self-help materials for depression or anxiety in the past.

YES **NO**

If yes to 10a, please name the material you used:

10b. Do you think the self-help treatments you have used in the past have helped you?

DEFINITELY			UNCERTAIN				NOT AT ALL		
1	2	3	4	5	6	7	8	9	10

Do you have any comments about *computer-based* self-help?

PTO

Demographic Information

This information will only be used to describe my sample better and will in no way identify you.

Gender: Male Female

Age: _____

Occupation: _____

B Are you currently suffering from depression or anxiety?

YES NO

If yes to 1, are you getting any talking treatment, i.e counseling, cognitive behavioural therapy, or other?

YES NO

If yes, please name:

If yes to 1, are you currently on any medication for your depression/anxiety?

YES NO

If yes, please name the medication:

.....
3

Please fill in your contact details. We will only contact you if your responses indicate that you may be suffering significant depression or anxiety. If you wish, we can also send you a summary of the results of this study when it is completed.

Name: _____

Address: _____

Please tick this box if you wish to be sent a summary of the results.

³ Overcoming Depression – The acceptability of a computer-based self-help programme for the treatment of depression and anxiety (Participant Consent Form Version 1 – 20/3/06)

APPENDIX A-3

Summary of Results Sent to Participants



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1 March 2007

Dear Participant,

In December 2006 you completed a short questionnaire while waiting in the Roseland's Doctors waiting room, asking you about self-help approaches, anxiety, and depression. We would like to thank you again for your participation in the study. The study aimed to find out the acceptability and willingness of patients to use a self-help approach, particularly computer-based self-help, to treat depression and anxiety. No assumptions were made about whether participants were actually depressed or anxious, as a more general public opinion was sought. Just over one hundred patients visiting Roseland's Doctors completed this questionnaire. This part of the study is now complete and a summary of the results are provided below.

Results from the questionnaire asking about anxiety and depression indicated that 11.1% were showing significant anxiety, 3.3% were showing significant depression, and 8.9% were showing both significant anxiety and depression. 20% of the people surveyed said they were currently suffering from anxiety or depression, and of these 25% indicated that they were receiving talking treatment, and 55% indicated they were on medication for depression or anxiety. These results are similar to results found in previous research about the prevalence of depression and anxiety in New Zealand.

Overall, self-help approaches appeared to be acceptable to patients and most would be willing to try a self-help treatment if they were suffering from depression or anxiety. There was some indication that patients would prefer to talk to someone face to face more than a computer-based self-help programme, and would be more willing to try a computer-based self-help programme if additional brief face to face contact was provided. Patients may also have a slight preference for a self-help book at home rather than a surgery based computer self-help programme, although it is unclear whether this is because of the need to travel to the surgery, or a resistance to the computer. Only 20% of patients had used self-help approaches for depression or anxiety in the past; but of these, most thought that self-help treatments had helped them.

The next part of the study will involve a trial of a 6 week computer-based self-help programme to treat depression and anxiety. This will be offered to patients already receiving treatment for depression or anxiety from their GP. The computer-based programme has already shown promising results in the UK in reducing the symptoms of

depression and anxiety. If shown to be beneficial in the treatment of depression and anxiety in New Zealand, it is hoped this treatment could be made available more widely.

Thank you again for completing the questionnaire in the first part of the study. If you would like any further information, do not hesitate to contact me at rebeccascheibmair@free.net.nz

Kind regards,

Rebecca Scheibmair

APPENDIX B-1

Effectiveness Study Participant Information Sheet



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PARTICIPANT INFORMATION SHEET

Overcoming Depression – Self-help Programme

Principal researcher: Rebecca Scheibmair, rebeccascheibmair@free.net.nz
Supervisor: Associate Professor Paul Merrick, School of Psychology, Massey University, Private Bag 102904, North Shore MSC, Auckland; telephone (09) 414 0800 extn 41231, or email P.L.Merrick@massey.ac.nz

You are invited to try a self-help programme as an adjunct to the treatment for your depression or anxiety. If you choose to be part of the programme you will be randomized to one of two treatments. Because this is a research project we will not be able to tell you what the other treatment is until you have finished the 6 week period of the study. If you wish we can offer you the other treatment at that point.

Your participation is entirely voluntary (your choice). You do not have to take part in this study, and if you choose not to take part you will receive the usual treatment/care. You may have a friend, family or whanau support to help you understand the risks and/or benefits of this study and any other explanation you may require.

If you do wish to participate, you will complete some questionnaires and be randomized to one of the two treatments. You will be asked to complete some short questionnaires that will help to monitor your depression and anxiety. You will not be suitable for the programme if you have severe depression or anxiety, suicidal thoughts, psychosis, or cannot read or understand English. One of the treatments will involve coming into the GP practice for approximately an hour per week for 6 weeks, and the other will only require you to visit the clinic as you would for the usual care from your GP during those 6 weeks. After the 6 weeks you will need to come to the clinic and complete the short questionnaires again. You will then have the opportunity to complete the other treatment programme if you wish.

We would also like to see you back 6 months after you finish the programme, to complete the questionnaires again and to see how you are managing your depression and anxiety.

You will be identified by a unique identifying number and only the researcher and her supervisors will have access to this information. The information collected in this study will be kept on a computer disk in a locked file for 10 years, after which it will be destroyed. No material which could personally identify you will be used in any reports in this study.

At the end of your treatment you will be given feedback on your individual results and have the opportunity to provide details so a summary of the research findings can be sent to you at the completion of the project. Your results will only be given to *you*, unless you indicate in the consent form that you would like your doctor to be informed of your results.

If you do agree to take part you are free to withdraw from the study at any time, without having to give a reason and this will in no way affect your continuing health care. Participation in this study will be stopped should any harmful effects appear or if the doctor feels it is not in the participant's best interests to continue. One of the harmful effects may be a worsening of depression. If the depression scores within this computer programme show that your depression is getting worse, please see your doctor as soon as possible.

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded.

If at any time you have suicidal thoughts or are feeling mentally unwell, please contact your GP. In the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation and Compensation Act. If you have any questions about ACC, contact your nearest ACC office or consult the website www.acc.co.nz/claimscare/making-a-claim/medicalmisadventure

If you have any queries or concerns regarding your rights as a participant in this research study, you can contact an independent Health and Disability Advocate. This is a free service provided under the Health & Disability Commissioner Act:

Telephone (NZ wide): 0800 555 050
Free Fax (NZ wide): 0800 2787 7678 (0800 2 SUPPORT)
Email: advocacy@hdc.org.nz

This research is being conducted as part of a Doctorate at Massey University, supervised by Associate Professor Paul Merrick. If you have any questions about this research, please feel free to contact the researcher or the supervisor.

This project has been approved by the Northern X Ethics Committee. Protocol No. NTX/06/08/105

APPENDIX B-2

Effectiveness Study Summary Information Sheet



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SUMMARY INFORMATION SHEET

Overcoming Depression – Computer-based self-help

*Principal researcher: Rebecca Scheibmair, rebeccascheibmair@free.net.nz
Supervisor: Associate Professor Paul Merrick, School of Psychology, Massey University, Private Bag 102904, North Shore MSC, Auckland; telephone (09) 414 0800 extn 41231, or email P.L.Merrick@massey.ac.nz*

You are invited to try a computer-based self-help programme as an adjunct to the treatment for your depression or anxiety. We are trialing a computer-based self-help programme, called 'Overcoming Depression', for depression/anxiety for the first time in New Zealand. This computer self-help programme has been shown to significantly improve the symptoms of depression and anxiety in Britain.

Your participation is entirely voluntary (your choice). If you do wish to participate, you will be randomly selected to either begin the programme in the next week, or to begin the programme in 6 weeks time. If you are selected to complete the programme in 6 weeks time, you will receive the usual care from your GP during those 6 weeks and complete the short questionnaires again at the end of those 6 weeks, so we can safely monitor your depression. After these 6 weeks you will have the opportunity to complete the computer programme.

The programme will involve visiting a GP's office to independently complete six weekly sessions on the computer, each taking 45 minutes -1 hour. While participating in the computer-based programme, you will also receive your usual care from your GP.

If you think this is something you would like to find out more about, there is further information available. Please ask your GP to book a time for you to find out more and begin the programme if you wish.

This research is being conducted as part of a Doctorate at Massey University, supervised by Associate Professor Paul Merrick. If you have any questions about this research, please feel free to contact the researcher or the supervisor.

APPENDIX B-3

Effectiveness Study Consent Form



CONSENT FORM

Overcoming Depression – Computer-based Self-Help

This consent form will be held for a period of ten (10) years

- I have read and understood the information sheet, dated 16/10/2008, for volunteers taking part in the study designed to investigate the effectiveness of a computer-based self-help programme for depression.
- I have had the opportunity to discuss this study. I am satisfied with the answers I have been given.
- I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time and this will in no way affect my continuing healthcare.
- I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study.
- I understand that the computer-based self-help treatment will only be available at my GP's office and only during the hours the office is open.
- I understand that the treatment, or investigation, will be stopped if it should appear harmful to me.

- I understand that if the computer-based programme shows that my depression is getting worse, I should see my doctor as soon as possible.
- I have had time to consider whether to take part.
- I know who to contact if I have any side effects to the study.
- I know who to contact if I have any questions about the medication or the study.

- I would like the researcher to discuss the outcomes of the study with me.

YES / NO

- I agree to my GP or other current provider being informed of the results of my participation in this study.

YES / NO

I _____ (full name) hereby consent to take part in this study.

Date:

Signature:

Rebecca Scheibmair

Phone number:

Project explained by Rebecca Scheibmair

Principal Investigator

Signature:

Date:

APPENDIX B-4

Information about Depression given to Participants

Depression

What is depression?

The word depressed is a common everyday word. People might say "I'm depressed" when in fact they mean "I'm fed up because I've had a row, or failed an exam, or lost my job" etc. These ups and downs of life are common and normal. Most people recover quite quickly.

With true depression, you have a low mood and other symptoms each day for at least two weeks.

Symptoms can also become severe enough to interfere with day-to-day activities.

Who gets depression?

About 2 in 3 adults have depression at some time in their life. Sometimes it is mild or lasts just a few weeks. However, an episode of depression serious enough to require treatment occurs in about 1 in 4 women and 1 in 10 men at some point in their lives. Some people have two or more episodes of depression at various times in their life.

What are the symptoms of depression?

Many people know when they are depressed. However, some people do not realize when they are depressed. They may know that they are not right and are not functioning well, but don't know why.

Some people think that they have a physical illness, for example, if they lose weight.

The following is a list of common symptoms of depression. It is unusual to have them all, but several usually develop if you have depression.

- Low mood for most of the day, nearly every day. Things always seem 'black'.

- Loss of enjoyment and interest in life, even for activities that you normally enjoy.

- Abnormal sadness, often with weepiness.

- Feelings of guilt, worthlessness, or uselessness.

- Poor motivation. Even simple tasks seem difficult.

- Poor concentration. It may be difficult to read, work, etc.

- Sleeping problems.

- Sometimes difficulty in getting off to sleep.

- Sometimes waking early and unable to get back to sleep.

- Sleeping too much sometimes occurs.

- Lacking in energy, always tired.

- Difficulty with affection, including going off sex.

- Poor appetite and weight loss. Sometimes the reverse happens with comfort eating and weight gain.

- Irritability, agitation, or restlessness.

- Symptoms often seem worse first thing each day.

- Physical symptoms such as headaches, palpitations, chest pains, and general aches.

- Recurrent thoughts of death. This is not usually a fear of death, more a preoccupation with death and dying. Some people get suicidal ideas such as ..."life's not worth living".

The severity of the symptoms can vary from mild to severe. As a rule, the more symptoms from the list above that you have, the more severe the depression is likely to be.

Depression is common. Symptoms can affect day-to-day life and can become very distressing.

Treatments include talking treatments and antidepressant medicines. Treatment takes time to work but has a good chance of success. Some people have recurring episodes of depression and require long-term treatment to keep symptoms away.

What causes depression?

The exact cause is not known. Anyone can become depressed. Some people are more prone to it, and it can develop for no apparent reason. You may have no particular problem or worry, but symptoms can develop quite suddenly. An episode of depression may also be triggered by a life event such as relationship problem, bereavement, redundancy, illness, etc. In many people it is a mixture of the two. For example, the combination of a mild low mood with some life problem, such as work stress, may lead to a spiral down into depression.

Women tend to develop depression more often than men. Particularly common times for women to become depressed are after childbirth (postnatal depression) and the menopause.

A chemical imbalance in the brain might be a factor. This is not fully understood. However, an alteration in some chemicals in the brain is thought to be the reason why antidepressants work in treating depression.

Some myths and other points about depression

Depression is common, but many people don't admit to it. Some people feel there is a stigma attached, or that people will think they are weak. Great leaders such as Winston Churchill have suffered depression. Depression is one of the most common illnesses that GPs deal with. People with depression may be told by others to 'pull their socks up' or 'snap out of it'. The truth is, they cannot, and such comments by others are very unhelpful.

Understanding that your symptoms are due to depression, and that it is a common illness, may help you to accept that you are ill and need help. This may be particularly true if you have physical symptoms such as headache or weight loss. Some people ask "am I going mad?" It may be a relief to know that you are not going mad, and the symptoms that you have are common and have been shared by many other people.

You may 'bottle up' your symptoms from friends and relatives. However, if you are open about your feelings with close family and friends, it may help them to understand and help.

What are the treatment options for depression?

In general, treatments are divided into those used for mild depression and those used for moderate and severe depression.

What if I don't have any treatment?

Most people with depression would get better without treatment. However, this may take several months or even longer. Meanwhile, living with depression can be difficult and distressing (and also for your family and friends). Relationships, employment, etc, may be seriously affected. There is also a danger that some people turn to alcohol or illegal drugs. Some people think of suicide.

Therefore, many people with depression opt to try some form of treatment.

Treatment options for mild depression

In general, mild depression means that you have some of the symptoms listed above, but are still able to cope reasonably well with normal activities. For example, you may still be able to do your normal job, and get by with household chores, but perhaps with difficulty. Your doctor may suggest one or more of the following.

Talking treatments (psychological treatments)

Talking through feelings may be all that you need for mild depression. Sometimes talking with an understanding friend or relative is helpful. Your doctor may also 'talk things through' with you or refer you to a counsellor. A brief course of cognitive behavioural therapy may help (see below for further details of this.)

Specific counselling

In some cases there is a particular problem that triggered the depression, or is making it worse. For example, marital problems, sexual problems, bereavement, previous childhood abuse, etc. Counselling directed at a specific area may then be helpful. Sometimes this may be done by a local agency or self-help group which deals with specific problems. For example, RELATE for marital or sexual problems, or a bereavement counsellor following a bereavement, etc.

An exercise programme

Research has shown that regular exercise can help to ease symptoms of depression in some cases. A typical exercise programme to help ease depression would be three 'formal' sessions per week of moderate duration (45-60 minutes) for 10-12 weeks. Aerobic exercises are probably best such as jogging, brisk walking, swimming, playing a vigorous team sport such as football or netball, etc. However, ideally you should try to get into the habit of doing some sort of exercise on most days in between any 'formal' exercise. For example, try to go out for a walk each day.

A self-help programme

There are various pamphlets, books, and audio tapes which can help you to understand and combat depression. The best are based on the principles of cognitive behavioural therapy. There is some evidence to say that a 'guided self help programme' can help some people with mild depression to recover. That is, a programme where the materials are provided by a doctor or nurse, and where a doctor or nurse monitors your progress. These programmes take some motivation and effort to work through - a bit like doing homework.

Computer and internet based self-help cognitive behavioural therapy programmes are recent innovations and may become more popular.

Antidepressant medicines

Antidepressant medication (discussed in detail below) is not usually recommended for the initial treatment of mild depression. However, an antidepressant may be advised for mild depression in certain circumstances. For example, in people:

- with mild depression that persists after other treatments have not helped.
- whose depression is associated with a physical illness.
- who have had an episode of moderate or severe depression in the past.

Treatment options for moderate or severe depression

In general, moderate depression means that you have several of the symptoms listed above, and you find great difficulty in coping with normal activities. Severe depression is even worse. In these situations, a doctor may suggest one or more of the following.

Antidepressant medicines

Antidepressants are usually the first-line treatment for moderate or severe depression. A medicine cannot alter your circumstances. However, symptoms such as low mood, poor sleep, poor concentration, etc, are often eased with an antidepressant. This may then allow you to function normally, and increase your ability to deal with any problems or difficult circumstances.

Antidepressants do not usually work straight away. It takes 2-4 weeks before their effect builds up fully. A common problem is that some people stop the medicine after a week or so as they feel that it is doing no good. You need to give it time. Also, if it is helping, follow the course that a doctor recommends. A normal course of antidepressants lasts up to six months or more after symptoms have eased. Some people stop treatment too early and the depression quickly returns.

There are several types of antidepressants, each with various 'pros and cons'. For example, they differ in their possible side-effects. (The leaflet that comes in the medicine packet provides a full list of possible side-effects.) If the first one that you try does not suit, then another may be found that will suit. So, tell your doctor if you have any problems with an antidepressant.

Antidepressants are not tranquillisers and are not thought to be addictive.

About 5-7 in 10 people with moderate or severe depression improve within a few weeks of starting treatment with a prescribed antidepressant. However, up to 3 in 10 people improve with dummy tablets (placebo) as some people would have improved in this time naturally. So, you are roughly twice as likely to improve with antidepressants compared to taking no treatment. But, they do not work in everybody.

Talking (psychological) treatments

If available in your area, an option is to be referred to a psychologist or other professional for a more specific type of talking treatment. Most psychological treatments for depression last in the range of 16-20 sessions over 6-9 months. For example:

Cognitive therapy. Briefly, cognitive therapy is based on the idea that certain ways of thinking can trigger, or 'fuel', certain mental health problems such as depression. The therapist helps you to understand your thought patterns. In particular, to identify any harmful, unhelpful, and 'false' ideas or thoughts which you have that can make you depressed. The aim is then to change your ways of thinking to avoid these ideas. Also, to help your thought patterns to be more realistic and helpful. Therapy is usually done in weekly sessions over several months. You are likely to be given 'homework' between sessions.

Cognitive-behaviour therapy (CBT). This is a combination of cognitive therapy and behaviour therapy. Behaviour therapy aims to change any behaviours which are harmful or not helpful. In short, CBT helps people to achieve changes in the way that they think, feel and behave. (See separate leaflet for more details on CBT.)

Other types of therapy sometimes used include: interpersonal therapy, problem-solving therapy and psychodynamic psychotherapy.

For moderate depression, the number of people who improve with cognitive therapy and cognitive behaviour therapy is about the same as with antidepressants. These treatments may not be so good for some people with severe depression. This is because you need some motivation to do these treatments and people with severe depression often find motivation difficult.

Also, there is a shortage of trained therapists who can perform psychological treatments. So, it might not be an option in your area, or there may be a long waiting list.

Some research suggests that a combination of an antidepressant plus a talking treatment such as CBT is better than either treatment alone.

Exercise and counselling

In addition to the above treatments, as with mild depression, regular exercise is thought to help to improve symptoms (if you are able to do some exercise). Also, counselling for a specific problem may help too if a particular problem is troubling you (relationship breakdown, bereavement, etc).

Other treatments

St John's Wort (hypericum)

This is a herbal antidepressant that you can buy from pharmacies without a prescription. It recently became a popular 'over the counter' treatment for depression. However, many doctors now do not advise that you take this because:

It is not clear how well it works. Although some studies suggest that it may help depression, other studies have failed to confirm this.

Side-effects sometimes occur. (Some people think that because St John's wort is 'natural' then it is totally safe. This is not true. It contains many chemicals which sometimes cause problems.)

It may react with other medicines that you may take. Sometimes the reactions can cause serious problems. For example, you should not take St John's wort if you are taking warfarin, cyclosporin, oral contraceptives, anticonvulsants, digoxin, theophylline, or certain anti-HIV medicines. Also, you should not take it at the same time as certain other prescribed antidepressants.

Specialist and hospital based treatments

Other treatments such as specialist medicines or electrical treatment (ECT) may be advised if you have severe depression which has not improved with other treatments.

Some dos and don'ts about depression

Don't bottle things up and 'go it alone'. Try and tell people who are close to you how you feel. It is not weak to cry or admit that you are struggling.

Don't despair - most people with depression recover. It is important to remember this.

Do try and distract yourself by doing other things. Try doing things that do not need much concentration but can be distracting such as watching TV. Radio or TV is useful late at night if sleeping is a problem.

Do eat regularly, even if you do not feel like eating.

Don't drink too much alcohol. Drinking alcohol is tempting to some people with depression as the immediate effect may seem to relieve the symptoms. However, drinking heavily is likely to make your situation worse in the long run.

Don't make any major decisions whilst you are depressed. It may be tempting to give up a job, or move away, to solve the problem. If at all possible you should delay any major decisions about relationships, jobs, or money until you are well again.

Do tell your doctor if you feel that you are getting worse, particularly if suicidal thoughts are troubling you.

Sometimes a spell off work is needed. However, too long off work might not be so good as dwelling on problems and brooding at home may make things worse. Getting back into the hurly-burly of normal life may help the healing process when things are improving. Each person is different, and the ability to work will vary.

Sometimes a specific psychological problem can cause depression, but some people are reluctant to mention it. One example is sexual abuse as a child leading to depression or psychological difficulties as an adult. Tell your doctor if you feel something like this is the root cause of your depression. Counselling may be available for such problems.

Will it happen again?

A 'one-off' episode of depression at some stage in life is common. However, some people have two, three, or more episodes of depression. You can have treatment for each episode. However, if you are prone to recurring episodes of depression, you may be advised to take an antidepressant long-term to prevent depression from recurring.

Some related conditions

Postnatal depression

Some women develop depression just after having a baby. See separate leaflet called '*Postnatal Depression*' for details.

Bipolar affective disorder

In some people, depression can alternate with periods of elation and over-activity (mania or hypomania). This is called bipolar affective disorder or manic-depression. Treatment tends to include mood stabiliser medicines such as lithium. See separate leaflet called '*Bipolar Affective Disorder*' for details.

Seasonal affective disorder

Some people develop recurrent depression in the winter months only. This is called 'Seasonal Affective Disorder' or SAD. For people in the UK with SAD, symptoms of depression usually develop each year sometime between September and November, and continue until March or April. You, and your doctor, may not realize that you have SAD for several years. This is because recurring depression is quite common. You may have been treated for depression several times over the years before it is realized that you have the seasonal pattern of SAD. Treatment of SAD is similar to other types of depression. However, 'light therapy' is also effective. See separate leaflet called '*Seasonal Affective Disorder*' for details.

Other mental health problems

Depression sometimes occurs at the same time as other mental health problems.

People with anxiety, panic disorder, and personality disorders quite commonly also develop depression. As a rule, depression should be treated first, followed by treatment of the other disorder. In particular, anxiety will often improve following treatment of depression.

Eating disorders such as anorexia and bulimia may accompany depression. In this situation the eating disorder is usually the main target of treatment.

Further help and information

Depression Alliance

212 Spitfire Studios, 63-71 Collier Street, London N1 9BE

Tel: 0845 123 23 20 Web: www.depressionalliance.org

Provide information, support and understanding to those who are affected by depression.

Saneline

Tel: 0845 767 8000 Web: www.sane.org.uk

Saneline is a national out of hours telephone helpline providing information and support for anyone affected by mental health problems including families and carers.

The British Association of Behavioural and Cognitive Psychotherapies (BABCP)

Globe Centre, PO BOX 9, Accrington, BB5 2GD

Tel: 01254 875277 Web: www.babcp.com

They maintain a register of qualified practitioners. They also have a series of pamphlets (available for a small charge) which provide information about frequently encountered problems such as

Anxiety, Depression, Schizophrenia, PTSD, General Health, OCD, Agoraphobia, Learning Disability, Insomnia, Chronic Fatigue Syndrome, Eating Disorders, Understanding CBT, Sexual Dysfunction, Chronic Pain, Conduct Disorder, Bipolar Disorder, Social Phobia, Fear of Flying and Self Help.

Oxford Cognitive Therapy Centre (OCTC)

Based in the Oxford Psychology Department, part of Oxfordshire Mental Healthcare NHS Trust.

Web: www.octc.co.uk

Their website gives details of how to order a number of educational and self-help booklets with a CBT approach for conditions such as Depression, Obsessive-Compulsive Disorder, Bulimia Nervosa, Anorexia Nervosa, Anxiety, Panic, Phobias.

Self-help leaflets based on a CBT approach

For common mental health issues including depression. Written by members of the Newcastle, North Tyneside and Northumberland Mental Health NHS Trust.

Available on the web at: www.nnt.nhs.uk/mh/content.asp?PageName=selfhelp

Ultrasis

Web: www.ultrasis.com - produce interactive, computer based CBT programmes for healthcare professionals, corporations and consumers.

© EMIS and PIP 2005 Updated: September 2005 PRODIGY Validated

Comprehensive patient resources are available at www.patient.co.uk

APPENDIX B-5

Effectiveness Study Demographic Questionnaire

Background Questionnaire

Gender: Male Female

Age: _____

Ethnicity: _____

Occupation: _____

1. How long have you been suffering from depression/anxiety?

2. How long have you been receiving treatment for depression from your GP?

3. Are you currently on any medication for your depression? If yes, please indicate the medication, and how long you have been taking it.

3. Have you received any type of talking treatment for your depression/anxiety in the past, e.g., counseling, cognitive behavioural therapy, or other? If yes, please indicate the type of treatment, how long for, and when this occurred.

4. Have you used any type of self-help treatment for your depression/anxiety in the past? If yes please indicate which materials you used.

APPENDIX B-6

Effectiveness Study Weekly Follow-up Questionnaire

About your week

We would like to get an indication of some of the things that may have helped you with your depression this past week (since last completing the computer programme). Please answer the following questions as honestly as you can.

1. How many times have you seen your GP in the last week?

2. Have you taken your medication as prescribed over the last week? Please indicate how many times you missed your medication dose.

3. Did you complete the tasks the computer programme asked you to complete at home this week? Please indicate how much of these tasks you were able to attempt.

4. Did you do anything else to help your depression in the last week (e.g. read a self-help book, take herbal remedies, or anything else you felt helped you feel better)? Please indicate methods used.

5. Did anything happen in the last week that you felt made your depression worse, or you feel caused you a setback? If so, please indicate briefly what happened (continue over the page if necessary).

APPENDIX B-7

GP Follow-up Questionnaire

1. How easy was it to refer people to the computer CBT study?
2. Do you believe the programme is suitable for use in General Practice?
3. Do you have any ideas about how it could run differently in General Practice?
4. What kind of feedback did you get from the patients?
5. Did you see in any improvement in the patients who completed the study?
6. Could you give an estimate of the percentage of patients you suggested the study to who agreed to participate?
7. Were there any patients you were hesitant to refer to the study? If so why?
8. If the programme was available in the future would you refer patients to it?
9. Any other comments?

Thank you again for all of your support. I hope to have results to send to you by October of this year. If you have any further questions please don't hesitate to contact me:

Rebecca Scheibmair - 027 462 3259

rebeccascheibmair@free.net.nz

APPENDIX C-1

**Ethics Approval from Northern X Health and Disability Ethics
Committee**

12 October 2006

Ms Rebecca Scheibmair
18A Maunu Rd
Papatoetoe
Auckland

Dear Rebecca

NTX/06/08/105 **'Overcoming depression': the acceptability and effectiveness of a computer-based cognitive behavioural self-help programme as an adjunct to treatment for depression and anxiety.**

Principal Investigator: Ms Rebecca Scheibmair, Massey University.
Supervisor: A/Professor Paul Merrick,

Thank you for your amendments and the study has now been reviewed by a subcommittee. We apologise for the delay which was caused by the absence of one of the Committee members.

The above study has been given ethical approval by the **Northern X** Regional Ethics Committee.

Approved Documents

Information Sheet/Consent form: Although the content of these forms has ethical approval, changes need to be made. Please amend and send to this office.

1. There is a change to the advocacy statement which must now read
'If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact the Advocacy Network Services Trust (ADNET) ph:
Northland to Franklin 0800 423 638
Free fax 0800 2787 7678
Email: advocacy@hdc.org.nz'
2. Please change the version no. and date of the Information Sheet and add the same version no. and date to the Consent Form. Ensure that it is update from V#3 1/8/06.
3. Change the date of the information sheet in the first line of the Consent Form and add the version no.

Accreditation

The Committee involved in the approval of this study is accredited by the Health Research Council and is constituted and operates in accordance with the Operational Standard for Ethics Committees, April 2006.

Certification

The Committee is satisfied that this study is not being conducted principally for the benefit of a manufacturer or distributor of a medicine or item in respect of which the study is being carried out and may be considered for coverage by ACC.

.../2

Progress Reports

The study is approved until 28 February 2009.. However, the Committee will review the approved application annually and notify the Principal Investigator if it withdraws approval. It is the Principal Investigator's responsibility to forward a progress report prior to ethical review of the project in **11 October 2007**. The report form should be forwarded to you but, if not, the report is available on <http://www.newhealth.govt.nz/ethicscommittees>. Please note that failure to provide a progress report may result in the withdrawal of ethical approval.

A final report is required at the end of the study and a form to assist with this is available from the website below under 'Information for researchers'. Please forward the progress report and an abstract.

Amendments

It is also a condition of approval that the Committee is advised of any adverse events, if the study does not commence, or the study is altered in any way, including all documentation eg advertisements, letters to prospective participants.

Please quote the above ethics committee reference number in all correspondence.

It should be noted that Ethics Committee approval does not imply any resource commitment or administrative facilitation by any healthcare provider within whose facility the research is to be carried out. Where applicable, authority for this must be obtained separately from the appropriate manager within the organisation.

Yours sincerely



Pat Chainey
Northern X Ethics Committee Administrator

Cc: Massey University.

Cc: A/P Paul Merrick, *Bea Massey*

APPENDIX D-1

Acceptability Study – Correlations

Correlations between perceived helpfulness of self-help approach (question 2) and anxiety score

		Question 2	HADS-anxiety
Question 2	Pearson Correlation	1	.041
	Sig. (2-tailed)		.704
	N	100	89

Correlations between perceived helpfulness of self-help approach (question 2) and depression score

		Question 2	HADS-depression
Question 2	Pearson Correlation	1	.135
	Sig. (2-tailed)		.203
	N	100	91

Correlations between willingness to use a self-help approach (question 1) and anxiety score

		Question 1	HADS-anxiety
Question 1	Pearson Correlation	1	.045
	Sig. (2-tailed)		.669
	N	101	91

Correlations between willingness to use a self-help approach (question 1) and depression score

		Question 1	HADS-depression
Question 1	Pearson Correlation	1	.087
	Sig. (2-tailed)		.413
	N	101	90

Correlations between perceived helpfulness of computer-based self-help approach (question 4) and anxiety score

		Question 4	HADS-anxiety
Question 4	Pearson Correlation	1	-.040
	Sig. (2-tailed)		.710
	N	99	89

Correlations between perceived helpfulness of computer-based self-help approach (question 4) and depression score

		Question 4	HADS-depression
Question 4	Pearson Correlation	1	.075
	Sig. (2-tailed)		.486
	N	99	89

Correlations between willingness to use a computer-based self-help approach (question 3) and anxiety score

		Question 3	HADS-anxiety
Question 3	Pearson Correlation	1	-.013
	Sig. (2-tailed)		.900
	N	101	90

Correlations between willingness to use a computer-based self-help approach (question 3) and depression score

		Question 3	HADS-depression
Question 3	Pearson Correlation	1	.068
	Sig. (2-tailed)		.522
	N	101	90

APPENDIX D-2

Effectiveness Study – Normality Statistics of Sample

				Kolmonogrov-Smirnov			Shapiro-Wilk		
		Skewness	Kurtosis	Stat.	df	Sig.	Stat.	df	Sig.
HADS baseline	ITT	.379	-1.343	.242	14	.026	.866	14	.037
	Dropouts removed	.350	-1.469	.246	12	.044	.872	12	.069
HADS post	ITT	1.457	1.770	.286	14	.003	.815	14	.008
	Dropouts removed	1.379	1.140	.250	12	.037	.816	12	.014
HADS follow-up	ITT	.802	-.519	.155	14	.200	.886	14	.072
	Dropouts removed	.751	-.956	.227	12	.088	.865	12	.056
PHQ-9 baseline	ITT	.481	-1.325	.240	14	.028	.873	14	.046
	Dropouts removed	.186	-1.532	.190	12	.200	.894	12	.133
PHQ-9 post	ITT	1.293	1.603	.230	14	.044	.869	14	.041
	Dropouts removed	1.646	2.541	.283	12	.009	.808	12	.012
PHQ-9 follow-up	ITT	1.290	2.137	.133	14	.200	.893	14	.089
	Dropouts removed	1.515	2.884	.156	12	.200	.858	12	.046
SASS baseline	ITT	-.020	-1.175	.157	14	.200	.941	14	.435
	Dropouts removed	-.306	-1.221	.187	12	.200	.925	12	.332
SASS post	ITT	-.219	-.127	.099	14	.200	.965	14	.800
	Dropouts removed	-.622	.543	.142	12	.200	.942	12	.529
SASS follow-up	ITT	-.349	.679	.164	14	.200	.942	14	.438
	Dropouts removed	-.663	.974	.139	12	.200	.936	12	.440