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The Impact of Attributional Style and Homework Experiences in Cognitive Behaviour
Therapy for Depression: A Longitudinal Investigation Employing Multilevel Analysis.

A dissertation presented in partial fulfillment
of the requirements of the degree of
Doctor of Clinical Psychology
at Massey University, Albany,
New Zealand.

Mieke Sachsenweger

2010

ABSTRACT

This longitudinal study aimed to investigate the moderating effects of attributional style on the relationship between homework experiences and depression severity throughout the course of therapy. Through an overarching depression study at Massey University, 28 participants experiencing first-episode Major Depressive Disorder (MDD) were recruited for 20 sessions of Cognitive Behaviour Therapy (CBT) plus follow-up sessions at two months. Clients were seen by seven doctoral students, and depression severity was monitored with the Beck Depression Inventory II (BDI-II) at each session, while attributional style was measured at six time points with the Attributional Style Questionnaire (ASQ). Homework was measured with the Homework Rating Scale II (HRS-II) at each session by clients, therapists and independent observers. A three-factor structure of the HRS-II was confirmed with the current data: ‘benefits and completion’; ‘costs and completion’ and client ‘beliefs’. Following preliminary analyses, benefits of homework completion was retained as the focus in a multilevel analysis investigation which utilised sessions up to the two month follow up. Therapist competence in assigning homework, and client depression severity, gender, and age were controlled for. No overall effect was found for homework in relation to depression over the course of therapy, and therefore attributional style did not moderate this relationship. However there was a trend towards a relationship between quantity and quality of homework and depression, which was moderated by a pessimistic attributional style. No effect was found for homework in relation to attributional style independently of depression severity. Attributional style on its own was related to depression severity over the course of therapy, as predicted. Women were significantly more depressed and less optimistic at intake than men, and older age correlated with lower pessimism and depression levels. Implications for future research and clinical practice are discussed.

ACKNOWLEDGEMENTS

Thank you firstly to my lovely husband Lance, who is my biggest supporter and has sacrificed so much in order to ensure I reached my dreams with as little stress and as much happiness as possible. Without you none of this would have been possible, and I hope you know how much I love and appreciate you. I don't think an acknowledgement can convey the huge amount of time, support, and compromises you have made for me.

Thank you to my wonderful supervisors. To Dr. Dave Clarke, for providing invaluable theoretical and clinical input consistently from day one, and for always being there for advice when I needed it. Thank you for your persistence and your constant encouragement to make my work even better. To Dr. Richard Fletcher, for taking me under your wing, and for providing endless patience, wisdom, passion, and encouragement throughout this process. Thank you for your extensive statistical expertise. This thesis would not have been completed to the standard it is without either of you.

Thank you to Dr. Nikolaos Kazantzis, for initiating the depression study from the beginning, coordinating the logistics, and for providing me with this very valuable opportunity to learn. Thank you for encouraging me to start writing and researching from very early on, and for your strong emphasis on scientific rigor. I would also like to acknowledge the support of the Massey University School of Psychology and all those who funded the study as a whole, including the Lottery Health Research Council and the Albany Strategic Research Fund.

Thank you to all of the people involved in the depression study in any way, including all the international collaborators, the students, and the independent raters. Many people have put a lot of work into the overarching study this thesis built on. In particular, thank you to Kimberly Good for your unwavering support, knowledge, friendship, motivation, and kind words. You provided me with the courage and guidance to make this thesis what it is. Thank you also to Robyn Vertongen for your excellent clinical supervision of therapy throughout the data collection phase.

Thank you very much to all the clients who participated in the depression study, and who gave up their time and were so willing to fill out the many forms required, and to be videotaped, in order for this research to be possible. Your individual experiences are what made this research possible, and were an extremely valuable contribution to improving future treatment for others.

Thank you to Massey University for its additional support in granting me a Doctoral Scholarship, which was an immense relief in helping me to complete my studies. Thank you also to the New Zealand Federation of Graduate Women (North Shore Branch), Inc. for their support and recognition of the importance of this research in granting me a Postgraduate Scholarship.

Thank you to Professor Kerry Chamberlain, who probably doesn't realise it but gave me some of the most valuable advice I could have had through a doctoral workshop and a one-off consultation.

Thank you to my fantastic family, who I miss, and don't thank enough. To Jo, David, Donald, Sally, and Uwe (my New Plymouth family and my Christchurch family). I love you and thank you very much for your support over all the years, and for your interest and care in my work and general well-being.

Finally thank you to Debbie and Phil Garrett, my wonderful in-laws who have also provided much encouragement, support, and comic relief during the past seven years, and who have always shown an interest in my research.

This research was approved by the Northern X Regional Ethics Committee, Reference: NTX/06/08/085.

For Lance,

And for Jo, David, Donald, Sally,

Uwe and Alina.

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INTRODUCTION AND OVERVIEW

Depression is an internationally widespread and debilitating mental condition. In New Zealand, depression is experienced by as many as 20% of women and 10% of men during their lifetime (Mental Health Foundation of New Zealand, 2008). People who suffer from depression experience symptoms that may include depressed mood, loss of interest in normally enjoyable activities, sleep disturbance, weight change, fatigue, and at times, feelings of worthlessness and suicidal ideation (American Psychiatric Association, 2000). These symptoms result in significant personal distress, and affect many areas of peoples' lives, such as their performance at work, their family and interpersonal relationships, and their general daily functioning (Dobson & Dozois, 2008). Although a diagnosis of Major Depressive Disorder (MDD) requires a minimum of two weeks of experiencing at least five depressive symptoms, the illness can last much longer than this, often from three to 11 months or longer (although a large proportion of cases will remit during this time) (Clark & Beck, 1999). Relapse rates are high; according to Carr and McNulty (2006), approximately 85% of clients will experience a relapse during their lifetime. Furthermore, if left untreated, these recurrences become longer and more frequent. However, for clients treated with a combination of medication and therapy (the choice of which depends on depression severity and clinical judgement), relapse rates can often be reduced to 20-35%.

In light of its epidemiology, it is apparent that depression is both common and potentially debilitating. These facts provide an important basis for this thesis, as does the exciting evidence that depression is extremely treatable (Hollon & Beck, 2004). The primary focus of this thesis involves an investigation into the current therapy of choice for depression, cognitive behaviour therapy (CBT). The first chapter of this thesis provides an overview of the existing research surrounding CBT, which is currently the primary psychological therapy employed in the treatment of depression (Hollon, Haman, & Brown, 2002). This first chapter concludes by recognising that while CBT is an effective therapy, the important ingredients involved in activating change are as yet not clear. Chapter two discusses out-of-session homework tasks as one of these primary important ingredients, and outlines the rationale, theory, and research as to why this is the case. The need to investigate those factors that affect and ultimately enhance homework compliance is identified. Chapter two concludes by

naming client factors, and in particular, client beliefs as the primary factor involved in the initiation and maintenance of homework compliance. Chapter three focuses on client beliefs in the form of attributional styles (Abramson, Seligman, & Teasdale, 1978). A particular focus is on pessimism, which is the particular type of attributional style that involves viewing negative events as due to internal, stable, and global factors.

The current study is introduced and the research questions and method outlined in chapter four. The general aim is to investigate whether the benefits of homework on outcome are affected by a person's attributional style. In the case of a pessimistic attributional style, the suggestion is that the benefits of homework completion will be perceived as less, and the costs as more than they may be in reality. Therefore the client is also less likely to complete their homework in the future. The study takes place in the context of a wider depression study, where 28 clients with first episode Major Depressive Disorder receive up to 20 sessions of CBT and are followed up two months later. Chapter five presents the results of this study, including reliability checks, correlational relationships, and detailed multilevel analyses (see Singer & Willett, 2003, for multilevel analysis). Finally, chapter six concludes with a discussion of the findings, comparisons with previous literature, and possible explanations for the study's results. This thesis concludes with a brief discussion of the limitations of this study, and presents recommendations for future investigations in this fast expanding area of research, as well as discussing practical implications for clinicians.

CHAPTER 1: COGNITIVE BEHAVIOUR THERAPY FOR DEPRESSION

One of the most widely-implemented and effective treatments for depression to date is cognitive behaviour therapy (CBT; Anderson, Pilling, Barnes, Bayliss, Bird, Burbeck et al., 2009; Hollon et al., 2002). The central assumption of cognitive theory and therapy (which is the type of CBT focused on in this study) is that the way people view events is what results in their subsequent emotions and behaviours, rather than the events themselves (Beck, Rush, Shaw, & Emery, 1979). There are a number of variations of CBT that are subsumed under the broader heading of CBT because they incorporate both cognitive and behavioural interventions, although their focus may differ. Types of CBT have been categorized in various ways. For example, Ingram, Miranda, and Segal (1998) class the cognitive theories into meta-categories in terms of their primary focus: structural and propositional models, operational models, and product models. Dobson and Dozois (2001) also present three categories of CBT: those with a focus on coping skills, those with a focus on problem-solving, and those with a focusing on changing or restructuring cognitions. The type of CBT known as ‘cognitive therapy’, which was developed by Aaron Beck in the early 1960’s, can be classed as a ‘structural and propositional model’ as well as a ‘cognitive-restructuring-focused’ model. In reality, aspects of cognitive therapy overlap with all of these areas, as seen in Ingram et al. (1998) and Dobson and Dozois (2001), and as will be discussed shortly. However, an important point is that cognitive theory and therapy as conceptualised by Aaron Beck has received a large amount of popularity and empirical support in the depression literature (Dobson & Dozois, 2001; Hollon & Beck, 2004). This chapter will outline a brief history of cognitive theory and the subsequent development of cognitive therapy (henceforth referred to under the broader heading of CBT). Cognitive theory’s conceptualisation of depression will be outlined, as well as a brief overview of the treatment and targets of CBT. The chapter will conclude with a review of the efficacy research on CBT for depression to date.

Development of Cognitive Theory and Therapy

Beck’s motivation to develop cognitive theory and therapy grew out of his dissatisfaction with the research base for the dominant psychoanalytic orientation of the 1960’s and behaviourism of the 1960’s and 1970’s (Clark & Beck, 1999). As well as downplaying a focus on empiricism, early psychoanalytic therapies were often

criticized in the failure to address more current situations for the client, and importantly, were often considered to be a lengthy and therefore costly approach (Clark & Beck, 1999). Behavioural techniques were an effective intervention for many problems (such as phobias), but the theory appeared to be limited in explaining other problems and human behaviour, such as vicarious learning (Dobson & Dozois, 2001). In particular, behavioural accounts failed to generalize the simple relationships seen in the laboratory to explain complex human behaviour in the real world (see Breger & McGaugh, 1965, for a critique). It was suggested that both psychoanalytic and behavioural theories failed to account for the fact that people experience cognitions that researchers have since found integral in mediating the relationship between events and behaviour or affect (Dobson & Dozois, 2001). Indeed, a sole focus on either behaviour or cognitions fails to realize important aspects of the other area, and as a result Beck recognized the need for an integrative approach.

In response to this, Beck et al. (1979) describe many outside influences that led to the development of their cognitive theory. For example, Beck et al. (1979) cite early philosophers who influenced their writings such as Epictetus, who posited that it is the *view* people take of ‘things’ that is crucial in understanding human disturbance. Additionally, during the period of time in which Beck developed his cognitive theory, other researchers were also investigating the mediating role that cognitions played in the formation of psychopathology, and Beck et al. (1979) acknowledge the influence this research had on the development of their theory. They discuss behavioural researchers and theories, such as Bandura’s (1977) Social Learning Theory, that already contained a cognitive perspective, and therefore helped pave the way for advancements in this area. Martin Seligman’s learned helplessness theory (Seligman, 1972) is also cited as the one of the most important behavioural theories of depression, which was reformulated by Abramson et al. (1978) to incorporate a cognitive focus (Clark & Beck, 1999). Thus, it was fast becoming apparent that behavioural approaches alone failed to address an important aspect of human experience: cognitions. Beck (2005) notes that the cognitively-focused work of George Kelly on personal constructs (Kelly, 1955), and Albert Ellis who developed Rational-Emotive Behaviour Therapy (REBT; Ellis, 1962) were particular influences in the advancements of cognitive psychology. Although Ellis established the influential “ABC” (antecedent, belief, consequence) model, that emphasized the role of a person’s belief system, REBT did not gain the same popularity at CBT. REBT’s

postulation that more directive methods of intervention are required has resulted in some controversy, and the research base on REBT has not been entirely objective or exhaustive (Dobson & Dozois, 2001). Furthering Beck's theories, the establishment of the *Cognitive Therapy and Research* journal in 1977 also allowed researchers to demonstrate the effectiveness of this therapy, particularly in the treatment of depression, and to discuss new ideas and advances (Dobson & Dozois, 2001). This was a major advancement and advantage for cognitive theory. The need for an approach that adequately explained more of human behaviour, as well as one that valued empirical evidence, resulted in Beck's theory and the subsequent development of CBT becoming widely-researched and utilised in clinical practice. Cognitive theory, together with Abramson and colleagues' (1978) reformulated learned helplessness hypothesis, form two of the main theories of depression today, and are the basis of the CBT approach used in the current study. The following section now moves from a solely theoretical perspective to discussing the practical application of this approach in clinical practice and therapy.

Cognitive Therapy for Depression

Conceptualising Cognitions

The cognitive theory underlying CBT postulates that individuals develop *schemas* early in life, which, according to information processing theory, are ways of viewing and making sense of the world (Gotlib & Hammen, 1992). Schemas develop as a result of learning experiences that begin from birth, and schemas are also referred to in cognitive therapy as *core beliefs*. These refer to basic beliefs one holds about oneself, the future, and others and the world around them (Gotlib & Hammen, 1992; Padesky, 1994). In the context of depression, the basic core beliefs are frequently described as comprising a 'negative cognitive triad' in which the individual views themselves as inadequate, the world as punishing, and the future as bleak and unfulfilling (Blackburn & Twaddle, 1996; Kuehlwein, 2002).

These beliefs are generally not consciously noticed, and may be relatively unproblematic until triggered by a stressor. Once a relevant stressor occurs, core beliefs can be activated and lead to an individual experiencing depressive symptoms (Garratt, Ingram, Rand, & Sawalani, 2007). Often these core beliefs also play a central role in maintaining dysfunctional thoughts and beliefs, which contribute to

further psychological difficulties. However, the client usually remains unaware that these beliefs are present or that there is a link to their depression.

Although core beliefs are usually too far out of awareness to be articulated, individuals also develop sets of rules and assumptions, known as *intermediate beliefs*, which stem directly from these core beliefs and which people may be more aware of (Beck, 1995). These intermediate beliefs tend to be held across time and across a variety of situations. In other words, they are rules that the individual applies in any given circumstance. Intermediate beliefs are the mental filters that influence how an individual views and reacts to a situation (rather than it being the situation itself that may cause someone to react or feel a certain way) (Blackburn & Moorhead, 2001). An example of an intermediate belief may be “if I don’t gain approval from everyone at work, then I am nothing”. Intermediate beliefs often occur in the form of conditional “if, ...then” rules, and can be subject to a number of “thinking biases” such as “all or nothing” thinking, as highlighted in the previous example (Beck, 1995).

Intermediate beliefs are then in turn expressed at the most accessible level in the form of *automatic thoughts*. Automatic thoughts are the situation specific thoughts that people have continuously every day in reaction to what is happening in their environment (Wilson & Blackhurst, 2001). Often, automatic thoughts also exhibit many thinking biases as introduced above. Examples of other thinking biases (or “mistakes” or “errors” as they are sometimes known) include discounting positive information, jumping to conclusions, over-generalizing, and emotional reasoning. A full list with descriptions of each type of thinking bias can be consulted in Beck (1995). It should be noted that in this thesis the term thinking *biases* will be used rather than *mistakes* or *errors*, as the latter two terms imply that the client has done something wrong or that there is a particular set *right* way of thinking. Rather, there are simply ways to improve thinking (Teasdale, Scott, Moore, Hayhurst, Pope, & Paykel, 2001), and using terms with strong negative connotations may otherwise result in the client becoming defensive or feeling like they are at fault in some way.

The underlying premise for change in CBT is encapsulated by the *cognitive mediation hypothesis*, which postulates that change in depressive symptoms is mediated by change in a person’s negative cognitions. It is important to note that it is possible that this may also involve lessening negative cognitions and strengthening positive or alternative cognitions rather than *changing* them. For example, Teasdale et

al. (2001) reported finding that depressive relapse following CBT was reduced by changing dichotomous / extreme thinking styles rather than the actual content of the thoughts. However, this distinction is yet to be investigated further. Even when employing behaviourally-oriented techniques, it is hypothesised that it is the change in *thinking* that behavioural techniques cause that is important. An excellent review of the cognitive mediation hypothesis and its support to date is provided by Garratt et al. (2007). Research highlighted in this review consistently demonstrates that cognitive change is associated with improvement in depressive symptoms, although whether or not this is specific to CBT requires further research (Garratt et al., 2007). Several of the studies included in the review (e.g. Barber & DeRubeis, 2001; DeRubeis, Evans, Hollon, Garvey, Grove, & Tuason, 1990; Seligman, Castellon, Cacciola, Schulman, Luborsky, Ollove et al., 1988; Teasdale et al., 2001) are of particular interest because they demonstrated that change in levels of pessimism are linked with lowered depressive symptoms, furthering the support for the importance of cognitions. Of additional interest is the fact that pessimism is one of the variables that will be focused on in the current study due to its strong theoretical underpinnings and relevance to the cognitive theory of depression. A study by Riso, du Toit, Blandino, Penna, Dacey, Duin et al. (2003) found that depressed participants scored significantly higher in terms of negative attributions than non-depressed participants, although they found little difference in attribution scores between chronically depressed and non-chronically depressed individuals. This highlights that attributional style is an important factor in the etiology and maintenance of depression, but that further research is needed in terms of the degrees of depression. Different methodological approaches in the study by Riso et al. (2003) may be important to consider when comparing across studies in this area. However the main point is that pessimism appears to be an important specific cognitive style contributing to the etiology and maintenance of depression.

Therapy Process

The process of CBT occurs in a structured, collaborative, and short-term manner and incorporates a phenomenological (non-interpretive) emphasis (Clark & Beck, 1999). Throughout the course of CBT, the therapist works with the client to continually conceptualise their difficulties and patterns of thinking, and how the levels of their beliefs interact with and reinforce one another. The therapist also works with the client to alter negative styles of thinking through the use of various techniques.

Such techniques can include identifying, examining, and weighing the evidence for distorted thoughts, and collecting information to test them out by means such as gathering information (e.g. surveying) and behavioural experiments (examples of behavioural experiments are given in Bennett-Levy, 2003 and Persons, Davidson, & Tompkins, 2001). The importance of developing a sound collaborative therapeutic alliance is heavily emphasized, as is taking an ‘experimental’ empiricist viewpoint with the client in terms of hypothesizing, testing out their ideas, and continually reformulating the conceptualization of their difficulties. Cognitive therapy is focused on the client’s present problems, and is goal oriented. The therapist acts as an educator and a collaborator, but not as an expert. The aim is to assist the client to become their own therapist and to discover their own conclusions and solutions (Beck, 1995). As a result, CBT is postulated as a very empowering and collaborative type of psychotherapy.

Each session throughout CBT generally starts with a review of how the client is feeling, and how their week has been, along with a mood check. A mood monitor introduced to the client at the first session can be used to rate this on a scale that is meaningful to the client. From the second session onwards, the therapist also bridges from the previous session – that is, they review what was covered in the last session. Together, the client and therapist then set a mutually agreeable agenda for the session, which is generally followed first by a review of how the homework from the last session went. The client is commended for any efforts made, and problems with the homework are discussed. Following discussions of the other remaining agenda items, new homework is then set, and a summary of the session is discussed with the client. This summary can involve the client making notes on a cue card to take away as a reminder. Finally, evaluative feedback on the session is obtained from the client (Beck, 1995).

The goals of the first session are to establish rapport and a good therapeutic alliance with the client (Beck, 1995). In doing so, the therapist educates the client with an overview of the basic principles of cognitive therapy and provides psychoeducation about the client’s disorder. Such education not only involves providing information, but also normalizing the problems for the client and developing goals to instill hope. The exact content of therapy sessions beyond the first session vary according to the client’s goals and problems, as well as their abilities and the severity of their difficulties. Although the overall length of therapy can also differ

greatly, CBT aims to be structured and time-limited. Specifically, around 16 to 20 sessions are recommended for the treatment of mild to moderate depression, with booster sessions several months later (Anderson et al., 2009). Behavioural techniques are often implemented earlier in therapy, before addressing cognitions, as often the client cannot address cognitions when clouded by inactivity and an overwhelming depressed mood. When cognitions are first addressed, time is often spent socializing the client to the “five-part model” (Greenberger & Padesky, 1995). This involves educating the client about the interaction between thoughts, feelings, physiology, and behavior, in the context of a specific situation or the environment. While the five-part model postulates that any change in any of the areas listed above will cause a shift in the other components, a focus is placed on thoughts, and learning the effects that these have on the other components. In CBT, automatic thoughts are generally addressed first along with underlying assumptions, before addressing core beliefs in the latter part of therapy. This way, rather than targeting each situation as it arises separately, common underlying causes and belief structures can be modified and more permanent understanding of the problem and subsequent change can be achieved. As therapy nears an end, the client is prepared for termination and relapse prevention techniques are implemented, although this prospect is discussed from the outset of therapy (Beck, 1995). Following completion of therapy, booster sessions occur to prevent relapse.

Efficacy of CBT for Depression

CBT is renowned for its emphasis on empiricism and scientific evaluation of outcomes, and as a consequence, there is a wide resulting research base largely supporting its efficacy (Dobson & Dozois, 2001; Gotlib & Hammen, 1992). The broad guidelines given in a recent report commissioned by the National Institute for Health and Clinical Excellence (NICE) supports the efficacy of CBT for depression (Anderson et al., 2009). For individuals experiencing mild to moderate levels of depression, the psychological therapies recommended by NICE are CBT, interpersonal therapy (IPT), or behavioural activation. However, the findings from this review state that the evidence is strongest for CBT and IPT, and less so for behavioural activation. Medication in the form of selective serotonin reuptake inhibitors (SSRIs) is also recommended. However medication can cause side effects and does not address the underlying cause, so relapse is likely once medication administration ceases (Lambert & Davis, 2002). For individuals with moderate to

severe levels of depression, the NICE guidelines recommend a combination of medication and either CBT or IPT. The recommended length of psychotherapy treatment for depression is 16 to 20 sessions with several follow-up sessions over the ensuing months. Relapse prevention treatments should involve CBT, or mindfulness-based treatment for individuals who are currently well (Anderson et al., 2009). Therefore CBT is the consistent recommendation for both standard treatment and relapse prevention. Relapse prevention is frequently cited as one of CBT's main advantages over other therapies (e.g. Lambert & Davis, 2002).

A study by Cuijpers, van Straten, Andersson, and van Oppen (2008) is of interest in relation to the comparative efficacy of CBT and IPT. This study found no difference between CBT and several other forms of therapy (including behavioural activation and psychodynamic therapy) in their meta-analysis, and found that Interpersonal Psychotherapy (IPT) demonstrated higher efficacy than the other types of therapy. However, the authors define IPT as having 'no specific theoretical origin', which leads to some ambiguity as to the criteria for inclusion in this therapy type. While other therapies may also perform equally as well as CBT in some studies, CBT's popularity is enhanced by that fact that it provides a strong theoretical base, justification of its development and mechanisms of change, and a wide host of empirically based techniques for use in therapy (Cuijpers et al., 2008; Garratt et al., 2007).

A review of other research studies in the efficacy of psychotherapy for depression reveals findings that are clearly consistent with the NICE guidelines. Such studies highlight positive results in favour of CBT. For example, DeRubeis and Crits-Christoph (1998) conclude that CBT is an 'efficacious and specific' treatment for depression, and the preferential treatment intervention for depression. A comprehensive overview of the literature is also provided by Hollon and Beck (2004). However, although Hollon and Beck (2004) find strong support for CBT, the strong advantage over other psychotherapies is not as clear as in the NICE guidelines. Hollon and Beck (2004) in fact found similar results to that of the Cuijpers et al. (2008) study, and report that while CBT is more effective than no treatment and nonspecific treatment in the treatment of depression, it is only equally as effective as other psychotherapeutic interventions or medication. Therefore it can be concluded that thus far, for mild to moderate levels of depression, CBT consistently performs at least as well as other psychotherapies. It is also important to reiterate CBT's added

advantage of a strong theoretical base, a wide host of available treatment techniques, strong relapse prevention support, and its highlighted recommendation in the NICE guidelines as at 2009.

In the context of severe depression, the efficacy of CBT is still in need of further validation compared to the efficacy of medication (Hollon & Beck, 2004). As highlighted by the NICE guidelines the general consensus is that medication should be used in conjunction with therapy in the context of severe levels of depression (Hollon & DeRubeis, 2004; Lambert & Davis, 2002). A randomized trial by Dimidjian, Hollon, Dobson, Schmalings, Kohlenberg, Addis et al. (2006) showed that for severe depression, both the behavioural activation condition and the antidepressant medication condition in their study outperformed cognitive therapy. The findings in relation to behavioural activation will be discussed shortly; the findings in relation to medication will be discussed first. Although Dimidjian et al. (2006) and others have demonstrated that medication outperforms CBT for severe depression, as suggested earlier, it is likely that CBT may have beneficial effects that medication does not. Namely, once medication ceases clients may relapse, whereas the effects of CBT often continue and prevent relapse (Hollon & DeRubeis, 2004). Recent researchers have asserted that clients may be half as likely to experience a relapse following CBT as compared with medication (Hollon & Beck, 2004; Hollon & Shelton, 2001). The study by Dimidjian et al. (2006) also reported a much higher rate of attrition for the medication condition (44%) as compared with the therapy conditions (13.3% for the cognitive therapy condition and 16.3% for the behavioural activation condition), indicating that patients can find medication a more difficult mode of treatment. Reasons given for attrition in the medication condition included undesirable side effects and lack of improvement, whereas only one person dropped out early because of symptom improvement (Dimidjian et al., 2006).

While the findings from Dimidjian et al. (2006) are consistent with the general consensus for medication, the fact that the behavioural activation condition outperformed cognitive therapy was unusual. However, the study presented with several limitations. One point to note is that the Dimidjian et al. (2006) study employed an “expanded BA” (behavioural activation) model, in which targeting ruminative thinking was also included, which added to the already blurred behavioural – cognitive distinction between conditions. Additionally, the authors state that cognitive therapy has a focus on thought *content*, whereas behavioural strategies

target the negative thinking *patterns* apparent in depression. As described earlier, this point is debatable, as much of cognitive therapy involves addressing thinking biases or styles as well as thought content when appropriate (Teasdale et al., 2001). Indeed, Dimidjian et al. (2006) admit that the specification of effective ingredients or drivers of change is difficult, and that it is very likely that the function of thinking has an important role to play. As the authors point out, Beck's cognitive therapy also acknowledges the importance of behavioural components in the utility of CBT, especially when depression is at a severe level. Cognitive therapists are required to employ behavioural strategies both early in treatment and when depression is more severe, as cognitive strategies are more difficult to implement in these instances (Beck, 2005).

This discussion highlights an important point in terms of the active ingredients of CBT. Research has found that change in beliefs is related to decreases in depressive symptoms (as discussed earlier in the context of the cognitive mediation hypothesis; see for example research and reviews by Garratt et al., 2007, Riso et al., 2003, and Teasdale et al., 2001). However, the specificity of this to cognitive therapy is less certain, as cognitive change has been demonstrated (to a lesser extent) in pharmacotherapy and other psychological therapies as well (DeRubeis et al., 1990; Hollon & Beck, 2004). However there are several points which suggest that the specificity of cognitive mediation to cognitive therapy is still very promising. One is the study by DeRubeis et al. (1990), that found that although cognitions improved in both the medication and cognitive therapy conditions, only in the cognitive therapy condition did the change in cognitions precede the change in depressive symptoms (Garratt et al., 2007). Thus, although change in cognitions may occur in both modes, the order and therefore causation may be specific to cognitive therapy. The comprehensive review by Garratt et al. (2007) also points out that Teasdale et al. (2001) found only cognitive therapy changed the extremity of cognitive response styles. Finally, Segal, Gemar, and Williams (1999) and Segal, Kennedy, Gemar, Hood, Pedersen, and Buis (2006) found that cognitive therapy resulted in longer lasting changes than medication, and this was hypothesised to be a result of deeper-level modifications which resulted in less cognitive and emotional reactivity. Therefore although cognitive change may not be specific to CBT, it appears that there is promising research in terms of investigating the order and size of effects that do occur in CBT.

In summary, cognitive therapy is a class of CBT, and incorporates both cognitive and behavioural elements. It was developed by Aaron Beck in the 1960's as a response to empirical questions about psychodynamic therapy and a dissatisfaction of behavioural therapy to fully explain human behaviour. CBT has gained worldwide support and popularity due to its clear techniques, sound theoretical base, ability to explain behaviour, and its strong and ever-evolving evidence base. Overwhelmingly the research supports CBT as an efficacious treatment for depression, and it is the primary recommendation alongside medication depending on severity of depression. Although studies have also supported the use of IPT or behavioural activation in the treatment of depression, the theory behind these inclusions and the consistency in research findings is generally not as strong as it is for CBT.

An important consideration at this point is that although CBT is the treatment of choice for depression, it is still not clear what specific techniques are primary in producing these results, and for whom. Therefore more research is clearly needed into the mechanisms of change in CBT, and in particular the cognitions that play a mediating role in therapy. The following chapters focus on a key component of CBT: out of session tasks. Although such tasks are also incorporated in many other therapies, they are an essential component of CBT and are perhaps integral for different reasons. More importantly, the following chapters will also address the role that attributional styles play in the implementation of such homework.

CHAPTER 2: HOMEWORK

Introduction / Definition

There is a general lack of agreement as to what constitutes ‘homework’ in psychotherapy. Part of the reason for this ambiguity is the multitude of terms that have been substituted for homework over the years, due to the negative connotations that clients can associate with its meaning (such as reminders of being graded at school for their work) (Kazantzis, 2005; Kazantzis & L’Abate, 2007; Kazantzis & Ronan, 2006). Terms used have included such wording as ‘implementation of counselor recommendations’ (Conoley, Padula, Payton, & Daniels, 1994), ‘home practice’ (Blanchard, Nicholson, Taylor, Steffek, Radnitz, & Appelbaum, 1991), and ‘between-session (homework) activities’ (Kazantzis & Ronan, 2006; Ronan & Kazantzis, 2006). However, despite the variation in terms, there are many articles referred to throughout this study that do consistently use the term ‘homework’, but still define it in a variety of different ways. One definition by Kazantzis (2005) includes criteria such as the activities being planned, carried out between therapy sessions, being empirically supported, tailored to the client, designed collaboratively, and being used as a means for collecting information, and / or practicing and testing new behaviours. This definition includes much of what *should* be incorporated into homework assignments but is not necessarily so in practice. A more concise definition of homework is provided by Neimeyer, Kazantzis, Kassler, Baker, & Fletcher (2008): “any out-of-office activity directed by a therapist and intended to have a therapeutic effect if undertaken during therapy” (pp. 199). Even this definition is questionable, as Kazantzis and Lampropoulos (2002) point out that empirical studies comparing homework compliance to control groups can be complicated by control group clients engaging in extra activities without being directed by the therapist. Thus, it is not necessarily true that an activity must be therapist-directed to have an effect similar to that of standard ‘homework’ tasks. Particularly in therapies using models such as humanistic and interpersonal approaches, the task is likely to be largely client initiated and directed (Ronan & Kazantzis, 2006). Thus, in this study, ‘homework’ refers to *any task that is carried out by the client between therapy sessions with the intention to have, or contribute towards, a therapeutic effect for the client* (which is similar to Neimeyer et al.’s definition). Whether or not the effect *is* therapeutic and whether or

not the client has completed the homework in an ideal fashion are other issues, related to quality of completion, which will be discussed later.

Homework assignments, in their general terms, are primarily employed within cognitive and behavioural approaches. Indeed, Haarhoff and Kazantzis (2007) remind us that homework use is a guiding principle of Cognitive Behaviour Therapy (CBT); it is a “defining feature” of the approach (pp. 11, Kazantzis, 2005), with its roots nested in behavioural traditions (Kazantzis & L’Abate, 2005). Despite its dominance in these approaches, homework is still reported to be widespread among a variety of models, such as psychodynamic (see for example Kazantzis, Lampropoulos, & Deane, 2005), as discussed in the special series of the *Journal of Psychotherapy Integration* (Ronan & Kazantzis, 2006). A recent study by Kazantzis, Busch, Ronan, & Merrick (2007) supported these reports. Kazantzis et al. (2007) surveyed over three hundred mental health professionals from a variety of backgrounds (such as nursing and social work) and theoretical orientations (such as psychodynamic and humanistic), and found that a majority of the sample reported using homework assignments in therapy to some extent.

Thus, homework is a widely-used component of a variety of therapies, and thus is worthy of investigation on this basis alone, in line with the scientist-practitioner model of best practice. Other rationales for the use of homework will be explored further in this chapter, along with empirical support to date for the use of homework in therapy. Additionally, the need for future research will be identified and presented in support of justification for the current study.

Rationale for Homework Use

The basic rationale for the use of homework activities in CBT derives from several behavioural theories. Classical conditioning theory for example is utilized in a number of behavioural techniques that require previously feared stimuli and reactions to become extinguished and replaced with new associations (Kazantzis & L’Abate, 2005). For example, the pairing of flying with fear requires a systematic desensitization approach amongst other techniques, the implementation of which is partly enabled through out-of-therapy homework. Operant conditioning theories also play a role in the rationale for practice. That is, any behaviour a client engages in throughout their lives is reinforced by aspects of their environment. The therapist must subsequently work with external reinforcers and punishers in order to assist the

client to change their behaviour, as well as being aware of what the likely obstacles to this change are likely to be (Kazantzis & L'Abate, 2005). Another behavioural theory that particularly comes into play in the rationale for homework is generalization (Kazantzis, Deane, & Ronan, 2004). This is a particularly important concept, as the transfer of skills learnt in therapy into every day lives are of central importance in therapy, and homework tasks provide the means for doing this (discussed more next in the context of practical rationale for homework).

Homework in CBT allows the client to extend their learning beyond the therapy sessions alone, thus increasing their learning capacity and enabling the client to generalize skills from therapy into their every day lives. In addition to this, homework ensures the client can practice skills in a guided manner, and receive assistance to problem solve obstacles that arise, which may have otherwise been missed. The client can test out ideas and expectations in an experimental manner, thus strengthening new, alternative assumptions and core beliefs by gathering new evidence and information (Garland & Scott, 2002; Thase & Callan, 2006). The behavioural principles discussed earlier as well as the notions of maintenance and shaping are important here; that is, whether a client is able to generalize their behaviours into new situations, and adapt and maintain them in the context of external influences is critical (Kazantzis & L'Abate, 2005). Homework provides a means for testing this out and discussing the obstacles that arise in therapy, as well as reflecting on learning experiences. Additionally, the use of homework allows the client to practice techniques learnt in therapy in their own time, leaving room for further extending learning in the therapy sessions themselves.

Efficacy Research and Limitations

Although a central and core component of CBT, homework itself is not a new concept and has been utilized in a range of therapies, such as humanistic and psychodynamic (Kazantzis, Lampropoulos et al., 2005; Ronan & Kazantzis, 2006; Kazantzis et al., 2007). Nevertheless, much of the research investigating the efficacy of homework has utilized CBT approaches, and although substantial, there is still much research to be done in this area alone. A comprehensive meta-analysis of 27 studies by Kazantzis, Deane, and Ronan (2000) examined the effects of homework assignments and compliance on therapeutic outcome in cognitive and behaviour therapy (although the restriction to these two types of therapy was not deliberate) for a

range of disorders, but primarily anxiety ($n = 9$) and depression ($n = 10$). The authors point out that it is essential to distinguish between studies that examine the effects of including homework versus not including homework on therapeutic outcome, as opposed to examining the correlation of level of compliance in homework with therapeutic outcome. In regards to the first, examining the effects of including homework assignments, Kazantzis et al. (2000) included 11 studies, and found a mean effect size of $r = 0.36$ for these. They also examined the correlation between compliance and outcome for 16 studies, which resulted in a mean effect size of $r = 0.22$. They conclude that including homework increases therapeutic outcome, and that compliance indeed correlates with outcome. The positive nature of including homework in therapy is well established, and further evidence for this will be discussed shortly. However, one limitation in interpreting these effect size results is pointed out by Lambert, Harmon, and Slade (2007). They state that it is difficult to determine the empirical or clinical significance of these effect sizes as it is not clear in the meta-analysis what treatments the studies in question were comparing their findings to (e.g. a particular therapy or a placebo control), or whether random assignment was routinely established. Additionally, Kazantzis et al. (2000) point out several limitations of efficacy research themselves; namely that many of the studies suffer from low statistical power to detect effects (see also Kazantzis, 2000), although the meta-analysis is designed to combat this problem. Additionally, within individual studies, variations in types of homework, the ways in which they are administered (being at times less than optimal in terms of enhancing compliance), and problematic ratings of compliance (such as single, retrospective ratings) make interpreting sound results difficult. These difficulties will be discussed further shortly, as they are common of much of the homework literature to date.

A recent review by Thase and Callan (2006) reiterated the distinction between causal and correlational research, and summarized the findings from some leading research to date. Within the limited number of randomised trials investigating the causal nature of homework compliance, the general consensus is that results are inconsistent (Kazantzis, Deane, Ronan, & Lampropoulos, 2005), with some studies finding no difference between clients who are assigned homework and clients who are not, and other studies finding the opposite. One study that found no effect for homework was by Kornblith, Rehm, O'Hara, and Lamparski (1983). However, difficulties that were identified by Thase and Callan (2006) in contributing to this

result included the fact that clients who were not assigned to the homework condition often completed tasks on their own accord anyway, and others who were assigned to the homework condition often did not complete it on a regular basis. These factors make concluding causation difficult and may contribute to insignificant results. Additionally, a study by Neimeyer and Feixas (1990) (which was also included in the Kazantzis et al. (2000) meta-analysis) found significant results for group CBT in that participants in their homework group improved significantly more than participants in the no-homework group, but only when pretreatment depression severity was controlled for, which, as Thase and Callan (2006) points out, may indicate that homework is not as necessary for mild depression. Additionally, these significant results only applied to ratings from the Hamilton Rating Scale for Depression (HRSD), and not for the Beck Depression Inventory (BDI), suggesting that the BDI may be less sensitive to change, a point that is also noted by Bryant, Simons, and Thase (1999).

In terms of correlational studies, as Kazantzis, Deane, Ronan, and Lampropoulos (2005) note, and as the Kazantzis et al. (2000) meta-analysis found, the results are relatively consistent and indicate that increased homework compliance does correlate with enhanced therapeutic outcome across a range of disorders. Since the Kazantzis et al. (2000) meta-analysis, Rees, McEvoy, and Nathan (2005) are some of the researchers who have conducted further investigation into this area, and this particular study again reported finding that clients completing more homework in CBT for depression experienced better treatment outcomes. Participants were involved in group CBT for anxiety and depression, and it was found a higher quantity of homework completion correlated with lowered BDI scores, although the strength of this relationship did vary depending on the type of homework activity (e.g. thought records versus behavioural tasks). A major limitation of Rees et al.'s (2005) study is that although they measured homework completion at every session, they did so in a dichotomous yes/no format only, with no consideration as to the amount completed. Additionally, they then appear to have entered the total amount of homework completed over the course of therapy into their regression analysis, which does not take into account the fact that homework completion is likely to change over time. Finally, the authors state that it is important to measure *quality* of homework completion as well as quantity, although the results of this study only indicated a trend for the quality-outcome relationship. Other researchers that have underscored

the importance of including quality as well as quantity ratings due to both its research and clinical importance include Kazantzis, Deane, Ronan, and Lampropoulos (2005), and Bryant et al. (1999).

Another study by Burns and Spangler (2000) that was conducted too late to be included in the Kazantzis et al. (2000) meta-analysis also reported finding that clients completing more homework in CBT for depression experienced better treatment outcomes. However, as Kazantzis, Ronan, and Deane (2001) point out, there are several significant flaws to this study. One of these problems was mentioned earlier, and that is that the authors had clients rate their homework compliance retrospectively at a 12-week evaluation point. The therapists also rated compliance retrospectively, but with the aid of notes and records. Retrospective ratings can easily be distorted due to factors that influence objectivity such as the client performing poorly or very well in therapy, and problems such as distorted memories. Another problem that Kazantzis et al. (2001) identify is that Burns and Spangler (2000) found *correlational* relationships, but they use this data to conclude that increased homework compliance *causes* greater change in depression severity, which is inappropriate given that their study was a retrospective correlational design, rather than a rigid experimental one. A study by Startup and Edmonds (1994) (which was included in the Kazantzis et al. (2000) meta-analysis) attempted to address this type of problem (inferring causation) to a degree. They employed a correlational design, but measured homework compliance only for the first two sessions of therapy, and correlated it with final BDI scores. The rationale was that any progress that could otherwise account for changes in depression severity and homework compliance is unlikely to have occurred by the first two sessions. However, this study also experienced limitations, such as only the therapists rating homework compliance, with no client or independent observer ratings. Thus there were no measures to check any possible therapist biases against or to check the accuracy of ratings. Additionally, by only rating the first two sessions of homework compliance, little information as to the changes over time and overall compliance, as well as little variety in homework tasks, is obtained. This is problematic given that homework compliance is not necessarily stable over time, and may decrease over the course of therapy (Gaynor, Lawrence, & Nelson-Gray, 2006). The authors found no correlation with change in BDI at three-month follow up.

In summary of homework research to date, it can be concluded that higher levels of homework quantity and quality likely correlate with increased treatment

outcomes in terms of lowered depression severity. Additionally, it is likely that homework compliance has a causal relationship with outcome, although there is little research in this area so far, and the existing research has many limitations. These include the difficulty of controlling for clients completing homework when they are not required to, and clients not adhering to homework when they are required to. Therefore this thesis aims to overcome some of these limitations. It aims to utilise regular ratings of homework throughout the course of therapy, and utilise both therapist and client measures, as well as independent observer ratings where possible. It also aims to increase the statistical power of analyses, and use more comprehensive measures of homework compliance that include at least both quantity and quality ratings of homework.

Increasing Compliance

A final consideration is that while homework has been shown to be important and effective in therapy, there is much less research on the factors that influence clients' compliance with homework. A review by Kazantzis, Deane, Ronan, and Lampropoulos (2005) summarises a small amount of studies that have investigated the role that client, therapist and task factors play in the implementation of homework. Mixed findings have been found in regards to the relationship between symptom severity and homework compliance (see for example Burns & Spangler, 2000, and Edelman & Chambless, 1993). Studies investigating clients acceptance of treatment rationale have also found a link with homework compliance (e.g. Addis & Jacobson, 2000). Other studies have turned to investigating the nature of the homework task (e.g. Conoley et al., 1994) or the therapists' behaviours in implementing the task (e.g. Bryant et al., 1999), although these studies still acknowledge the role of client beliefs in predicting compliance. However, it is still clear that there is very little research in the area of factors affecting homework compliance in general, and even less in the role that client factors play.

However there are *theories* around the client factors influencing compliance, discussed thoroughly in both Kazantzis and L'Abate (2007) and Kazantzis, et al. (2005). Cognitive theories have a strong influence when reflecting on whether a client is likely to carry out their homework tasks or not. For example, Ajzen's (1985, 1988) theory of planned behaviour incorporates the general notion of cost-benefit analyses when considering a homework task. That is, clients will analyse how difficult a

homework task is, and how much energy it is going to cost them (in terms of time, effort, distress) in comparison with the perceived gains from doing the task. If the perceived costs outweigh the benefits then a client is much less likely to invest in doing the task (Kazantzis & L'Abate, 2005). According to Ajzen's (1985, 1988) theory, clients will also evaluate whether or not they think they have much control over these factors and whether they think they can change them or cope with them. Low perceived self-efficacy is likely to result in the client not engaging in the homework task (Kazantzis & L'Abate, 2005). The notion of self-efficacy was emphasized in Bandura's (1989) work, which posited that past experiences of homework, both personal and vicarious (through others' experiences) play a role in how much control a client perceives they have over homework. Therapist responses and the client's emotional experiences also play a role in the development of these beliefs, and the client then forms expectations about future homework tasks and their likely outcomes (Kazantzis & L'Abate, 2005). In particular, Riso and Thase (2007) name hopelessness and helplessness (two of the cornerstones of depression) as "the most severe obstacles to the successful implementation of homework assignments in therapy" (pp. 248). Not only can the client predict that the homework task will go badly and will be pointless, but they also often fail to engage in collaboratively designing the task, resulting in a cycle of the homework task then becoming harder than it would have otherwise been, reinforcing their original beliefs (Riso & Thase, 2007). Due to the central importance of the interfering nature of helplessness attributions, and the lack of research on factors influencing homework compliance in general, attributional style will be discussed in depth next.

CHAPTER 3: ATTRIBUTIONAL STYLE

Attribution Theory Beginnings

The concept of an attributional style derives from Fritz Heider's (1958) work in 'naïve psychology' (also known as 'common-sense psychology') which is concerned with how people make sense of behaviour in terms of its causes (Peterson, Maier, & Seligman, 1993). In his book, Heider (1958) addresses interpersonal issues to fill a void left by personality and social psychology. He states that naïve psychology is an ideal approach as it incorporates people's valuable natural knowledge of social interactions without needing to be subject to scientific scrutiny. In discussing attributions, Heider (1958) makes the point that people have a natural awareness of their environment, and that they automatically interpret and make meaning of this environment which enriches their 'life space'. Heider's work particularly focuses on how people think and feel about others, and therefore what people expect of others. In discussing this, Heider introduces the concept of levels of attribution, particularly in terms of whether the cause of actions is the self, others, or chance. Additionally, attribution in terms of intention is discussed, along with what caused the intention (for example an action towards you intended harm because they did not like you).

Since this, Kelley (1967, 1972) has made a large contribution to Heider's (1958) work in the development of attribution theory, highlighting gaps in the research thus far. One point that Heider (1958) made was that he believed that people always look for meaning in behaviour. This was further explained by Kelley (1972). When interacting with others, Kelley points out that we often ponder upon why people (and ourselves) do or say certain things, and that often we come to our own explanations of the likely reasons behind an action. Consequently, our behaviour that follows is often as a result of what meaning we assign the situation. In addition to Kelley (1972), Jones and Davis (1965) also assisted greatly in popularizing Heider's (1958) work with their discussion on how people interpret others' actions. To summarize the work of the aforementioned theorists, the foundations of attribution theory are concerned with understanding how people construe the causes of events (in particular whether the cause is internal or external), and how these beliefs influence peoples' subsequent behaviour (Peterson et al., 1993).

Origins of the “Learned Helplessness” Theory of Depression

Development of the Original Learned Helplessness Hypothesis

Shortly after this time, Overmier and Seligman (1967) were investigating Pavlovian conditioning by administering electric shocks to dogs, some of whom could not escape for the purposes of the learning phase. What they discovered was that later in the experimental phase, when given the chance to escape following a shock, most of the dogs who had previously been restrained did not attempt to escape the shocks, while the others did (Seligman, 1972). Following this, several possible hypotheses (that are beyond the scope of this review) as to why this occurred were entertained, such as adaptation to the shock. However, increasing the shock and theoretically therefore the motivation for the dogs to escape did not result in any change (see Seligman, 1972, for further hypotheses and why these have since been deemed unlikely). A more likely hypothesis suggested at the end of Overmier and Seligman’s (1967) report was the “learned helplessness” hypothesis. The fact that the dogs could not escape the shocks resulted in the interference of them failing to learn to escape later – the dogs had learnt that none of their behaviours were related to the consequences of shock. Thus a failure to control the shock resulted in them losing motivation to attempt to stop it. Seligman and Maier (1967) conducted follow-up experiments and further confirmed this hypothesis. Additionally, they found that the dogs who had learned that the shock and their response were independent maintained this learning seven days later, whereas Overmier and Seligman (1967) only found this effect for 24 hours (not 48 hours or more). Seligman and Maier (1967) speculate that this lengthened effect may be due to an emotional factor rather than just a learning factor. They also observed that the dogs who gave up trying to escape the shocks became somewhat passive (LoLordo, 2001).

This theory gathered wide interest in the research community, with many studies replicating Overmier and Seligman’s (1967) study, and expanding on it with other animals (such as rats; see Maier & Seligman, 1976, for a review). Further findings include the observation that those animals who have experienced unavoidable shock or other such trauma (such as being defeated in a fight) are slower to learn subsequent tasks, such as gathering food or escaping from mazes (Brookshire, Littman, & Stewart, 1961; Seligman, 1972). Norepinephrine depletion has also been found in rats’ brains after learning that shock was unavoidable (Weiss, Stone, & Harrell, 1970). Additionally, attempting to reverse the effects of learned helplessness

by re-learning that responding will be effective in avoiding the aversive stimulus is often difficult, due to the prior learning that the response and stimulus are independent (Seligman, 1972). However, Seligman (1972) notes that the un-learning of helplessness can occur with forced responding to shocks and subsequent exposure to reinforcement for doing so. In addition to this, if dogs are trained to respond and are reinforced for this prior to being exposed to unavoidable shocks, this can serve as a preventative measure, and the dogs may be less likely to succumb to helplessness. A final point that Seligman (1972) makes that is of great interest is that not all dogs display learned helplessness after unavoidable shocks; rather, it is about two-thirds of dogs. The other one-third of dogs appear normal, suggesting some prior learning in their lives around controllability.

In 1971, Thornton and Jacobs extended the learned helplessness findings to humans, by administering a low level of shock to subjects, some of whom could avoid these and some who could not. They replicated the learned helplessness effect, and in addition, found that those subjects who experienced variable levels of shock displayed a larger helplessness effect than those who received fixed levels of shock. The authors speculate that the predictability of a fixed level of shock may serve to lower stress and thus motivation to avoid it. Additionally, the authors found that the control groups' reaction times were similar to the group who could not avoid the shock, leading them to suggest the shocks were too mild. However, it is unethical to increase the shocks to a traumatic level, and so to replicate this phenomenon in humans, some other form of unpleasant stressor may need to be used. Since Thornton and Jacob's (1971) study, many other researchers have in fact modified this procedure using stimuli such as aversive noise, and replicated the learned helplessness effect with humans (see for example Hiroto, 1974; Hiroto & Seligman, 1975; and Krantz, Glass, & Snyder, 1974).

Original Learned Helplessness Theory in Relation to Depression

Seligman (1972) was among the first to make the link that theoretically, learned helplessness has many similarities to depression in humans. Seligman (1972) noted that depressed individuals often report beliefs that their actions will not have an effect on outcomes, and thus experience decreased motivation, which is very similar to the idea in learned helplessness that responses are independent of stimuli. Following this, researchers such as Klein, Fencil-Morse, and Seligman (1976) demonstrated that the learned helplessness effect that they found in non-depressed

subjects who were unable to control outcomes during learning, parallels the performance of depressed subjects in terms of solving tasks such as anagrams.

The theory of learned helplessness that has been developed to apply to humans thus contains three main components. The first, *contingency*, refers to the phenomenon described earlier – people can come to believe that there is little relationship between their actions and the outcomes; outcomes are uncontrollable. The second important concept to the learned helplessness theory is *cognition*. Often, such individuals perceive the causes of events to be external to them, rather than internal – that is, they are caused by something other than the individual's actions. This may or may not be accurate, but these perceptions are used to make predictions and expectations regarding the future. The third important concept is *behaviour* - many people consequently develop the view that there is little point in doing something that will have no effect on the outcome. Therefore, they often give up and do not do anything that might change the situation, thus perpetuating the cycle and confirming their beliefs (Peterson et al., 1993). In addition to the cognitive deficits described above, motivational and emotional deficits are also thought to result from learned helplessness, as described earlier (Abramson et al., 1978).

Further Developments of the Learned Helplessness Hypothesis and its Links with Attribution Theory

Reformulated Learned Helplessness Model

While the learned helplessness hypothesis was a breakthrough for social psychology, there were still some limitations in applying this theory directly to people. Thus, in order to combat these problems, Abramson et al. (1978) proposed the *reformulated* learned helplessness model. Basically, the reformulated learned helplessness model incorporates a revised attribution theory in order to make sense of this phenomenon in people and as it relates to depression.

The first problem Abramson et al. (1978) describe is the finding that subjects who had no control over initial outcomes had low expectancy for control later (suggesting they thought it was an external, uncontrollable situation), but that these same subjects later said they viewed the task as involving skill just as much as the subjects who had control over the task (see for example Klein & Seligman, 1976, and Miller & Seligman, 1975). Additionally, Abramson et al. (1978) point out that the original hypothesis does not adequately explain how current helplessness is

transformed into an expectation of future helplessness. In order to explain and remedy this problem, the authors suggest that people's perception and attribution of an event mediates the relationship between the event and future expectations and symptoms. Thus, they describe a difference between *universal* helplessness (for example, an incurable illness that no-one can change) and *personal* helplessness (for example, getting bad grades despite trying hard and others getting good grades). Thus, people's beliefs around these factors determines whether they attribute the cause of helplessness to an internal factor or an external factor. It is thought that the attribution of helplessness to an internal factor is much more likely to result in a loss of self-esteem (emotional deficit) but does not influence motivational or cognitive deficits per se, as either internal or external helplessness / uncontrollability is sufficient to produce these (Abramson et al., 1978; LoLordo, 2001).

In addition to this, some investigators have found that learned helplessness can generalize to other, controllable situations. Hiroto and Seligman (1975), for example, demonstrated that experiencing an inescapable tone later resulted in subjects experiencing increased difficulty with solvable anagram problems as compared with those who experienced an escapable tone. This brings Abramson et al. (1978) to their second problem with the original learned helplessness model – it does not describe in what instances a person will show the helplessness deficits. It does not make sense to expect that a person will show it in all instances, which brings one to wonder how the distinction is made (Peterson et al., 1993). Thus, Abramson et al. (1978) differentiate between *global* and *specific* deficits, as well as *chronic* or *stable*, and *transient* or *unstable* deficits. They postulate that when an individual encounters a situation in which they have no control, they make an attribution about the cause of this helplessness. Thus, a global attribution would suggest this is a helplessness that is likely to affect many other situations, whereas a specific attribution suggests that it is only relevant to the current situation. Additionally, the stable versus unstable attribution results in a person making expectations about how long these deficits are likely to last – for example, a stable attribution would result in an individual believing the helplessness will always be present; not just present for the moment. These attributions result in the individual making predictions about the future and therefore developing expectations for what is likely to happen in other situations.

Thus, Abramson et al.'s (1978) reformulated learned helplessness model incorporates the notion of attributions to explain why people might expect to be

helpless in different and potentially controllable situations. To summarize, the attribution categories introduced by Abramson et al. (1978) were internal versus external; global versus specific; and stable versus unstable. Thus it can be hypothesised for any given person how widely they are likely to generalise helplessness beliefs, and for how long, as well as how likely this is to affect their emotions and motivation. It allows us to form theories about disorders such as depression, and therefore to plan treatment accordingly. The reformulated model of depression includes the deficits mentioned earlier (emotional, motivational, cognitive, and self-esteem), and explains how these can come about. In addition, Abramson et al. (1978) state that helplessness needs to be accompanied by either desired outcomes being unlikely or highly aversive outcomes being likely in order to result in depression.

It should be noted that there has since been a proposed revision of the reformulated learned helplessness model by Abramson, Metalsky, and Alloy (1989), called the “hopelessness theory of depression.” They suggest that in addition to perceived helplessness, people need to have a *negative outcome expectancy* in order for depression to result. This highlights the idea that it is not just uncontrollability of an outcome that causes depressive symptoms, rather, it is the combination of this with the outcomes’ value and likelihood of occurring that is important. A review of the two theories by Henkel, Bussfeld, Möller, and Hegerl (2002) noted that there has been mixed support for the hopelessness theory of depression so far.

Measurement of Attributional Style

Because the above reformulated learned helplessness model of depression hypothesises that internal, stable and global attributions of uncontrollable bad events lead to depression, researchers have developed a questionnaire to help ascertain what people’s ‘attributional styles’ are. The idea is that this information not only allows research to be conducted investigating therapy for depression and its outcomes, but also allows therapists to gain knowledge regarding their clients’ cognitions. This is particularly useful in conjunction with the main therapeutic model for depression, Aaron T. Beck’s Cognitive Behaviour Therapy (CBT, as discussed in chapter 1; see for example Beck, 1995).

Peterson, Semmel, von Baeyer, Abramson, Metalsky, and Seligman (1982) developed the *Attributional Style Questionnaire* (ASQ) for this purpose, which contains twelve different scenarios for people to fill in their own hypothetical causes.

Half of these scenarios are positive, (for example, ‘you become very rich’), and half are negative (for example, ‘you go out on a date and it goes badly.’). These categories are further sub-divided into achievement-oriented situations, and affiliation-oriented situations. People filling the questionnaire out then need to rate the cause on a seven-point scale on the three attributional dimensions: external versus internal (‘totally due to other people or circumstances’ versus ‘totally due to me’), unstable versus stable (‘will never again be present’ versus ‘will always be present’), and specific versus global (‘influences just this particular situation’ versus ‘influences all situations in my life’). Additionally, they need to rank how important this situation would be to them on the same seven-point scale. The initial psychometric properties of the ASQ have been found to be satisfactory, and the expected dimensions correlated with depressive symptoms, although internal reliability of single dimensions was not great. There was also little distinction between the three dimensions of attributional style for good events. The authors speculate one possible reason is that people spend less time worrying about these and so don’t think about the causes as much. Unsatisfied with the modest reliability of the ASQ, Peterson and Villanova (1988) have developed an Expanded ASQ that contains 24 items, all of which are bad events. They state that these changes have improved reliability, but that further research still needs to be done as the internal – external dimension was still not very clear, which they suggest may be because it could be a multidimensional concept. Additionally, they state that because stability and globality are highly correlated, Peterson and Seligman’s (1984) suggestion that they may be measuring the same dimension such as pessimism is plausible.

Optimism and Pessimism

A good overview of optimism and pessimism and their relationship to the reformulated learned helplessness theory is provided by Gillham, Shatté, Reivich, and Seligman (2001). Essentially, pessimistic people are thought to attribute bad events to internal, stable and global causes, whereas optimistic people are thought to attribute them to the opposite: external, unstable and specific causes. Thus, people can be said to have a pessimistic or optimistic attributional (more recently known as explanatory) style. Attributional style has been consistently linked with depressive symptoms. Namely, attributing bad events to internal, stable, and global causes (that is, a pessimistic attributional style) is associated with depression, as is attributing good

events to external, unstable, and specific causes (although this association is weaker) (see Sweeney, Anderson, & Bailey, 1986, for this meta-analytic review).

It is thought that a pessimistic explanatory style is not the *cause* of depression, rather, it is a predisposing factor (Peterson & Steen, 2002). This needs to be clarified, however, as there have been mixed findings. Some studies (for example, Golin, Sweeney, and Schaeffer, 1981) have found that a pessimistic explanatory style is correlated with depressive symptoms, although the particular study in question found that only the stable and global dimensions *predicted* later depressive symptoms. Other studies (such as Bennett & Bates, 1995, although this was with 11-13 year olds only) have found that attributional style does not predict depressive symptoms.

There are also questions surrounding whether or not people's attributional style can change, especially whether pessimists can become more optimistic. Seligman et al. (1988) have demonstrated that explanatory style change does correlate with improvement in depressive symptoms during cognitive therapy and at one-year follow-up. Carver, Scheier, Miller, & Fulford (2002) state that they also believe this is possible, but that much research is still needed in this area, as researchers are unsure as to how much change is likely, and how long the change can be expected to last. Henkel et al. (2002), and Gillham et al. (2001) comment that much more research is needed on attributional style overall with clinically depressed subjects; a gap this research hopes to help fill.

According to Peterson and Steen (2002), another major gap in this area of research is in the mechanisms of change in regards to attributional style. However, one interesting finding so far that they discuss is Anderson and Arnoult's (1985) discovery that people who have a pessimistic explanatory style also tend to engage in less social interaction than those with an optimistic explanatory style.

A final consideration is the suggestion that attributional style does not predict depressive symptoms once affectivity is controlled for. Chang and Sanna (2001) discuss several studies that have found that pessimism-anxiety links become non-significant once affectivity has been controlled, and pessimism (as measured by the Life Orientation Test (see Scheier, Carver, and Bridges, 1994)) does not predict depressive symptoms once negative affectivity is controlled. Chang and Sanna's (2001) own study found that optimism had direct links to depressive symptoms, as well as to negative affectivity, while pessimism was only related to depressive symptoms through negative affectivity.

To summarize this chapter, the concept of an attributional style was first suggested by Heider (1958), and this work was popularised by Kelley (1972). The original learned helplessness hypothesis was proposed by Overmier and Seligman (1967), who described passivity and non-responsive phenomena, largely seen in animals, in response to learning that their behaviour had no effect on controlling negative outcomes. This observation was linked to depression in humans by Seligman in 1972, and the reformulated learned helplessness model by Abramson et al. (1978) added the notion of sub-dimensions to attributional styles (internal versus external, global versus specific, and stable versus unstable attributions). The ASQ was developed by Peterson et al. (1982) to aid in the measurement of these attributes in people, and links have since been made between high levels of pessimism (attributing negative events to internal, stable, and global causes) and increased levels of depression (e.g. Sweeney et al., 1986). It is evident that further research is needed that utilizes clinically depressed subjects, and that research should attempt to address mechanisms of change more thoroughly.

CHAPTER 4: CURRENT STUDY

General Aim

CBT is known to be an effective treatment for depression, but there is still much research to be done into the exact mechanisms of change in CBT (Garratt et al., 2007). Within CBT, homework has been demonstrated to correlate with increased therapeutic outcome in terms of depression severity, and has thus been identified as an essential component of CBT. However, even less research has been conducted into the factors influencing homework compliance, and in particular, client cognitions and beliefs, even though these are theorised to be the most important influence in homework compliance (Kazantzis, Deane, Ronan, & Lampropoulos, 2005). Attributional style and the reformulated theory of learned helplessness are central explanations in the development and maintenance of depression (Abramson et al., 1978), and are hypothesised in this study to be an important predictor of client compliance with homework (see for example Riso & Thase, 2007). Therefore, the aim of this study is to investigate what effects peoples' attributional styles have on their level of homework compliance, and how these factors interact to produce optimal change (in depression severity and attributional style) over the course of CBT for depression.

Research Questions

1. *The homework - depression relationship*: Do clients' experiences of homework influence their therapy outcome as measured by depression severity?
2. *The attributional style - depression relationship*: Do clients' attributional styles influence their therapy outcome as measured by depression severity?
3. *The moderating effect of attributional style on the homework - depression relationship*: Does the influence of homework on therapy outcome as measured by depression severity depend on clients' attributional styles (i.e. does attributional style moderate the homework-depression relationship)?
4. *The effect of therapist competence in the use of homework*: Does therapist competence in reviewing, designing, and assigning homework influence the relationship in (3)?
5. *The attributional style - homework relationship*: Do clients' attributional styles explain some of the variation in their experiences of homework throughout the course of therapy?

Method

Participants

Participants for the depression study were recruited via multiple print media advertisements (see Appendix A for an example). The requirements for inclusion in the study were as follows: Clients needed to be between 18 and 65 years, experiencing their first Major Depressive Episode (MDE), proficient in English, not taking any Central Nervous System (CNS) acting drugs, not experiencing Psychosis or Borderline Personality Disorder (BDD), and have no imminent risk of self-harm.

The final sample size was $N = 28$. Clients were selected from an initial applicant pool of 251. Applicants undertook a 30 minute telephone interview conducted by a postgraduate clinical psychology student (see Appendix B for interview format), and 186 people did not proceed past this stage. The remaining 65 clients completed a 50 minute Composite International Diagnostic Interview (CIDI; Robins, Wing, Wittchen, Helzer, Babor, Burke et al., 1989, see also Peters & Andrews, 1995) at the Massey University Centre for Psychology, and filled out the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996), the Attributional Style Questionnaire (ASQ; Peterson et al., 1982), and a demographics form (Appendix C). Clients received an information sheet and signed a consent form (Appendix D), and were interviewed by a therapist to confirm they met the MDE criteria. Therapists followed a semi-structured interview guide (Appendix E) and filled out the Suitability for Cognitive Therapy scale (Safran & Segal, 1990) and the Social and Occupational Functioning Assessment Scale (SOFAS; Goldman, Skodol, & Lave, 1992) after the assessment. Of the 65 clients interviewed, 37 did not meet criteria and were given community contacts to pursue and offered a written report. More detailed demographics were collected from the final 28 clients at the end of the therapy programme (Appendix C).

The final sample was comprised of 64% females and 36% males, with the majority of clients in their 40's. Most of the sample (86%) identified as "European / Caucasian", although this did not indicate their country of origin or how long they had lived in New Zealand. Table 1 presents more detailed demographic information.

Table 1

Demographics of the depression study participants

	N	%
Gender		
Male	10	36
Female	18	64
Intake Age		
20-29	3	11
30-39	7	25
40-49	9	32
50-59	5	18
60-65	4	14
Ethnicity		
NZ European	24	86
Other	4	14
Marital Status		
Single	4	14
Dating	1	4
De Facto	5	18
Married	11	39
Divorced	6	21
Widow(er)	1	4
Employment		
Full time	6	21
Part time	10	36
Other	12	43
Children		
0	8	29
1	2	7
2	14	50
3	2	7
4	1	4
5	1	4
Past therapy		
0 months	18	64
< 1 month	2	7
1 - 3 months	6	21
4 - 6 months	1	4
7 - 9 months	1	4
Past medication		
0 months	24	86
< 1 month	0	0
1 - 3 months	3	11
4 - 6 months	1	4

Note. Total percentages may not equal 100 due to rounding.

Therapists

Seven therapists participated in the study, all of whom identified as “European / Caucasian”. Three therapists were in their 20’s, two were in their 40’s, and two were in their 50’s. One therapist saw a total of two clients, three therapists saw a total of three clients each, two therapists saw a total of four clients each, and one therapist saw a total of nine clients.

Therapists were Doctor of Clinical Psychology students, and attended a one-week CBT block course, and a one-week CBT for Depression block course, run by Massey University, in addition to their standard clinical training. Therapists were also trained specifically in homework administration which consisted of two days training in homework protocol (as per Kazantzis, MacEwan, & Dattilio, 2005) run by Dr. Nikolaos Kazantzis. Each therapist videoed two to three role plays of themselves carrying out the homework protocol with a “client”. Role plays were reviewed as a group and by Dr. Nikolaos Kazantzis, and repeated until 100% adherence was achieved as per the Homework Adherence And Competence Scale (HAACS; Kazantzis, Wedge, & Dobson, 2005) (Appendix F).

Throughout the study, therapists received weekly group supervision from a senior registered Clinical Psychologist. Before therapists were allowed to see more than three clients, they were required to obtain at least three Cognitive Therapy Scale (CTS; Young & Beck, 1980) ratings of above 40, as rated by the group supervisor. In order to ensure competence in homework administration was maintained, random sessions were viewed by independent observers (postgraduate psychology students) and HAACS adherence scores were relayed to therapists and reviewed in supervision. Items therapists were not adhering to were problem solved with the group supervisor.

Procedure

The therapy phase of the study occurred from 2007 until 2009, and clients were recruited at different times throughout this period. Following intake, clients were offered 20 sessions of CBT for depression, each of which was video recorded. Therapy was delivered twice per week for the first four weeks, and once per week thereafter. Each session was intended to last for 50 minutes. The depression study had a large focus on enhancing homework completion, and a strict protocol for implementing homework was followed by therapists. An overview is provided in the “Guiding Model for Practice” by Kazantzis, MacEwan et al. (2005, pp. 380-400) and is outlined in the HAACS (Appendix F). Therapists were expected to a) *review*

clients' homework, reinforcing any attempts made by the client, while conceptualising non-completion to overcome barriers, b) assist the client to *design* new homework that was relevant to the session, and c) *assign* the homework in a manner that would maximize the likelihood of completion (that is, anticipating and problem solving any obstacles, specifying details of when and where the client would complete the homework, and so forth). The details of the agreed-upon homework tasks were written down at the end of each session on the Homework Assignment Form, with a carbon copy given to the client (Appendix G). On this form, clients rated their perceived importance of the task, and their confidence and readiness to try the task. Therapists aimed to obtain ratings of confidence of at least 70 out of 100 from clients.

Therapy generally progressed from psycho-education and behavioural tasks such as activity scheduling to more cognitive tasks later on. Examples of cognitive tasks included conceptualising thoughts, emotions, and behaviours in a five-part model (Greenberger & Padesky, 1995) and using thought records to challenge thinking biases. Formulations were finalised collaboratively around session 10, and behavioural experiments and core belief work followed, with relapse prevention in the final one to two sessions. Following the end of therapy, booster sessions were given approximately two and six months after session 20. Client participation was voluntary and clients contributed their time and psychometric data in exchange for therapy that was free of charge.

As some six-month follow-up sessions had not yet been completed, only two-month follow-up sessions were included in this data set. For a variety of personal reasons, some clients did not complete all 20 sessions of therapy. Table 2 presents this data.

Table 2

Number of sessions completed by clients

Completion stage	N	%
At least 17 sessions	22	79
17+ sessions plus 2 month follow-up	18	64
14-16 sessions	1	4
10-13 sessions	3*	14
5-9 session	2	7
0-4 sessions	0	0

Note. * Indicates one client still returned for two-month follow-up. Percentages are rounded to the nearest whole number.

Measures

Measures completed in the depression study are presented in Table 3.

Table 3

Measures employed in the depression study

Measure	Completed by	Sessions
Beck Depression Inventory II (BDI-II)	Client	0-21
Homework Rating Scale II (HRS-II)	Client	2-21
	Therapist	2-21
	Independent raters	Random
Attributional Style Questionnaire (ASQ)	Client	0, 5, 8, 20, 21
Social and Occupational Functioning Assessment Scale (SOFAS)	Therapist	0, 5, 8, 20, 21
Personality Beliefs Questionnaire (PBQ)	Client	8
Homework Adherence And Competence Scale (HAACS)	Independent raters	2-10

Note. Measures in bold are employed in the current study. The HRS-II was developed by Kazantzis, Deane, and Ronan (2005); the PBQ was developed by Beck and Beck (1991).

Attributional Style Questionnaire (ASQ)

The ASQ is a 12-item measure that was originally developed by Peterson et al. (1982). The ASQ provides 12 hypothetical events, half of which are positive (such as ‘you become very rich’), and half of which are negative (such as ‘you have been looking for a job unsuccessfully for some time’). Participants are asked to write a hypothetical cause for the event, and then rank it on three dimensions: internality (is it due to me or other people?), stability (will it be present in the future?), and globality (does it influence many areas?), each on a seven-point scale (e.g. 1 = ‘totally due to other people or circumstances’; 7 = ‘totally due to me’).

Internal reliability for the positive events scale (CoPos) was found by Peterson et al. (1982) to be adequate at $\alpha = .75$, while the reliability for the negative events scale (CoNeg) was also adequate at $\alpha = .72$. Reliabilities for the individual subscales of internality, stability, and globality were lower, with alphas of $\alpha = .44$ to $\alpha = .69$, indicating that these are best viewed as a total composite score of each scale rather than as individual subscales. The lowest reliability was produced by the internality subscale, which is often excluded in research (e.g. Moore & Fresco, 2007).

Three main ASQ scores are calculated. A ‘CoNeg’ score is comprised of the average of the six negative items (each of which is in turn comprised of an internal, stable, and global sub-item), while a ‘CoPos’ score is comprised of the average of the six positive items (also comprised of the sub-items above). A total ‘CPCN’ score is calculated by subtracting the CoNeg score from the CoPos score. The current study primarily utilized the CoNeg score (which will be referred to as ‘pessimism’ in the context of this study), given that this has been most commonly used in research, as discussed in chapter 3. The CoPos score (which will be referred to as ‘optimism’ in the context of this study) was included out of interest but was not be the focus of the current study. It was decided not to utilize the CPCN (total score; CoPos minus CoNeg), due to the limited information it theoretically provides. For example, a client could theoretically score high on both the CoPos and CoNeg dimensions, (for example, CoPos of 18; CoNeg of 18), resulting in a CPCN score of 0, and another client could score low on both the CoPos and CoNeg dimensions (for example, 11 on each) and also end up with a CPCN score of 0, even though their clinical pictures

would likely be quite different. The reliability of the scales and subscales of the ASQ were checked before data analysis proceeded in the current study.

Homework Rating Scale II (HRS-II)

The HRS-II is a 12-item measure developed by Kazantzis, Deane, and Ronan (2005) which is completed by the client and therapist each session (and by independent raters at random intervals). The HRS-II assesses the implementation and completion of homework from the previous session and is presented in Appendix H.

Items are rated on a five-point scale from 0 (e.g. I was able to do the activity “not at all”) to 4 (e.g. I was able to do the activity “completely”). Items 3 (‘Difficulty’) and 4 (‘Obstacles’) are reverse-scored. Bjornholdt (2006) has grouped the 12 items into three factors (when rated by clients), which are also described in Munro (2006). The three factors are presented in Table 4.

Table 4

Factor structure of the HRS-II as reported by Bjornholdt (2006)

Factor	HRS-II Items	Description
Factor 1: Benefits and completion	1	Quantity
	2	Quality
	10	Pleasure
	11	Mastery
	12	Progress
Factor 2: Costs and completion	1	Quantity
	2	Quality
	3	Difficulty
	4	Obstacles
Factor 3: Client beliefs	5	Comprehension
	6	Rationale
	7	Collaboration
	8	Specificity
	9	Match with Therapy Goals

Note. The HRS-II is presented in Appendix H.

The HRS-II is a new measure, and reports of its psychometric properties are few. Kazantzis, Bjornholdt, Munro, Dobson, Merrick, Fletcher et al. (2006) presented a poster with their findings to date at the 40th annual meeting of the Association for Behavioural and Cognitive Therapies. Study two of their poster reported psychometrics for the client and therapist versions of the HRS-II. They reported an alpha for the client version of $\alpha = .87$, and an alpha of $\alpha = .84$ for the therapist version. Item-total correlations ranged from $r = .44$ to $r = .70$ for the client version, and from $r = .08$ ('difficulty') to $r = .76$ for the therapist version. The authors reported that the correlations between client and therapist versions of the HRS-II were low, suggesting they have different perspectives on the same task. Study three from Kazantzis et al. (2006) did not report on the reliability of the scale as rated by independent raters, however they did report the Intraclass Correlation Coefficients (ICCs) between the independent raters, which overall were strong at $r = .82$. They identified three items with low agreement (ICCs below .40): match with therapy goals, rationale, and difficulty. Because the HRS-II is a new measure, the internal reliability and ICCs were also examined in the current study using the depression study data set.

Beck Depression Inventory II (BDI-II)

The BDI-II was developed by Beck et al. (1996). The BDI-II consists of 21 items measuring intensity of depressive symptoms (such as loss of pleasure, feelings of guilt, crying, and tiredness) in patients over the past two weeks. Scales on each item are worded differently according to the item, but range from 0 (e.g. 'I do not feel sad') to 3 (e.g. 'I am so sad or unhappy that I can't stand it.'). The total score a person can have on the BDI-II is between 0 and 63. Beck et al. (1996) have categorized scores into groups of severity: Scores between 0 and 13 are categorized as 'minimal'; 14 to 19 'mild'; 20 to 28 'moderate'; and scores from 29 to 63 are categorized as 'severe'.

Psychometrics of the BDI-II were reported by Beck et al. (1996) in their manual. Reliability was high, with an alpha of $\alpha = .92$ for a sample of 500 outpatients, and $\alpha = .93$ for a sample of 120 college students. Similar findings have been replicated in later studies and with other populations (e.g. Arnau, Meagher, Norris, & Bramson, 2001; Dozois, Dobson, & Ahnberg, 1998; Osman, Downs, Barrios, Kopper,

Gutierrez, & Chiros, 1997). Item-total correlations between $r = .41$ and $r = .62$ were reported by Dozois et al. (1998) in their study with college students, and between $r = .54$ and $r = .74$ by Arnau et al. (2001) in their study with primary medical care patients. High test-retest reliability has been reported (e.g. Sprinkle, Lurie, Insko, Atkinson, Jones, Logan et al., 2002, reported a test-retest reliability of $\alpha = .96$ over a period of one to 12 days in their university counselling centre sample) and strong convergent and criterion validity has also been found (e.g. Osman et al., 1997; Sprinkle et al., 2002).

Homework Adherence And Competence Scale (HAACS)

This is a 19 item scale developed by Kazantzis, Wedge et al. (2005) designed to assess therapists' competence in reviewing, designing, and assigning homework (Kazantzis, Wedge et al., 2005). It is completed by independent raters (in this case via sessions recorded on DVD). Raters state whether a therapist was adhering to each item (yes/no) and if yes, how competent they were on a seven-point scale (0: non-adherence/extremely poor; 1: poor; 2: mediocre; 3: fair; 4: good; 5: very good; 6: excellent).

Psychometric review of the HAACS was conducted by Munro (2006), who found that the internal consistencies for each of the three areas was adequate, with alphas for the review, design and assign sections at $\alpha = .70$, $\alpha = .81$, and $\alpha = .80$ respectively. However, there were three individual items that had item-total correlations of less than $r = .30$. These were Items 4 (using an individualised conceptualisation to make sense of non-completion), 12 (in-session practice of homework), and 14 (using a situational conceptualization to identify beliefs and situational triggers). Item 4 is the only item in the measure that gives a 'not applicable' option, as clients may complete all their homework. Alphas obtained for the larger adherence and competence domains were calculated by Munro (2006) at $\alpha = .77$ and $\alpha = .81$, respectively.

Independent HAACS ratings were carried out by four independent raters from sessions two to 10; no sessions beyond session 10 were rated. This was primarily because the first four weeks (which are often the first eight sessions as they are often twice-weekly to begin with) have been found to be when the most change in therapy occurs (Tang & DeRubeis, 1999). Restricting the rating period also aided in

practicality of funding and completing the study. Due to inconsistencies in obtaining complete sets of ratings for all clients and for all intended sessions, some HAACS data are missing. In total, there were 203 HAACS observations across the seven therapists.

Data Analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS) for Windows, Version 17.0 (SPSS Inc., 2008).

Multilevel Analysis

Multilevel analysis has been referred to by various names, such as Hierarchical Linear Modelling (HLM; Bryk & Raudenbush, 1992), Applied Longitudinal Data Analysis (Singer & Willett, 2003), Mixed-Effects Regression Models (Miklowitz, Otto, Frank, Reilly-Harrington, Wisniewski, Kogan et al., 2007) and Multilevel Analysis (Snijders & Bosker, 1999). Multilevel analysis has been employed in many studies of change over time already (e.g. Marco, Neale, Schwarz, Shiffman, & Stone, 1999; Okiishi, Lambert, Nielsen, & Ogles, 2003; Shanahan, Elder, Burchinal, & Conger, 1996), the reasons for which are several-fold and will be discussed now.

There is a need to investigate multiple different levels of data simultaneously with longitudinal data. These can be classed into different levels of variables. “Level 1” variables describe individual (within-person) change over time, while “Level 2” variables describe differences in change between different people (Singer & Willett, 2003). These levels describe data that are nested within one another. In the current study the Level 1 variables (e.g. ‘time’) are nested within individuals, which make up the Level 2 data. A third level can be considered (e.g. individuals nested within therapists or organisations), but this is not the focus here (Kwok, Underhill, Berry, Luo, Elliott, & Yoon, 2008). Rather than examining group averages over time, multilevel analysis allows “individual growth models” to be developed. This means that trajectories are developed for each individual, and relationships are derived both within the individual’s data over time (Level 1) and for data between individuals (Level 2) (Affleck, Zautra, Tennen, & Armeli, 1999; Kwok et al., 2008). This is important because within a study such as this one, peoples’ scores vary widely in both their initial depression status and in their subsequent rate of change. Group trends do not reflect this.

Time is treated as a continuous variable in multilevel analysis; therefore it is acceptable to have different numbers of waves for each client (that is, clients complete different numbers of sessions), or to have unequal spacing of data (clients may not come at regular one-week intervals) (Kwok et al., 2008). Covariates may be time-variant (Kwok et al., 2008), which is important in the current study with the use of the ASQ and the HRS-II, as assumptions of their static nature should not be made. Additionally, multilevel analysis does not assume that variances and covariances are equal across time, as is required in ANOVAs (Hedeker, 2004; Kwok et al., 2008).

As specified in Singer and Willett (2003), there are three minimum requirements for multilevel modelling. The first is to employ at least three waves of data (the data used in this study has 22 waves). The second requirement is to have a reliable outcome measure which changes systematically across time (in this case the BDI-II). Finally a sensible measurement for time is required.

The process for carrying out multilevel analysis in the current study is described next. Data management issues such as compensating for missing values and selecting scales for use are described first, followed by a discussion of the reliability checks carried out prior to analyses. Descriptive graphs, regressions, and correlations compose the preliminary model building analyses, and multilevel model building is described last.

Data Management

Statistical considerations within the multilevel models are presented next.

Missing values. Missing values were calculated and replaced using SPSS's expectation-maximization (EM) method. The proportions of missing data per measure are presented in Table 5.

Table 5

Proportions of missing data and results of Little's MCAR tests

Measure	N (sessions with data missing)	Percentages missing	Little's MCAR test
BDI-II	3	0.17-0.22	Non significant
ASQ	2	0.29-1.75	Non significant
HRS-II (Client)	4	0.30-1.52	Non significant
HRS-II (Therapist)	2	0.31*-1.25	*One significant
HAACS	2	0.24-0.26	Non significant

Percentages of missing data were minimal, and all were missing completely at random except for one missing data item. However, EM estimation continued as the percentage was minimal and unlikely to affect analyses. Although it is not known for certain if the item was missing at random (MAR; still acceptable when using EM methods (SPSS, Inc., 2007)), or not missing at random (NMAR, which could present an issue (SPSS, Inc., 2007)), it is unlikely that only one missing data item would represent any real reason for being missing other than that the client forgot to fill it in. The low amount of missing data for the HAACS was due to the use of averages of the two raters' scores. In instances where there was only one raters' score available, that score was taken.

Assumption checks. According to Singer and Willett (2003), although normality and outlier checks can be performed, the primary assumption to check is that the residual plots of the variables are normally distributed, via visual inspection. Guidelines for producing these residual plots were followed for all variables included in the current study as presented in Pallant (2007). The Normal Probability Plots ('P-P Plots') were checked to see that the residuals formed a diagonal line (normal distribution). The scatterplots were checked in accordance with Tabachnick and Fidell's (2007) recommendations that standardised residuals were randomly scattered around the centre of the plot, rather than skewed to the bottom or the top. This is an indicator of normality. Additionally, scatterplots were examined to check that they were (roughly) rectangular in distribution, to ensure the relationship was linear rather than curvilinear. Scatterplots were also checked to ensure that the residuals were distributed at roughly equal widths across the graph, in order to ensure that the assumption of homoscedasticity was met. Violations of homoscedasticity were compared with Weighted Least Squares (WLS) Regression versions to check if transformations were necessary (Garson, 2008).

Coding time. Various options for coding time were possible. One was to simply code each session as '1, 2, 3, 4' and so on. However, this does not reflect the varying nature of time in the current sample. As sessions were twice-weekly for the first four weeks, and once a week thereafter, the second option was to code time as '0.5, 1, 1.5, 2' and so on, and then to code the two-month follow-up session a higher number yet again. A final option was to record the exact dates each person came in for each session, and work out the number of days since intake so that a cumulative and exact scale is established. This would reflect the fact that clients missed some

sessions and often sessions were spaced further apart than anticipated. This was trialled, however the session dates varied so widely that it left too much unexplained variance for the analyses to provide a clear outcome of effects of the independent variables. Therefore, sessions were coded as per the second option; in increments of 0.5 for the first four weeks and then increments of 1.0 thereafter, with the two-month follow-up being coded as session 24.

HAACS management. Item 4 of the HAACS had a large amount of missing data (48.5% of Item 4 was missing), due to “not applicable” ratings, as it assessed processing of homework non-completion only. Options for handling the missing data included replacing “not applicable” with average scores or expectation maximization methods; assigning a zero score; replacing with a standard score; or giving full marks. None of these options were desirable as they gave a false representation of Item 4, or they unfairly awarded marks. Thus, Item 4 was removed from the analyses for all participants. While not optimal, it was deemed to be the most appropriate solution given these considerations, and given Munro’s (2006) finding that this item performed poorly in item-total correlations. It was ensured (see later analyses) that the reliability of the HAACS scale remained high before proceeding further.

As seen in the results, there was no consistent pattern over time in therapists’ competence. This was problematic because it would be difficult to extend the data beyond session 10 with any sound statistical justification. Thus, the HAACS scores needed to be treated as a Level 2 variable. Options for converting the HAACS scores to Level 2 (time-invariant) were several-fold. One option was to take therapists’ initial scores as indicators of their competence over time. The rationale would be that this was when therapists were likely to be most competent, having just completed training and reaching 100% adherence. Additionally, it was likely that therapists’ explicit verbalisation of the homework protocol would decrease over time, due to clients becoming more proficient in moving through the steps themselves. A second option was to take therapists’ average HAACS scores over time as their overall competence score. However, neither of these options were feasible, given that the descriptive graphs showed no clear pattern over time, and there were some large fluctuations in scores at individual time points. Thus, a decision was made to rank therapists in order of overall competence as compared with other therapists, the process for which was as follows.

Three groups were compiled at each time point (from sessions two to 10); one group containing the lowest of each therapists' scores out of all their clients, one group containing the highest, and one group in the middle. Within each of these three groups, therapists were rank-ordered in relation to the other therapists, and Spearman's rank-order correlations were then calculated between each of the three groups (Spearman, 1987). This was to determine whether therapists' relative ranks remained consistent over time, given that their raw data within each therapist did not.

HRS-II management. Client ratings of their own homework completion were the focus of this thesis, because these reports provide the most personal account of their experience. However, therapist ratings were still included in the preliminary analyses to provide a more comprehensive picture of homework factors.

A decision needed to be made about whether to use all the HRS-II items in the analyses, or to use only some items or total scores, or whether to group the HRS-II items into the factors described by Bjornholdt (2006). In order to make this decision, several analyses were considered. The residual plots were examined to check for items that violated assumptions of normality, linearity, or homoscedasticity. Correlation analyses were checked for strong relationships with the BDI-II, and a Principal Components Analysis (PCA) was run to check the match with Bjornholdt's (2006) report and ascertain its suitability for use with this data set. PCA is one of the main types of exploratory factor analyses, suitable for use with data which has few pre-existing preconceptions associated with it, and is commonly used for new research investigations (Giles, 2002; Pallant, 2007). Based on these analyses, the factors described in Bjornholdt (2006) were used in the later multilevel analysis.

ASQ management. The ASQ variables CoPos (optimism) and CoNeg (pessimism) were available at five time points (intake, sessions five, eight, 20, and two-month follow-up). There were two options for managing this data. One was to leave it as it was, which would mean that sessions where the ASQ was not completed would be excluded from analyses, meaning 16 time points would not be included. The other option was to employ linear interpolation to extend the ASQ scores over all time points in-between measurements (Roth, 1994). This option was chosen to enable maximum use of the other variables in the study.

Data shape. Data transformations needed to be considered. That is, was the outcome variable (BDI-II) actually curvilinear in nature, rather than linear as the analyses assume? The primary way to ascertain this according to Singer and Willett

(2003) is to examine the descriptive graphs of individuals' BDI-II scores over time; these are displayed in the results section. Given that there are 28 individuals in the current study, it was unlikely that all individuals would display the same functional form, and indeed it appeared from the graphs that this was the case. In addition, there was no compelling evidence for an overall curvilinear trend. A curve-fit analysis performed in *SPSS* indicated that there was minimal difference between a linear, quadratic, or cubic model fit, indicating that any of the three may be appropriate to use. Additionally, the residual scatterplot (presented in results) showed random, even scatter, indicative of linearity. Thus, as Singer and Willett (2003) state, it was simpler to adopt a common form across everyone, and the linear form meant that results interpretation in the absence of transformations was much clearer.

Reliability Checks

Intraclass Correlation Coefficients (ICCs). ICCs were performed between the different versions of a) the HRS-II, and b) the HAACS. The choice to use ICCs instead of correlations or percentage agreements was guided by Cicchetti (1994). Correlations yield a high correlation coefficient when two raters show consistent patterns between their scores, whether these scores are consistently agreeing or disagreeing. ICCs, on the other hand, require scores to be consistent *and in agreement* before a high ICC will result. ICCs are preferable to percentage agreement because ICCs give an indication of reliability and significance.

Alpha. Reliability analyses were carried out on the BDI-II, the ASQ, the HRS-II (client and therapist versions), and the HAACS. Reliability analyses for each measure were performed at each time point. The HRS-II and the HAACS are both relatively new measures and it was therefore especially important to check their reliability. The HAACS scores from the two raters were averaged at the individual item level prior to performing this analysis, so that the reliability analysis was performed on the exact data that was going to be used in future analyses.

Preliminary Information for Model Building

Graphs. Descriptive graphs were produced for each of the variables used in the study as per Singer and Willett's (2003) recommendations. The purpose of presenting graphical information was to observe trends in the data, and gain an overall picture of what it was showing in order to compare later analyses to. It also enabled an idea of the shape of the data (linear or curvilinear).

Graphs mainly included line graphs of the raw data, however for the ASQ variables no clear trend was observed, so ordinary least squares (OLS) regression lines were superimposed. For the HAACS data, line graphs of raw competence data as well as OLS graphs were obtained for each therapist in order to observe whether their competence remained stable over time, which aided in determining whether the HAACS data could be treated as a Level 1 or a Level 2 variable.

Regressions. Regression analyses were performed with a) BDI-II scores over time, b) HRS-II scores (individual items, total scores, and factor scores) over time, and c) ASQ scores (optimism and pessimism) over time. Each regression produced an intercept (constant) and slope (Beta) for each client, which were used for future correlations. This allowed correlations to take the longitudinal nature of variables into account.

Correlations of potential predictors. Correlations were performed between the BDI-II intercepts and slopes and the HRS-II raw data as well as the HRS-II intercepts and slopes (the HRS-II data included individual items and total scores as rated by clients and therapists, and HRS-II factors as rated by clients). The purpose of performing correlations using both HRS-II raw data and HRS-II intercepts and slopes was to compare relationships with the BDI-II when the HRS-II was conceptualised as both time invariant and time variant. Correlations were run between the BDI-II intercepts and slopes and the ASQ raw scores and intercepts and slopes (of CoPos (optimism) and CoNeg (pessimism) and their subscales). Correlations were also run between the HRS-II factors and the ASQ optimism and pessimism variables. These correlations highlighted significant relationships to give an indication of which variables would be important to add when building the multilevel model.

Multilevel Model Building

Multilevel analysis in SPSS uses the MIXED procedure for maximum likelihood estimation to essentially carry out a series of regressions upon regressions (Singer & Willett, 2003; SPSS Inc., 2002). At Level 1, change within persons across time is specified, so there are regression equations that apply to each individual in the data set at this level. At Level 2, differences in intercepts and change trajectories between persons are examined, and so there are group-level regression equations that are formed. Finally, there is an overarching regression equation that combines the two levels (Cohen, Cohen, West, & Aiken, 2003).

Each of these regression equations contain a *fixed* portion of the model, which describe true individual trajectories over time at Level 1 as well as group averages at Level 2. In addition to this, each regression also contains a *random* component, which describes the error associated with the equation; that is, the variance that is still left unexplained. This is the difference between the true change trajectory of a person, and what trajectory is actually observed. These random components can be reduced by adding further predictors into later models which explain systematic error. Variables that are associated with between person differences will reduce variance at Level 2, while variables that are associated with within person change will reduce variance at Level 1 (Singer & Willett, 2003). A portion of the random component will also be caused by measurement and random error as with any study.

The syntax used to create these models is displayed in Appendix I. Decisions about which variables to enter and when were guided primarily by theory, however the general analytic process is also described thoroughly in Singer and Willett (2003), as well as by several others (e.g. Cohen et al., 2003; Hedeker, 2004; Peugh & Enders, 2005).

Model A. “Model A”, the “unconditional means model” (Singer & Willett, 2003), was specified first, where BDI-II raw scores were entered into the model alone. This base model showed whether or not BDI-II scores at the beginning of therapy were significantly different from zero on average (fixed effects), and whether there was enough variance at Levels 1 (within persons; across time) and 2 (between persons) to proceed with further models. If an outcome variable does not contain enough variation in scores then there is no rationale to add predictor variables in an attempt to explain variance.

Model B. “Model B”, the “unconditional growth model” (Singer & Willett, 2003) was specified next, where ‘time’ was added to Model A in the form of session codes (described earlier). This “Model B” described whether BDI-II scores were still significantly different from zero after time was taken into account (described as ‘fixed effects’ which report both initial status and rate of change averages). This model, like the others, also contained variance components which showed whether or not time explained any variance at Level 1 or 2. A decrease in variance components from Model A to Model B would indicate that ‘time’ is explaining some of the variance in BDI-II scores. Additionally, whether the decrease occurs at Level 1 or Level 2 indicates whether time explains more variance within-persons or between-persons.

Variance components that remain significant following a decrease show that there is still more variance to be explained. Pseudo R-Square statistics were determined by calculating the percentage change between models in terms of the variance components, which resulted in an exact percentage of variance in BDI-II scores that the variable ‘time’ explained (at both Level 1 and Level 2). Goodness-of-fit statistics were also obtained in the output in the form of 1) a Deviance statistic (a -2 Log Likelihood statistic, which is a comparison of the log-likelihood¹ of the current model and a saturated, more general model), 2) the Akaike Information Criterion (AIC; Akaike, 1973) which adjusts the deviance statistic for number of parameters in the model, and 3) the Bayesian Information Criterion (BIC; Schwarz, 1978), which makes adjustments for both the number of parameters in the model, and the sample size (Singer & Willett, 2003).

Model C. Models A and B form the base from which to add predictor variables. The aim of adding predictor variables in subsequent models is to explain some of the remaining variance from Model B. Model C is the appropriate time to introduce the main predictor of interest; in the case of the current study this was homework as rated by clients in the HRS-II. The decision was made to enter factors as per Bjornholdt’s (2006) and Munro’s (2006) theses. This decision was based on theory (e.g. Bjornholdt, 2006) which was accompanied by the PCA performed in this study, and was highlighted by the individual HRS-II items performing weaker than the HRS-II factors in the correlation analyses. The strongest homework predictor (as per the correlation analyses), Factor 1 (“benefits and completion”), was entered as the Model C predictor. The remaining two factors (“costs and completion” and “beliefs”) were also entered separately as alternate versions of Model C, in order to provide as much information with which to proceed as possible. Additionally, a fourth version of Model C was tested in which an interaction between Factors 1 (“benefits and completion”) and 2 (“costs and completion”) was added.

Model D. From this, Model D was built. Model D allowed us to control for attributional style. While it was expected from previous research that pessimism would be the strongest predictor, both pessimism and optimism (the linear interpolation versions of) were entered separately, and the variable that explained the

¹ The log-likelihood is “the logarithm of the joint likelihood of observing all the sample data actually observed” (Singer & Willett, 2003, pp. 116)

most variance was kept as the final “Model D”. Model D demonstrates the effects of homework on depression scores over time after controlling for attributional style. If adding attributional style into Model D has an effect on Model C then it can be said that attributional style moderates the relationship between the homework factor in question and depression as measured by the BDI-II.

Model E / Post hoc. Following the multilevel model building, “post hoc” analyses were run. Control variables (HAACS rankings, gender, age, and depression severity) were added in to a “Model E”. Depression severity was coded according to the Beck et al. (1996) BDI-II manual groupings. Intake BDI-II scores between 0 and 13 were coded as ‘0’ (minimal), scores from 14 to 19 were coded as ‘1’ (mild), scores from 20 to 28 were coded as ‘2’ (moderate) and scores from 29 to 63 were coded as ‘3’ (severe). Client age was also correlated with the variables used in this study and differences in these variables between males and females were compared with multivariate analyses of variance.

Homework Factor 1 (“benefits and completion”) was entered as a Level 2 variable in an alternative “Model C” by using client averages over all sessions, much like previous research has treated homework. The purpose for this was to check that it was not just due to the widely varying nature of homework completion over time that the results seen in this thesis were produced.

Homework Items 1 and 2 (‘quantity’ and ‘quality’ of completion) were correlated with each other, and then multiplied to create an interaction term that was correlated with BDI-II scores. Due to the fact that quantity and quality are the two most basic items important in the investigation of homework completion this interaction was also entered into Model C of another alternative multilevel model to investigate its relationship with BDI-II.

Finally, two new multilevel models were built, with HRS-II Factor 1 (and HRS-II Factor 2 in the second version) entered into Model A, time into Model B, and optimism into Model C. These variables were selected from the significant ASQ - HRS-II correlations, for the purpose of checking whether attributional style was related to clients’ experiences of homework.

CHAPTER 5: RESULTS

Data Management

Assumption Checks

BDI-II scores over time were entered as the dependent variable in a linear regression analysis, and time as the independent variable. The Normal P-P standardised residual plot is presented in Figure 1, and the standardised residual scatterplot in Figure 2.

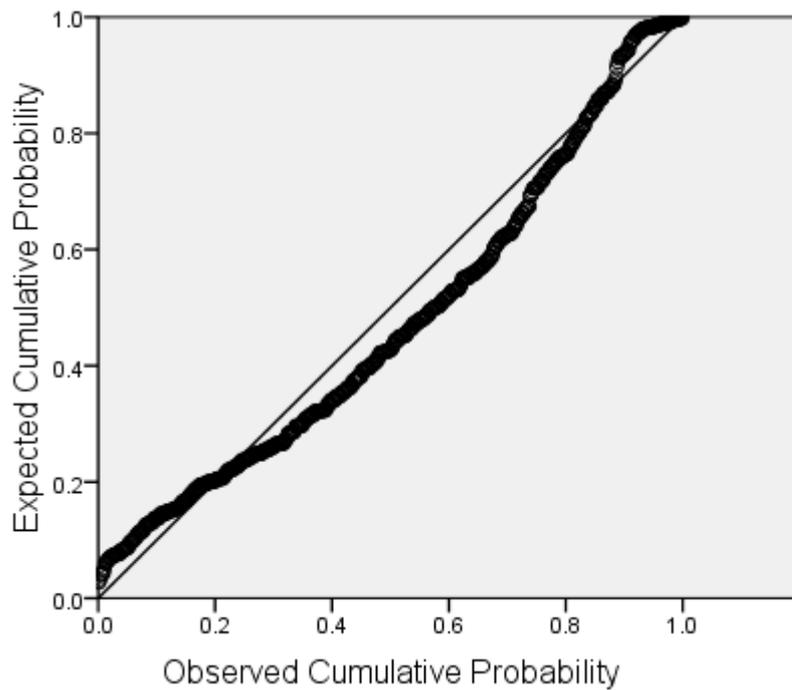


Figure 1. Normal P-P standardised residual plot for BDI-II scores over time

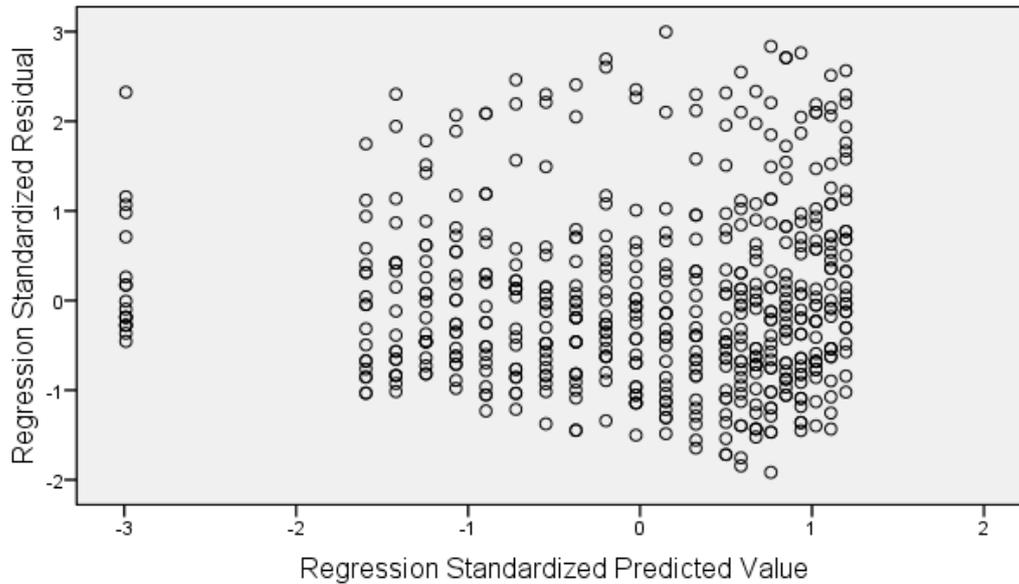


Figure 2. Standardised residual scatterplot for BDI-II scores over time

As seen in Figure 1, the residuals follow a roughly linear diagonal line, indicating only minor departures from normality. The scatterplot in Figure 2 shows a rectangular shape with no curvilinear pattern, which is centred around the middle of the graph, and has an equal width throughout. This allows a conclusion that the assumptions of normality, linearity, and homoscedasticity are adequately met for the BDI-II data.

ASQ scores (pessimism and optimism) were regressed against BDI-II as the dependent variable, as were the individual items of the HRS-II, the total HRS-II scores, and the HAACS scores, to produce a series of residual plots (Appendix J). Visual inspection of the plots shows results that are mostly consistent with that of the BDI-II plots; that is, no obvious departures from normality, linearity, or homoscedasticity that violates the assumptions underlying future analyses. The exceptions to these are the individual HRS-II items of Item 5 (comprehension), Item 6 (rationale), Item 7 (collaboration), Item 8 (specificity, as measured by clients), and Item 9 (match with therapy goals), all of which compose the HRS-II Factor 3 (“beliefs”). These items showed skewed residual scatterplots, violating the assumption of homoscedasticity (the assumption that the variability of each item is the same at all levels of BDI-II scores (Giles, 2002)).

Weighted Least Squares (WLS) Regression analyses provided residual scatterplots after the heteroscedasticity of Factor 3 (“beliefs”) as a whole was taken

into account (Garson, 2008). These are shown in Appendix J (Figures J59 and J60) and demonstrate that compensating for heteroscedasticity in this instance made little difference. Additionally, the error terms were only marginally different (unweighted: intercept error = 2.68; slope error = 0.17; weighted: intercept error = 2.07; slope error = 0.14). These findings did not warrant transforming Factor 3 and it was left in its raw form.

HAACS Management

Descriptive graphs were compiled for the HAACS data in the form of both line graphs and Ordinary Least Squares (OLS) regression graphs. Because the graphs are of individual therapists and are numerous, these are presented in Appendix K for Therapists 2 to 7. However, Therapist 1's graphs are presented below as an example in Figures 3 and 4.

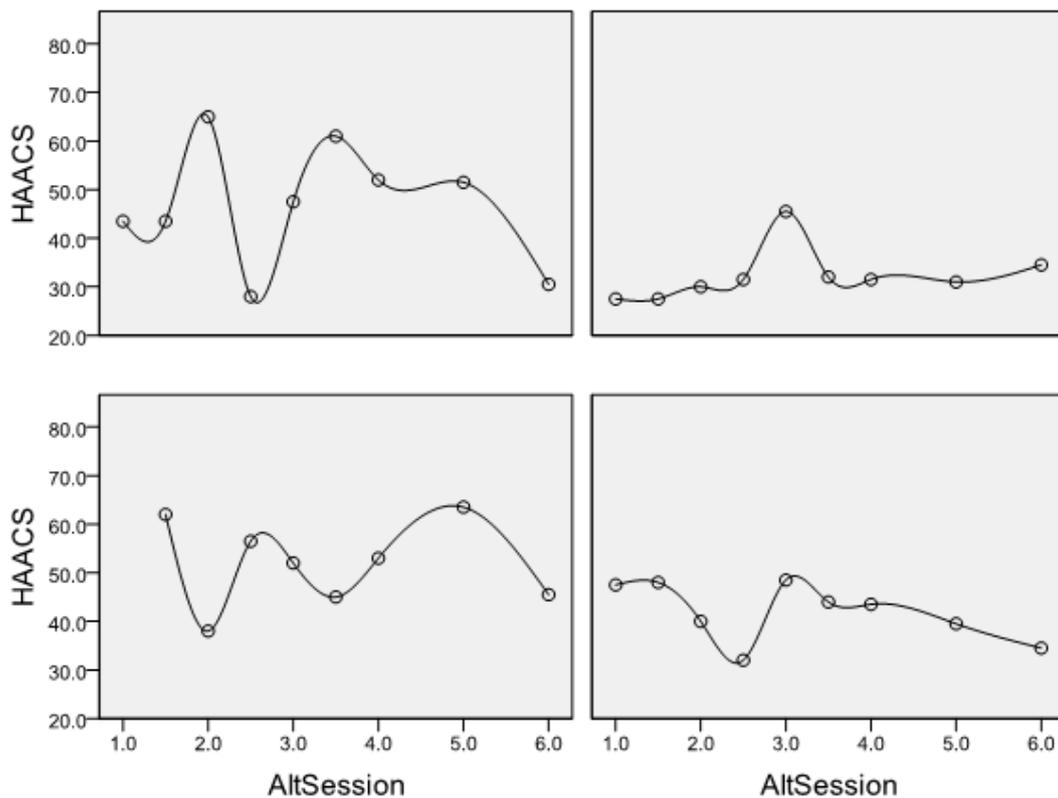


Figure 3. HAACS (homework competence) ratings of Therapist 1 over sessions two to 10 (indicated by 'AltSession') for each of their four clients (client numbers are not marked to ensure anonymity among therapists)

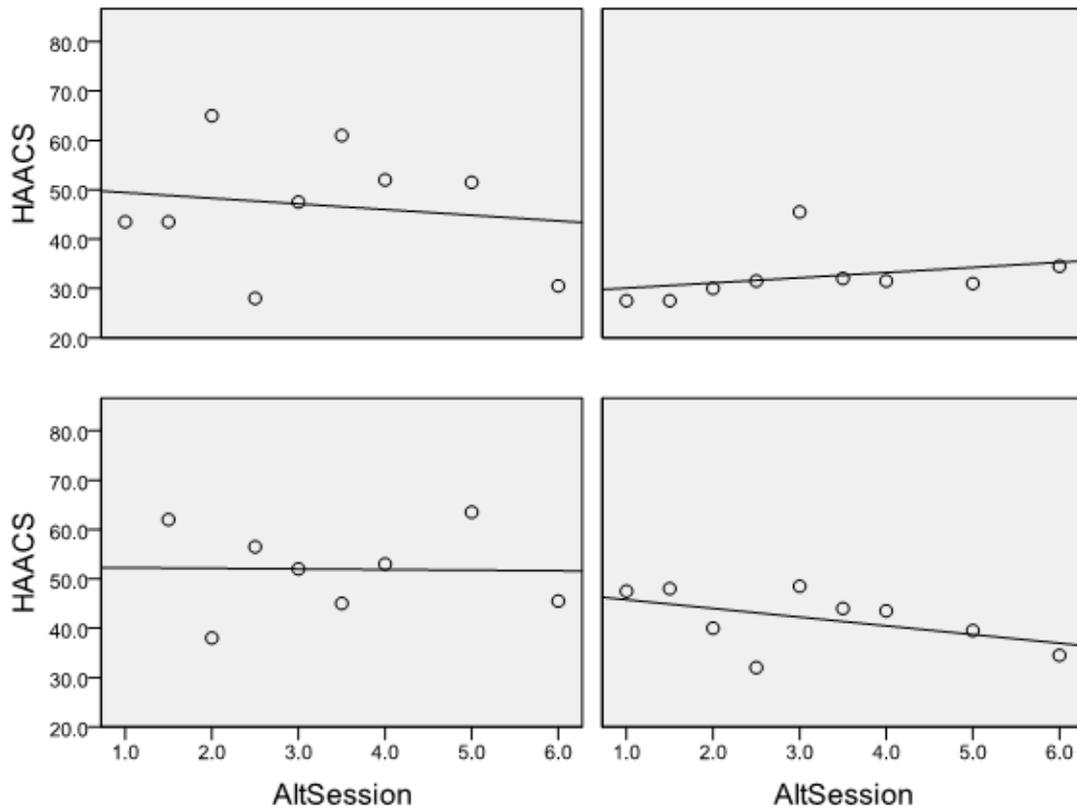


Figure 4. Ordinary Least Squares Regression (OLS) lines of HAACS (homework competence) ratings of Therapist 1 over sessions two to 10 (indicated by ‘AltSession’) for each of their four clients (client numbers are not marked to ensure anonymity among therapists)

The HAACS graphs show that there is no consistent pattern over time in therapists’ competence.

The results of the Spearman’s rank-order correlations are presented for groups 1 (lowest scores for each therapist), 2 (middle scores) and 3 (highest scores) in Tables 6, 7, and 8, respectively.

Table 6

Spearman's rank-order correlation coefficients for the seven therapists' HAACS rankings (Group 1: Each therapists' lowest score)

	S2	S3	S4	S5	S6	S7	S8	S9	S10
S2	-	0.79*	0.61	0.79*	0.79*	0.96*	0.71	0.64	0.79*
S3		-	0.61	0.36	0.50	0.75	0.36	0.46	0.50
S4			-	0.36	0.64	0.64	0.71	0.89*	0.86
S5				-	0.71	0.71	0.50	0.61	0.71
S6					-	0.89*	0.75	0.86*	0.71
S7						-	0.79*	0.71	0.75
S8							-	0.71	0.82*
S9								-	0.86*
S10									-

Note. * $p < .05$ (indicated in bold). Sessions are referred to as 'S2', 'S3', and so on.

Table 7

Spearman's rank-order correlation coefficients for the seven therapists' HAACS rankings (Group 2: Each therapists' middle score)

	S2	S3	S4	S5	S6	S7	S8	S9	S10
S2	-	0.29	0.50	0.61	0.64	0.68	0.64	0.18	0.46
S3		-	0.57	0.89*	0.64	0.61	0.54	0.89*	0.71
S4			-	0.64	0.89*	0.29	0.96*	0.75	0.93*
S5				-	0.68	0.71	0.68	0.71	0.75
S6					-	0.61	0.93*	0.75	0.82*
S7						-	0.46	0.36	0.32
S8							-	0.64	0.86*
S9								-	0.86*
S10									-

Note. * $p < .05$ (indicated in bold). Sessions are referred to as 'S2', 'S3', and so on.

Table 8

Spearman's rank-order correlation coefficients for the seven therapists' HAACS rankings (Group 3: Each therapists' highest score)

	S2	S3	S4	S5	S6	S7	S8	S9	S10
S2	-	0.58	0.60	0.89*	0.83*	1.00*	1.00*	0.66	1.00*
S3		-	0.81*	0.58	0.41	0.20	0.58	0.46	0.74
S4			-	0.83*	0.60	0.40	0.60	0.71	1.00*
S5				-	0.83*	0.80	0.89*	0.77	1.00*
S6					-	1.00*	0.83*	0.94*	1.00*
S7						-	1.00*	1.00*	1.00*
S8							-	0.66	1.00*
S9								-	1.00*
S10									-

Note. * $p < .05$ (indicated in bold). Sessions are referred to as 'S2', 'S3', and so on.

The three tables presented above indicate high correlations between therapists' rankings over time, a large proportion of which are significant. The average correlation coefficient across all three groups and all eight time points was $r = .68$. This, along with an examination of the raw data, indicated that therapists' relative rank orders do not change significantly across the eight time points. Thus it was determined that, although clearly not the optimal solution, it was adequate and appropriate to assign each therapist a rank from 1 (lowest) to 7 (highest) and use this in place of raw data for any further analyses.

HRS-II Management

A Principal Components Analysis (PCA) was carried out with the 12 items of the HRS-II (client version) using direct oblimin rotation. The Kaiser-Meyer-Olkin value was .81, which is above the recommended value of .6 (Kaiser 1970, 1974). Bartlett's Test of Sphericity (Bartlett, 1954) was significant, both values of which indicate that a PCA was suitable for use with the current data. As per Munro's (2006) and Bjornholdt's (2006) theses, data was forced into three factors, which was additionally deemed appropriate as there were only three eigenvalues above 1.0. The three factors collectively explained 66.57% of the variance, and the pattern matrix of the three factors is presented in Table 9.

Table 9
*Pattern Matrix of the Principal Components Analysis
 for the HRS-II*

Item	Component		
	<u>1</u>	<u>2</u>	<u>3</u>
11 - Mastery	0.89		
12 - Progress	0.89		
10 - Pleasure	0.77		
9 - Match Goals	0.50		0.48
4 - Obstacles		0.84	
3 - Difficulty		0.67	
1 - Quantity	0.41	0.59	
2- Quality	0.52	0.52	
5- Comprehension			0.91
8 - Specificity			0.88
6 - Rationale			0.85
7 - Collaboration			0.34

The factor structure of the current data set closely matches that of Bjornholdt (2006).

Data Shape

The BDI-II scores are presented in Figures 5 and 6, first as graphs of individual clients, and then as a group graph with an average trend line.

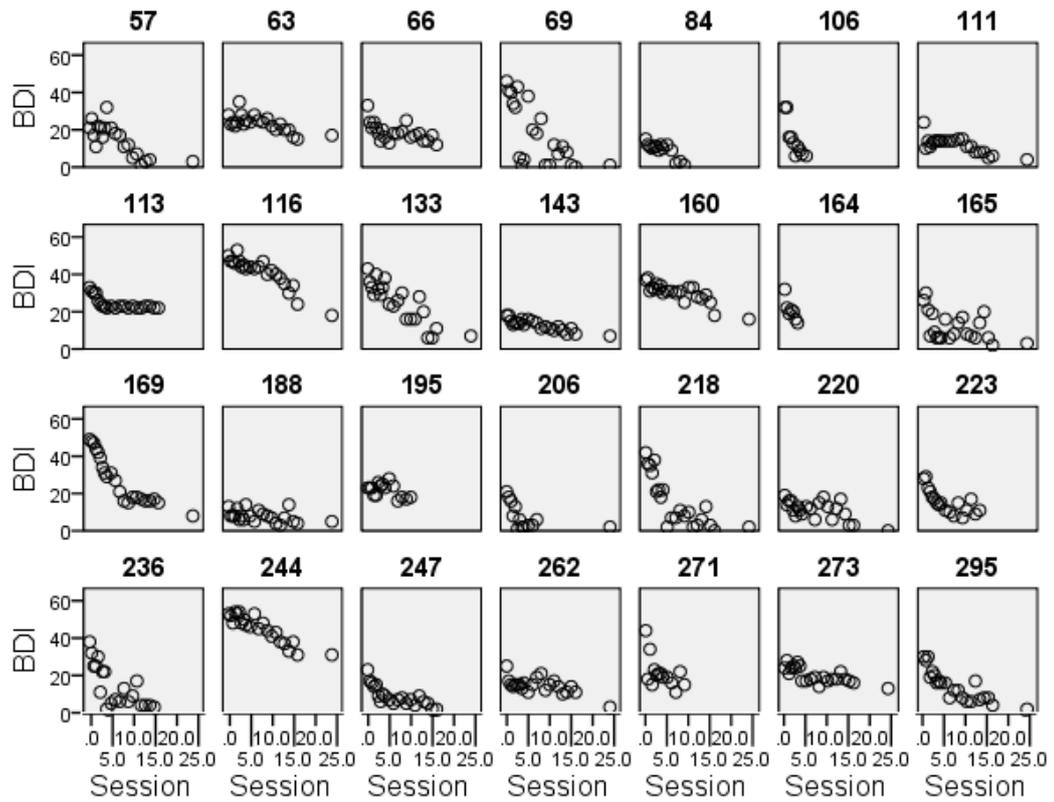


Figure 5. Individuals' BDI-II scores over time from intake to two-month follow-up (each client represented by a separate box and indicated numerically in bold at the top of each box)

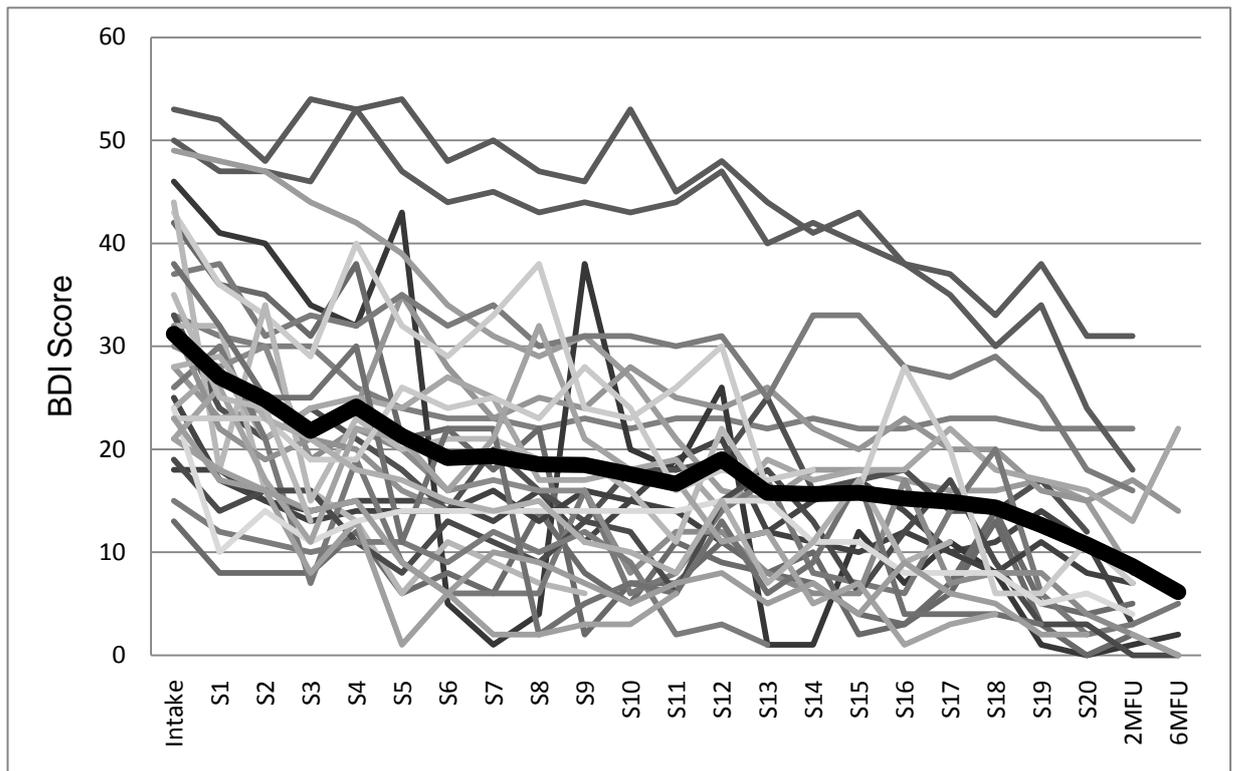


Figure 6. Line graph showing all 28 clients' BDI-II scores from intake through to six-month follow-up. The bold line indicates the average trend

Overall, clients showed a decline in depression severity as measured by the BDI-II. The graphs do not indicate any strong curvilinear trends. There is large variability in both clients' initial statuses, and in their rates of change, demonstrating the importance of incorporating a multilevel model method of analysis rather than relying on group trends.

Reliability Checks

Intraclass Correlation Coefficients (ICCs)

A series of ICCs were carried out with the HRS-II, the results of which are shown below in Tables 10 (client and therapist ICCs), and 11 (client and therapist ratings compared with the two independent raters). The scale used for the description is taken from Montgomery, Graham, Evans, and Fahey (2002), although the authors state that no universal guidelines can be applied to ICCs. The scale includes: <0.20 'slight agreement'; 0.21-0.40 'fair agreement'; 0.41-0.60 'moderate agreement'; 0.61-0.80 'substantial agreement'; >0.80 'almost perfect agreement'.

Table 10

HRS-II ICC scores between client and therapist ratings

HRS-II	ICC	Description
Item 1	0.62	substantial
Item2	0.48	moderate
Item3	0.27	fair
Item4	0.43	moderate
Item 5	0.27	fair
Item 6	0.30	fair
Item 7	0.41	fair
Item 8	0.21	fair
Item 9	0.26	fair
Item 10	0.56	moderate
Item 11	0.45	moderate
Item 12	0.39	fair

Note. The ICCs reported are the single measures.

Table 11

HRS-II ICC scores between the clients and therapists and the two independent raters

HRS-II	Client	Therapist	Client	Therapist
	<u>Rater 1</u>		<u>Rater 2</u>	
Item 1	0.40	0.61	0.29	0.58
Item2	0.34	0.59	0.29	0.40
Item3	0.05	-	0.08	0.05
Item4	0.06	-	0.04	-
Item 5	0.14	0.24	0.05	0.38
Item 6	0.21	0.34	0.06	0.03
Item 7	0.27	0.14	0.15	0.19
Item 8	-	0.10	-	0.18
Item 9	0.04	-	-	-
Item 10	0.25	0.39	0.20	0.35
Item 11	0.26	0.50	0.10	0.43
Item 12	0.20	0.25	0.15	0.13

Note. The ICCs reported are the single measures.

A dash indicates a negative ICC.

As seen in Table 10, the clients and therapists share on average ‘fair’ and ‘moderate’ agreement in terms of the HRS-II items. This means that on average, their ICCs are between 0.21 and 0.60, meaning that the discrepancies are not likely to be so major as to make any of the versions irrelevant. Table 11 shows that the relationship between the ratings of both clients and independent raters, and therapists and independent raters, is on average ‘slight’ or ‘fair’. That is, the independent raters’ scores do not agree with that of the clients and therapists as much as the clients and therapists agree with each other.

ICCs were also carried out between the two independent raters for the HAACS scores. When comparing total HAACS scores, the agreement was $r = .91$, which is ‘almost perfect’ according to Montgomery et al. (2002).

Alpha

A series of reliability analyses were carried out. The results of all of these are displayed in Appendix L. The first concerned the BDI-II, and alpha values can be seen in Table L1. Consistent with previous research, the alphas are all strong, in the $\alpha = .90$ or above range.

The second reliability analysis was with the HRS-II. As seen in Table L2, the alphas were strong across time, ranging from $\alpha = .65$ to $\alpha = .92$, indicating that the 12 items in the HRS-II hang together sufficiently to be measuring the same concept.

Reliability analyses were also conducted for the ASQ CoNeg (pessimism) and CoPos (optimism) constructs, as well as the Internal, Stable and Global subscales that make up each construct. As seen in Table L3, the alpha values for the pessimism construct were all adequate, above $\alpha = .62$, although they did decrease near the end of therapy. The alpha values for the optimism construct were not as strong as those for the pessimism construct, but they did remain above $\alpha = .54$, and they increased near the end of therapy. The subscale alphas were more variable and less reliable; they ranged from $\alpha = .23$ (CoNeg Internal subscale) to $\alpha = .88$ (CoNeg Global subscale).

Reliability analyses were conducted for the HAACS scores, using the average scores of the two raters. The results of these analyses can be seen in Table L4. As seen in Table L4, the reliability of the HAACS scale (minus Item 4) is good, at above $\alpha = .70$ at all time points. This indicates that the scale is a reliable one in that the items are likely to be all measuring the same construct. Thus it indicates that it is appropriate to proceed with total HAACS scores as a measure of competence for future analyses (as the scale is intended to be used), rather than necessitating analyses of individual items.

Preliminary Information for Model Building

Graphs

Descriptive graphs are presented for the HRS-II and ASQ data (graphs for the HAACS and BDI-II data were presented earlier under the context of data management). OLS regression lines were superimposed on the ASQ scatterplots (optimism and pessimism; Figures 7 and 8 respectively).

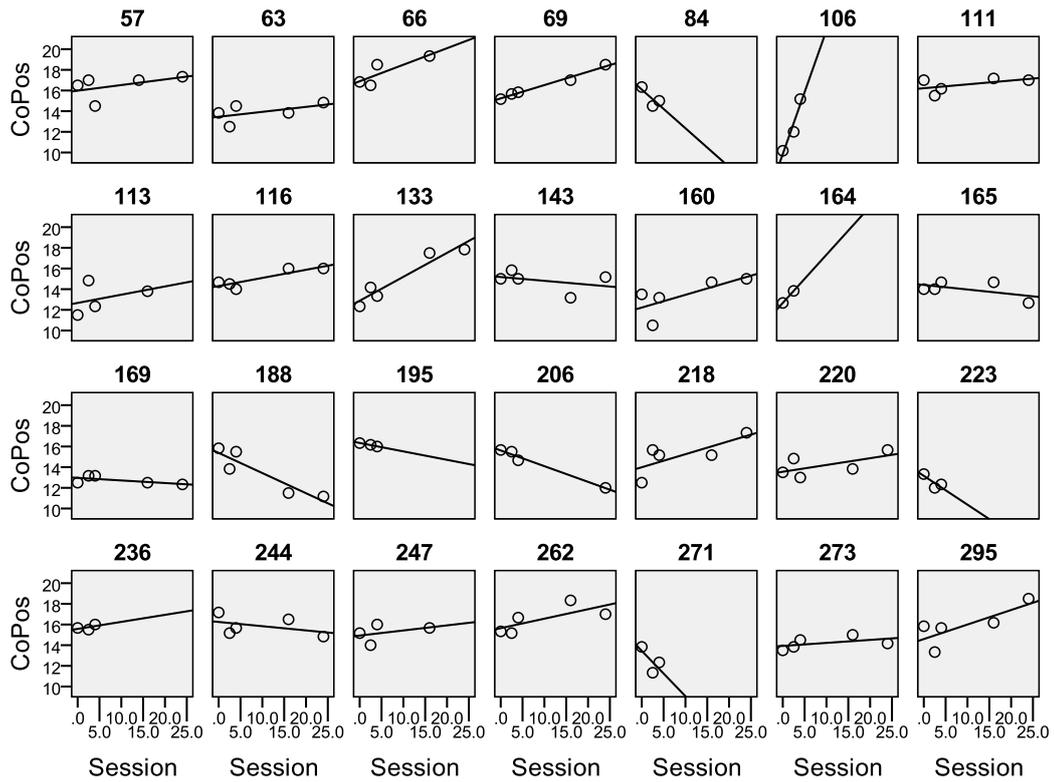


Figure 7. OLS trajectories of the optimism (CoPos) data over five timepoints (intake, sessions five, eight, 20, and two-month follow-up). Each box represents one client, the code for which is written in bold above each box

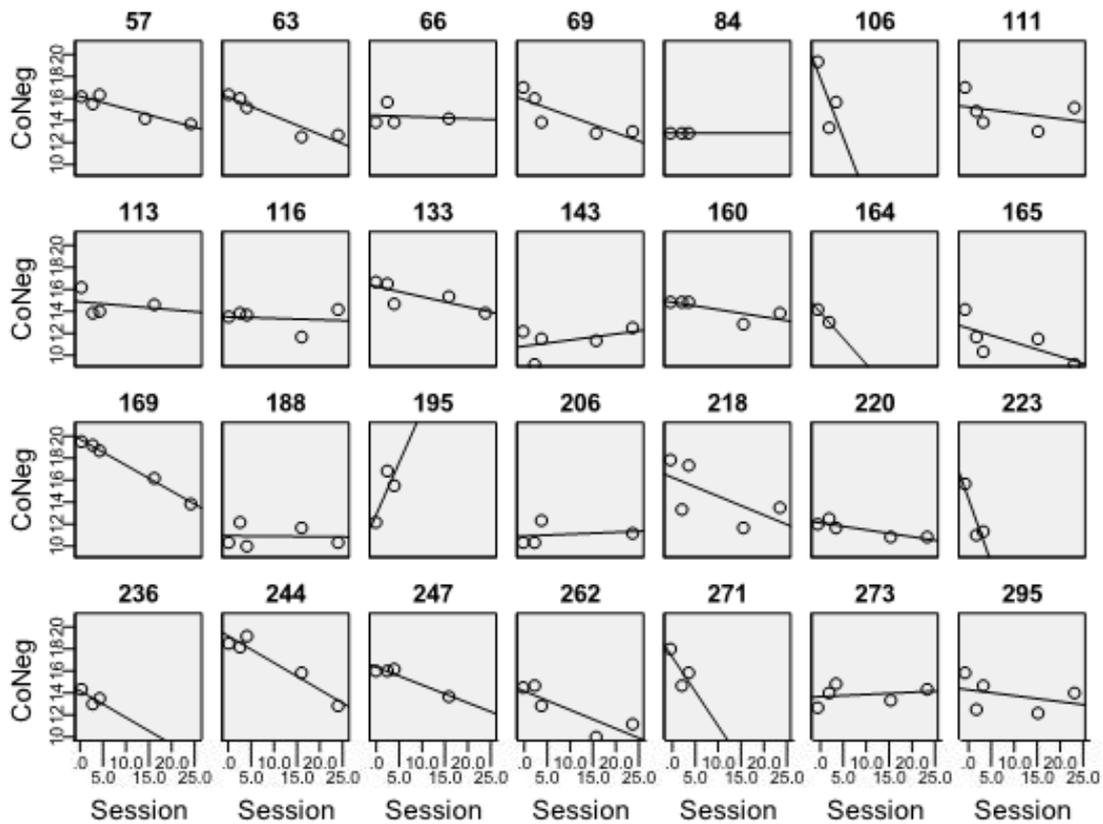


Figure 8. OLS trajectories of the pessimism (CoNeg) data over five timepoints (intake, sessions five, eight, 20, and two-month follow-up). Each box represents one client, the code for which is written in bold above each box

Figure 7 shows that the majority of clients experienced an increase in optimism scores over the course of therapy, although nine out of the 28 (32%) produced a decrease. Figure 8 shows that the majority of clients experienced a decrease in pessimism scores over the course of therapy, with only four out of the 28 clients (14%) producing an increase.

Line graphs were plotted for HRS-II scores over time for both the clients (Figure 9) and therapists (Figure 10).

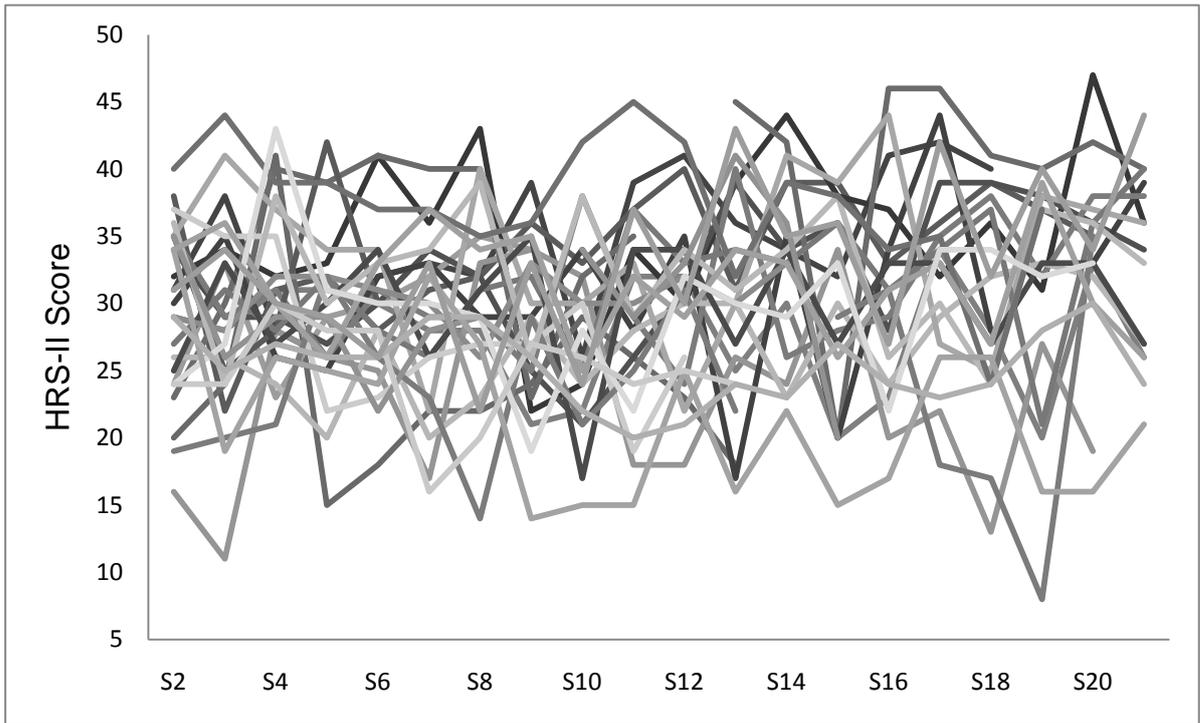


Figure 9. HRS-II client ratings from sessions two to two-month follow-up for all clients

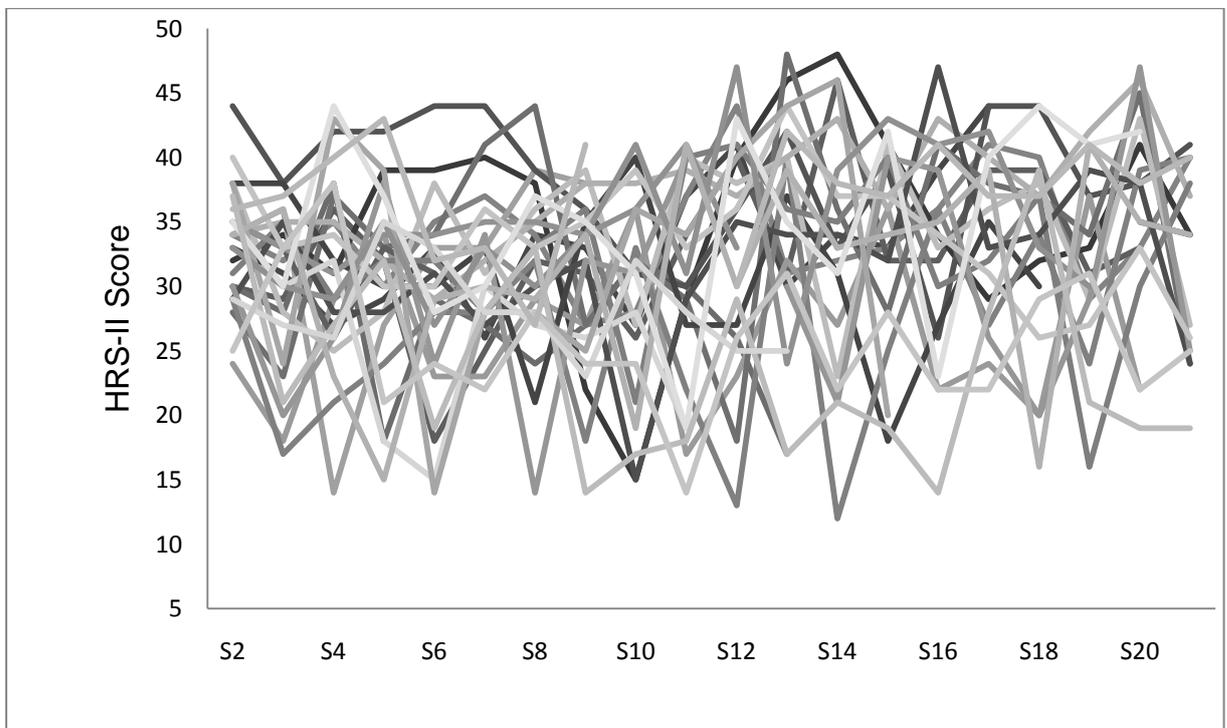


Figure 10. HRS-II therapist ratings from sessions two to two-month follow-up for all clients

As seen in Figures 9 and 10, the HRS-II data does not display clear trends across time, as rated by both clients and therapists. Additionally, rather than scores remaining constant, it is apparent that many clients' scores fluctuate randomly across time.

Correlations

All correlations that follow are two-tailed. The BDI-II intercept and slope for each individual was correlated with the HRS-II individual items and total scores for each individual at each time point, after Items 3 (difficulty) and 4 (obstacles) were reverse scored. See Table 12 for the correlations.

Table 12

BDI-II intercept/slope correlations with raw HRS-II items over all time points, as rated by clients and therapists

HRS-II Item	BDI-II Intercept (α)	BDI-II Slope (β)	BDI-II Intercept (α)	BDI-II Slope (β)
	<u>Client ratings</u>		<u>Therapist ratings</u>	
1. Quantity	0.06	-0.06	0.00	-0.02
2. Quality	0.09*	-0.08	0.02	0.03
3. Difficulty	-0.19**	0.01	-0.14**	0.06
4. Obstacles	-0.03	-0.07	0.01	-0.04
5. Comprehension	0.18**	-0.11*	0.05	0.01
6. Rationale	0.23**	-0.05	0.10*	-0.04
7. Collaboration	0.15**	-0.08	0.02	0.01
8. Specificity	0.23**	-0.11*	0.13**	-0.18**
9. Match with goals	0.23**	-0.08	0.15**	-0.06
10. Pleasure	0.01	-0.11*	0.04	-0.04
11. Mastery	-0.02	-0.04	0.02	-0.08
12. Progress	0.03	-0.01	0.02	-0.06
HRS-II Total	0.12**	-0.11*	0.04	-0.05

Note. * $p < .05$; ** $p < .01$. Significant correlations indicated in bold. See Appendix H for HRS-II items.

Table 12 shows that more HRS-II items correlate with the BDI-II intercept (clients' initial BDI-II status) than with the BDI-II slope (clients' rate of change). Client ratings of the HRS-II yield more significant correlations with the BDI-II slope

than therapist ratings. Items with the strongest correlations with BDI-II slope are comprehension, specificity, and pleasure, along with the HRS-II total score.

BDI-II intercepts and slopes were also correlated with the intercepts and slopes of HRS-II individual items and total scores (rather than raw data at each time point). The findings are presented in Table 13.

Table 13

BDI-II intercept/slope correlations with HRS-II intercepts/slopes

HRS-II Item	Client ratings		Therapist ratings	
	BDI-II Intercept (α)	BDI-II Slope (β)	BDI-II Intercept (α)	BDI-II Slope (β)
1. Quantity α	-0.05	-0.20	-0.01	0.06
Quantity β	0.07	0.30	0.08	-0.08
2. Quality α	-0.03	0.24	-0.06	-0.14
Quality β	0.24	-0.66**	0.06	0.50**
3. Difficulty α	-0.26	0.01	-0.14	-0.16
Difficulty β	-0.00	-0.57**	-0.06	0.47*
4. Obstacles α	-0.16	-0.11	0.04	0.04
Obstacles β	0.09	-0.20	0.04	0.04
5. Comprehension α	0.23	0.08	0.16	-0.65**
Comprehension β	0.15	-0.68**	-0.06	0.76**
6. Rationale α	0.27	-0.11	0.17	-0.01
Rationale β	0.00	0.33	0.02	-0.39*
7. Collaboration α	0.19	-0.20	0.08	0.53**
Collaboration β	-0.07	0.44*	-0.02	-0.87**
8. Specificity α	0.28	0.06	0.26	-0.28
Specificity β	-0.02	0.12	0.00	-0.33
9. Match with goals α	0.29	0.21	0.12	0.29
Match with goals β	0.05	-0.79**	0.08	-0.84**
10. Pleasure α	-0.02	0.24	0.01	0.17
Pleasure β	0.08	-0.65**	0.08	-0.36
11. Mastery α	-0.03	0.15	0.05	-0.19
Mastery β	0.01	-0.62**	0.01	-0.06
12. Progress α	0.04	0.28	-0.09	0.22
Progress β	0.04	-0.78**	0.17	-0.82**
HRS-II Total α	0.10	0.11	0.07	0.06
HRS-II Total β	0.11	-0.78**	0.01	-0.15

Note. * $p < .05$; ** $p < .01$. Significant correlations indicated in bold. See Appendix H for items; ' α ' refers to the intercepts; ' β ' refers to the slopes.

Table 13 shows that once the HRS-II is conceptualised as time variant (in the form of intercepts and slopes), the correlations with the BDI-II intercept become non-significant. The correlations between the HRS-II and the BDI-II slope increase markedly. Most notably, no client HRS-II intercepts correlate with the BDI-II slope; only HRS-II slopes yield significant relationships, reflecting the time-varying nature of homework.

BDI-II intercepts and slopes were correlated with the intercepts and slopes of the three HRS-II factors as conceptualised by Bjornholdt (2006) (and as confirmed in the earlier PCA). An interaction between Factor 1 and Factor 2 was also included. The correlations are presented in Table 14.

Table 14

BDI-II intercept/slope correlations with the HRS-II factors' intercepts/slopes over time

	BDI-II α	BDI-II β	F1 α	F1 β	F2 α	F2 β	F3 α	F3 β	F1F2 α	F1F2 β
BDI-II α	-	-0.27	-0.02	0.14	-0.20	0.13	0.34	0.02	-0.12	0.19
BDI-II β		-	0.20	-0.79**	-0.06	-0.19	0.00	-0.11	0.17	-0.76
F1 α			-	-0.35	0.39*	-0.70	0.61**	0.12	0.89**	-0.30
F1 β				-	-0.00	0.11	-0.04	0.02	-0.33	0.85**
F2 α					-	-0.50**	0.15	-0.00	0.72**	-0.23
F2 β						-	-0.15	0.56**	-0.29	0.60**
F3 α							-	-0.33	0.55**	-0.12
F3 β								-	-0.00	0.35
F1F2 α									-	-0.39*
F1F2 β										-

Note. * $p < .05$; ** $p < .01$. Significant correlations indicated in bold. "F1" - "F3" refer to factors 1 - 3 (1: "benefits and completion"; 2: "costs and completion"; 3: "beliefs"). The ' α ' and ' β ' refer to the variables' intercept and slope, respectively. F1F2 refers to the Factor 1 – Factor 2 interaction.

The primary relationships of interest in Table 14 are the correlations between the BDI-II intercepts and slopes and those of the HRS-II factors. Only one significant relationship is apparent amongst these: The slope of Factor 1 (“benefits and completion”) correlates significantly with BDI-II change over time.

BDI-II intercepts and slopes were also correlated with raw ASQ scores (optimism and pessimism; indicated in italics in Table 15), and with ASQ (optimism and pessimism) intercepts and slopes. The results are shown in Table 15.

Table 15

BDI-II intercept/slope correlations with ASQ totals over all time points

	BDI-II Intercept (α)	BDI-II Slope (β)
<i>Optimism (raw)</i>	-0.04	0.19*
Optimism intercept (α)	-0.26	0.58**
Optimism slope (β)	0.19	-0.71**
<i>Pessimism (raw)</i>	0.50**	-0.32**
Pessimism intercept (α)	0.61**	-0.44*
Pessimism slope (β)	-0.09	0.57**

Note. * $p < .05$; ** $p < .01$. Significant correlations indicated in bold.

Table 15 shows that only the pessimism variable shared significant correlations with the BDI-II intercept (in particular, the raw pessimism scores and the pessimism intercepts). The lack of BDI-II intercept correlations with the pessimism slope suggests that initial BDI-II scores do not predict change in pessimism over time.

Both optimism and pessimism yielded significant correlations with the BDI-II slope, demonstrating that attributional style is an important consideration when measuring BDI-II change over time. The positive correlation of the BDI-II slope with raw optimism scores and optimism intercept indicates that the higher a persons' initial optimism, the faster their depression is likely to decrease. The negative correlation of BDI-II slope with optimism slope indicates that as BDI-II scores decrease, optimism scores increase over time. The negative correlation of BDI-II slope with pessimism raw scores and intercept indicate that the higher a persons' initial pessimism level is, the slower their depression level (BDI-II score) is likely to decrease. The positive correlation of BDI-II slope with pessimism slope indicates that as BDI-II score decreases over time, so do pessimism scores.

Finally, ASQ intercepts and slopes were correlated with the HRS-II factor intercepts and slopes, the results of which are presented in Table 16.

Table 16

ASQ intercept/slope correlations with the HRS-II factors' intercepts/slopes over time

	Optimism Intercept α	Optimism Slope β	Pessimism Intercept α	Pessimism Slope β
Factor1 α	0.42*	-0.13	-0.15	0.20
Factor1 β	-0.49**	0.62**	0.17	-0.37
Factor2 α	0.24	-0.25	-0.36	0.01
Factor2 β	-0.34	0.66**	0.24	-0.15
Factor3 α	0.30	-0.02	-0.08	0.19
Factor3 β	-0.21	0.20	0.22	-0.27

Note. * $p < .05$; ** $p < .01$. The ' α ' and ' β ' refer to the variables' intercept and slope, respectively.

Table 16 demonstrates that only optimism shares significant relationships with the HRS-II factors. Within the optimism correlations, only Factor 1 (“benefits and completion”) and Factor 2 (“costs and completion”) share a significant relationship with this variable.

Multilevel Model Building

Models A and B

These two baseline models are presented in Table 17. Note that all models begin from session two, due to the logical and theoretical impossibility of having homework at intake or the first session, with homework being one of the main predictors of this study.

Table 17

Unconditional means model and unconditional growth model

Level	Variable	Parameter	Model A	Model B
<u>Fixed Effects</u>				
Initial status, π_{0i}	Intercept	γ_{00}	17.33*** (1.71)	23.05*** (2.11)
Rate of Change, π_{1i}	Intercept	γ_{10}	- -	-0.80*** (0.10)
<u>Variance Components</u>				
Level 1	Within person	σ^2_{ϵ}	48.44*** (3.21)	22.89*** (1.56)
Level 2	Initial status	σ^2_0	79.18*** (21.89)	120.77*** (33.26)
	Rate of change	σ^2_1	- -	0.18** (0.06)
	Covariance	σ_{01}	- -	-2.74* (1.16)
<u>Pseudo R² Statistics and Goodness-of-fit</u>				
				R ² $_{\epsilon}$
				R ² ₀
				R ² ₁
			Deviance	
			AIC	
			BIC	

Note. *** $p < .001$; ** $p < .01$; * $p < .05$. Model A includes BDI-II scores alone from session two and Model B includes BDI-II scores plus time from session two.

Fixed Effects

The fixed effects are as follows. The initial status fixed effect, γ_{00} , for Model A indicates the mean BDI-II score for the depression study sample at session two, while this same parameter at Model B indicates the mean BDI-II score at session two with the time structure taken into account. The main point from these figures is that both are positive and significant, meaning the average BDI-II score is non-zero at session two. The fixed effects rate of change statistic, γ_{10} , under Model B is an estimate of the average change trajectory (slope) of the samples' BDI-II scores over time. This number is negative and significant, indicating that change is non-zero and that on average BDI-II scores decrease over time.

Variance Components

The variance components of Table 17 are, according to Singer and Willett (2003), of most interest. In Model A, the significant positive variance components at both Level 1 and Level 2 ($\sigma^2\epsilon$ and $\sigma^2\omega$) indicate that there is variance to be explained both within and between people in BDI-II scores. The higher number at Level 2 indicates there is more variation to be explained between people than within. The variance components in Model B demonstrate how much variance the added variable of time has explained. The number has dropped at Level 1 indicating that time explains some variation within people; 52.8% of variation is explained by adding time (see the pseudo R-square statistic $R^2\epsilon$). However, the variation to be explained between people at Level 2 increases by adding time, as the figures for both intercept and rate of change are both significant, which is to be expected (Singer & Willett, 2003). The negative and significant covariance statistic indicates that those who have a higher initial (session two) BDI-II score experience a slower rate of change over time.

Goodness of Fit Statistics

The deviance statistic enables us to compare models of nested data, and from Model A to Model B this reduces by a large amount, 298.88. This shows that Model B is a superior fit to Model A. Note that the deviance statistic cannot be interpreted with the same certainty for Models C, D or E, because the requirement of nested data is not fulfilled. The final two statistics to observe are the AIC (Akaike Information Criterion) and the BIC (Bayesian Information Criterion). The AIC statistic takes into account the number of parameters in a model (fixed effects and variance components), while the BIC statistic take this into account as well, plus the sample size. It is clear that both statistics decrease in Model B (the AIC decreases by 292.88 and the BIC decreases by 280.34), providing further evidence that Model B is a superior fit. The AIC and BIC are both statistics that will be compared in Models C and D.

Models C and D

Model C represents the uncontrolled effects of homework on depression severity. The Model C in Table 18 employs the homework factor that correlated the most with BDI-II: “benefits and completion” (Factor 1). The alternative versions of Model C employing Factors 2 and 3 (“costs and completion” and “beliefs”) and the interaction term (Factor 1 x Factor 2) are presented in Appendix M.

Model D represents the effects of “benefits and completion” of homework on depression severity when controlling for attributional style. Pessimism, as the primary focus of this research, is presented as Model D in Table 18, but the alternative Model D employing optimism is also presented in Appendix M.

Table 18

Models C and D: The uncontrolled and controlled effects of homework with attributional style on depression severity

		Parameter	Model A	Model B	Model C	Model D
<u>Fixed Effects</u>						
Initial status, π_{0i}	Intercept	γ_{00}	17.33*** (1.71)	23.05*** (2.11)	24.74*** (2.39)	4.55 (5.57)
	Factor 1	γ_{01}	-	-	-0.19 (0.12)	-0.18 (0.12)
	Pessimism	γ_{02}	-	-	-	1.43*** (0.36)
Rate of Change, π_{1i}	Intercept	γ_{10}	-	-0.80*** (0.10)	-0.76*** (0.15)	1.27** (0.44)
	Factor 1	γ_{11}	-	-	0.00 (0.01)	-0.01 (0.01)
	Pessimism	γ_{12}	-	-	-	-0.15*** (0.03)
<u>Variance Components</u>						
Level 1	Within person	σ^2_{ϵ}	48.44*** (3.21)	22.89*** (1.56)	22.36*** (1.52)	21.86*** (1.50)
Level 2	Initial status	σ^2_0	79.18*** (21.89)	120.77*** (33.26)	120.76*** (33.24)	91.26** (26.34)
	Rate of change	σ^2_1	-	0.18** (0.06)	0.18** (0.06)	0.11* (0.04)
	Covariance	σ_{01}	-	-2.74* (1.16)	-2.67* (1.14)	-1.00 (0.80)
<u>Pseudo R² Statistics and Goodness-of-fit</u>						
	R ² $_{\epsilon}$		-	0.53	0.538	0.548
	R ² $_0$		-	-	-0.00	0.244
	R ² $_1$		-	-	-0.00	0.389
	Deviance		3338.27	3039.39	3034.72	3002.03
	AIC		3344.27	3051.39	3050.72	3022.03
	BIC		3356.81	3076.47	3084.18	3063.81

Note. *** $p < .001$; ** $p < .01$; * $p < .05$. Model A and B are re-presented for comparison. Model C represents HRS-II Factor 1 ("benefits and completion"); Model D represents Model C controlling for pessimism attributional style.

Model C Interpretation

Fixed effects. Model C will be described first. The four fixed effects of the model can be interpreted as follows. The intercept parameter of initial status, γ_{00} , describes the average session two BDI-II score for clients who score ‘0’ on the factor in question. As seen above, (and for the other three versions in Appendix M), this is significant and positive, meaning the average BDI-II score at session two is still non-zero, with homework taken into account. The initial status homework parameter, γ_{01} , shows the average difference in BDI-II scores at session two between clients scoring ‘0’ on a homework factor, and those scoring high on a homework factor. There are no significant effects for any of the HRS-II factors on this parameter, either in Table 18 or in Appendix M. The fixed effects rate of change intercept, γ_{10} , shows the average slope (rate of change) of BDI-II scores for the average client scoring “0” on the homework factor in question. The factors in Table 18 and Appendix M all display significantly non-zero, negative scores for this. This means that even if clients don’t endorse any of the homework items (experienced benefits, completion, beliefs, plus have high difficulty and obstacles (remember these items are reverse-scored)), the change in BDI-II scores over time is still decreasing significantly. The final fixed effect, the γ_{11} parameter, shows the difference in rate of change of BDI-II scores between clients scoring “0” on the factor in question, and clients scoring high on that factor. As seen in Table 18 and Appendix M, there are no significant differences, indicating that change in BDI-II scores is not related to any of the three homework factors, or the interaction between Factors 1 and 2.

Variance components. The next important component to examine within Model C is the within-person variance component. As seen in Table 18 and Appendix M, all four versions of Model C all still have a significant amount of variance left to explain after their homework factor has been added. None of the HRS-II factors explain much of the variance from Model B; the best is Factor 1 which only explains an additional 0.8% (as seen by the $R^2\epsilon$ statistic). Very little is changing in terms of Level 2 variance when homework is added, as evidenced by the negligible and sometimes negative R^2_0 and R^2_1 statistics. Thus it is apparent that homework factors explain very little variation in BDI-II scores within people, and none between people.

Goodness-of-fit statistics. Finally, the Goodness-of-fit statistics can be interpreted according to Singer and Willett (2003). This refers to the AIC and BIC

statistics. None of the versions of Model C have a large decrease in AIC statistics from Model B, and all experience an increase in BIC statistics from Model C, indicating that homework factors do not provide a better model fit.

Model D Interpretation

Fixed effects. Model D interpretation is as follows. The γ_{00} parameter indicates the average BDI-II score at session two when clients are scoring “0” on both Factor 1 (“benefits and completion”) of homework (or the relevant factor in Appendix M), *and* on the ASQ score in question (pessimism for Table 18; optimism in Appendix M). From Table 18, we can see that when clients score 0 on the pessimism construct, their corresponding session two BDI-II scores are very low; not significantly different from zero. Alternatively, when their optimism scores are 0, then their average BDI-II scores are very high, and significantly non-zero. The γ_{01} parameter again describes the difference in average BDI-II scores between those who score 0 on the homework factor and those who score high on it, after controlling for the effects of attributional style. After adding both pessimism and optimism these scores remain non-significant, as there was no effect of homework in Model C to begin with. The significant γ_{02} parameter shows that after controlling for homework Factor 1, BDI-II session two scores are positively related with pessimism scores (i.e. if BDI-II scores are higher then pessimism scores will be too), and BDI-II session two scores are negatively related with optimism scores (if BDI-II scores are higher then optimism scores will be lower). The pessimism relationship demonstrates stronger significance than the optimism relationship (as seen in Table 18 and Appendix M). The fixed effect rate of change parameter γ_{10} shows the average rate of change of BDI-II scores of clients scoring “0” on both the homework factor and the ASQ construct. The pessimism score is positive and significant, indicating a positive relationship with BDI-II scores. That is, if clients are scoring lower (“0”) on their experience of homework benefits, *and* their pessimism factor, then their BDI-II scores are likely to be lower. The negative optimism score in Appendix M indicates that if clients are scoring low (“0”) on their experience of homework benefits *and* their optimism scores, then BDI-II scores are likely to increase. The γ_{11} parameter remains non-significant in Model D for both pessimism and optimism, meaning that after controlling for attributional style, there is still no significant difference in BDI-II rate of change between those scoring low and high on homework benefits (Factor 1). This

makes sense given that this difference was not significant in Model C to begin with. The final fixed effect parameter, γ_{12} , indicates that *after controlling for homework benefits*, pessimism is negatively associated with rate of change in depression. Therefore people with higher levels of pessimism experience a slower rate of change in depression.

Variance components. In terms of variance components, neither pessimism nor optimism provide much change in terms of explaining Level 1 (within-person) variance. However, at Level 2, pessimism explains 24.4% of the variance in BDI-II scores at session two (according to the R^2_0 value). Pessimism also explains 38.9% of the variance in BDI-II rate of change, according to the R^2_1 value. The optimism variable provides no explanation of variance at Level 2 (Appendix M), and the AIC and BIC goodness-of-fit statistics back these conclusions up, with optimism demonstrating a lesser decrease than pessimism.

Post Hoc Analyses

Control Variables

Correlations were performed between the study variables and client age. Age correlated significantly with depression ($r = -0.13, p < 0.01$), optimism ($r = 0.28, p < 0.01$), and pessimism ($r = -0.23, p < 0.01$), but not with homework benefits and completion or with homework quantity and quality. Therefore, older clients were found to be less depressed and pessimistic, and more optimistic.

Multivariate analyses of variance were performed between the study variables and client gender. These indicated that there were significant differences in some of the variables between males and females (Wilk's Lambda = 0.73, $F(5, 475) = 34.37$). The significant ($p < 0.001$) differences between males and females included BDI-II scores (M (males) = 14.49, $SD = 8.06$; M (females) = 19.58, $SD = 12.71$), and optimism scores (M (males) = 15.81, $SD = 1.67$; M (females) = 14.34, $SD = 1.37$). There were no significant differences between males and females for pessimism, homework benefits and completion, or homework quantity and quality. Therefore women were significantly more depressed than men, and exhibited lower levels of optimism than men.

Following this, general study variables to control for were entered into a Model E. The variables were: therapists' HAACS rankings (therapist competence in

designing, assigning, and reviewing homework), and client gender, age, and depression severity. These were all Level 2 (time-invariant) predictors and each represent different versions of Model E. The results of these are displayed in Table 19.

Table 19

Model E: Post Hoc Analyses: Control variables

Level	Variable	Parameter	HAACS Rank	Gender	Age	BDI Severity
<u>Fixed Effects</u>						
Initial status, π_{0i}	Intercept	γ_{00}	6.58 (6.88)	5.00 (5.47)	11.99 (9.47)	-6.73 (6.42)
	Factor 1 (Model C)	γ_{01}	-0.20 (0.12)	-0.20 (0.12)	-0.20 (0.12)	-0.19 (0.12)
	Pessimism (Model D)	γ_{02}	1.44*** (0.36)	1.60*** (0.35)	1.43*** (0.36)	1.18** (0.37)
	Control (Model E)	γ_{03}	-0.49 (1.02)	-7.53* (3.53)	-0.16 (0.16)	6.52** (2.07)
Rate of Change π_{1i}	Intercept	γ_{10}	1.31** (0.47)	1.34** (0.43)	1.62** (0.56)	1.37** (0.43)
	Factor 1 (Model C)	γ_{11}	-0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
	Pessimism (Model D)	γ_{12}	-0.14*** (0.03)	-0.16*** (0.03)	-0.15*** (0.03)	-0.13*** (0.03)
	Control (Model E)	γ_{13}	-0.02 (0.04)	0.28 (0.16)	-0.01 (0.01)	-0.17 (0.10)
<u>Variance Components</u>						
Level 1	Within person	σ^2_{ϵ}	21.82*** (1.50)	21.86*** (1.50)	21.80*** (1.50)	21.81*** (1.50)
Level 2	Initial status	σ^2_0	90.35** (26.06)	75.86** (22.45)	87.89** (25.28)	68.24** (19.49)
	Rate of change	σ^2_1	0.11** (0.04)	0.09* (0.04)	0.10* (0.04)	0.09* (0.04)
	Covariance	σ_{01}	-1.04 (0.80)	-0.49 (0.68)	-1.04 (0.76)	-0.46 (0.64)
<u>Pseudo R² Statistics and Goodness-of-fit</u>						
		R ² $_{\epsilon}$	0.550	0.549	0.550	0.550
		R ² $_0$	0.252	0.372	0.272	0.435
		R ² $_1$	0.389	0.500	0.389	0.500
		Deviance	2994.96	2990.08	2992.46	2986.39
		AIC	3018.96	3014.08	3016.46	3010.39
		BIC	3069.07	3064.19	3066.57	3060.50

Note. *** $p < .001$; ** $p < .01$; * $p < .05$. HAACS rank, gender, age, and depression severity represent different versions of Model E. Numbers of particular interest are indicated in bold.

Table 19 shows that only gender and BDI-II severity had an effect on the original Model D (Table 18). Whilst gender did not moderate any of the fixed effects from Model D, it correlated with BDI-II scores at intake on its own (γ_{03} parameter is significant). That is, women were more depressed than men at session two. Gender also explained 12.8% additional between-person variance in initial BDI-II status from Model D (R^2_0 statistic), and 11.1% additional between-person variance in BDI-II rate of change from Model D (R^2_1 statistic). BDI-II severity moderated the relationship between pessimism and BDI-II scores at session two, as it decreased the magnitude of the γ_{02} parameter, and also correlated on its own with BDI-II scores at session two, as expected (given that BDI-II severity is directly related to raw BDI-II scores). BDI-II severity also explained an additional 19.1% of between person variance from Model D in BDI-II scores at session two, and an additional 11.1% of between person variance in BDI-II rate of change. The covariance statistic also decreases markedly from Model D when both gender and BDI-II severity are entered. The entry of BDI-II severity resulted in the largest changes in AIC and BIC statistics.

Conceptualising Homework

Addressing Variance

Individual averages of clients' HRS-II Factor 1 scores over time were entered into an alternative Model C to ascertain whether coding homework as time-invariant (similar to previous research) aided in explaining variance. The results are presented in Table 20; the original time-variant version is included as a point of comparison.

Table 20

Model C re-analysed: The time-invariant effects of homework benefits

Level	Variable	Parameter	Factor 1 Time Variant	Factor 1 Time-Invariant
<u>Fixed Effects</u>				
Initial status, π_{0i}	Intercept	γ_{00}	24.74*** (2.39)	18.56 (9.77)
	Factor	γ_{01}	-0.19 (0.12)	0.47 (0.99)
Rate of Change, π_{1i}	Intercept	γ_{10}	-0.76*** (0.15)	-0.42 (0.43)
	Factor	γ_{11}	0.00 (0.01)	-0.04 (0.04)
<u>Variance Components</u>				
Level 1	Within person	σ^2_{ϵ}	22.36*** (1.52)	22.91*** (1.562)
Level 2	Initial status	σ^2_0	120.76*** (33.24)	119.89*** (33.03)
	Rate of change	σ^2_1	0.18** (0.06)	0.17** (0.06)
	Covariance	σ_{01}	-2.67* (1.14)	-2.67* (1.14)
<u>Pseudo R² Statistics and Goodness-of-fit</u>				
			R ² $_{\epsilon}$	0.538
			R ² $_0$	-0.00
			R ² $_1$	0.00
			Deviance	3034.72
			AIC	3050.72
			BIC	3084.18

Note. *** $p < .001$; ** $p < .01$; * $p < .05$. The time variant version of Model C is re-presented for comparison.

Table 20 shows very little differences between the two versions of HRS-II Factor 1, meaning that coding homework as time-invariant does not result in a significant relationship with BDI-II.

Quantity - Quality Interaction

Additionally, the basic relationship between quantity and quality of homework completion and depression seemed too important to not investigate further. Therefore

quantity and quality were correlated with each other (Table 21), and then multiplied together to form an interaction term, the intercepts and slopes of which were correlated with the intercepts and slopes of BDI-II scores. The results are shown in Table 22.

Table 21

Correlation between HRS-II quantity and quality over time

	Quantity Intercept	Quantity Slope
Quality Intercept	0.53** (0.01)	-0.39 (0.05)
Quality Slope	-0.15 (0.46)	0.87** (0.00)

Note. ** $p < .01$.

As Table 21 shows, there is a significant relationship between the amount of homework completed at the beginning of therapy and the quality of homework completed at the beginning of therapy, as well as between quantity and quality of homework completion over time. This justified investigating the interaction term with BDI-II scores in Table 22.

Table 22

Correlation between quantity - quality interaction and BDI-II over time

	Quan x Qual Intercept	Quan x Qual Slope
BDI-II Intercept	-0.08 (0.71)	0.17 (0.38)
BDI-II Slope	-0.02 (0.94)	0.02 (0.92)

As seen in Table 22, the quantity - quality interaction did not result in any significant relationships with BDI-II scores.

This interaction was entered into a multilevel model at Model C to double-check the lack of findings. The results are presented in Table 23.

Table 23

Post hoc multilevel model with quantity - quality interaction in Model C

		Parameter	Model A	Model B	Model C	Model D
<u>Fixed Effects</u>						
Initial status, π_{0i}	Intercept	γ_{00}	17.33*** (1.71)	23.05*** (2.11)	22.31*** (2.19)	3.61 (5.46)
	Interaction	γ_{01}	-	-	0.13 (0.11)	0.08 (0.11)
	Pessimism	γ_{02}	-	-	-	1.36*** (0.36)
Rate of Change, π_{1i}	Intercept	γ_{10}	-	-0.80*** (0.10)	-0.66*** (0.11)	1.19** (0.42)
	Interaction	γ_{11}	-	-	-0.03* (0.01)	-0.02 (0.01)
	Pessimism	γ_{12}	-	-	-	-0.14 (0.03)
<u>Variance Components</u>						
Level 1	Within person	$\sigma^2\epsilon$	48.44*** (3.21)	22.89*** (1.56)	22.71*** (1.55)	22.30*** (1.53)
Level 2	Initial status	σ^2_0	79.18*** (21.89)	120.77*** (33.26)	120.14*** (33.09)	92.04** (26.62)
	Rate of change	σ^2_1	-	0.18** (0.06)	0.16** (0.06)	0.10* (0.04)
	Covariance	σ_{01}	-	-2.74* (1.16)	-2.56* (1.11)	-1.00 (0.79)
<u>Pseudo R² Statistics and Goodness-of-fit</u>						
		$R^2\epsilon$	-	0.527	0.531	0.54
		R^2_0	-	-	0.005	0.238
		R^2_1	-	-	0.111	0.444
		Deviance	3338.27	3039.39	3034.03	3003.90
		AIC	3344.27	3051.39	3050.03	3023.90
		BIC	3356.81	3076.47	3083.47	3065.65

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Table 23 shows a small effect for the quantity - quality interaction on BDI-II scores over time, but this effect is minimal. There is no effect for the interaction term on BDI-II scores at initial status (γ_{01} parameter), but there is a small effect for the interaction term on BDI-II scores over time (γ_{11} parameter), indicated in bold in Table

23. This means that over time, people who engage in a higher quantity and quality of homework experience more change in BDI-II scores. However, the near-zero change in variance scores at both Level 1 and Level 2 between Model B and Model C indicate that the quantity - quality interaction plays very little role in explaining variance in BDI-II scores. Additionally, the loss of significance of the γ_{11} parameter in Model D indicates that pessimism moderates the homework-depression relationship; therefore, once pessimism is taken into account and controlled for, there is no significant difference in BDI-II scores over time between clients who do no homework and those who do more. Finally, the non-significant γ_{12} parameter shows that there is minimal difference in BDI-II scores over time between people scoring low and high on pessimism after the quantity - quality homework interaction has been controlled for. However the γ_{02} initial status parameter is significant showing that there are differences in initial BDI-II scores between low and high scorers on pessimism even after taking initial quantity - quality homework scores into account. The Level 2 variance statistics also support the role pessimism plays in explaining between-person variance in BDI-II scores both initially and over time. The initial status variance explained moves from 0.5% in Model C when homework alone is entered to 23.8% explained in Model D when pessimism is entered (R^2_0 statistic). The rate of change variance changes from 11.1% explained in Model C to 44.4% explained in Model D with the introduction of pessimism (R^2_1 statistic).

Homework - Attributional Style Relationship

Finally, based on the earlier correlations, a new model was built with HRS-II Factor 1 (“benefits and completion”) entered into Model A, followed by time in Model B and CoPos (optimism; linear interpolation of) in Model C. The same model was built with HRS-II Factor 2 (“costs and completion”) entered into Model A, but convergence could not be achieved. Optimism was employed due to its significant correlation with homework in Table 16, independently of depression. The results from the first model are presented in Table 24.

Table 24

Models A to C with HRS-II Factor 1 as the unconditional means model, and optimism as a Model C predictor

		A: Factor 1	B: Time	C: Optimism
<u>Fixed Effects</u>				
Initial status, π_{0i}	γ_{00}	9.88*** (0.41)	9.32*** (0.37)	7.91* (3.08)
	γ_{01}	-	-	0.10 (0.21)
Rate of Change, π_{1i}	γ_{10}	-	0.08* (0.04)	-0.18 (0.25)
	γ_{11}	-	-	0.02 (0.02)
<u>Variance Components</u>				
Level 1	σ^2_{ϵ}	10.18*** (0.68)	9.62*** (0.66)	9.69*** (0.67)
Level 2	σ^2_0	4.04** (1.25)	2.22* (1.06)	2.10* (1.04)
	σ^2_1	-	0.01 (0.01)	0.01 (0.01)
	σ_{01}	-	0.08 (0.07)	0.09 (0.07)
<u>Pseudo R² Statistics and Goodness-of-fit</u>				
	R ² $_{\epsilon}$	-	0.055	0.049
	R ² $_0$	-	-	0.054
	R ² $_1$	-	-	0.000
	Deviance	2485.52	2467.17	2455.89
	AIC	2491.52	2479.17	2471.89
	BIC	2503.99	2504.10	2505.10

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

The model above shows that the HRS-II Factor 1 has significant variance to be explained at both Levels 1 and 2. Adding time explains variance between people, but not within people. The γ_{01} and γ_{11} parameters are not significant for optimism in Model C and therefore show that optimism bears no significant relationship with HRS-II Factor 1. Additionally, adding optimism into Model C does not explain any variance at Level 1 or Level 2.

CHAPTER 6: DISCUSSION

Outline

The aim of this study was to investigate the mechanisms of change involved in CBT for depression, with a particular focus on homework and methods of enhancing homework compliance. This chapter opens with a short re-cap of the specific broad aims for this study illustrated in Figure 11 and their rationale, accompanied by a presentation of the major findings from the study. Contributions to the existing literature are then discussed, in conjunction with a comparison to the current study's findings. Possible explanations for the findings are discussed. Finally, a section encompassing overall study considerations and suggestions for future research will be presented, along with a discussion of practical implications for clinicians.

Summary of Study Aims and Findings

The aim of this study was to investigate the mechanisms of change involved in CBT for depression, with a particular focus on homework and methods of enhancing homework compliance. These specific aims can be conceptualised as seen in Figure 11 below.

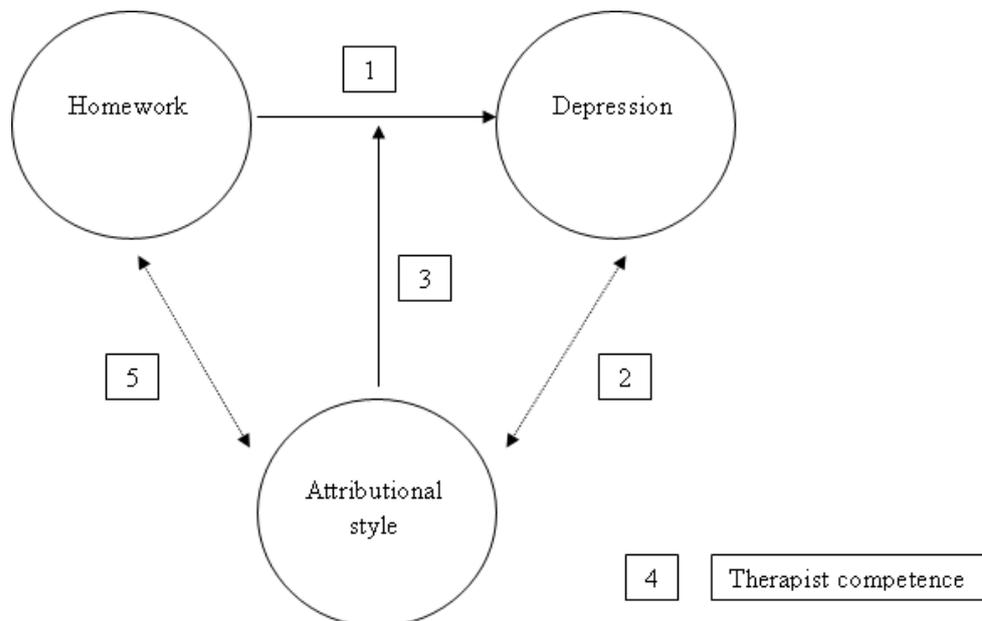


Figure 11. Visual representation of the variables of interest in this study and which relationships four of the five research aims target, and in which order

Overall CBT Efficacy

The first important finding of this study was that depression scores as measured by the BDI-II decreased for all clients over the course of therapy. All clients finished therapy with lower BDI-II scores than when they began therapy. Furthermore, at the two-month follow-up all clients' BDI-II scores remained lower than when they had entered therapy, demonstrating the positive findings were sustained once therapy contact ceased. Pessimism scores also showed an overall decrease over the course of therapy, with optimism scores showing an overall increase. Pessimism scores were the focus of the current study, and it was found that 81.5% of clients' pessimism scores were lower (or in one case the same) when they finished therapy than they were at the beginning of therapy. At the two-month follow-up point, 79% of those who returned for follow-up experienced sustained lower pessimism scores than at intake. Overall the attendance rates in therapy were high; 79% of the sample completed 17 sessions or more, and 64% of the sample completed 17 sessions or more plus the two-month follow-up.

Homework - Depression Relationship

The first aim was to re-confirm the relationship demonstrated between homework compliance and reduction in depression severity seen in previous literature (see Kazantzis et al., 2000). Results from multilevel analyses in this study showed that, counter to expectations, homework did not significantly relate to depression over time. Several sources of HRS-II were gathered, and it was found that ratings amongst clients, therapists, and independent observers were not highly correlated. Client ratings were selected and employed as the focal measure, to gain information as close to their perspective as possible. Homework was conceptualised according to three factors composed from the HRS-II: benefits and completion, costs and completion, and client beliefs. While 'benefits and completion' was promising as the only factor that significantly correlated with depression scores, the relationship was non-significant in the context of a multilevel analysis. HRS-II scores did not display a clear trend across time; instead they fluctuated greatly between sessions and overall did not appear to show any patterns. An interesting finding however was that a post hoc quantity - quality homework interaction provided a small predictive effect on outcome. Thus when conceptualised in basic 'completion' terms, homework appears to display a predictive trend. However, when pessimism was added to this model, the effect disappeared, indicating a moderating effect.

Attributional Style - Depression Relationship

The second aim was to re-confirm the relationship between a pessimistic attributional style and increased depression severity both at intake and over the course of therapy, as demonstrated in previous literature (see for example Sweeney et al., 1986). An important pre-requisite was also to demonstrate that attributional style displayed state-like properties and was variable over time. The relationship between attributional style and depression was confirmed, with both optimism and pessimism demonstrating significant relationships with BDI-II scores over time. In particular, higher pessimism scores were shown in a multilevel analysis to be related to higher BDI-II scores at intake, and to predict slower change in depression scores over time. Both pessimism and optimism were variable; that is, both changed in severity over the course of therapy. On average, pessimism scores decreased and optimism scores increased. At intake, BDI-II scores were correlated with higher pessimism scores, but not with optimism scores. This demonstrates that prior to therapy, pessimism is more strongly related to depression than optimism is. However, both optimism and pessimism scores at intake correlated with BDI-II change over time, and furthermore, change in optimism and pessimism over time also correlated with depression change over time. Both optimism and pessimism are therefore important considerations in the nature of depression, but pessimism experiences the stronger relationship with depression.

Moderating Effect of Attributional Style

The third aim was to combine the above two relationships (homework and depression, and attributional style and depression), and investigate the moderating effect of attributional style on the homework - depression relationship. The main findings of the study (discussed in the first aim) found no relationship between homework and depression. This meant that attributional style was unable to act as a moderator. Post-hoc analyses then re-conceptualised homework using a quantity - quality interaction, and found a small link between this interaction and depression scores over time, although homework still failed to explain any variance in depression scores within or between people. Therefore there was a trend towards clients who complete more homework and to a higher quality performing better in terms of depression outcome. The post hoc analyses also found that pessimism moderated this small relationship, so that once pessimism was taken into account, the homework-depression relationship became non-significant, as originally expected. Conversely it

was found that after controlling for homework quantity and quality, pessimism no longer related to depression. Incorporating both homework and pessimism in Model D (Table 18) resulted in a reduction in between person variance. Thus the homework quantity - quality interaction, and pessimism, both influenced each other to produce changes in depression scores, although these relationships were small.

Therapist Competence

The fourth aim was to investigate whether therapist competence in reviewing, assigning, and designing homework impacted on clients' homework compliance and hence therapy outcome. This was to ensure that any clients performing consistently lower on homework measures was not caused by therapists' implementation of the task in the first instance. Controlling for homework competence in the multilevel analysis produced no effect on the relationships described in aims one to three. Therefore therapist competence was not a variable that significantly influenced the relationships in question. It is interesting to note that therapist competence was shown to be variable both within therapists over time, within therapists between their different clients, and between therapists. Therapist competence in assigning homework may therefore be influenced by a number of factors such as stage in therapy, the homework task itself, the client they are working with, and their personal abilities and beliefs in learning homework administration and applying it in practice. However, despite this variability, each therapists' personal ranking amongst the other therapists was shown with a Spearman's rank order correlation to correlate relatively highly over time, meaning that a therapists' competency rank remained consistent over the course of therapy.

Attributional Style - Homework Relationship

The fifth and final aim was to investigate whether attributional style related to homework experiences directly, independent of the relationship with depression. In particular, it was thought that a more pessimistic attributional style would result in lower levels of homework completion and less experienced benefits of homework. If clients tended towards a more pessimistic attributional style, it was thought that they would likely attribute negative outcomes in homework to internal, stable and global causes, and thus be less likely to complete tasks in the future. Both optimism and pessimism were included in the investigation of this research aim as the link between attributional style and homework has not directly been investigated in previous research. Correlation analyses showed that optimism correlated more highly with

homework benefits and completion than pessimism. However, multilevel analyses demonstrated a non-significant relationship between optimism and homework experiences at intake and over the course of therapy.

Demographic variables

Client age correlated significantly with depression severity and levels of optimism and pessimism. Older clients were significantly less depressed, experienced higher levels of optimism, and lower levels of pessimism. Client gender also shared significant relationships with depression and optimism levels, but not pessimism levels. Women were significantly more depressed and were significantly less optimistic than men. No age or gender difference was found for benefits and completion of homework, or for quantity and quality of homework completion. Both client age and gender were controlled for in investigating the homework - attributional style - depression relationship (that is, the final relationship shown in Model D), and it was found that while client age made no significant difference in this context, gender did. Women were significantly more depressed at intake than men, although there was no difference between women and men in terms of depression change over time.

Contributions to the Existing Literature

Advanced Methodology

The advanced methodology employed is one of the primary contributions of this study to the existing literature on homework, attributional style and depression in CBT. The methodological advantages include advanced data analysis, comprehensive training of therapists, and comprehensive measurement techniques.

Multilevel Design

While previous studies have suffered from a low sample size (Kazantzis, 2000; Kazantzis et al., 2000), the current study's multilevel analysis approach enabled a rich data set with the inclusion of up to 22 data points for each client, rather than utilizing averages. This meant there were a total of 546 BDI-II observations with which to work. The comprehensive multilevel design employed meant that individual and group growth trajectories were developed, and multiple levels of data were investigated simultaneously (Affleck et al., 1999; Kwok et al., 2008). Therefore both within person and between person relationships were able to be investigated, and rather than relying on group averages this provides a rich source of information with which to work. A major advantage of the multilevel design is that the longitudinal

nature of data is comprehensively incorporated into the analyses, and a repeated measures design (discussed next in the context of homework) is able to be employed. Thus not only can relationships between variables be investigated, but the nature of their change over time is also provided. Additionally, this means that variables that change over time and are not stable are not reduced to average trends, rather their changing nature is reported in conjunction with the analytical outputs (Kwok et al., 2008).

Repeated Measurement of Homework

The multilevel design is especially advantageous in the advancement of research on homework in CBT. Previous research has found relationships between homework completion and therapy outcome (see for example Kazantzis, Deane, Ronan, & Lampropoulos, 2005), but most of these studies have employed simplistic correlational designs. Additionally the amount of past research is not extensive and the measurement techniques employed have been limited. Within the Kazantzis et al. (2000) meta-analysis, only nine studies investigated the use of homework specifically with depression. Of these nine, three were conducted in the 1980's and two of these utilized very small sample sizes ($N = 8 - 12$) (Harmon, Nelson, & Hayes, 1980; Zettle & Hayes, 1987). One of these three studies also focused on late-life depression (Thompson & Gallagher, 1984). Of the remaining six studies, measurement techniques were limited. Several of the studies concerned employed retrospective ratings (e.g. Burns & Nolen-Hoeksema, 1991, 1992). Since the Kazantzis et al. (2000) meta-analysis, there has been continued research on the effects of homework, although only a small number have investigated compliance specifically in relation to depression. These studies have failed to greatly improve the pre-2000 research, with many still employing dichotomous ratings (e.g. Rees et al., 2005). Thus not only has the measurement of homework in the current study been astute, but the multilevel analysis described earlier has allowed this data to be maximised. The current study employed a comprehensive analysis of homework; by employing the HRS-II a variety of areas pertaining not only to homework completion but also to experienced benefits, costs, and beliefs associated with homework were also able to be analysed. This overcame the reliance on quantity of homework completion that previous studies exhibited. Homework was also measured at every session, meaning that change over time could be analysed, and that the bias of single retrospective ratings was overcome. Additionally, homework was measured by clients, therapists, and independent

observers, to obtain both the personal perspective on homework experienced by clients as well as the therapists' more removed viewpoint, and the independent observers' objectivity. These factors demonstrate that the current study represents a significant and important improvement over previous research, resulting in a significant contribution to existing literature.

High Levels of Specific Training in Homework Implementation

Therapists were highly trained in the areas of CBT and in particular homework. All therapists were Doctor of Clinical Psychology students, in their fifth year of training or above. Therapists had completed comprehensive training in a psychotherapy paper with a focus on CBT from their standard training, however they also attended a week-long course specifically focusing on CBT alone, and a week-long course training therapists in CBT specifically for depression. In addition to this, therapists undertook several days of training in comprehensive homework protocol (as per Kazantzis, MacEwan et al., 2005) and submitted two to three videos of homework role plays each, obtaining 100% adherence in the protocol before they proceeded. Training in homework was provided by a leading researcher in the area of homework, Dr. Nikolaos Kazantzis, who has published many articles and is the editor of two seminal books, *Using homework assignments in cognitive behavior therapy* (2005), and *Handbook of homework assignments in psychotherapy* (2007). Therapists were supervised by a registered clinical psychologist weekly and underwent regular feedback in the form of CTS ratings and HAACS competence ratings. These rigorous methodological considerations represent a significant advancement in the homework literature, and pave the way for high standards in future research.

Comprehensive Screening at Intake

The current study had a careful focus on screening clients in the adult age range. The age bracket of 18 to 65 years meant that children, the majority of teenagers, and elderly were excluded. This controlled some potential confounding effects associated with age, such as brain development or neuropsychological decline. Depression was required to be the primary diagnosis, and clients were screened via a phone interview, the CIDI, a semi-structured interview with a therapist in the study, and the BDI-II. Clients were required to be currently experiencing their first MDD episode; recurrent depressive disorders were excluded. The frequency and duration of depressive episodes is increased in individuals with MDD (recurrent), with other features such as decreased responsivity to environment and hormonal (e.g. cortisol)

levels altered (Carr & McNulty, 2006). The limitation of the study to clients with first episode depression controls these confounding factors. Other confounding factors such as Borderline Personality Disorder and imminent risk of self-harm were also excluded. Additionally, clients were prohibited from inclusion if they were currently taking psychoactive drugs, to reduce confounding explanations for treatment effects. It should be noted that it would be advantageous for future studies to replicate this investigation with different populations to enable generalisability of results.

Confirming the Efficacy of CBT for Depression

Previous research has demonstrated that CBT is an efficacious treatment for MDD, in particular in the mild to moderate range. In the severe range it is best implemented in conjunction with appropriate medication (Anderson et al., 2009; DeRubeis & Crits-Christoph, 1998). The comparative amount of research on this topic pertaining specifically to a New Zealand population is much less. A search of the *New Zealand Journal of Psychology* reveals a small number of studies purporting the popularity of CBT in New Zealand and its sound rationale (e.g. Kazantzis & Deane, 1998; Kennedy-Merrick, Haarhoff, Stenhouse, Merrick, & Kazantzis, 2008). However little research is available on the effectiveness of CBT in a depressed adult New Zealand sample. The positive findings in relation to changes in depression represent a significant contribution to a specific small population as well as contributing to the worldwide CBT literature. Additionally, the current study demonstrated change in attributional style over time in a clinically depressed adult sample, a gap identified by Henkel et al. (2002) and Gillham et al. (2001), and a finding also specific to the New Zealand population.

1. Homework – Depression Relationship

Main Results Indicate No Relationship

The main results of this study showed no relationship between homework benefits and completion, costs and completion, or client beliefs and depression. The lack of relationship between homework and depression was in contradiction with much of the previous research in this area (e.g. Kazantzis et al., 2000; Kazantzis, Deane, Ronan, & Lampropoulos, 2005; Rees et al., 2005). However, while correlational studies have generally found a significant effect for homework, studies investigating the causal relationship have produced inconsistent findings (Kazantzis, Deane, Ronan, & Lampropoulos, 2005; Thase & Callan, 2006). While much of the previous literature has demonstrated a relationship between homework and

depression, the current study addressed many methodological limitations in previous research, as described earlier. For example, the current study utilised homework ratings at every session, employed a rating scale rather than dichotomous ratings, and used multilevel analysis to discern individual growth trajectories. Additionally, the current study employed client ratings as a focus rather than the ever-popular therapist ratings (e.g. Burns & Spangler, 2000). Therefore it may be that when investigating homework in detail rather than employing averages, this effect is diminished.

An additional explanation is that there are many other factors that may be more important in terms of enhancing outcome (of depressive symptoms) than homework completion. For example, attributional style, one of the main predictors in this thesis, might be one of the more important factors to consider. Perhaps a more pessimistic individual improves less rapidly in therapy than a less pessimistic individual, regardless of whether they do their homework or not. Indeed, Carr and McNulty (2006) list a pessimistic cognitive style in their discussion of risk and protective factors for depression, a claim which is also strongly supported by the theory and research in chapter 3 of this thesis. The findings of this thesis also support the relationship between attributional style and depression, which will be discussed shortly. Carr and McNulty (2006) also list other correlates of therapy outcome, such as neurotic personality traits, or biological and family factors, that are implicated in the etiology and maintenance of depression. A brief literature search will reveal many more confirmed correlates, such as the widely-researched therapeutic relationship (e.g. Zuroff & Blatt, 2006). A possibility might therefore be that homework may be further down the list of importance than initially thought.

Personal experience as a therapist in the depression study consisting of 22 sessions with four of the clients allows further reflection. Two of the four clients seen personally did not complete their homework on a regular basis while two of the clients did. However all four improved in their depressive symptoms over the course of therapy. The same procedures and similar tasks were followed with all of these clients, and, being the same therapist, competence was likely to be relatively similar. There are several possible reasons why all still improved although homework completion was inconsistent between them. One is that all four clients were still motivated to consistently attend therapy, to complete the full 20 sessions plus two follow ups, to develop strong rapport with their therapist, and to challenge their cognitions. All four clients reported having viewed some situations differently,

employing cognitive techniques, and attempting to change their behaviour. They all brought examples from their week into therapy, where the situations were worked through together, and the clients at various times expressed finding particular techniques extremely helpful. Therefore one reason for all four clients improving may be that the other therapy factors, such as rapport, and the fact that clients often integrate their learning into the real world anyway, played important roles in clients' improvement. Another reason may be that, as Kazantzis, MacEwan et al. (2005) state, non-completion of homework provides rich grounds for discussion as to why it was not completed. It may be that clients were still unsure about attempting a behavioural experiment, or that they thought the task was not of importance, or they were using the techniques in their head rather than on paper due to finding the task arduous. Whatever the reason, these barriers were able to be discussed in therapy and alternative means for reaching the desired goal were formed. Regardless of whether clients did their homework or not, large amount of time were devoted to discussing the homework tasks and therefore learning may still have occurred without actually doing the tasks.

There are several other possible explanations for the lack of relationship between homework and depression in this study. One is that a small effect might in fact exist, but the strong focus on homework in the depression study meant that clients were overall doing large amounts of homework. This might mean that there were not enough clients regularly *not* completing homework to compare results to. This is where a randomised controlled study with comparison groups would provide clearer results, although the limitations of these are still significant, in that clients often do tasks on their own even when they are not required to. Therefore testing this hypothesis is difficult, but it might be that all clients in this study were exposed to homework enough so that it still had an effect on their treatment outcome. A comparison of outcomes with a replication of this study minus the focus on homework would be advantageous.

Post Hoc Results Indicate a Quantity - Quality Effect

Despite the above findings, there was an interesting effect produced by the quantity - quality homework interaction on depression scores over time. When measuring pure quantity and quality of completion without taking into account any of the other experiences involved in homework (e.g. pleasure, mastery), changes in depression over time are explained to a small degree. The theory behind completing

homework inherently makes sense, and so this finding might serve to demonstrate that the basic principles of homework are important. In addition, it suggests that previous research investigating the effects of quantity alone has been limited; the quality of homework completion is also very important to measure (as suggested by Bryant et al., 1999; Kazantzis, Deane, Ronan, & Lampropoulos, 2005; Rees et al., 2005). However, when pessimism is added to this model, the quantity - quality effect on depression scores disappears, indicating that pessimism moderates this relationship to a degree.

Therapists, Clients, and Independent Observers View Homework Differently

Therapist and client agreement is discussed first. Although there are no universal guidelines for interpreting ICCs, it was clear that the coefficients in the current study were not high between client and therapist ratings. Most could be classed as 'fair' agreement (the second-to-bottom ranking on a five-point scale from Montgomery et al. (2002)). This demonstrates that clients are clearly rating their homework completion from a different perspective to what therapists are. This discrepancy was also reported by Kazantzis et al. (2006). However, from the ICCs reported in Table 10 earlier, it is apparent that clients and therapists generally agree more on some items than others. Agreement is higher when rating quantity and quality of homework completion, obstacles encountered, and pleasure and mastery gained from the task. Clients and therapists agreed less on the difficulty of the task, on the progress made from the task, and on all of the items that compose the client "beliefs" factor (comprehension, rationale, collaboration, specificity, and match with therapy goals). This is particularly interesting, because agreement is higher on items that involve the clients' personal experience (e.g. sense of pleasure gained from the task), than it is on behaviours that were experienced and observable in the actual therapy session (e.g. rationale for the task, level of collaborating in designing the task). However, Kazantzis, Deane, and Ronan (2005) describe these in-session items as representing client beliefs because this is where their belief system about their ability to carry out the task is likely to be highlighted. To this end, one possible explanation for the findings (also consistent with the hypotheses of this thesis) might be that clients' attributional styles are distorting the objectivity of their ratings. However, post-hoc analyses demonstrated that attributional style did not explain any of the variance in homework scores as rated by clients. Therefore, this hypothesis is not likely. It is still possible, however, that client ratings are influenced by other

factors (such as personality type or whether they thought the task was important or not), that were not included in the current study. The depression study did measure some of these variables, however an extensive investigation was beyond the scope of the current study. Further still, it may be that therapist beliefs influenced *their* (therapists') ratings of homework completion. Therapists who are pessimistic about the utility of homework, or their general ability as a therapist, may under-estimate their competence in assisting with these same factors. Therapist beliefs were not measured in the depression study but are a promising avenue for future research to investigate.

ICCs between clients and therapists, and independent observers were also poor. In particular the clients only experienced 'slight' or 'fair' agreement with independent observers, while the therapists fared only slightly better. This indicates that independent observers are likely perceiving homework completion very differently from therapists and especially clients. It is possible that because they are rating via video, they are missing out on important information gained from being in the room with the client. Especially if homework is not verbally discussed in detail or specifically named as 'homework', the independent observers are unlikely to be able to give accurate ratings. It is also possible that independent observers are not able to spend as much time thinking about the homework as they are also rating other scales for the depression study in conjunction with the HRS-II. Another explanation may be that the independent observers do not follow a client consistently over time, and so do not remember the clients' previous session from which this homework followed on, and they are also not influenced by factors such as the clients' personality as much. Therefore, while independent observers are likely to be objective in this sense, they are also missing out on a lot of information that is only gained from being in the room and following the client consistently over time.

2. Attributional Style – Depression Relationship

Attributional Style, in Particular Pessimism, is Related to Depression Change Over Time

Both optimism and pessimism correlated significantly with depression. Higher BDI-II scores at intake were correlated with higher levels of pessimism at intake and over the course of therapy. BDI-II scores at intake did not correlate with optimism. Therefore clients' initial levels of pessimism may be the most important aspect of attributional style to consider when initially planning therapy and predicting future

depression change over time. However, BDI-II change over time was correlated with both optimism and pessimism scores both at intake and over time, demonstrating that both styles are important considerations over the course of therapy. Numerous studies have reported finding that attributional style and depressive symptoms are correlated (for example, Golin et al., 1981) and that change in attributional style is correlated with change in depressive symptoms (e.g. Barber & DeRubeis, 2001, DeRubeis et al., 1990, Carver et al., 2002, Seligman et al., 1988, & Teasdale et al., 2001), therefore these findings were not unexpected. The stronger relationship between pessimism and BDI-II scores than optimism and BDI-II was also in line with previous research (e.g. Seligman et al., 1988). A report by Carr and McNulty (2006) lists a pessimistic cognitive style as a particular risk factor for depression.

Multilevel analyses demonstrated that of the two facets of attributional style, pessimism explained the most variance in depression scores. The relationship between optimism and depression at intake remained, but over time became non-significant in the context of multilevel analysis. Investigating the nature of attributional style in relation to depression using multilevel analysis is a new development in the literature. Although there has recently been research using multilevel analysis when investigating the nature of attributional style, the amount is small and the studies are not relevant to this topic. For example, Abela, McGirr, and Skitch (2007) employed multilevel analysis in the investigation of the hopelessness theory but in relation to the diathesis-stress hypothesis and with youth. Very recent research that has investigated attributional style in relation to depression in adults has still often relied on using multiple individual regression analyses (e.g. Ball, McGuffin, & Farmer, 2008). Therefore there is very little if not no research re-investigating the attributional style relationship with clinical depression in adults using multilevel analysis.

Thus it can be concluded that pessimism experiences a stronger association with depression changes. The relationship with pessimism and BDI-II scores over time demonstrates the importance of measuring change over time and employing analytical techniques that capture these differences. From these findings, it can be stated that people who are more pessimistic will generally be more depressed at intake, and will experience a slower decline in depression levels over time. However, it is also likely that pessimism levels themselves decrease throughout the course of therapy, providing strong motivation for targeting negative attributions in CBT for depression. Optimism does not appear to be as important in terms of influencing

changes in depression severity. While this could be due to the CoPos (optimism) construct being less reliable, it could also be that attributing positive events to internal, stable, and global causes is less important than refraining from attributing negative events to internal, stable, and global causes.

Attributional Style is Time - Variant

Both pessimism and optimism scores varied over the course of therapy. On average, pessimism scores for clients showed a downward / decreasing trend, while optimism scores showed an upward / increasing trend from intake to therapy termination. However, for both pessimism and optimism, there were a small number of exceptions for individual clients where scores went in the opposite direction to what was expected. Although the ASQ measures a *style* of thinking and may therefore have originally been conceptualised as stable, the time variant nature of attributional style has been suggested and subsequently demonstrated by others (e.g. Carver et al., 2002, & DeRubeis et al., 1990) and was therefore not unexpected. This provided important evidence that the changing relationship of attributional style with homework and depression over time was a valuable pursuit.

Attributional Style Change is Maintained at Follow-up

Both optimism and pessimism improvements from intake to therapy termination were maintained at the two-month follow-up for a large proportion of clients. However, pessimism was the focus of this study as it yielded more significant correlations and higher reliability. Of those who returned for follow-up sessions, 79% experienced sustained lower pessimism scores than at intake. Attributional style has been investigated in relation to sustained benefits in several studies. For example, Seligman et al. (1988) showed that pessimistic attributional styles increased slightly a year following termination, but remained lower than when they initially entered therapy. Optimism scores showed a similar pattern, decreasing slightly at one-year follow-up compared with termination, but remaining higher than at intake (Seligman et al., 1988). Thus these findings in conjunction with the current study's reports suggest that cognitive change experienced during therapy can be sustained through lengthy follow-up periods, indicating lasting change worthy of sound investment during the course of therapy.

3. The Moderating Effect of Pessimism on the Homework - Depression Relationship

Pessimism is a Moderator of the Quantity - Quality Effect

The main findings of the study found no relationship between homework and depression, and therefore attributional style was unable to act as a moderator. However, post-hoc analyses utilising the quantity - quality homework interaction found that pessimism moderated the relationship between the homework quantity - quality interaction and depression over time. Thus once controlling for pessimism the homework - depression relationship disappeared. While only a small effect, it suggests a trend towards the idea that level of homework completion depends on clients' pessimism levels. The reverse was also true; there was no effect for pessimism once quantity and quality of homework completion was controlled for. Thus homework may also moderate the pessimism-depression link, but at this stage there is only a small effect and it is only apparent when quantity and quality of the HRS-II are used, not other HRS-II factors.

Because this particular aim was a new area of research that had not yet been investigated, there are no known studies to compare the above effect of pessimism on the homework - depression relationship to. However, there was a strong theoretical rationale for doing so. The rationale for investigating the moderating effect of attributional style was a culmination of several factors. Firstly, research had made a clear link showing that homework completion correlated with enhanced treatment outcome (see for example the Kazantzis et al., 2000 meta-analysis). While it was clear that the case for a causal effect was still questionable (Thase & Callan, 2006), and that the existing research did have limitations such as the utilization of single retrospective ratings of homework, the theoretical and practical rationale for homework was sound. Additionally, most research as indicated in the Kazantzis et al. (2000) meta-analysis was positive in terms of its findings. However there was much less research investigating how to enhance client participation or compliance in such an important area of therapy. The review by Kazantzis, Deane, Ronan, and Lampropoulos (2005) highlighted this, and in particular, research into client factors was minimal. Thus a need to investigate factors influencing compliance was identified.

At the same time, a strong link had been made between a pessimistic or negative attributional style and depression severity. The cognitive mediation hypothesis stated that changing thinking styles in general mediated the change in depression outcome, and Teasdale et al. (2001) demonstrated that just changing the extremity of thinking styles was an effective intervention. Furthermore, studies such as that by Riso et al.

(2003) demonstrated that depressed people scored significantly higher in negative attributional styles than non depressed people.

While theoretically, it had been pointed out that cost-benefit analyses (Ajzen, 1985, 1988) were an important factor in whether or not clients engaged in homework tasks, along with self efficacy beliefs (Bandura, 1989) (Kazantzis & L'Abate, 2005), no researcher has yet made the move to investigate whether all of the above factors are linked. That is, negative attributions interfere with progress in general therapy, so it seems likely that they would also interfere with homework completion. Particularly given that attributing negative outcomes to internal, stable and global factors is likely to increase perceived costs and decrease perceived benefits of homework, attributional style is a very important consideration. Additionally factors influencing homework completion have received little empirical attention, even though Riso and Thase (2007) pointed out that helplessness and hopelessness attributions were the most serious barrier to homework implementation.

This sound rationale, along with the small finding discussed in this section demonstrates that pessimistic attributions may be an important consideration when assigning homework to more pessimistic and more severely depressed clients. Clients demonstrating a trend of blaming negative outcomes on internal, stable and global causes may experience homework-interfering behaviours, and may need extra input in the processing of this. Likewise, the moderating effect of homework quantity and quality on the pessimism-depression relationship provides motivation for encouraging more pessimistic clients to engage in homework more often and to a higher quality. This would enable exposure to corrective experiences for the client if homework review procedures are followed adequately, as otherwise negative attributions provide an opportunity to be altered in the making.

4. The Effect of Therapist Competence in the Use of Homework Competence Was Not Consistent

The first point to note is that therapist competence was shown to be variable in several respects. The first is in regards to variation within individual therapists over time. Graphs presented earlier demonstrated that therapists are not consistent in their competence in assigning, designing, and reviewing homework over the course of therapy. This indicates that session-to-session variables, such as homework task or clients' clinical presentation, influence the implementation of homework. Secondly, within therapists competence varied between their different clients, indicating that the

person the therapist is working with has a large impact on the therapists' styles of homework administration. Finally, competence varied between therapists. Competence may therefore be influenced by therapists' personal abilities and beliefs in learning homework administration and applying it in practice. However, despite this variability, each therapist's personal ranking amongst the other therapists was shown with a Spearman's rank order correlation to correlate relatively highly over time, meaning that a therapists' competency rank in relation to other therapists remained consistent over the course of therapy.

Competence Did Not Impact on the Multilevel Models

Post-hoc multilevel analyses showed that therapist HAACS ranks had no relationship with Model D and did not explain any of the variation in Model D at either Level 1 or Level 2. Therefore therapist competence in homework appears to have no effect on the homework - attributional style - depression relationships. There is no known past research investigating the effects of therapist competence as measured by the HAACS in relation to client homework compliance or depression outcome with which to compare this finding to. However there is a solid theoretical base advocating for therapist competence in a range of individual homework behaviours pertaining to the HAACS, even though these behaviours were researched independently of the HAACS. Such behaviours include giving the client a rationale for the homework and matching the task to client goals, tailoring it to the client and working collaboratively, considering possible barriers to completion, making the assignments clear and specific and providing a written format, and reviewing learning from homework tasks (Kazantzis et al., 2004, Kazantzis & Lampropoulos, 2002). A comprehensive guide to optimal therapist behaviours is provided by Nelson, Castonguay, and Barwick (2007) and in the guiding model for practice by Kazantzis, MacEwan et al. (2005). Past research has also investigated overall therapist competence in assigning homework in relation to client compliance, although again these did not involve the HAACS. For example Bryant et al. (1999) utilized the CTS (Cognitive Therapy Scale) and the Therapist Homework Assignment Competency Scale (THACS, developed by Michael Bryant) in investigating therapist competency. The study produced mixed findings, with homework review predicting compliance, while competent assignment and providing rationales did not predict compliance (Bryant et al., 1999). Judgements of therapists' competence in clearly describing and justifying homework assignments and in anticipating possible difficulties was not

related to increased homework compliance in a study by Startup and Edmonds (1994). This study had significant limitations in that competency judgements were rated on a short scale by clients, and clients' compliance was rated by therapists, introducing a degree of bias on both accounts. However these studies are representative of the mixed findings in the literature so far, and highlight to a degree the limitations experienced in them. Therefore, it was based primarily on the theoretical rationale for therapists' competency in homework that it was thought that high competence would correlate with increased compliance and enhanced outcome, rather than on the empirical investigations of competence-compliance relationships. It is not entirely surprising, however, given previous mixed findings and the current study's limited session numbers that incorporated the HAACS that no effect was found in this study.

This is not to say that competence is not important, rather that specific aspects of therapist competence need to be broken down further and the effective components identified. Additionally, it might be that future research needs to compare therapists who are not specifically trained in homework administration with therapists who are highly trained in a controlled study. It could be that all the therapists in the current study were performing at a high level due to the intensive training they undertook, resulting in a lack of significant differences between therapists. A lack of such variation may mean that separating out differences is difficult.

5. The Attributional Style – Homework Relationship

Main Findings Indicate No Relationship

Multilevel analyses demonstrated a non-significant relationship between optimism and homework experiences at intake and over the course of therapy. However interestingly, correlation analyses prior to the multilevel analyses supported a trend towards a relationship between optimism and experienced homework benefits. Interestingly, this trend was stronger than the trend for the pessimism – homework relationship. Nonetheless, these trends ceased to exist in the context of multilevel analysis. A literature search has not found any previous research with which to compare these findings; it is thought that this study is the first to report on the relationship between attributional style and homework completion and experiences. However, theory indicated that this was an important avenue to pursue, as the relationship between pessimism and depression is widely known, and the relationship between homework and depression is a growing body of research. It makes sense that if a more pessimistic person has a negative experience with a homework outcome,

they are more likely to attribute this to internal, stable and global causes, and are thus less likely to attempt to complete future homework tasks.

In light of these speculations, there are several possibilities for the lack of findings here. One is that homework scores fluctuate too widely to be able to form a coherent pattern or relationship. However, the multilevel analysis did show that there was significant variance to be explained both within and between people in homework scores, indicating that the fluctuations were not too great as to hide any potential for explaining variance. Another possibility is that therapists were extremely homework-orientated, and so provided the extra encouragement pessimistic clients needed to complete their homework. Thorough reviewing of homework at each session was motivation for many to carry out their assignment and report back, and was an opportunity for any misattributions to be corrected. This might have meant that pessimistic clients were brought up to 'normal' levels by having their misattributions corrected. Optimistic attributions were likely not addressed to the same degree or were reinforced, leaving these scores unaltered to correlate with homework.

The above reasons are similar to those for the lack of findings in the depression - homework link. This is because depression and attributional style are linked so even though depression was not taken into account in this analysis, it would have still been a contributing factor inadvertently. Another final possibility is that the hypothesis that attributional style affects homework compliance is incorrect, at least in the current study. Whether the lack of relationship is due to therapists' vigilance or a genuine lack of relationship remains unclear; further randomised controlled studies are needed to compare these.

Limitations

One limitation of this study was that not all of the measures were administered at all time points. In particular, the ASQ was not measured between sessions 9 and 19, and therapist competence via the HAACS was only checked in the first half of therapy. There was sound rationale for this decision in that most change is hypothesised to occur within the first half of therapy (Tang & DeRubeis, 1999). Additionally, numerous and lengthy measures can be arduous for clients. However this is discussed in the next section on considerations for future research.

Another limitation of the study is that the sample is not representative of the general population. By screening clients thoroughly for age, number of depressive

episodes, and concurrent or past therapy, generalisation of findings is limited. This was designed specifically because as an initial investigation, it was desirable to control potential confounding variables. However replications need to occur with other populations (e.g. clinical and more severe populations). The results could also be replicated with a larger sample size although the number of clients was greater than the average sample size of 19 cited in the Kazantzis, et al. (2000) meta-analysis, and was sufficient for multilevel analysis with 546 data points.

A final limitation of the study is that the therapists were not yet registered professional clinicians; they were still in the final stages of their training. Replication with more experienced professionals could aid in exploring this data. However, the therapists employed in this study were extensively trained in CBT, depression, and homework, and were rigorously monitored by senior professionals. Additionally, many experienced therapists may have their own beliefs and pre-existing conceptions about homework that interferes with administration.

Considerations for Future Research

Measurement Instruments

One area for future research lies with the measures utilized in the current study. The use of the outcome measure, the BDI-II, while widely utilized and highly reliable, may be extended in future studies by employing additional outcome measures. A small number of studies investigating the effect of homework compliance on outcome have reported that there is an effect for homework on outcome as measured by the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960), but not for the BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961, Bryant et al., 1999). The authors purport that the BDI may be less sensitive than the HRSD. However it should be noted that the BDI-II, as used in the current study, is an advancement from the original BDI and has high agreement with the HRSD-R and new cutoff scores (Beck et al., 1996). Additionally the HRSD may introduce an unfair bias as it is a therapist rated measure.

The HRS-II is also a newly developed measure. The development of the HRS-II was based on sound theory (Kazantzis et al., 2004), its reliability has been reported to be high (see Kazantzis et al., 2006), and its factor structure has been examined and demonstrated to be composed of three clear factors (Bjornholdt, 2006). However, more research is needed into its reliability and validity with different populations. The

use of the HRS-II should also be investigated in terms of socially desirable responding, and in terms of which version is most appropriate to use. The fact that the client, therapist, and independent observers' versions result in different scores mean that further research needs to be conducted into why this occurs. Another avenue for future research lies with the measurement intervals of the ASQ which was measured at intake, sessions five, eight, 20, and the two-month follow-up. While this is substantial, and it is unreasonable to expect clients to fill out a lengthy measure often, one additional measurement point between sessions eight and 20 might aid in the enhanced interpolation of this data. Likewise, time and funding constraints meant that the HAACS was only measured up to session 10. It would be ideal to employ independent raters to extend their observations through to session 20 so that full raw data could be utilized rather than ranks.

Randomised Controlled Trials

As alluded to earlier, randomised controlled trials would be extremely beneficial in furthering this research into homework effects. Because there was no effect of homework in this study, it is very difficult to investigate the impact of attributional style. Therefore a step back needs to be taken, in order to re-investigate why there was no effect for homework. One suggestion is that due to the high levels of homework training in this study, all of the clients may have been experiencing the benefits of homework in this study to a high level. It is difficult to know whether the effects would have been different had some of the clients been allocated to therapists without this focus. Such an investigation lends itself to randomised controlled trials, which in future research may benefit from including three different conditions. The first condition should be a replication of the procedures in this study; that is, implementing CBT with a high focus on homework training for therapists and their competent implementation of the protocol with clients. A second condition could include CBT but with minimal or no focus on homework. While it is acknowledged that homework is an essential component that comprises CBT, for the purposes of delineating the effective ingredients this could be partialled out. Finally, a wait-list control group could compose the third and final comparison group to control for incidental improvement. This would allow us to observe whether the focus on completing homework tasks per se in CBT is as important as initially thought. In carrying out controlled research, it is acknowledged that many clients in the "no homework" conditions may carry out tasks on their own accord. For example, in the

trial by Kornblith et al. (1983), clients in the no homework condition completed homework on their own accord, while clients in the homework condition regularly did not complete homework. The suggestion here however is that such research could be improved. By having a condition that implemented homework with the rigour that the current study did, the clients in the homework condition would have a high chance of completing homework to a much greater degree than those in the no homework condition (overcoming one of the problems with the Kornblith et al. 1983 study). If it was found that there was still no difference between clients in the homework and no homework conditions, this would tell us something very important. It will highlight whether the large emphasis on homework tasks in therapy is as important as initially thought. It may be that clients completing homework on their own accord is just as effective in producing change, so long as the therapist encourages this integration between every day life and therapy, and reflects on the clients' out-of-therapy thought processes with them. Rather than dismissing these trials as conducted ineffectively or as producing an un-interpretable result because clients in the no homework condition did tasks anyway, it should be considered as a piece of information that is actually very important. Once it has been established whether the focus on homework tasks and the completion of set tasks per say (as opposed to client initiative and out-of-therapy thought processes) is important or not, then research can move to investigating the impact of more detailed factors such as attributional style. Indeed it may be found that homework tasks are very important; this theoretically does make sense, and researchers such as Neimeyer and Feixas (1990) did find this type of effect in their trials. Whatever the finding however, the need for randomised controlled research is highlighted here, and the suggestion now is to move away from the strong focus on correlational research.

Further Correlates of Homework Compliance

Another avenue for future research to investigate is a more thorough investigation of factors that cause homework compliance to fluctuate over time. This could entail investigating both client and therapist factors. An example of client factors that would be useful to include is items pertaining to clients' ratings of perceived task importance and readiness to try the task from the homework assignment form (Appendix G) as predictors. The current study focused on clients ratings of homework assignments already completed, with theoretical links to their subsequent predictions about future assignments. While beyond the scope of the

current study, the pre-homework beliefs about homework as described above would be very interesting to investigate. Likewise, therapist beliefs about homework would be important to measure and to examine in relation to their competence scores and their clients' adherence scores. As mentioned earlier, therapist competence in general would be useful to examine in the context of a controlled study, with highly trained therapists compared with a group of therapists with no specific training in homework. Even though clients in the no-training group may enlist in homework assignments on their own accord, the findings will provide insight into how much emphasis it is important for therapists to place on homework in therapy. If clients in the no-training group complete homework on their own accord then perhaps specific training is redundant. However, this awaits future investigation.

Practical Implications for Clinicians

Homework May Not Be One of the Essential Ingredients of Therapy

Results from this study indicate that homework as conceptualised from the HRS-II factors is not related to therapeutic outcome as measured by depression. Additionally, homework is not related to attributional style, which is a known significant predictor of depression severity over time. Therefore it may be that other therapeutic factors such as the therapeutic alliance play a more important role in outcome. Homework is still a very important component of therapy theoretically, and it is not the suggestion that this should be dismissed. Rather, what this means for clinicians is that it may be important to consider what aspects of therapy their clients are reporting to be helpful. Clinicians might benefit from being open to the idea that standard homework tasks may not be beneficial to everyone, and they may need to discuss with their client how they can tailor tasks to make them work for that individual. The need to tailor assignments to individuals is already acknowledged in Kazantzis, MacEwan et al. (2005).

Specification of a Task May Not Be What is Important in Homework

No-one can doubt the importance of discussing a clients' every day experiences with them in therapy, and relating their learning to their outside life. In this regard, homework provides the means for integrating a person's therapy experiences with their outside lives. The high focus on homework in the current study means that it is difficult to know what the effects of no focus on homework would have been, however the positive outcomes in terms of depression scores and attributional style improvements indicate that homework is certainly not harmful, and

in fact it makes sound theoretical sense that is too important to ignore. The suggestion from this study is that while homework scores on assigned tasks may not be important, it may be that it was the discussion of homework completion or non-completion that was the important contributing factor. Therefore clinicians may benefit from attempting to regularly discuss with clients how they are going to implement their learning in therapy to their outside lives, and to follow this up with a review of this integration. This provides an opportunity to encourage generalisation and to correct any distorted attributions that may interfere with progress, even though specific tasks may not be identified. Clinicians might be aware that clients who are not completing their homework are not necessarily ignoring the principles learnt in therapy; they may just be applying them in alternative manners.

Focusing on Quality of Homework Completion May Be Important

The positive relationship between homework quantity, quality, and depression (and the lack of individual correlations between quantity and depression) highlights the need for asking the client about not necessarily whether they completed their homework, but the degree to which they felt they completed it. This also highlights the drawbacks of the existing literature base focusing on quantity of homework completion alone. Clinicians may therefore benefit from asking their clients about the degree of homework completion in therapy rather than just whether they did their homework or not. In addition to providing more information, asking about the quality of completion opens up grounds for further discussion of the experience of homework, and highlights any distortions in the clients' perceptions (for example discounting their efforts).

Maintain Awareness That Clients' Perceptions of Their Efforts May Not Match Those of Their Therapist

The disparities between client, therapist, and independent observer ratings in the current study demonstrated the need to check clients' experiences rather than assuming their objective description is being viewed in a certain way. A client may report that they completed their homework, and that they filled in all seven columns of a thought record for example. However, a pessimistic client may perceive that they didn't do it properly, or they didn't write enough in each column to be adequate. Thus it is important that the therapist check with the client how they felt they did, and to compare any disparities in perceptions openly with the client. Clinicians may therefore benefit from being aware that even if a client did perform objectively well in

a homework task, their experience may be quite different and it may be this experience of the task that hinders progress rather than the task itself.

Note That CBT is an Effective Treatment for Both Depression and Pessimistic Attributional Styles (which can change)

The final point to take away from this study is that CBT was effective in reducing depression severity for all clients, an effect that was maintained at follow-up. Additionally, pessimism scores were shown to decrease for the majority of clients over the course of therapy, while optimism scores increased. Therefore attributional style is a worthy target of change. In particular, it may be beneficial for clinicians to concentrate their efforts on pessimistic attributions, which showed a higher relationship with depression than optimism did in the current study. Clinicians' attention to internal, stable, and global attributions of negative events is likely to be beneficial as it provides a means for highlighting these to the client and altering what is a significant underlying factor in the maintenance of depression.

CONCLUDING STATEMENTS

The primary aim of this study was to investigate whether pessimism moderated the relationship between homework and outcome in terms of depression severity over the course of CBT for first-episode Major Depressive Disorder. While CBT was known to be an effective treatment for depression, much less was known about what makes CBT effective. Additionally, completion of homework had been shown to correlate with improved outcome in therapy. However, measurement of homework had been limited, and investigations of how to enhance compliance had been minimal. Thus a major theory of depression, the learned helplessness theory, was employed to investigate whether attributing negative outcomes to internal, stable, and global attributes affected homework experiences and hence therapy outcome.

Twenty-eight adult participants were recruited at Massey University in Albany, New Zealand, and engaged in 20 sessions of CBT for depression, plus a follow-up session two months later. Clients were rigorously screened to exclude recurrent MDD, psychoactive drugs, and personality disorders. Clients completed measures of depression and homework at each session, as well as multiple other measures interspersed throughout therapy. Clients were seen by doctoral students highly trained in CBT and optimal homework implementation, and ratings of homework adherence and therapist competence were also regularly gathered by independent observers.

A longitudinal design was employed using multilevel analysis to enable investigation of both between and within person effects over time. This was one of the first studies to use this advanced technique in the investigation of homework, and overcame severe limitations such as single retrospective, dichotomous ratings of homework seen in previous literature. Thus the current study represented a significant advancement in the research of homework and depression.

Overall it was demonstrated that CBT was effective in this study, with all clients experiencing reductions in their levels of depression which were maintained at the two-month follow-up point. Clients' reductions in levels of pessimism were also retained at follow-up. It was found that older clients were significantly less depressed than younger clients, and were also more optimistic and less pessimistic. Women were significantly more depressed and less optimistic than men, in accordance with previous research.

Homework was conceptualised as comprising three factors from the HRS-II: benefits and completion, costs and completion, and client beliefs. None of these factors shared a significant relationship with therapy outcome. Thus homework tasks may not have been as important as previously thought. However it may be that the discussion of homework is what is important, whether or not clients physically complete the subsequent task, as discussion enables cognitive integration of every day life into therapy and vice versa. Conceptualising homework as a basic quantity - quality interaction resulted in a small relationship indicating that it is important to measure quality as well as quantity, an oversight in some previous research. This basic relationship also indicates that further research may need to be conducted on the other HRS-II items. Pessimism moderated the relationship between quantity, quality and depression, indicating that the views clients take of negative events may influence their basic homework completion and their views on how they performed. Clients' ratings of their homework experiences were at odds with those of therapists and independent observers, suggesting that therapists should exercise caution when asking clients about their experiences. Attributional style was related to depression as expected; higher levels of pessimism inhibited therapy outcome to a degree.

Therapist competence fluctuated over time and differed depending on the client. Additionally, competence did not impact on the relationship between attributional style, homework, and depression. Attributional style was not directly related to homework completion as originally thought, although again future research should investigate different means of conceptualising homework completion.

The practical implications of this research suggest that clients might benefit from discussing homework and every day life in relation to learning in therapy, but that their actual completion of the subsequent homework task may not be a crucial factor. Thus it is suggested that clinicians maintain a focus on homework in therapy, but that future research should investigate the generalisability of these results and continue to investigate whether the actual completion of a task is as important as initially thought. It may also be important for clinicians to maintain awareness that quality of homework is an important associate of therapy outcome, perhaps even more so than quantity of homework completed. Additionally, therapists' views of quality are likely to differ from those of the client, and so clinicians may need to investigate more thoroughly the clients' views surrounding their homework outcomes.

The current study represents significant growth in the investigation of homework compliance, and its comprehensive multilevel approach has paved the high standard for future research to continue from. The findings have produced interesting and clinically important outcomes, suggesting that homework is important, but it has begun to question exactly which parts of homework play the most important role and why. This is an exciting area for future research, and continuing to pursue this avenue will lead to further refinement of the optimal therapy that clinicians strive to provide clients with, and that clients deserve. If clients are going to invest in homework, then it needs to be ensured that the reasons for this are sound, and this research has certainly begun to ensure this.

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Appendix A

Study to find out how to beat the blues

A team of specially trained Massey psychologists is offering free therapy to first-time depression sufferers in Auckland as part of a collaborative international study involving Harvard University and the London Institute of Psychiatry.

The University's Centre for Psychology will provide data from therapy sessions with volunteers, so that the team of international researchers can better understand the dynamics of Cognitive Behavioural Therapy (CBT), how it alleviates depression symptoms and how it equips sufferers to avoid repeat bouts of depression.

Findings from the study could offer hope for depression sufferers, many of whom do not have access to affordable, effective treatment, says Dr Nik Kazantzis, senior lecturer and practitioner who heads the team.

Depression sufferers typically experience low mood, poor appetite, lack of energy, disturbed sleep, feelings of helplessness and guilt. They may find decision-making difficult, feel miserable when they make even the smallest mistake and generally feel life has become overwhelming.

CBT teaches people how to become their own therapists by teaching them skills so they can deal better with difficult situations and the painful emotions they trigger, says Dr Kazantzis. Volunteers are being offered 20 hour-long individual sessions to learn strategies for changing problem thoughts and behaviours.

He says CBT is a widely used, mainstream therapy developed by American-born psychiatrist Dr Aaron Beck in the 1960s. Although it has been endorsed by more than 400 studies internationally as an effective, low-cost treatment for a range of disorders, including depression, little is known about why it works.

Dr Kazantzis, who trained under Dr Beck two years ago, believes the therapy is particularly suited to New Zealanders as it offers immediate, practical help in coping with the present and does not necessarily require clients to embark on in-depth analysis of their pasts to be effective.

People can volunteer for the therapy if they have not been previously diagnosed with depression and are not taking medication that affects the brain.

About 121 million people world wide suffer from depression but fewer than 25 per cent have access to effective treatment, according to the World Health Organisation. Depression is the fourth-highest contributor to the global burden of disease, and is expected to become the second highest by 2020.

For more info about participating in the study call Nicole

Source: <http://www.massey.ac.nz/massey/about-us/news/article.cfm?mnarticle=study-to-find-out-how-to-beat-the-blues-21-05-2008>

Appendix B

COGNITIVE BEHAVIOR THERAPY HOMEWORK PROJECT

PHONE SCREENING INTERVIEW PROTOCOL

Introduction

When person answers say something like:

Hello, may I speak to Jane Smith (who presumably has left a message somewhere saying she is interested in taking part).

If yes, then say, *Jane or Ms Smith (depending on age) this is Mary Brown, I'm a researcher from Massey University. You left a message on (say when or can't remember say recently) about possibly taking part in our research study. Is this a convenient time to talk about it?*

If yes then listen to what they spontaneously say and if they don't spontaneously talk say *the easiest way to start is by just outlining again the what the study is about and if you're still ok with it, I'll ask you some questions to help work out whether you fit within the group of people we are looking for this time.*

If no, then arrange a more convenient time to call back if they are still interested

So, basically what we are wanting to do is work out how treatment for depression, in particular Cognitive Behavioural Therapy can be improved to help people with depression. It is already a proven treatment, but we think there are ways that it could be improved. We are looking for 70 people between the age of 18-65 years from the greater Auckland area that are experiencing an episode of major depression for the first time in their lives. People can only be included in this study if they meet a certain set of criteria, therefore I will have to ask you several questions, this may take 20-30 minutes of your time.

But before going any further, you should know that every you say will be confidential. But there are two exceptions to this – and that is if I think there is any chance that you may cause harm to yourself. In that case I have break confidentiality for the sake of yours and others safety.

OK?

If yes, then proceed with, *right, then let's start with the questions*

If not ok, then listen to reservations, reassure and proceed or otherwise terminate.

Initial Questions

- a) *What is your DOB? How old are you? – needs to be between ages of 18 and 65 but since age already discussed at outset, won't be too many problems with this.*
- b) *Can you read, English OK? Write? Hold a conversation?*
- c) *Are you currently taking any medication prescribed by your doctor? If yes, What is it? This could include the contraceptive pill or sleeping medication. Google. Exclude occasional hypnotic and oral contraception.*
- d) *What help are you getting if any for your depression?*
- e) *Is this the first time you have felt like this?*

I now have to ask you some questions about the way you have been feeling lately, the reason I am asking these questions is to assess whether you would benefit from participating in the study. We ask these questions so we are sure that the people participating in this study are likely to benefit from the treatment we provide.

DSM-IV-TR MAJOR DEPRESSION

At least 5 of the following symptoms have been present during the same two week period and represent a change from previous functioning; at least one of the symptoms is depressed mood or loss of interest.

1. Do you have a depressed mood (feel “sad”, “down”, “angry” or “empty”) most of the day, every day. How is your mood?
 - How long have you been feeling.....
 - Do you feel that way nearly every day?
 - How much of the day does it last?
 - How bad is the feeling?
 - SUD – how would you rate this feeling on a scale of 0-100 (0 being not at all sad and 100 being the most sad you have ever been)?

Criteria – depressed mood most of the day, nearly every day, as indicated by subjective report or observation by others

2. Have you lost interest in or do you get less pleasure from the things that you used to enjoy?
 - a. What do you normally enjoy doing? (TV, reading, sports, shopping, socialising, eating, hobbies?)
 - b. What do you still enjoy?
 - c. What have you lost interest in?
 - d. For how long have you not enjoyed these things like you used to?
 - e. Is it like that nearly every day?

Criteria – Markedly diminished interest or pleasure in all or almost all activities most of the day nearly everyday

3. Have there been any changes in your appetite for food?
 - a. Increased? Decreased?
 - b. How much more/less have you been eating?
 - c. Is it like that nearly every day?
 - d. For how long has it been this way?
 - e. Have you gained or lost any weight? How much? Since when?

Criteria - Significant weight loss/gain when not dieting (change of more than 5% in month) or a decrease or increase in appetite nearly every day.

4. How has your sleeping been?
 - a. How many hours per night have you been sleeping?
 - b. How does this compare to normal?
 - c. Increased? Decreased?
 - i. Is it a problem nearly every day?
 - ii. How long have you had these sleep problems?
 - iii. If decreased – do you have any problems falling asleep, staying asleep, or waking up to early in the morning?

Criteria – insomnia or hypersomnia nearly every day.

5. Listen for slowed speech, long pauses before answering

questions or between words.

- a. Agitation: Have you been feeling more fidgety lately? Are you having problems sitting still?
 - i. IF YES: Do you pace back and forth?
 - ii. Have others noticed your restlessness
- b. Retardation: Have you felt slowed down, like you are moving in slow motion
 - i. IF YES: have others noticed this?

Criteria – psychomotor agitation or retardation nearly everyday (has to be observable by others)

6. How has your energy levels been?

- a. Have you been feeling tired or worn out?
- b. IF YES: Duration? (For how long have you...)
Persistence? (Do you feel like this nearly everyday?)

Criteria – Fatigue or loss of energy nearly everyday?

7. How have you been feeling about yourself?

- a. What has your self-esteem been like?
 - i. IF LOW: What types of thoughts do you have about yourself?
 - ii. Do you feel like you are worthless or a failure?
 - 1. If yes: Tell me about it
- b. Have you been blaming yourself for things?
 - i. Like what?
- c. Do you feel guilty
 - i. IF YES: what about?
 - ii. How hard is it to get your mind off this?
 - iii. Do you think about things from the past and feel guilty about them?
 - iv. IF YES: Like what?
 - v. Is the patient's guilt or worthlessness on the patients mind everyday?
 - vi. What has your **self esteem** been like?
 - 1. Has there been any change?

Criteria – feelings of worthlessness or excessive or inappropriate guilt nearly everyday (not merely self-reproach or guilt about feeling sick)

8. Have you been having problems thinking or concentrating?

- a. IF YES: what does this interfere with?
- b. Are you able to watch TV? Read? Follow a conversation?
- c. How long have you noticed this happening?
- d. Does it happen nearly everyday?
Is it harder to make decisions than before?
IF YES: What kind of decisions is harder to make?
- a. What about every day decisions?
- b. How long have you had this problem?
- c. Does it happen nearly everyday?

Criteria – Diminished ability to think or concentrate, or indecisiveness, nearly everyday.

9. **SUICIDE SCREEN** - Sometimes when a person feels down or depressed they may think about dying, this is

quite common. It is very typical and common for people to have thoughts about harming or killing themselves.

Have you been having any thoughts like that?

- a. IF YES: Tell me about it. Have you thought about taking your life?
 - i. IF YES: Did you think of ways to do it?
 - ii. Do you currently have a plan?
 - iii. Do you have the means to carry out this plan?
 - iv. How close have you come to doing it?
 - v. IF you have not attempted, why not? What stops you from doing it? What are the protective factors?
 - vi. IF NO: Do you wish you were dead? Do you have thoughts of death or dying?
 - vii. When you go to sleep do you often wish that you would not wake up?

Criteria – Recurrent thoughts of death, not just of dying, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

10. What difficulties in your life has the depression caused?
OR: How have these difficulties affected your life?
 - a. Does it bother you a lot that you feel this way?
 - b. Has it caused problem in your job? Study? Relationships? Friends? Family? Social life? Doing household chores?

Criteria – The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

11. Do you have any medical conditions?
 - a. YES:
 - i. When did the conditions start?
 - ii. Has there been any change to this condition? Lately?
12. Have you lost a loved one in the last two months?
Exclude: unless – if associated with marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.
13. During this time have you been experiencing delusions or hallucinations? At the same time as depressive symptoms.
14. IF PSYCHOTIC
 - a. Was there a time when you had the (hallucinations/delusions) but did not feel sad or depressed?
 - b. IF YES: How long did you have [psychotic symptoms] only?
 - c. When did the depression begin in relation to this?
15. Has there been a major event in your life lately that may have come before you felt like this? E.g. a death of a close relative or friend (bereavement)?
16. When you started experiencing these symptoms have you ever felt this way?
 - a. Have there been times lasting at least a few days

when you felt the opposite of depressed, that is when you were very cheerful or high and this felt different from your normal self?

IF YES or UNCLEAR:

1. Did you feel hyper, or like you were high on drugs, even though you had not taken anything?
2. Did anything cause your good mood?
3. How long did it last?
4. So, was this more than just feeling good?
5. When did this occur?
6. How many periods like this have you had?

IF NO:

7. What about a period lasting at least a few days when you were unusually irritable, and quick to argue or fight?

IF YES: Describe what that was like.

- i. Were you using drugs or alcohol?
- ii. Did you get into many arguments or fights?
- iii. How long did this period last?
- iv. Was there a reason you felt this way?
- v. When did it occur?
- vi. How many times have you felt this way?

If the clients report manic symptoms ask these questions:

- Did you find during this period you needed less sleep than usual?
- Did you notice you had racing thoughts and ideas?
- Were you easily distracted?
- Did you find you were overly occupied with pleasurable activities (or goal oriented)?
- Did you find during this period you were involved in a lot of risky and potentially self-damaging behaviour e.g. gambling, drinking, stealing, speeding?
- During this time did you feel more irritated than normal?
- During this time did you find it hard to relax?
- Did you find you felt like this constantly over a period of a week? (apply to all questions).

DRUG ABUSE/DEPENDENCE

Alcohol:

Pre-screen:

Frequency: How often do you have a drink containing alcohol?

Daily? Weekly?

How many drinks containing alcohol do you have on a typical day when drinking?

How often do you have six or more drinks in one occasion?

Now I am going to ask you some questions about your use of alcohol

What are your drinking habits like? – for example how

<p>much alcohol do you consume a night? How much would you consume in a week? Was there ever a time in your life when you drank too much? IF YES: How old were you? Has anyone in your family said that you were an excessive drinker? Have friends, a doctor, or anyone else ever said that you drank too much? Has alcohol ever caused problems for you? IF YES: What kind of problems? How old were you when you had these problems? <i>If all questions are answered NO unlikely to meet diagnosis of Alcohol abuse</i></p> <p>Street drugs: Have you ever used street/recreational drugs? *if used less than 10 times go to prescribed medicines Did you ever think you used drugs too much? IF YES: how old were you?</p> <p>Has anyone in your family said that you use drugs too much? Have friends, a doctor, or anyone else said that you use drugs too much? Have drugs ever caused a problem for you? IF YES: What kinds of problems? How old were you when you had these problems?</p> <p>Prescribed medication: Have you ever used sleeping pills, tranquilisers, weight loss medicines or pain killers? IF YES: How long did you take the drug? Did you get hooked or addicted to it? Did you take much more than was prescribed? <i>If all the above are answered NO, diagnosis of drug dependence unlikely</i></p> <p>A1: Because of drinking or taking drugs how often have you - Missed work or school? - Have trouble at work or school? - Got fired etc? - Not taken care of children? - No cook, clean house, go grocery shopping?</p> <p>A2: Do you drive while intoxicated? How often? Did you ever drink (take drugs) and then do something that was potentially dangerous (e.g. operating machinery)</p> <p>A3: Were you ever arrested for driving under the influence, or disorderly conduct? Were you ever busted for selling/buying drugs?</p>	
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IF YES: How many times
Recurrent drug related legal problems

A4:

Because of your drug taking/drinking did you....
- frequently have problems or arguments with friends or family?
- Spend less time with family or friends?
- Get separated or divorced?
- Get into physical fights?
- Get violent?
- IF YES TO ANY: do you still drink/take drugs despite these problems?

**Have you taken any drugs/consumed any alcohol today? Do you plan to drive anywhere? (e.g. do your children need to be picked up etc – follow up.)

Drug Abuse = A maladaptive pattern of drug use leading to clinically significant impairment or distress, as manifested by one or more of the following occurring within a 12 month period.

Screen for psychosis: *Now I will ask you some questions about how you perceive or view the world around you.*

DELUSIONS AND HALLUCINATIONS

DELUSION OF REFERENCE

When watching TV, listening to the radio, or reading the paper do you notice that they are referring to you, or that there are special message intended for you?

- What have you noticed?

Does it seem like **strangers on the street are taking special notice** of you or talking to you? Is it a feeling you have, or **are you pretty sure** that they are talking about / referring to you?

How do you know?

Does it seem like things are especially arranged for you?

In what way?

DELUSIONS OF PERSECUTION

Is anybody against you, following you, giving you a hard time, or trying to hurt you?

Do you feel like there's a plot to hurt you?

Who's involved?

Why would they want to hurt you?

THOUGHT BROADCASTING

Do you ever think of something so strongly that people could hear your thoughts?

So, people can hear what you are thinking even when you are not talking?

How do you know?

DELUSIONS OF MIND READING

Are people able to read your mind and know what you're thinking?

How can they do this?

Do they literally read your thoughts, or do they read your facial expression to know what you're thinking?

THOUGHT WITHDRAWAL

Are your thoughts ever taken out of your head?

Does someone or some force reach into your head and steal or remove your thoughts?

THOUGHT INSERTION

Are there ever thoughts in your head that have been put there from the outside?

DELUSION OF GUILT

Do you think you've done something so terrible and deserve to be punished?

I know it will be hard to talk about, but what do you feel so guilty about?

Do you blame yourself for bad things going on in the world, like wars, crime, and starvation?

DELUSION OF GRANDIOSITY

What is your self-esteem like?

Do you feel more self-confident than usual?

Do you think you have special talents, abilities, or powers?

When some people feel (HIGH, EUPHORIC, etc) they may think they're going to become famous or do great things. Did you have any thoughts like that?

DELUSION OF CONTROL

Do you ever get the feeling that you're being controlled by some force or power from the outside?

At times, does it seem like you're not in control of your body, almost like you're a puppet and something from the outside pulls the strings?

So, at times your body does certain things without your willing it?

SOMATIC DELUSION

Are you concerned that you have a serious physical illness that a doctor hasn't found, or that something is wrong with your body?

HALLUCINATIONS

VISUAL HALLUCINATIONS

Have you seen visions or other things that other people didn't see?

What did you see?
What time of the day did this occur?

How long ago did it start?
Do you see it everyday?
How often do you see it?

AUDITORY HALLUCINATIONS

Have you heard noises, or sounds, or voices that other people didn't hear?

What did you hear?

Do the voices seem to come from inside or outside your head?

IF INSIDE: But you hear it with your ears?

How many voices do you hear?

Are they male or female?

Do you recognize them?

Do you ever hear two or more voices talking to each other?

Do the voices ever talk about what you're doing or thinking?

IF YES: Do they keep a running commentary on what you are doing or thinking just like a sports commentator?

How long ago did the voices start?

Do you hear them every day?

How often during the day do you hear them?

Do they influence your behaviour?

Do they tell you to do things?

TACTILE HALLUCINATIONS

Do you ever notice strange sensations in your body or on your skin?
Do you ever feel something creeping or crawling on your body, or something push or punch you but no one is there?

IF YES: Like what?

When did it happen for the first time?
How often has it happened?

OLFACTORY AND GUSTATORY HALLUCINATIONS

What about smells that other people don't notice, or strange tastes in your mouth?

IF YES: Like what?

When did it happen for the first time?

How often has it happened?

Are they associated with any other physical symptoms like an upset stomach, numbness, tingling, or brief memory loss?

Tell me about that?

Screen for Borderline PD

I am now going to ask you some questions about your relationships with other people. I will specifically ask you questions about your feelings in your relationships

- **Inclusion = at least 5 criteria**
- **Pervasive pattern of instability of interpersonal relationships, self-image, and marked impulsivity beginning at early adulthood and present in a variety of contexts:**
 - 1) Have there been times when you've been very upset, almost to the point of being distraught, because you thought someone you loved or needed, might leave you?
 - a. How often has this happened?
 - b. What did you do to stop them from leaving?

Do you spend a lot of time thinking of ways to keep people from leaving you?

Frantic efforts to avoid real or imagined abandonment (do not include self-mutilating behaviour.

- 2) Do your relationships with friends and lovers tend to be intense and stormy with lots of ups and downs?
 - a. IF YES: can you tell me about some of themWith some people do you switch from loving, respecting, and admiring them at one time, to despising them at another time?
If YES: Tell me about that

A pattern of unstable and intense interpersonal relationships characterised by alternating between extremes of idealisation and devaluation.

<p>3) Does the way you think about yourself change so often that you don't know who you are?</p> <p>a. IF YES: tell me about this Do you ever feel like you are something else, or that you're evil, or maybe that you don't even exist? Tell me about that.</p> <p><i>Identity disturbance: markedly and persistently unstable self-image or sense of self.</i></p> <p>4) I am going to read you a list of behaviours that sometimes causes problems for people. How many times in the last 5 years have you:</p> <p>a. Gambled more money than you could afford to lose b. Spent money on things you could not afford c. Been high on drugs d. One night stands/ sexual affairs e. Intoxicated by alcohol f. Charged with reckless, driving, speeding ticket etc g. Driving while intoxicated or high h. Gone on eating binges i. Done anything impulsive where you could have gotten hurt</p> <p><i>Impulsivity in at least two areas that are potentially self-damaging (do not include suicidal or self-mutilating behaviour).</i></p> <p>5) Have you ever been so upset that you told someone that you wanted to kill or hurt yourself?</p> <p>a. IF YES: Tell me about it b. How often have you done this?</p> <p>Have you ever made a suicide attempt, even one that wasn't very serious?</p> <p>IF YES: What did you do? How many attempts have you made?</p> <p>Have you ever been so upset or tense that you deliberately hurt yourself by cutting your skin, putting your hand through a glass window, burning yourself or anything like this?</p> <p>IF YES: What have you done? How often?</p> <p><i>Recurrent suicidal behaviour, gestures or threats, or self-mutilating behaviour.</i></p> <p>6) Has anyone ever told you that you are irritable (<i>touchy, short-tempered, cross, ill-tempered</i>) or that your moods seem to change lots?</p> <p>a. IF YES: tell me about it</p> <p>Do you often have days when your mood is constantly changing—days when you shift back and forth from feeling your usual self, to feeling angry or depressed or anxious?</p> <p>IF present: Are the mood swings mild or very intense? How often does this happen in a typical week? How long do the moods last?</p> <p><i>Affective instability due to marked reactivity of mood – lasting from a few hours and only rarely a few days.</i></p> <p>7) Do you feel empty most of the time?</p> <p>a. IF YES: What percent of the time do you feel that way?</p> <p><i>Chronic feelings of emptiness</i></p>	
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8)How easily do you lose your temper?
How often do you lose your temper?

Do you feel angry much of the time?
What kinds of things get you really angry?
Are you sometimes angry with knowing why you feel that way?

Tell me what you are like when you are angry.
How long do you usually stay angry?

Do you ever throw or break things? Have you ever hit anyone? Do you get into physical fights? IF YES: tell me about it.

When you are angry do you ever give someone the silent treatment?

IF yes: how long can you keep it up?
Is that a common reaction for you?

Inappropriate, intense anger or difficulty controlling anger

9) When some people are under stress, they have experiences that are very hard to explain to other people. Have you ever felt like things around you were somehow strange, or changed in size or shape?

IF YES: describe what that is like.

When you've been under stress, have you ever felt your body of part of it was somehow changed or not real?

Have you ever felt you were watching yourself from outside your body?

IF YES: describe what that was like?

Do you ever have brief blackouts and forget what has happened?

When you are feeling stressed, do you ever get paranoid or suspicious of people you usually trust?

IF NO: what about being afraid that someone is spying on you or trying to hurt you?

IF YES: Does this happen even when you are stressed?

IF YES to any of above

- were you using any drugs or alcohol when these experiences happened?
- IF YES: does this only happen when you are taking drugs and alcohol?
- IF NOT: How long do the experiences last?
- DO they go away when you are not under stress?

Transient, stress related paranoid ideation or severe dissociative symptoms.

Acceptance and Referral

ACCEPTANCE

a)We would like to offer you the opportunity to be involved as a participant in this study.

b)We are optimistic about this therapy, there has been significant scientific support to demonstrate CBT as an effective

and beneficial first line treatment for first episode depression.
c) Due to limited resources in this study it is important for you to keep in mind that this study is based in western/Pakeha culture. We do not offer a culturally specific service. However, if you identify as Maori and you are concerned, we will have a kaumatua available for consultation during the therapy process – he is available to consult us on any cultural issues that may arise during the process.

- Would you prefer a culturally specific service? Yes? Refer to WDHB.

Please note that if a participant identifies culturally-related concerns during the course of their participation in assessment or treatment, clinical supervisors should be consulted in the first instance. The School of Psychology kaumatua koro Turoa will also be available for consultation regarding any cultural issues that may arise in the process of this study. Turoa may be contacted in emergencies at 027-2888-135, and less urgent enquiries should be directed through Robyn Knuth, Secretary to the Head of School, Turitea campus.

Set up time for interview and meeting with therapist...

REFFERAL

Make sure safety checks have been carried out. (Sucide screen, present use of alcohol drugs) – contacted acute services if needed.

Make a referral to the best alternative mental health service. Provide contact details.

Contact referral source and contact study co-ordinator.

Appendix C

NAME: _____

ID NUMBER: _____

**DEPRESSION STUDY
Personal Data Form**

1. **Age** years
2. **Gender** (*tick one*) Female Male
3. **Marital Status** (*tick one*)
Never Married Divorced
Married Widow/ Widower
4. **Ethnicity** (*tick one*)
Asian European/ Caucasian
Maori Pacific Islander
Other
5. **Occupation**
6. **Education** (*tick one*)
Some primary school Completed primary school
Some high school Completed high school
Technical training beyond high school Some university
Graduated from university
7. **Have you received any mental health treatment in the past?**

DEPRESSION STUDY
Personal Data Form
Part II: Extra Information

Marital Status

At beginning of therapy
(Circle one)

- Single
- Dating
- De Facto
- Married
- Divorced
- Widow / Widower

Occupation

- At beginning of therapy you told us your occupation at that time. What was it?

- Were you actively engaged in that occupation at the time or was this a past occupation? (Circle one)

- Current
- Past

- If it was current, were you working: (Circle one)

- Full time (35+ hours per week)
- Part time

Family

Do you have Children?

- Yes
- No

If yes, how many children do you have?



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Te Kura Pūkenga Tangata

Participant Information Sheet Depression Study

You are invited to take part in a research study involving a brief psychological treatment for depression called Cognitive Behaviour Therapy (CBT). The purpose of the study is to examine certain processes of therapy which may increase its positive benefits. The study will involve 70 individuals between the age of 18 and 65 years, recruited within the greater Auckland area. Like yourself, these individuals will currently be experiencing a major depressive episode for the first time. Before you consent to be part of this study, please read the following. Ask as many questions as you need to be sure that you understand what taking part will involve. The decision to take part is entirely your choice.

If you provide written consent to be involved, you will receive a comprehensive psychological assessment, then a 20 session protocol of CBT for depression over a 16 week period. Treatment will be individualised based on your specific needs and goals, and provided by advanced clinical psychology trainees under close supervision. Consistent with prior research on CBT for depression, sessions will be scheduled twice a week for the first 4 weeks and then weekly for the next 12 weeks. Follow-up sessions will occur at 2 months and 6 months after treatment has ended. Participants will be asked to complete some assessment questionnaires to determine treatment gains, and also asked to provide informal feedback on the CBT they received. Your total time commitment (assessment, therapy sessions, questionnaires, and follow-up) is estimated to be about 30 hours, plus travel to and from the Centre for Psychology. Therapy will be provided by clinical psychology doctoral/masters students trained in delivering this protocol.

How will the study benefit you? It is expected that new information, which may benefit you or others, will be obtained by this study. Furthermore, it is very likely that the comprehensive psychological assessment and therapy offered as part of this study will improve your condition, although this cannot be guaranteed. These services will be provided free of charge. Due to funding limitations, you will be responsible for your own travel costs to and from the Centre for Psychology in Albany. Parking will be provided free of charge.

Who is unable to take part? Participants will need to be proficient in reading, writing, and conversing in English. They must be free from taking drugs which act on the central nervous system. They must not meet diagnostic criteria for substance abuse, psychosis, or borderline personality disorder. Lastly, they must be able to be managed safely with outpatient psychotherapy.

If you do agree to take part, you are free to withdraw from the study at any time without having to give a reason. This will in no way affect your continuing health care, as you will be referred to an appropriate provider to further assist your specific needs. Participation in

this study will be stopped should any harmful effects appear or if an appropriate medical professional feels it is not in your best interest to continue. You may be taken out of the study if you need treatment that is not allowed during this study, or if the study is cancelled. You will be asked to check with your study therapist before taking any other treatment; this includes anything from the supermarket, pharmacy or health shop.

Will my information remain confidential? Participating in this study will involve having your therapy sessions videotaped (and transferred to DVD discs) in order for the researchers to monitor the therapy protocol. All information collected about you during the study, including the recorded sessions, will be kept strictly confidential and only accessed by those researchers and clinical supervisors directly involved in the study. The only time in which confidentiality is breached is in the event that you express an intention to harm either yourself or somebody else, in which case a crisis team would become involved. No material which could personally identify you will be used in any reports on this study. All assessment information and clinical notes will be kept in individual files stored in a locked clinical records room, with files coded with anonymous identification numbers. Files will be stored in a separate location from both the identifying information and the DVD archive.

The information collected will be used for the research project and for publication in academic journals. All participants will be offered a summary of the findings at the conclusion of the study. This will include details of any publication arrangements that have been made. Please note that there is likely to be a delay between data collection and publication.

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. ACC cover is not automatic and your case will need to be assessed by ACC according to the provisions of the 2002 Injury Prevention Rehabilitation and Compensation Act. If your claim is accepted by ACC, you still might not get any compensation. This depends on a number of factors such as whether you are an earner or non-earner. ACC usually provides only partial reimbursement of costs and expenses and there may be no lump sum compensation payable. There is no cover for mental injury unless it is a result of physical injury. If you have ACC cover, generally this will affect your right to sue the investigators. If you have any questions about ACC, contact your nearest ACC office or the investigator.

If at any time you have questions or concerns about this study, you are welcome to contact: Dr. Nikolaos Kazantzis (who now has an academic office at La Trobe University), phone: Auckland (09) 8898292, or email: N.Kazantzis@latrobe.edu.au

If you have any questions about any issues pertaining to Maori in this study, regardless of your own ethnicity, you are welcome to contact Kaumatua koro Turoa, via the School of Psychology, phone Auckland (09) 414 0800 extension 2040.

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 study has received ethical approval from the Northern X Regional Ethics Committee.



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Te Kura Pūkenga Tangata

Consent Form

Depression Study

This consent form will be held for a period of five (5) years

- I have read and I understand the Information Sheet dated 20 February, 2009, for volunteers taking part in the Depression Study
- I have had the details of the study explained to me.
- I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study.
- My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.
- I have been given contact details to use in case I have future questions about 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.
- I understand that my participation in this study is confidential and that no material that could identify me will be used in any reports on this study.
- I agree to my sessions in this study being videotaped.
- I understand that I will not receive any compensation for travel costs or for the time I spend as a participant in this study.
- I have had adequate time to consider whether or not to take part in this study. I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: _____

Date: _____

**Full Name –
printed** _____

Appendix E

Depression Study – Assessment Summary

NAME:
DATE:
AGE:
GENDER:

DOB:
NHI #:
ETHNIC GROUP:
IWI AFFILIATION:

INTRODUCTION
ROLE
LOOSE AGENDA
TIMEFRAME
CONFIDENTIALITY - LIMITS
USE OF REPORT

SUMMARIZE – LEFT OUT
MOST IMPORTANT
QUESTIONS
FEEDBACK
PLAN – 1ST THERAPY SESSION

Presenting Problems (list of SYMPTOMS, physiological, emotional, behavioral, cognitive)

ONSET			
DURATION			
FREQUENCY			
What made worse / better			
Prevent from doing things?			
How coped?			

Precipitants - (things going on at the time, e.g., starting new job, moving home)

Perpetuating Factors - (financial stressors, occupational functioning, social contacts - frequency & nature, family conflict)

Previous Psychiatric History (had these presenting problems before? previous hospitalization, medications, therapies, suicide attempts, dates, duration, diagnoses, response to treatment and outcome)

Alcohol and Drug History (ONSET, frequency, duration, amount, friends, current consumption, tolerance, black-outs, last consumed, afforded substances, other drugs, reasons for use)

Anger and Violence History (onset, triggers, behaviors, consequences, controllability, models, remorse, past violence, examples for/of violence)

Family History (born, grew up, number in the family, closest member / talk to, separations, absent parents, grandparents, deaths, occupations, present living arrangements, childhood upbringing, family relationships, alcoholism, drugs, abuse, family homes, running away, emotional effect of childhood experiences -ve / +ve, prolonged enuresis, fears and phobias)

Familial History of Psychiatric Illness? (Type of illness + Ensure Biological connection)

Religion – (beliefs and practices)

Major Distressing Events – (impact, coping, self-esteem)

Schooling History (primary / secondary / tertiary schools attended, academic performance and behavior at school, qualifications, expulsions and suspensions, relationships with peers and teachers, friends, sports, subjects enjoyed)

Employment (jobs at and before problems, current employment status, reasons for leaving, work performance and satisfaction, relationships at work)

Relationships (number of friendships – longstanding friends, close friends, easy to make friends? Trust? Long term intimate relationships – duration of courtship, age, when married, occupations, problems, arguments, how did they solve problems, current relationship, children, including sexual relationship)

Sexual History (education/ how obtained, friendships from school / clubs, past and current girl/boyfriends, experiences - first sexual intercourse, sexual activity, - onset of interest, number of partners, preference, unpleasant sexual experiences, attitudes to sex, understanding regarding safe sex, difficulties, satisfaction, STDs)

Personality (ability to socialize, changeability of mood, ability to express emotion, perception of self-esteem, interests, hopes, TRUST in others, introverted, extroverted, anxious / relaxed, self-centered, strengths, limitations)

Culture (tribal origin, language ability, participation in cultural activities, spiritual values, church contact, Iwi affiliation)

Medical / Developmental History (birth, milestones, attachment, hospitalization, head injuries, MVAs, physical conditions, family illnesses, psychiatric history, No identified cause then check for evidence of somaticism + Precipitators (e.g. stress) and consequences of illness behavior (e.g., attention) + epilepsy / diabetes / asthma)

Surgical Operations (when, where, complications, psychological reactions, head injury)

Obstetric and Gynecological Problems (difficulties giving birth, postpartum, hemorrhage, postnatal blues or depression, current menstrual function, pre-menstrual tension, menopausal symptoms)

Current physical complaints

Social Circumstances (living arrangements, income, schooling/ employment status, daily routine, future hopes, note of client is primary caregiver / community support worker)

Alleged Offences (accuracy of facts, planned, A & D, reasons, current events at the time, remorse, previous trouble)

Specific Screens

Depression - (Over last two weeks – Sleep difficulties (getting to sleep / middle / early waking) + Sad/ negative mood over day? + Loss of interest? / pleasure? + Poor concentration? + Indecisiveness? + Memory problems? + Restlessness vs. physically slowed + Tiredness + Increased vs. decreased need for sleep + Increased\decreased appetite and/or weight loss? / how many Kgs? + Thoughts of death \suicide?)

Suicide / Homicide Risk - (Past Attempts + What plan do they have? + What stops them? + Rate likelihood on 0-10 + alcohol abuse? + depression? + sufficient social supports? + community psychiatric evaluation needed?)

Anxiety Disorders - Panic Symptoms (In past month - Worried about attacks - Pounding heart + sweating + trembling + difficulty breathing + tightness / pain in chest or abdomen + choking + dizziness\lightheadedness\faint + derealization + depersonalization + fear of going crazy, dying, or losing control + numbness\tingling + chills or hot flushes + peaks in 10 minutes? – how long before it subsides?)

Agoraphobia - (concern about additional attacks, and their consequences? Fear of places where attack might reoccur? Fear of places where escape might be difficult\embarrassing if you did have a panic attack? Avoidance of these places?)

Phobias - (define all objects of fear + is it just social evaluation? + anxious response to objects – to the point of panic? + Avoidance of objects/situations or endured with great distress + recognition that fear is excessive?).

OCD - (Intrusive thoughts\images causing distress? + efforts to suppress thoughts\images? + Rituals in response to thoughts or according to rigid rules? + function of rituals is to prevent anticipated event, but in an unrealistic way?)

GAD - (excessive worry for 6 months? + is worry hard to control? + restlessness? + irritability? + sleeplessness? + easily fatigued? + mind blanks?)

Mania - Overconfidence in oneself + Less sleep needed? + noticed racing thoughts? + Easily distracted + Overly occupied with goal-oriented or pleasurable activities? + Increase in potentially self-damaging behavior + Irritated + Can't relax + Constant over last week?).

Evidence of Trauma - (A) **Continual re-experiencing** (Images\thoughts of T + Dreams\Nightmares of T + Flashbacks or hallucinations or other re-enactment + Psychological distress upon exposure to reminders of T + Physiological reactivity to reminders of T). (B) **Avoidance** (of thoughts and feelings associated with T + of places, things or people associated with T + diminished interest). (C) **Dissociation** (amnesia for aspects of T + feelings of detachment from others + blunting of affect and emotional expression + cannot envisage future). (D) **Arousal** (difficulty sleeping + outbursts of anger or irritability + poor concentration + hypervigilance + easily startled)

Eating Disorders - (less than 85% of normal weight + Intense fear of weight gain + Excessive or Dieting schedule + Distorted perception of the significance of weight in self-evaluation + 3 absent menses + excessive and uncontrollable binge eating within 2 hrs + Purging (vomiting, laxatives, weight-loss medications) + assess peers and family's view on food and weight.

Psychoticism - (Reduced goal directed activity + Impoverished thinking or speech + Social withdrawal + Thought Disorganization + Delusions of persecution\ reference\ mind reading\ thought withdrawal\ guilt\ control or bizarre ideas + Hallucinations)

Hallucinations – (visual, gustatory, tactile, auditory – single or multiple voices, third person commentary, second person commands)

Delusions – (primary or secondary, complete or partial) Types – (delusions of reference, guilt, unworthiness, jealousy. Delusions of control, influence or interference (passivity). Delusions of thought interference (broadcast, insertion, withdrawal).

Brain Injury - (Location – closed / open? + Lost consciousness? + how long? + Behavior immediately afterwards / several days afterwards? + Sleep difficulties? + Vision? + Hearing? + Headaches? + Pain? + Attention? + Memory? + Other people commented on changes / personality changed? + Lifestyle changes (functioning / irritability / tiredness / emotional instability? + Changes to Academic Functioning? Changes to behavior?)

Mental Status

General Description (Appearance – tall, short, thin, obese. Appearance and Clothing – tidy, well presented, casually dressed, inappropriate or bizarre dress styles. Motor Behavior – posture, gait, movement, agitated, restless, inactive, psychomotor retardation. Facial expression – cheerful, angry, sad, perplexed.)

Mood and Affect – mood (sad, low, depressed, labile, optimistic, elated, anxious, angry, hopeless) Affect (flattened, restricted / diminished range, over-familiarity, inappropriateness, disinhibition, aggressiveness)

Moderating Mood Factors - (poor sleep, low appetite, diminished interest, low energy, poor concentration, restlessness /agitation, feelings of worthlessness, suicidal ideation)

Speech – rate (fast / slow), quantity (lot/ little), loudness (loud/ soft), spontaneity

Form of Thought – (flight of ideas, thought blocking, loosened associations, circumstantiality, tangentiality)

Content of Thought – (overvalued ideas/ abnormal preoccupations/ delusions/ obsessions/ compulsions/ suicide/ anxiety/ paranoia etc.)

Cognitive State – (insight, level of consciousness, orientation to time, place and person, attention and concentration, short and long term / visual and verbal memory)

Assessing Risk

a) **Historical factors** (previous violence, use of weapons, age at first incident, early maladjustment)

b) **Dis-inhibiting factors** (major mental illness, A & D, personality disorder, unresponsiveness to treatment)

c) **Psychosocial factors** (unemployment, relationship instability, current emotional crisis)

d) **Behavioral factors** (impulsively, anger/ aggression, stalking, access to weapons)

e) **Cognitive factors** (lack of insight, denial, minimization, pessimism, attitude towards homicide/ sadism/ paranoia, lack of empathy/ remorse)

Assessing Risk

- _____ Male
- _____ Age (below 40 years)
- _____ Diagnosis (paranoid schiz, mania, antis/paranoid personality, delirium)
- _____ Past attempts
- _____ Substances
- _____ Diminished Rational Thinking
- _____ Suicidality
- _____ Organized Plan / Intent
- _____ No Significant Others
- _____ Social Supports

Increased Risk of Suicide

- _____ Age (adolescents and individuals aged 45 years and older)
- _____ Gender (females make more attempts, males are more successful)
- _____ Previous Attempts
- _____ Alcohol / Drug abuse
- _____ Unemployment
- _____ Unmarried / alone
- _____ Physical health problems
- _____ Significant personal loss (ability, objects, persons)
- _____ Presence of depression / alcoholism / schizophrenia
- _____ Panic attacks
- _____ General psychic anxiety
- _____ Lack of interest / pleasure
- _____ Alcohol abuse increase during affective episode
- _____ Diminished concentration
- _____ Global insomnia
- _____ Hopelessness, Helplessness, Guilt
- _____ Suicidal Ideation
- _____ Suicide Plans
- _____ Self-control
- _____ Level of Suicidal intent

From Sommers-Flanagan and Sommers-Flanagan (1995) "Intake Interviewing with Suicidal Patients: A Systematic Approach". *Professional Psychology: Research and Practice*, 26, 41-47.

Implications for Cognitive Therapy

Accessibility of Automatic Thoughts

Awareness and Differentiation of Emotions

Acceptance of Personal Responsibility for Change

Compatibility with the Cognitive Rationale

Alliance Potential (in-session Evidence)

Alliance Potential (out-of-session Evidence)

Chronicity of Problem

Security Operations

Focality

Optimism / Pessimism Regarding Therapy

Appendix F

HAACS

HOMEWORK REVIEW

Items 1-5 cover the therapist behaviors involved in reviewing homework from the previous session, and typically occurs early in the session.

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 1

1a DID the therapist discuss the completion of previously assigned homework to any extent? Yes No

1b HOW WELL did the therapist discuss the completion of previously assigned homework? Competence Rating

- 0 The therapist DID NOT discuss previously assigned homework.
- 1 The therapist made a CURSORY ENQUIRY about previous homework completion, but DID NOT ENGAGE the client (i.e., no exploration of the client's responses).
- 2 The therapist ENQUIRED about previous homework completion, and made an attempt to elicit feedback from the client but this was NOT SUCCESSFUL (e.g., the therapist used closed questions, or did not allow sufficient time for a response).
- 3 The therapist ENQUIRED about previous homework, and elicited some GENERAL FEEDBACK from the client. For instance, the client gave a vague response such as "I completed most of it" and this response was taken at face value and was not explored further (e.g., "Can you tell me more about the parts you completed?" and then "Can you tell me about the parts you had difficulty with or did not complete?").
- 4 The therapist ENQUIRED about previous homework and IDENTIFIED EXACTLY what portion of the homework was completed and what was not completed. However, the discussion focused EITHER on the completed homework OR the non-completed homework.
- 5 The therapist IDENTIFIED and DISCUSSED BOTH completed AND non-completed homework. However, in discussing completed homework, the focus was MORE on the quantity of what was completed (i.e., the extent of completion), RATHER THAN the quality (i.e., degree of client learning or skill acquisition, such as mastery in completing a thought record effectively, or testing out beliefs in behavioral experiments).
- 6 BOTH the quantity (i.e., the extent of completion and non-completion) AND quality (i.e., degree of client learning or skill acquisition, such as mastery in completing a thought record effectively, or testing out beliefs in behavioral experiments) of homework completion was discussed. The therapist facilitated a highly effective discussion to elicit the CLIENT'S LEARNING from the homework task (e.g., using Socratic questioning).

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 2

2a DID the therapist provide verbal reinforcement (i.e., praise) for any portion of the homework carried out? Yes No

2b HOW WELL did the therapist provide appropriate verbal reinforcement (i.e., praise) for any portion of the homework carried out? Competence Rating

- 0 The therapist DID NOT provide verbal reinforcement for any portion of the homework carried out.
- 1 Verbal reinforcement was given that was VERY BRIEF AND LIMITED in relation to the portion of homework completed, OR excessive praise was given for low completion.
- 2 SOME verbal reinforcement was given but this was NOT CLEARLY LINKED to the portion of homework completed, OR excessive praise was given for low completion.
- 3 Appropriate verbal reinforcement was given for MOST portions of the homework completed.
- 4 Appropriate verbal reinforcement was given for ALL portions of the homework completed.
- 5 Appropriate praise AND encouragement was given for ALL portions of the homework completed. The therapist ALSO appeared clearly enthusiastic in acknowledging and validating the client's efforts.
- 6 Appropriate praise AND encouragement was given for ALL portions of the homework completed. The therapist ALSO appeared clearly enthusiastic in acknowledging and validating the client's efforts. Encouragement was given for the client EXTENDING/ GENERALIZING the homework task to extend skill acquisition/ apply task to more challenging problems.

0-----1-----2-----3-----4-----5-----6
 Non-adherence/ extremely poor Poor Mediocre Fair Good Very Good Excellent

Item 3

3a WAS a situational conceptualization (e.g., thoughts, behaviors, emotions, physiology) used in reviewing previously assigned homework? Yes No

3b HOW WELL did the therapist use a situational conceptualization (e.g., thoughts, behaviors, emotions, physiology) to review previously assigned homework (i.e., identify the client's beliefs about having engaged in the homework to synthesize their learning)? Competence Rating

- 0 A situational conceptualization WAS NOT used in reviewing previously assigned homework.
- 1 An UNDEVELOPED situational conceptualization was arrived at (i.e., the therapist completely interpreted on behalf of the client).
- 2 A VAGUE, brief and incomplete situational conceptualization was arrived at (i.e., the therapist mostly interpreted for the client's experiences rather than eliciting information).
- 3 A PARTIALLY DEVELOPED situational conceptualization was arrived at (i.e., the therapist elicited some information and interpreted other information). NO automatic thoughts OR beliefs about the consequences, OR synthesis of learning were identified.
- 4 A situational conceptualization facilitated the IDENTIFICATION OF salient (i.e., emotionally laden) automatic thoughts, emotions, behaviors, and physiology that served as the TRIGGERS for homework completion.
- 5 A situational conceptualization facilitated the IDENTIFICATION OF salient (i.e., emotionally laden) automatic thoughts, emotions, behaviors, and physiology that served as the TRIGGERS for homework completion. The therapist ALSO elicited beliefs about the homework (i.e., difficulty, sense of pleasure, sense of mastery).
- 6 A situational conceptualization facilitated the IDENTIFICATION OF salient (i.e., emotionally laden) automatic thoughts, emotions, behaviors, and physiology that served as the TRIGGERS for homework completion. The therapist ALSO elicited beliefs about the homework (i.e., difficulty, sense of pleasure, sense of mastery), AS WELL AS their synthesis of learning (i.e., relevance, match with therapy goals, benefits, perceived progress).

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 4

4a WAS an individualized conceptualization used to make sense of any portion of non-completed homework (i.e., linked non-completion to the client's automatic thoughts, underlying assumptions and rules, or core beliefs)?

Yes No n/a

4b HOW WELL did the therapist use an individualized conceptualization to make sense of any portion of non-completed homework (i.e., linked non-completion to the client's automatic thoughts, underlying assumptions and rules, or core beliefs)?

Competence Rating

N/a There was NO NON-COMPLETED homework (i.e., all homework was completed).

- 0 The therapist DID NOT use an individualized conceptualization to make sense of any portion of non-completed homework.
- 1 The therapist LABELED/ INTERPRETED the portion of non-completed homework RATHER THAN facilitating the client's own understanding through collaborative discussion.
- 2 The therapist FOCUSED on one individualized conceptualization component (i.e., either core beliefs, or conditional rules and assumptions, or automatic thoughts). The therapist used this information to LABEL/ INTERPRET the portion of non-completed homework RATHER THAN facilitating the client's own understanding.
- 3 The therapist made LIMITED use of an individualized conceptualization, including SOME but NOT ALL of the following aspects: core beliefs, conditional rules and assumptions, and automatic thoughts. The therapist used this information to reach a VAGUE understanding of homework non-completion.
- 4 The therapist facilitated a discussion that made REASONABLE use of an individualized conceptualization, including SOME but NOT ALL aspects of: core beliefs, conditional rules and assumptions, and automatic thoughts. This led to a REASONABLE understanding of the client's beliefs about the homework task that contributed to non-completion.
- 5 The therapist facilitated a discussion that made GOOD USE of an individualized conceptualization, including ALL ASPECTS of: core beliefs, conditional rules and assumptions, and automatic thoughts. This led to a CLEAR understanding of the client's beliefs about the homework task that contributed to non-completion.
- 6 The therapist facilitated a discussion that made FULL USE of an individualized conceptualization, including ALL ASPECTS of: core beliefs, conditional rules and assumptions, and automatic thoughts IN several situations, which were LINKED to overall treatment goals. This led to a VERY CLEAR understanding of the client's beliefs about the homework task that contributed to non-completion, AS WELL AS the generalization of the task to other situations.

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

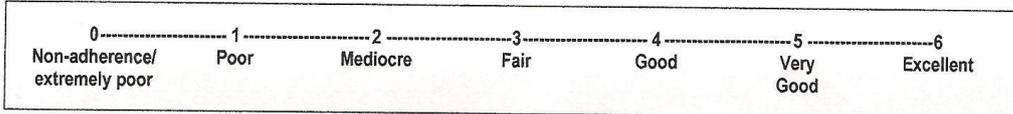
Item 5

5a DID the therapist attempt to problem solve practical obstacles to the homework? Yes No

5b HOW WELL did the therapist attempt to problem solve practical obstacles to the homework? Competence Rating

- 0 The therapist DID NOT attempt to problem solve practical obstacles.
- 1 The therapist PROVIDED solutions of their own accord, WITHOUT any contribution from the client.
- 2 The therapist PROVIDED solutions of their own accord, with only a CURSORY contribution sought from the client. (e.g., "Does that sound okay to you?").
- 3 The therapist ATTEMPTED to problem solve practical obstacles with SOME collaboration (i.e., the therapist provided some solutions themselves and elicited some input from the client).
- 4 The therapist FACILITATED a discussion that IDENTIFIED the actual practical obstacles. SOME potential solutions were generated and considered. The client arrived at a VAGUE plan to overcome the obstacles.
- 5 The therapist FACILITATED a discussion that IDENTIFIED the actual practical obstacles. A RANGE of potential solutions were generated and considered. The client arrived at CLEAR behavioral strategies to overcome the practical obstacles.
- 6 The therapist FACILITATED a discussion that IDENTIFIED the actual practical obstacles, AS WELL AS a consideration of other potential obstacles that may have occurred. A FULL RANGE of potential solutions were generated and considered. The client arrived at CLEAR behavioral strategies to overcome the practical obstacles, AS WELL AS behavioral strategies for considering changing circumstances (e.g., bringing an outside activity indoors, testing beliefs in several situations, applying interpersonal skills to a range of relationships/interactions).

OVERALL RATING: HOMEWORK REVIEW



Please look over your ratings for items 1-5. Now provide one overall rating for HOMEWORK REVIEW . Please take into account:

- the individual ratings for items 1-5.
- the appropriateness of not adhering to specific items, e.g., homework was completed unusually well; there was a crisis or risk to client safety.
- any other special considerations from the session rated, e.g., interpersonal features of the specific therapeutic relationship; and the therapist's ability to adapt the PROCESS AND DISCUSSION of homework based on the client's individualized cognitive conceptualization (e.g., greater verbal encouragement for a client with avoidant interpersonal style, normalizing aspects of non-completion for a client exhibiting perfectionism, emphasizing complimentary nature to existing coping strategies for client with demanding interpersonal style).

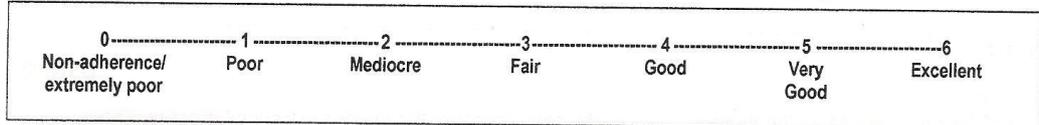
Rating

Please describe any factors that have affected your overall rating for HOMEWORK REVIEW:

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HOMEWORK DESIGN

Items 6-14 cover the therapist behaviors involved in collaboratively deciding what homework will be carried out between sessions, and typically occurs throughout the session.



Item 6

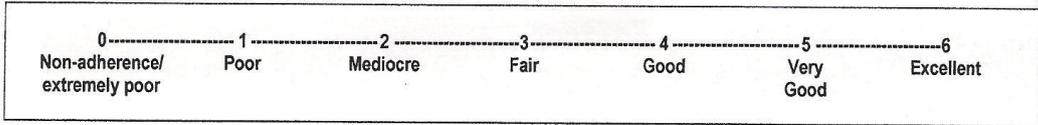
6a WAS any new or revised homework discussed?

Yes No

6b HOW WELL did the therapist discuss new or revised homework?

Competence Rating

- 0 The therapist did NOT discuss new or revised homework.
- 1 The therapist BRIEFLY discussed new or revised homework.
- 2 The therapist allowed SUFFICIENT TIME for a discussion of new or revised homework, BUT only at the END of the session.
- 3 The therapist allowed SUFFICIENT TIME for a discussion of new or revised homework, throughout the course of the session. However, the homework WAS NOT linked to in-session content or therapy goals.
- 4 The therapist allowed SUFFICIENT TIME for a discussion of new or revised homework throughout the course of the session. The homework WAS linked to EITHER in-session content OR therapy goals.
- 5 The therapist allowed SUFFICIENT TIME for a discussion of new or revised homework throughout the course of the session. The homework WAS linked to BOTH in-session content AND therapy goals.
- 6 The therapist allowed SUFFICIENT TIME for a discussion of new or revised homework throughout the course of the session. The homework WAS linked to BOTH in-session content AND therapy goals. The therapist was ALSO able to tailor the discussion of the homework to the client's interpersonal style. The discussion was ALSO EFFECTIVE even when confronted with interpersonal difficulties (e.g., client avoidance, perfectionism, demanding interpersonal style).



Item 7

Note:

This item asks about the therapist's use of the components of the "guided discovery" process. The guided discovery process has four sequential components which are:

- i. Asking informational questions to uncover information outside the client's awareness,
- ii. Listening empathically and providing reflections,
- iii. Summarizing the information discovered,
- iv. Asking synthesizing or analytical questions which enable the client's own learning.

7a DID the therapist use any aspects of guided discovery to identify the client's coping strategies and beliefs related to the homework? Yes No

7b HOW WELL did the therapist use guided discovery to identify the client's coping strategies and beliefs related to the homework? Competence Rating

- 0 The therapist DID NOT use any aspects of guided discovery to identify the client's coping strategies and beliefs related to the homework.
- 1 The therapist used INEFFECTIVE questioning (e.g., closed questions or broad questions, but these did not uncover new information) and provided INTERPRETIVE answers RATHER THAN guiding the client's own understanding about coping strategies and beliefs.
- 2 The therapist used SOME but NOT ALL components of the guided discovery process. HOWEVER they were used in a cursory, inappropriate, or ineffective manner (e.g., inaccurate reflections or summaries). The therapist used INTERPRETIVE answers RATHER THAN guiding the client's own learning, and was UNABLE to identify coping strategies and beliefs (e.g., "If you think X, then surely Y is?").
- 3 The therapist used ALL FOUR components of the guided discovery process, BUT was INEFFECTIVE in identifying coping strategies and beliefs.
- 4 The therapist used ALL FOUR components of the guided discovery process REASONABLY EFFECTIVELY. In using this process the therapist facilitated the identification of A FEW coping strategies and beliefs.
- 5 The therapist used ALL FOUR components of the guided discovery process EFFECTIVELY. In using this process the therapist facilitated the identification of A NUMBER OF coping strategies and beliefs.
- 6 The therapist APPEARED genuinely curious and inquisitive, and used ALL FOUR components of the guided discovery process VERY EFFECTIVELY. In using this process the therapist facilitated the identification of A NUMBER OF HIGHLY CREDIBLE coping strategies and beliefs.

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 8

8a DID the therapist integrate a disorder-specific cognitive model with the individualized conceptualization in designing homework? Yes No

8b HOW WELL did the therapist integrate a disorder-specific cognitive model with the individualized conceptualization in designing homework? Competence Rating

- 0 The therapist DID NOT discuss a disorder-specific cognitive model or individualized conceptualization in designing homework.
- 1 The therapist MENTIONED the disorder-specific cognitive model BUT did not elaborate on how it was relevant to the client's presentation.
- 2 The therapist integrated SOME but NOT ALL aspects of a disorder-specific cognitive model (e.g., Beck's Cognitive Triad, Clark's Panic Model, etc) to ONE ASPECT of the client's individualized conceptualization (i.e., core beliefs, conditional rules and assumptions, automatic thoughts, and under and over developed behavioral strategies).
- 3 The therapist integrated SOME but NOT ALL aspects of a disorder-specific cognitive model (e.g., Beck's Cognitive Triad, Clark's Panic Model, etc) to MORE THAN ONE aspect the client's individualized conceptualization (i.e., core beliefs, conditional rules and assumptions, automatic thoughts, and under and over developed behavioral strategies).
- 4 The therapist integrated MOST aspects of a disorder-specific cognitive model (e.g., Beck's Cognitive Triad, Clark's Panic Model, etc) to MOST aspects the client's individualized conceptualization (i.e., core beliefs, conditional rules and assumptions, automatic thoughts, and under and over developed behavioral strategies).
- 5 The therapist integrated ALL aspects of a disorder-specific cognitive model (e.g., Beck's Cognitive Triad, Clark's Panic Model, etc) to ALL aspects of the client's individualized conceptualization (i.e., core beliefs, conditional rules and assumptions, automatic thoughts, and under and over developed behavioral strategies).
- 6 The therapist integrated ALL aspects of a disorder-specific cognitive model (e.g., Beck's Cognitive Triad, Clark's Panic Model, etc) to ALL aspects of the client's individualized conceptualization (e.g., core beliefs, conditional rules and assumptions, automatic thoughts, and under and over developed behavioral strategies). The therapist was ALSO able to integrate all this information with the client's presenting problems, evidenced in tactful responses to client's interpersonal style (e.g., critical, competitive, suspicious, controlling, exaggerative).

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 9

9a WERE homework tasks selected for completion before the next session? Yes No

9b HOW WELL did the therapist collaboratively select homework tasks for completion before the next session? Competence Rating

- 0 Homework tasks were NOT selected during the session.
- 1 The therapist selected homework tasks WITHOUT any contribution of the client.
- 2 The therapist only sought a CURSORY contribution from the client in selecting homework tasks (e.g., "Does that sound okay to you?").
- 3 The therapist INVOLVED the client in the selection of homework tasks, BUT at times reverted to a DIRECTIVE rather than collaborative approach, especially in the final decision.
- 4 The therapist INVOLVED the client in the selection of homework tasks (E.G., facilitated a DISCUSSION rather than provided direct answers). A FEW possible homework tasks were discussed, AS WELL AS A FEW advantages and disadvantages of the possible homework tasks.
- 5 The therapist encouraged the client to view the process of selecting homework tasks as the therapist and client working together as a TEAM. The therapist also ACTIVELY INVOLVED the client in selecting homework tasks (e.g., facilitated a discussion rather than provided direct answers). SEVERAL possible homework tasks were discussed, AND the client's thoughts and feelings about the possible homework tasks were elicited and explored, AND SEVERAL advantages and disadvantages of the possible homework tasks were discussed.
- 6 The therapist encouraged the client to view the process of selecting homework tasks as the therapist and client working together as a TEAM. The therapist also ACTIVELY INVOLVED the client in selecting homework tasks (e.g., facilitated a discussion rather than provided direct answers). A FULL RANGE of possible homework tasks were discussed, AND the client's thoughts and feelings about the possible homework tasks were elicited and explored, AND A FULL RANGE of advantages and disadvantages of the possible homework tasks were discussed (i.e., based on prior experience, benefits experienced by others). The therapist and client ALSO decided on homework tasks that built upon existing client skills and strategies, AND the client was encouraged to take on more responsibility for selecting homework tasks.

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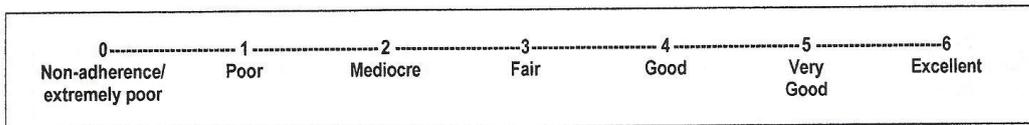
0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 10

10a DID the therapist present any rationale for the homework? Yes No

10b HOW WELL did the therapist present a rationale for the homework that aligned with the client's goals for treatment? Rating

- 0 The therapist DID NOT present any rationale for the homework.
- 1 The therapist presented a BRIEF rationale but FAILED to relate it to the client's treatment goals.
- 2 The therapist presented a RATIONALE for the homework with SOME mention of the client's treatment goals, however this was presented WITHOUT any input (and understanding) from the client.
- 3 The therapist assisted the client to understand how the homework was ALIGNED to the specific presenting problem in the current session.
- 4 The therapist assisted the client to understand that the homework was broken into achievable CHUNKS that were manageable and within the client's control. The therapist ALSO assisted the client to understand how the homework was ALIGNED to EITHER the specific presenting problem in the current session, OR their overall treatment goals.
- 5 The therapist assisted the client to understand that the homework was broken into achievable CHUNKS that were manageable and within the client's control. The therapist ALSO assisted the client to understand how the homework was ALIGNED to BOTH the specific presenting problem in the current session AS WELL AS their overall treatment goals.
- 6 The therapist assisted the client to understand that the homework was broken into achievable CHUNKS that were manageable and within the client's control. The therapist ALSO assisted the client to understand how the homework was ALIGNED to BOTH the specific presenting problem in the current session AS WELL AS their overall treatment goals, AND obtained feedback from the client on the rationale. The therapist ALSO provided empirical evidence to support the rationale for the homework.

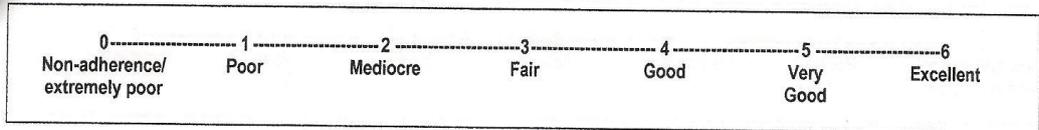


Item 11

11a DID the therapist ask about the client's ability and perceived difficulty of the homework? Yes No

11b HOW WELL did the therapist ask about the client's ability and perceived difficulty of the homework? Rating

- 0 The therapist DID NOT ask about the client's ability and perceived difficulty of the task.
- 1 The therapist made a CURSORY enquiry about the client's ability and perceived difficulty of the task, but did not discuss it any further.
- 2 The therapist ENQUIRED about the client's ability and perceived difficulty of the task, and made an INEFFECTIVE attempt to elicit feedback from the client (e.g., the therapist did not listen to the client's responses, asked closed questions, questions did not follow the client's responses).
- 3 The therapist ENQUIRED about the client's ability and perceived difficulty of the task, and elicited a GENERAL STATEMENT from the client, for example, the client was vague and said "Sure, I can do it" and this response was taken at face value and NOT explored any further.
- 4 The therapist ENQUIRED about the client's ability and perceived difficulty of the task, and through Socratic questioning identified a BROAD ISSUE (e.g., "That thought record looks too hard. There is so much to complete"). HOWEVER, the therapist then provided their own solutions to resolve the issues raised (e.g., "Okay, just complete the first three columns of the thought record").
- 5 The therapist ENQUIRED about the client's ability and perceived difficulty of the task, and through Socratic questioning identified SPECIFIC ISSUES (e.g., in addition to feeling overwhelmed by the entire thought record, it transpired that the client had difficulty distinguishing emotions and thoughts on thought record). Through further EXPLORATION the therapist and client collaboratively RESOLVED the issue (e.g., the therapist and client worked on automatic thoughts in-session, and/or the homework was redesigned to focus on practicing the identification emotions as distinct from automatic thoughts).
- 6 The therapist ENQUIRED about the client's ability and perceived difficulty of the task, and through Socratic questioning identified SPECIFIC ISSUES. Through further EXPLORATION the therapist and client collaboratively RESOLVED the issue. The therapist ALSO elicited ADDITIONAL CLIENT LEARNING from the discussion, for example, the client learnt that breaking items into smaller chunks was less overwhelming, and also identified an underlying rule (e.g., "I've failed if I can't work things out for myself").



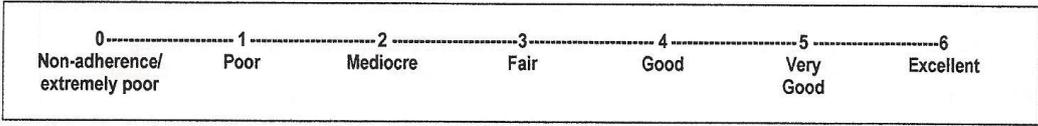
Item 12

12a WAS ANY attempt made to facilitate in-session homework practice? Yes No

12b HOW WELL did the therapist facilitate in-session homework practice? Rating

- 0 The therapist DID NOT provide the opportunity for in-session practice of the homework.
- 1 The therapist briefly DEMONSTRATED or EXPLAINED (i.e., modeled or instructed) the homework, that provided no opportunity for the clients to learn from their own practice.
- 2 The therapist PROVIDED only a BRIEF opportunity for in-session practice. The therapist tended to FOCUS on correcting the client's mistakes AND provided LIMITED positive reinforcement. The therapist DID NOT discuss any learning points from the practice.
- 3 The therapist PROVIDED SOME opportunity for in-session practice. The therapist provided SOME positive reinforcement (i.e., shaping successive approximations of skill), AND gave SOME constructive guidance when the client needed assistance. HOWEVER, the therapist used a DIRECTIVE rather than collaborative approach in discussing learning points from the practice.
- 4 The therapist PROVIDED SOME opportunity for in-session practice. The therapist provided SOME positive reinforcement (i.e., shaping successive approximations of skill), AND gave SOME constructive guidance when the client needed assistance. The therapist and client COLLABORATIVELY discussed learning points from the in-session practice.
- 5 The therapist PROVIDED a GOOD opportunity for in-session practice, using the METHOD/S most appropriate for the client and the specific task. The therapist provided POSITIVE reinforcement (i.e., shaping successive approximations of skill) AND gave CONSTRUCTIVE guidance when the client needed assistance. The therapist was ENCOURAGING when COLLABORATIVELY discussing learning points from the in-session practice.
- 6 The therapist PROVIDED CONSIDERABLE opportunity for in-session practice, using the METHOD/S most appropriate for the client and the specific task. The therapist provided ENTHUSIASTIC positive reinforcement (i.e., shaping successive approximations of skill), AND gave WARM, GENUINE, CONSTRUCTIVE guidance when the client needed assistance. The therapist was ENCOURAGING when COLLABORATIVELY discussing learning points from the in-session practice. The therapist ALSO asked the client for FEEDBACK on the experience, and asked the client to WRITE down the learning points.

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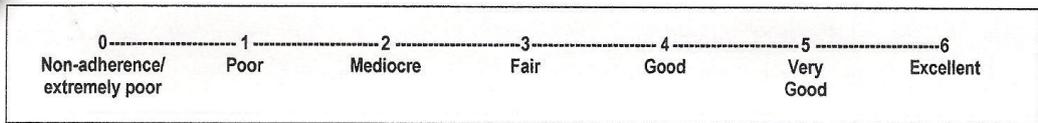
Item 13

13a DID the therapist use guided imagery to begin experiential learning for the homework in-session? Yes No

13b HOW WELL did the therapist use guided imagery to begin experiential learning for the homework in-session? Rating

- 0 The therapist DID NOT use guided imagery in homework design.
- 1 The therapist used guided imagery INEFFECTIVELY (i.e., affect was not generated, client had difficulty staying on track, etc). Feedback was NOT sought throughout the exercise, and at the completion, the therapist DID NOT facilitate any experiential learning from the imagery practice.
- 2 The therapist provided an OPPORTUNITY for guided imagery , but was UNABLE to use this to assist the client with some experiential learning of the homework task (i.e., client completed imagery but did not gain an experience of completing the task).
- 3 The therapist FACILITATED the client in using guided imagery, and this was REASONABLY EFFECTIVE in stepping the client through a scenario where they may use the homework assignment (i.e., physiological, emotional, cognitive triggers identified). HOWEVER, imagery was INEFFECTIVE in providing the client with some experiential learning of the homework task (i.e., client completed imagery but did not gain an experience of completing the task).
- 4 The therapist FACILITATED the client in using guided imagery, and this was REASONABLY EFFECTIVE in stepping the client through a scenario where they may use the homework assignment (i.e., physiological, emotional, cognitive triggers identified), AND the client gained SOME experiential learning of the homework task (i.e., experienced the outcome of having engaged in the homework task).
- 5 The therapist FACILITATED the client in using guided imagery, and this was EFFECTIVE in stepping the client through a scenario where they may use the homework assignment (i.e., physiological, emotional, cognitive triggers identified), AND the client gained SOME experiential learning of the homework task (i.e., experienced the outcome of having engaged in the homework task). The therapist ALSO focused on skill acquisition AND discussed with the client how the task could be extended to more complex skills (i.e., shaping).
- 6 The therapist FACILITATED the client in using guided imagery, and this was EFFECTIVE in stepping the client through a scenario where they may use the homework assignment (i.e., physiological, emotional, cognitive triggers identified), AND the client gained SOME experiential learning of the homework task (i.e., experienced the outcome of having engaged in the homework task). The therapist ALSO focused on skill acquisition AND discussed with the client how the task could be extended to more complex skills (i.e., shaping). In feedback, the therapist and client ALSO discussed the application of the task across different situations (i.e., generalization and maintenance).

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Item 14

14a DID the therapist use a situational conceptualization to help identify the client's beliefs and triggers (i.e., emotional, behavioral, physiological) for carrying out the homework in specific situations? Yes No

14b HOW WELL did the therapist use a situational conceptualization to help identify the client's beliefs and triggers (i.e., emotional, behavioral, physiological) for carrying out the homework in specific situations? Rating

- 0 The therapist DID NOT use a situational conceptualization to help identify the client's beliefs and situational triggers for carrying out the homework in specific situations.
- 1 An UNDEVELOPED situational conceptualization was arrived at (i.e., the therapist completely interpreted on behalf of the client).
- 2 A VAGUE, BRIEF AND INCOMPLETE situational conceptualization was arrived at (i.e., the therapist mostly interpreted for the client rather than eliciting information).
- 3 A PARTIALLY DEVELOPED situational conceptualization was arrived at (i.e., the therapist elicited some information and interpreted other information). This PROVED INEFFECTIVE in identifying the client's beliefs and situational triggers.
- 4 A PARTIALLY DEVELOPED situational conceptualization was arrived at (i.e., the therapist elicited some information and interpreted other information). Emotions, behaviors, and physiology WERE IDENTIFIED to the use of homework, BUT no cognitive triggers or beliefs were identified.
- 5 A SITUATIONAL CONCEPTUALIZATION facilitated the client's identification of SALIENT (i.e., emotionally laden) automatic thoughts that served as triggers for homework completion. Emotions, behaviors, and physiology were also identified.
- 6 A SITUATIONAL CONCEPTUALIZATION facilitated the client's identification of a SALIENT (i.e., emotionally laden) automatic thoughts, emotions, behaviors, and physiology that served as triggers for homework completion. The therapist ALSO discussed the triggers to the use of homework in several situations, AND elicited beliefs about the homework (i.e., difficulty, obstacles).

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OVERALL RATING: HOMEWORK DESIGN

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Please look over your ratings for items 6-14. Now provide one overall rating for HOMEWORK DESIGN. Please take into account:

- the individual ratings for items 6-14.
- the appropriateness of not adhering to specific items, e.g., no need to practice a particular skill for homework as this had covered extensively in previous sessions; client was extending a mastered skill to a new situation rather than being asked to learn something new.
- and any other special considerations from the session rated, e.g., interpersonal features of the specific therapeutic relationship; and the therapist's ability to adapt the PROCESS AND DISCUSSION of homework based on the client's individualized cognitive conceptualization (e.g., increased emphasis on in-session practice for a client with dependent interpersonal style, discussion of rationale for a client with controlling interpersonal style).

Rating

Please describe any factors that have affected your overall rating for HOMEWORK DESIGN:

**HOMEWORK
ASSIGN**

Items 15-19 cover the therapist behaviors involved in determining how the homework assignment/s will be practically carried out, and typically occurs near the end of the session.

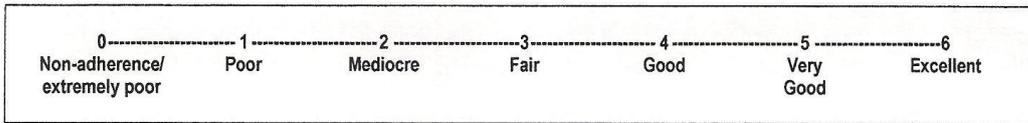
0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 15

15a WAS there any attempt to summarize the rationale for the homework in relation to therapy goals? Yes No

15b HOW WELL did the therapist ask the client to summarize the rationale for the homework in relation to therapy goals? Rating

- 0 The therapist DID NOT ask the client to summarize the rationale for the task in relation to therapy goals.
- 1 The therapist summarized the rationale for the task, with LITTLE OR NO INPUT from the client.
- 2 The therapist ATTEMPTED to involve the client in summarizing the rationale for the task in relation to therapy goals, but used a DIRECTIVE rather than collaborative approach.
- 3 The therapist INVOLVED the client in summarizing the rationale for the task in relation to GENERAL therapy goals.
- 4 The therapist INVOLVED the client in summarizing the rationale for the task in relation to MOST PERTINENT therapy goals. That is, the homework was discussed in terms of the SPECIFIC behavior changes that would be expected to result from progress towards this goal.
- 5 The therapist SKILLFULLY INVOLVED the client in summarizing the rationale for the task in relation to MOST PERTINENT therapy goals. That is, the homework was discussed in terms of the SPECIFIC behavior changes that would be expected to result from progress towards this goal, AND this process was LEAD by the client.
- 6 The therapist SKILLFULLY INVOLVED the client in summarizing the rationale for the task in relation to MOST PERTINENT therapy goals. That is, the homework was discussed in terms of the SPECIFIC behavior changes that would be expected to result from progress towards this goal, AND this process was LEAD by the client. FURTHERMORE, in discussion with the therapist, the client demonstrated a clear understanding of the homework and was able to place the current homework in context of current and overall goals for therapy. The therapist skill was evidenced by their adaptation of this discussion to the client's interpersonal style.



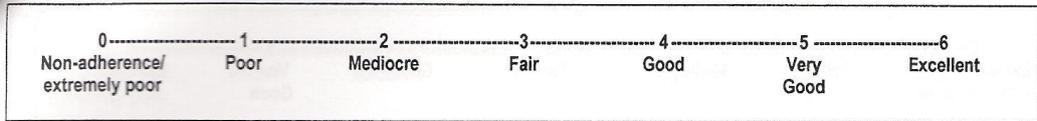
Item 16

16a WAS there any attempt to specify how the homework will be practically integrated into the client's life (i.e., specification of when, where, how often, how long)? Yes No

16b HOW WELL did the therapist collaborate with the client to specify how the homework will be practically integrated into the client's life (i.e., specification of when, where, how often, how long)? Rating

- 0 The therapist DID NOT collaborate to specify how the task would be practically integrated into the client's life.
- 1 The therapist DIRECTED how the task could be practically integrated into the client's life, WITHOUT any contribution from the client.
- 2 The therapist reached a VAGUE outline of how the task could be practically integrated into the client's life, with SOME collaboration (i.e., the therapist provided some specifics themselves and elicited some input from the client).
- 3 The therapist FACILITATED a discussion which resulted in the client being able to state with SOME behavioral specificity how the task could be practically integrated into the client's life in ONE of the following areas: when, where, how often, and how long.
- 4 The therapist FACILITATED a discussion which resulted in the client being able to state with SOME behavioral specificity how the task could be practically integrated into the client's life in TWO-THREE of the following areas: when, where, how often, and how long.
- 5 The therapist FACILITATED a discussion which resulted in the client being able to state with a HIGH DEGREE of behavioral specificity how the task could be practically integrated into the client's life in ALL of the following areas: when, where, how often, and how long. IF the client was unable to be specific in any area, the therapist gently GUIDED the client to a specific resolution.
- 6 The therapist SKILLFULLY ELICITED a description of how the homework would be practically implemented from the client. A HIGH DEGREE of behavioral specificity was achieved in ALL the following areas: when, where, how often, and how long. IF the client was unable to be specific in any area, the therapist gently GUIDED the client to a specific resolution. The therapist ALSO anticipated potential difficulties in communication and resolved them (e.g., misinterpretation of the process in achieving specificity, misinterpretation of the meaning of specificity, such as using a thought record "when" automatic thoughts occur).

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Item 17

17a WAS there any consideration of potential difficulties for completing the homework? Yes No

17b HOW WELL did the therapist consider potential difficulties for completing the homework? Rating

- 0 The therapist DID NOT attempt to consider potential difficulties.
- 1 The therapist PROVIDED potential difficulties of their own accord, WITHOUT any contribution from the client.
- 2 The therapist GENERALLY PROVIDED potential difficulties of their own accord, with only a CURSORY CONTRIBUTION sought from the client. (e.g., "So that would be difficult, wouldn't it?").
- 3 The therapist attempted to consider potential difficulties with some collaboration (i.e., the therapist provided some potential difficulties themselves and elicited some input from the client).
- 4 The therapist FACILITATED a discussion that identified SOME potential difficulties, AND SOME potential solutions were also generated and considered. The client arrived at a VAGUE plan to overcome the potential difficulties.
- 5 The therapist FACILITATED a discussion that identified MOST potential difficulties, AND a RANGE of potential solutions were generated and considered. The client arrived at a CLEAR plan to overcome the potential difficulties that included SPECIFIC behaviors (e.g., "My days are really busy next week, so I will set the alarm clock 30 minutes earlier on Tuesday morning and read the booklet before starting the day's other activities").
- 6 The therapist FACILITATED a discussion that identified ALL the potential difficulties, and a FULL RANGE of potential solutions were generated and considered. The client arrived at a CLEAR plan to overcome the potential difficulties that included SPECIFIC behaviors, AND behavioral STRATEGIES for considering changing circumstances (e.g., if unable to complete a task in a single sitting, then breaking it into smaller chunks and completing it over 2-3 sittings).

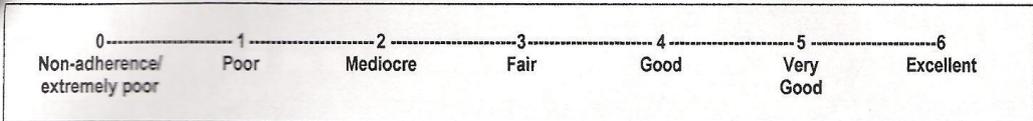
0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Item 18

18a WAS there ANY attempt to explain the outcome from the homework as having a learning 'experiment' focus? Yes No

18b HOW WELL did the therapist emphasize the homework as having a learning 'experiment' focus (e.g., a no-lose scenario, partial completion is helpful, seeing what works and what doesn't)? Rating

- 0 The therapist DID NOT emphasize the task as a learning 'experiment' focus.
- 1 In ATTEMPTING to explain a learning 'experiment' focus of the homework task, the therapist specified or intimated there was a 'CORRECT' actual outcome (i.e. could pass or fail).
- 2 The therapist did not focus on actual outcomes, but was VAGUE about the learning outcome (i.e., "it will be useful") but did not elaborate any further.
- 3 The therapist BRIEFLY explained the homework task as a learning experiment (i.e., to test out an idea or skill), rather than guided the client to their own learning.
- 4 The therapist FRAMED the homework task as a learning 'experiment'. MOST of the following points emerged from the discussion: there is no right or wrong (no failure or grading); it is a no-lose situation for the client; in any experiment the outcome is not known; there is a learning from every homework task no matter what the actual outcome; any information from the experiment is useful to further help with the treatment.
- 5 The therapist used guided discovery to uncover the CLIENT'S BELIEFS about the outcomes of the homework task, and then used Socratic questioning and hypothetical examples to facilitate the CLIENT to view the homework task as a learning experiment (i.e., gaining client's previous experiences of learning and applying them to the homework). MOST of the following points emerged from the discussion: there is no right or wrong (no failure or grading); it is a no-lose situation for the client; in any experiment the outcome is not known; there is a learning from every homework task no matter what the actual outcome; any information from the experiment is useful to further help with the treatment.
- 6 The therapist used guided discovery to uncover the CLIENT'S BELIEFS about the outcomes of the homework task, and then used Socratic questioning and hypothetical examples to facilitate the CLIENT to view the homework task as a learning experiment (i.e., gaining client's previous experiences of learning and applying them to the homework). MOST of the following points emerged from the discussion: there is no right or wrong (no failure or grading); it is a no-lose situation for the client; in any experiment the outcome is not known; there is a learning from every homework task no matter what the actual outcome; any information from the experiment is useful to further help with the treatment. The therapist ALSO discussed the BENEFITS (e.g., new skill acquisition, reduction in distressing thoughts, better treatment outcome) VERSUS the COSTS of performing the homework task (e.g., time, energy, short-term distress).



Item 19

19a WAS there ANY attempt to summarize the homework? Yes No

19b HOW WELL did the therapist ask the client to summarize the homework and obtain an indication of homework-related readiness, importance, and/or confidence? Rating

- 0 There was NO summary of the homework task AND NO indication of readiness, importance, or confidence.
- 1 The therapist summarized the task, WITHOUT any contribution from the client, AND DID NOT obtain any indication of readiness, importance, or confidence.
- 2 The therapist ATTEMPTED to involve the client in summarizing the task AND obtained separate indications for readiness, importance, or confidence, with only a CURSORY contribution sought from the client. (e.g., "Does about 80% sound right to you?").
- 3 The therapist INVOLVED the client in summarizing the task and obtained a VAGUE indication of readiness, importance, or confidence (e.g., the client said "I'd give that a very high rating").
- 4 The therapist FACILITATED the client to SUMMARIZE the task AND provide an indication of readiness, importance, and confidence.
- 5 The therapist USED Socratic questioning, which enabled the client to SUMMARIZE the task AND provide SPECIFIC ratings for EACH OF readiness, importance, or confidence. IF the task summary was incomplete, the client was gently guided to its completion. IF the rating was low (i.e., <70%) the client was gently guided to identify what it would take to increase their rating.
- 6 The therapist USED Socratic questioning, which enabled the client to ACTIVELY SUMMARIZE the task AND provide SPECIFIC ratings for EACH OF readiness, importance, and confidence. IF the task summary was incomplete, the client was gently guided to its completion, OR the task was modified with decreased demands. IF the confidence rating was low (i.e., <70%) the client was gently guided to identify what it would take to increase their confidence level. The therapist ALSO explored overly confident ratings (e.g., an immediate or persistent statement of 100%) to identify possible social desirability responses.

OVERALL RATING: HOMEWORK ASSIGN

0	1	2	3	4	5	6
Non-adherence/ extremely poor	Poor	Mediocre	Fair	Good	Very Good	Excellent

Please look over your ratings for items 15-19. Now provide one overall rating for HOMEWORK ASSIGN. Please take into account:

- the individual ratings for items 15-19
- the appropriateness of not adhering to specific items (e.g., the session was near the end of therapy and the client was taking responsibility for the process, and leading in-session discussion)
- and any other special considerations from the session rated, e.g., interpersonal features of the specific therapeutic relationship; and the therapist's ability to adapt the PROCESS AND DISCUSSION of homework based on the client's individualized cognitive conceptualization (e.g., greater use of collaboration for a client with suspicious interpersonal style, greater discussion of specifics and confidence ratings for a client with unrelenting standards).

Rating

Please describe any factors that have affected your overall rating for HOMEWORK ASSIGN:

Appendix G

Homework Assignment Form*

Today's Date: _____	Next Appointment Date: _____
Session Number: _____	

Homework Description:										
Learning Goal (e.g., test idea/ practice skill):										
When (e.g., 11:45 am before lunch):										
Where (e.g., in the bedroom / at work):										
How often (e.g., times per day/ hour/ week):										
How long (e.g., hours/ minutes):										
Confidence Rating (circle one):										
0	10	20	30	40	50	60	70	80	90	100
Not at all confident					Moderately confident					Totally confident
Readiness Rating (circle one):										
0	10	20	30	40	50	60	70	80	90	100
Not at all ready					Moderately ready					Totally ready
Importance Rating (circle one):										
0	10	20	30	40	50	60	70	80	90	100
Not at all important					Moderately important					Totally important

Homework Description:										
Learning Goal (e.g., test idea/ practice skill):										
When (e.g., 11:45 am before lunch):										
Where (e.g., in the bedroom / at work):										
How often (e.g., times per day/ hour/ week):										
How long (e.g., hours/ minutes):										
Confidence Rating (circle one):										
0	10	20	30	40	50	60	70	80	90	100
Not at all confident					Moderately confident					Totally confident
Readiness Rating (circle one):										
0	10	20	30	40	50	60	70	80	90	100
Not at all ready					Moderately ready					Totally ready
Importance Rating (circle one):										
0	10	20	30	40	50	60	70	80	90	100
Not at all important					Moderately important					Totally important

Homework Assignment Form – Revised © Copyright 2006 by Nikolaos Kazantzis. Revised version of the "Homework Assignment Form" from the book *Using Homework Assignments in Cognitive Behavior Therapy*, by N. Kazantzis, F. P. Deane, K. R. Ronan, & L. L'Abate (2005). New York: Routledge.

Appendix H

HRS II

Instructions: Many people find ways to engage in activities between therapy sessions in a way that suits them. This may differ from the way in which the activity was discussed with their therapist. This questionnaire asks about your activities from last session. Below are some ways in which people have said that they have engaged and learned from their activities. Please read each question carefully, and for each of the statements, circle the **one response** that best applies to you.

1. Quantity

I was able to do the activity

- 0 not at all
- 1 a little
- 2 some
- 3 a lot
- 4 completely

2. Quality

I was able to do the activity well

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 extremely

3. Difficulty

The activity was difficult for me

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 extremely

4. Obstacles

I experienced obstacles in doing the activity

- 0 not at all
- 1 a little
- 2 some
- 3 a lot
- 4 extensive

5. Comprehension

I understood what to do for the activity

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 completely

6. Rationale

The reason for doing the activity was clear to me

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 completely

7. Collaboration

I had an active role in planning the activity

- 0 not at all
- 1 a little
- 2 some
- 3 a lot
- 4 extensive

8. Specificity

The guidelines for how to carry out the activity were specific

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 extremely

9. Match with Therapy Goals

The activity matched with my goals for therapy

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 completely

10. Pleasure

I enjoyed the activity

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 extremely

11. Mastery

I gained a sense of control over my problems

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 extensively

12. Progress

The activity helped with my progress in therapy

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 extremely

Homework Rating Scale II – Client Version © Copyright 2005 by Nikolaos Kazantzis, Frank Deane, and Kevin Ronan. From the book *Using Homework Assignments in Cognitive Behavior Therapy*, by N. Kazantzis, F. P. Deane, K. R. Ronan, & L. L'Abate (2005). New York: Routledge.

Instructions: This questionnaire consists of 12 questions regarding your client's homework completion from last session. Please read each question carefully, and circle the number of the **one response** that best describes your impression of the client's experience. If several statements apply equally well, circle the lowest number for that group. Be sure not to choose more than one response for any question.

1. Quantity

The client was able to do the activity

- 0 not at all
- 1 a little
- 2 some
- 3 a lot
- 4 completely

2. Quality

The client was able to do the activity well

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 extremely

3. Difficulty

The activity was difficult for the client

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 extremely

4. Obstacles

The client experienced obstacles in doing the activity

- 0 not at all
- 1 a little
- 2 some
- 3 a lot
- 4 extensive

5. Comprehension

The client understood what to do for the activity

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 completely

6. Rationale

The reason for doing the activity was clear to the client

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 completely

7. Collaboration

The client had an active role in planning the activity

- 0 not at all
- 1 a little
- 2 some
- 3 a lot
- 4 extensive

8. Specificity

The guidelines for how to carry out the activity were specific

- 0 not at all
- 1 somewhat
- 2 moderately
- 3 very
- 4 extremely

9. Match with Therapy Goals

The activity matched with the client's goals for therapy

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 completely

10. Pleasure

The client enjoyed the activity

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 extremely

11. Mastery

The client gained a sense of control over their problems

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 extensively

12. Progress

The activity helped with the client's progress in therapy

- 0 not at all
- 1 a little
- 2 somewhat
- 3 a lot
- 4 extremely

Appendix I

```
title "Model A".  
mixed BDI-II  
  /print=solution testcov  
  /method=ml  
  /fixed=intercept  
  /random intercept | subject(Client).
```

```
title "Model B".  
mixed BDI-II with Session  
  /print=solution testcov  
  /method=ml  
  /fixed = Session  
  /random intercept Session | subject(Client) covtype(un).
```

```
title "Model C".  
mixed BDI-II with HRS-IIFactor1 Session  
  /print=solution testcov  
  /method=ml  
  /fixed = HRS-IIFactor1 Session HRS-IIFactor1*Session  
  /random intercept Session | subject(Client) covtype(un).
```

```
title "Model D".  
mixed BDI-II with HRS-IIFactor1 CoNeg Session  
  /print=solution testcov  
  /method=ml  
  /fixed = HRS-IIFactor1 CoNeg Session HRS-IIFactor1*Session CoNeg*Session  
  /random intercept Session | subject(Client) covtype(un).
```

```
title "Model E".  
mixed BDI-II with HRS-IIFactor1 CoNeg BDI-IISeverity Session  
  /print=solution testcov  
  /method=ml  
  /fixed = HRS-IIFactor1 CoNeg BDI-II Severity Session HRS-IIFactor1*Session  
  CoNeg*Session BDI-IISeverity*Session  
  /random intercept Session | subject(Client) covtype(un).
```

```
title "Model F".  
mixed BDI-II with HRS-IIFactor1 CoNeg BDI-IISeverity Gender Session  
  /print=solution testcov  
  /method=ml  
  /fixed = HRS-IIFactor1 CoNeg BDI-II Severity Gender Session HRS-  
  IIFactor1*Session CoNeg*Session BDI-IISeverity*Session Gender*Session  
  /random intercept Session | subject(Client) covtype(un).
```

Appendix J

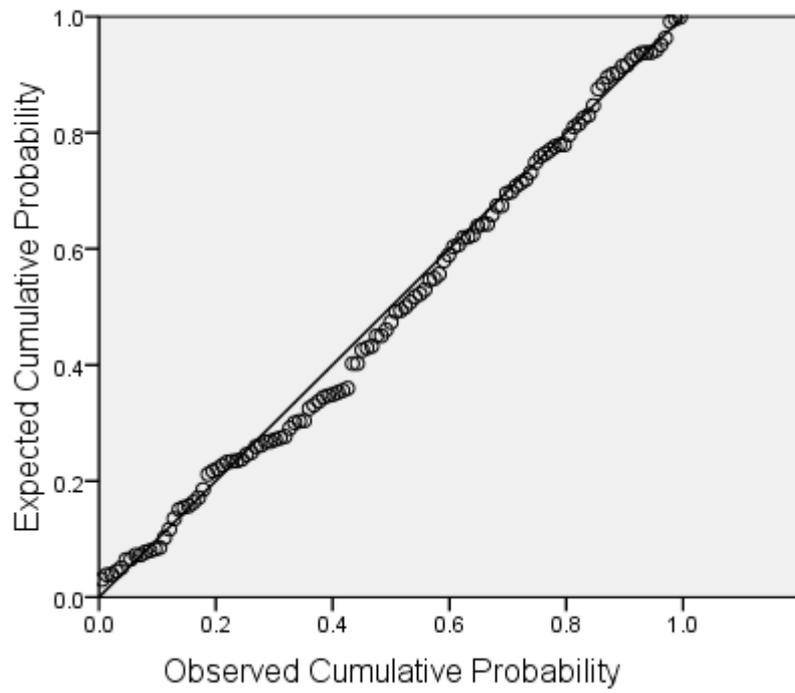


Figure J1. Normal P-P standardised residual plot for pessimism scores at five time points

Note. The analyses depicted in this figure, and in all other figures in this appendix, involved regression analyses against BDI-II scores as the dependent variable.

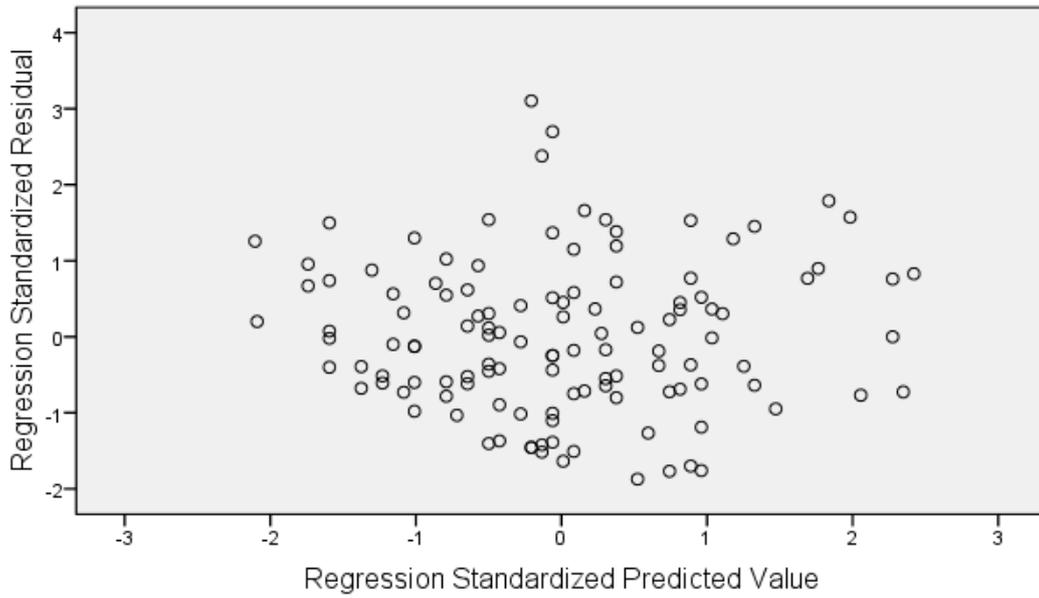


Figure J2. Standardised residual scatterplot for pessimism scores at five time points

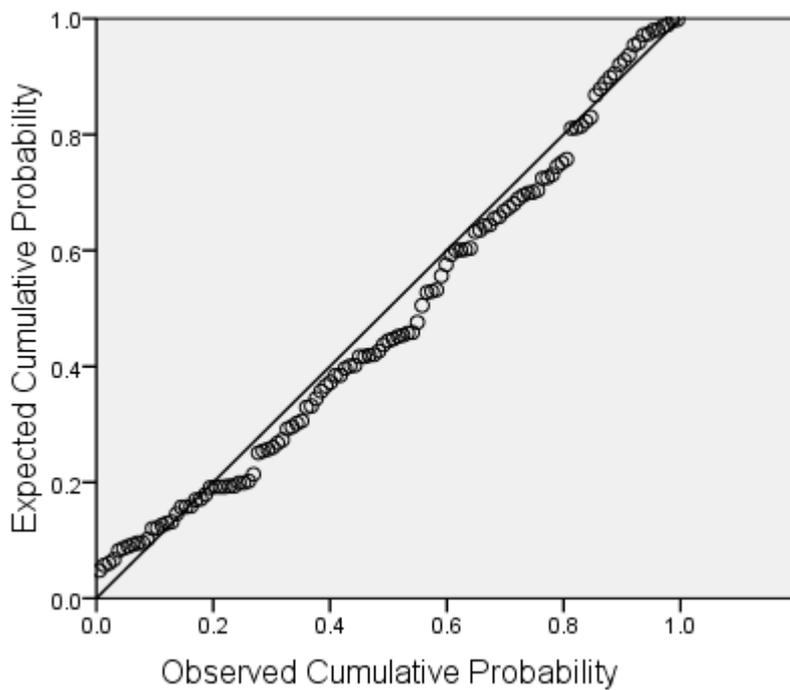


Figure J3. Normal P-P standardised residual plot for optimism scores at five time points

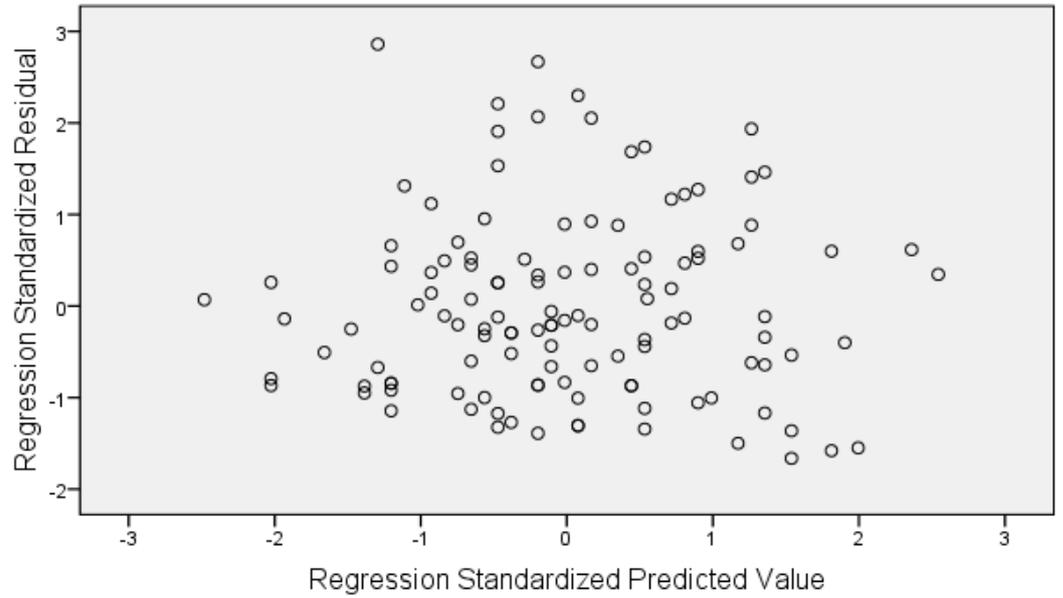


Figure J4. Standardised residual scatterplot for pessimism scores at five time points

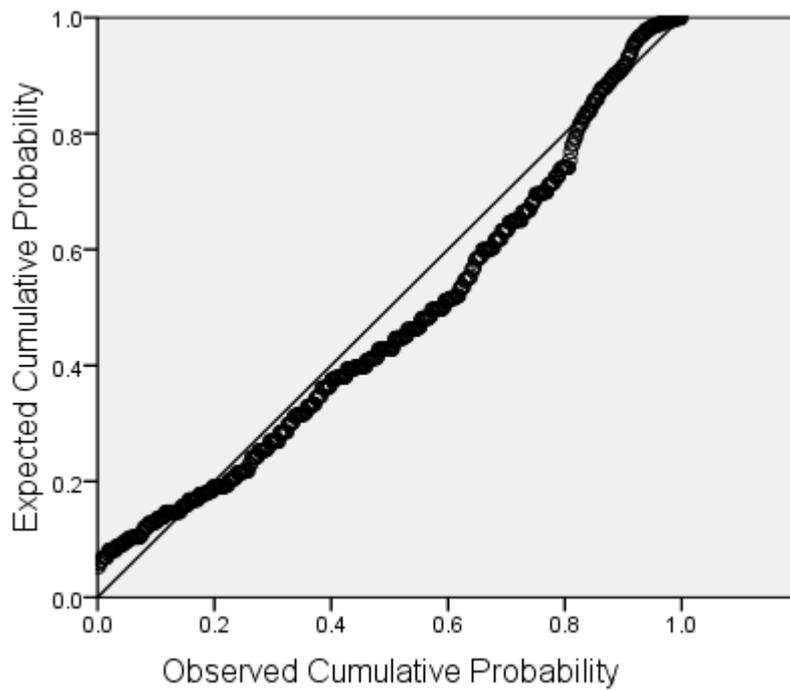


Figure J5. Normal P-P standardised residual plot for HRS-II (Item 1: Quantity) client rated scores across the course of therapy

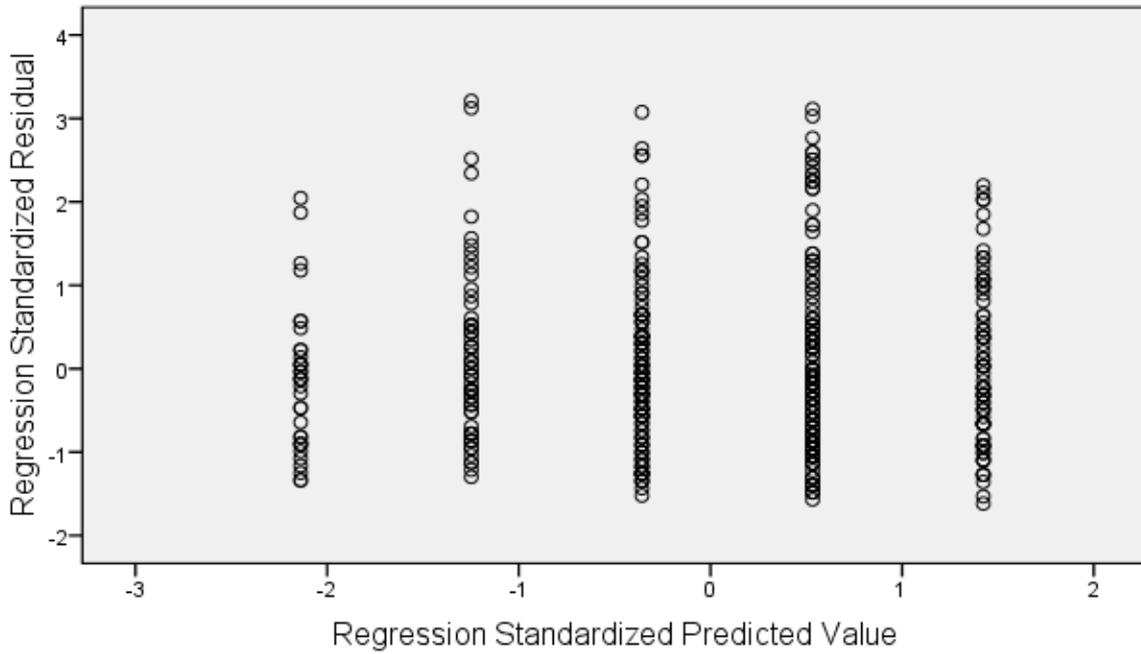


Figure J6. Standardised residual scatterplot for HRS-II (Item 1: Quantity) client rated scores across the course of therapy

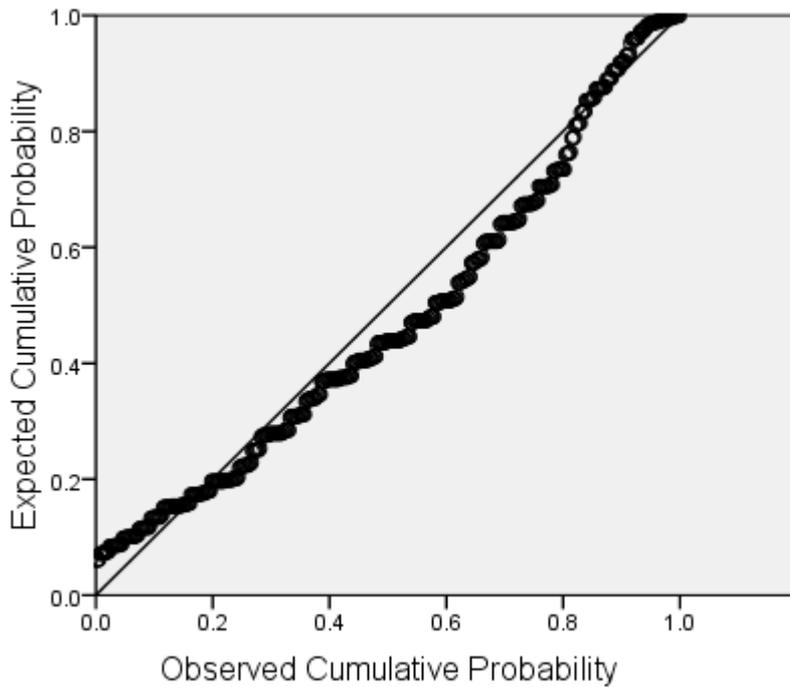


Figure J7. Normal P-P standardised residual plot for HRS-II (Item 2: Quality) client rated scores across the course of therapy

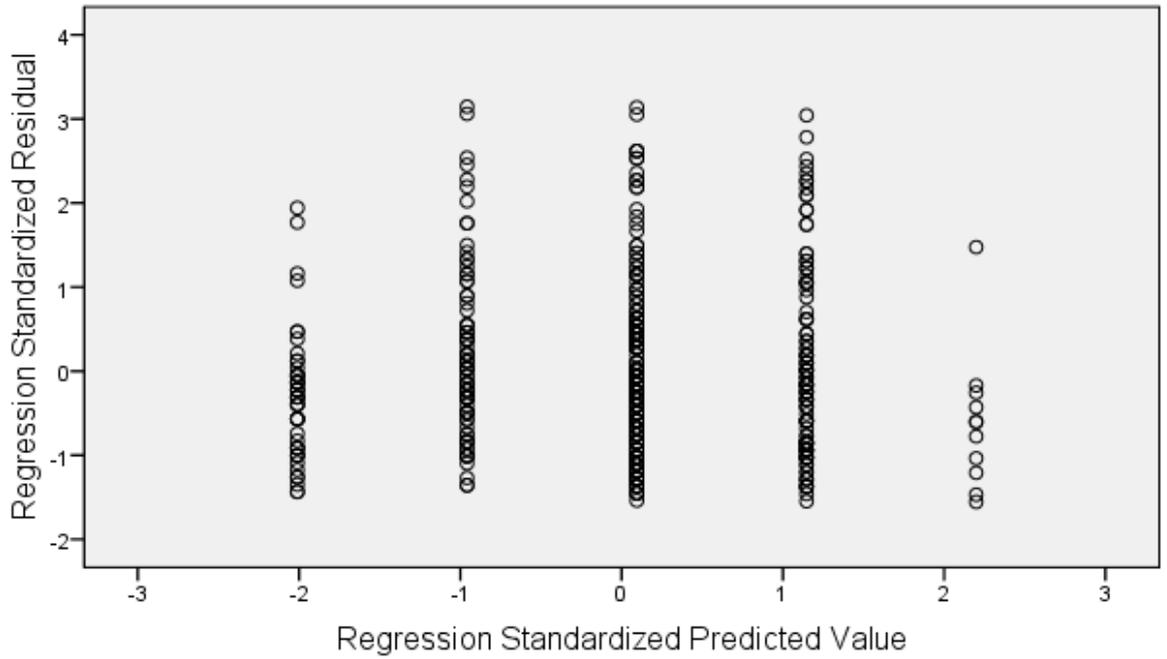


Figure J8. Standardised residual scatterplot for HRS-II (Item 2: Quality) client rated scores across the course of therapy

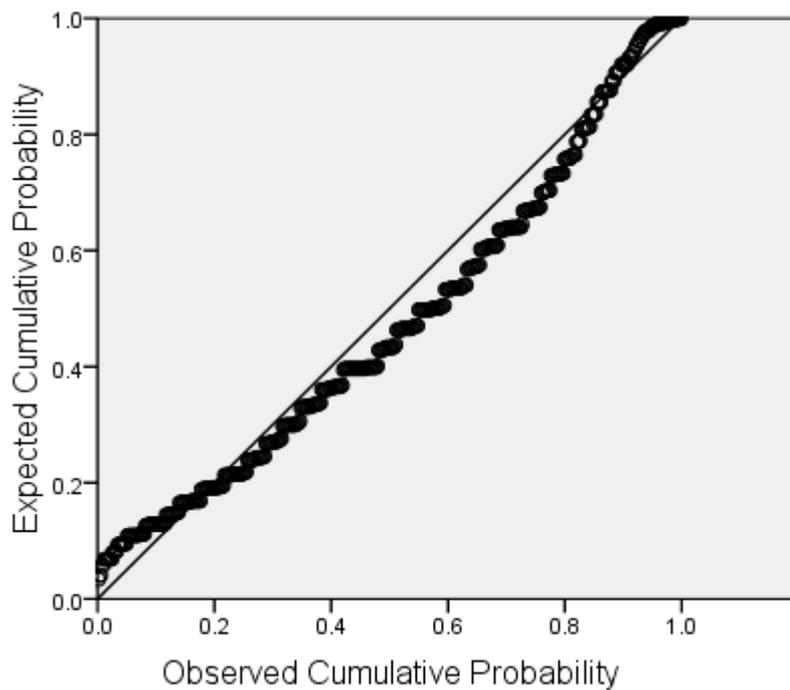


Figure J9. Normal P-P standardised residual plot for HRS-II (Item 3: Difficulty) client rated scores across the course of therapy

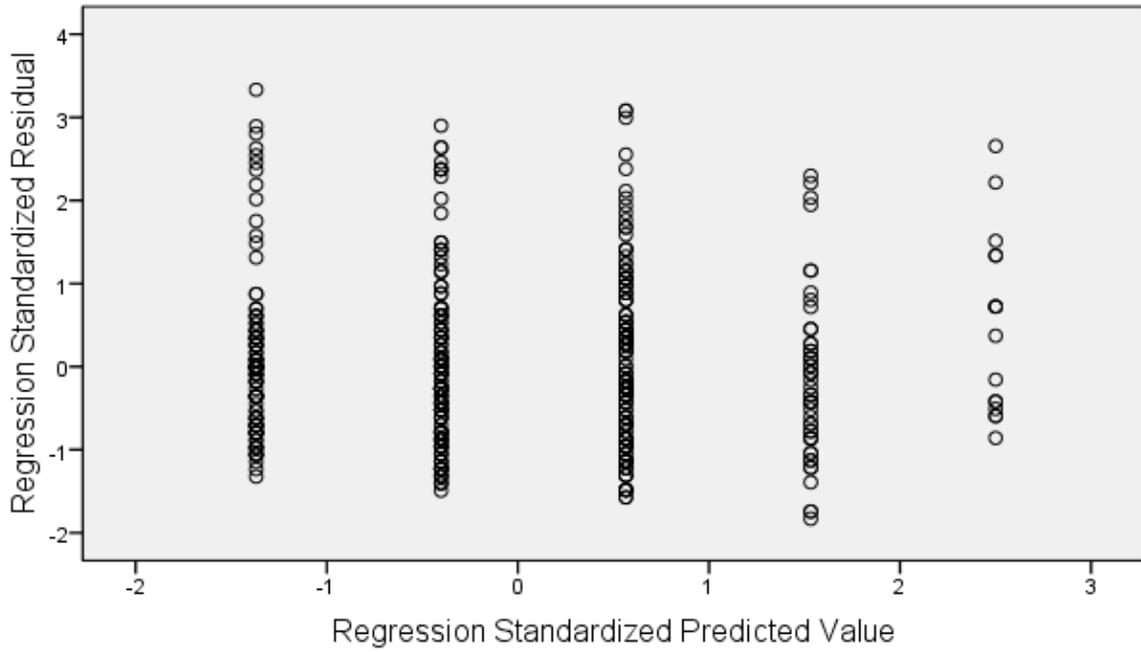


Figure J10. Standardised residual scatterplot for HRS-II (Item 3: Difficulty) client rated scores across the course of therapy

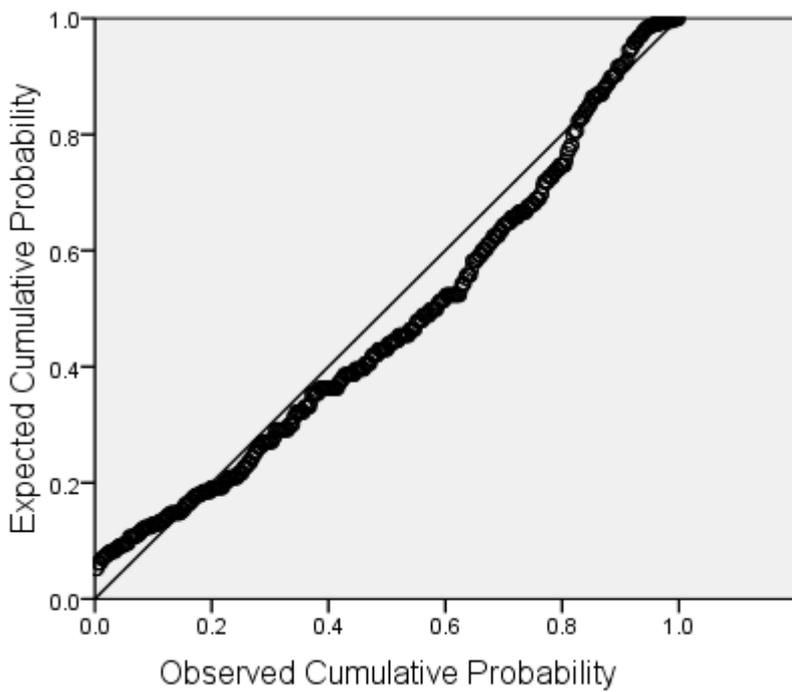


Figure J11. Normal P-P standardised residual plot for HRS-II (Item 4: Obstacles) client rated scores across the course of therapy

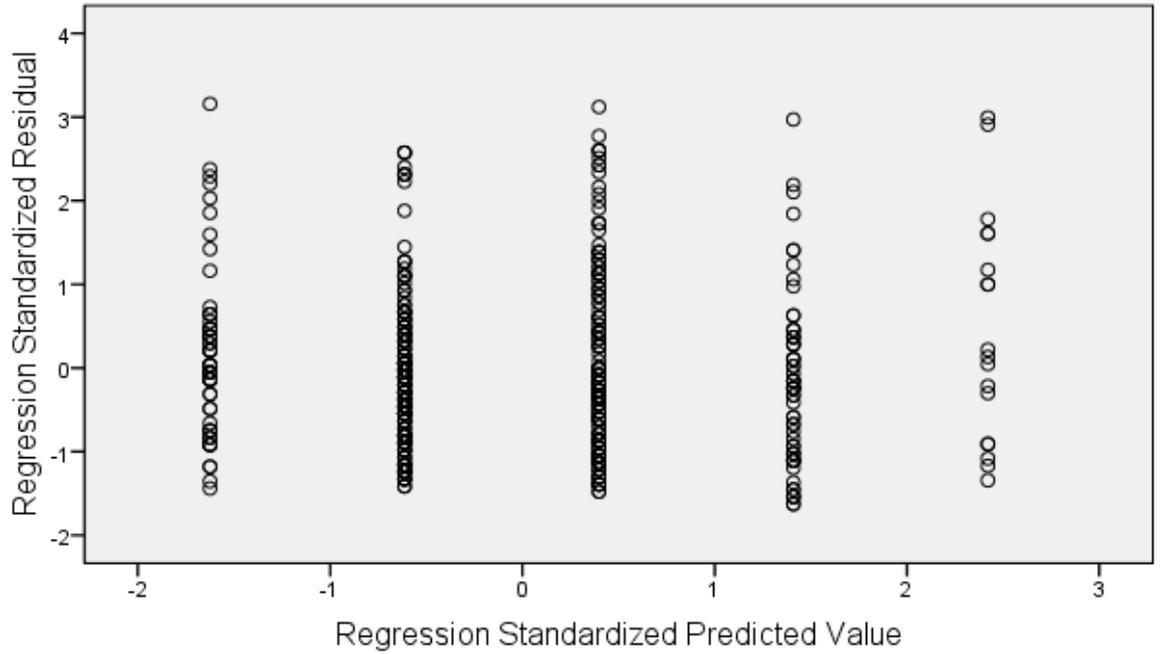


Figure J12. Standardised residual scatterplot for HRS-II (Item 4: Obstacles) client rated scores across the course of therapy

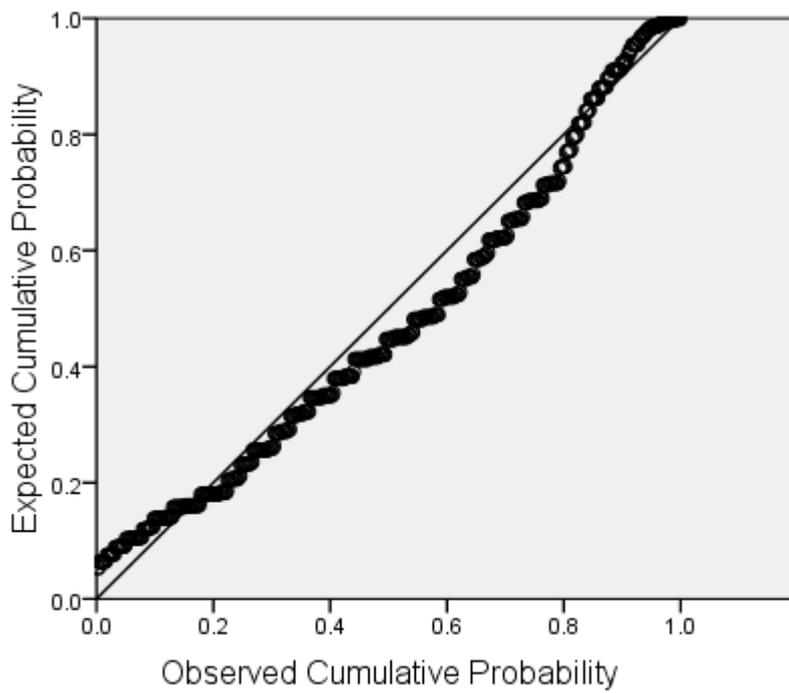


Figure J13. Normal P-P standardised residual plot for HRS-II (Item 5: Comprehension) client rated scores across the course of therapy

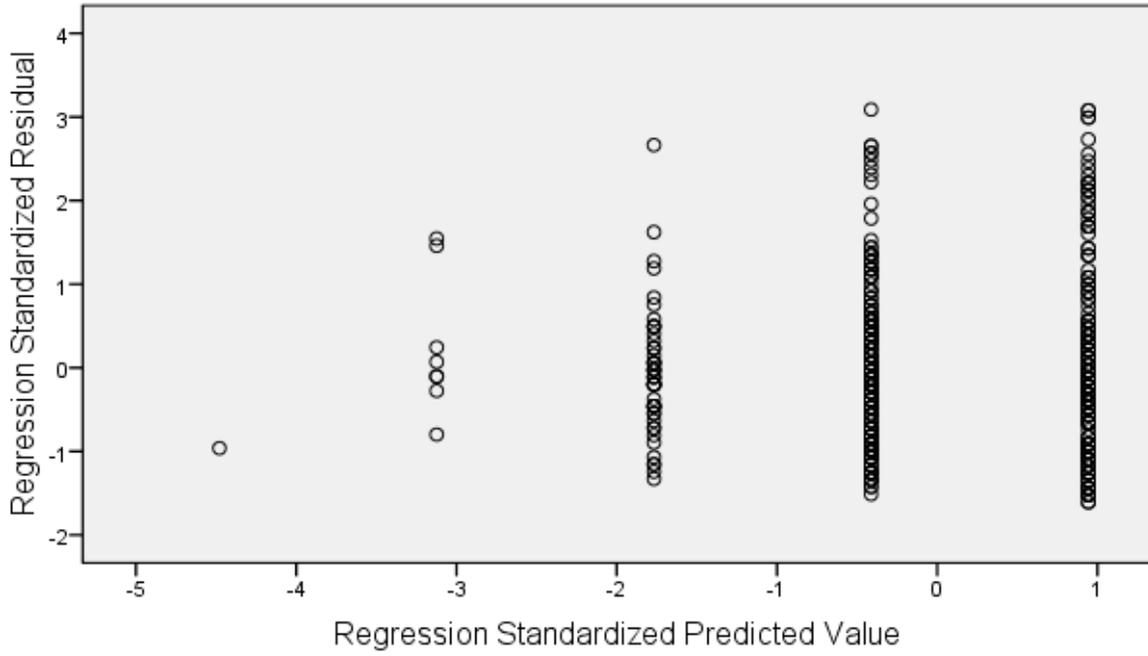


Figure J14. Standardised residual scatterplot for HRS-II (Item 5: Comprehension) client rated scores across the course of therapy

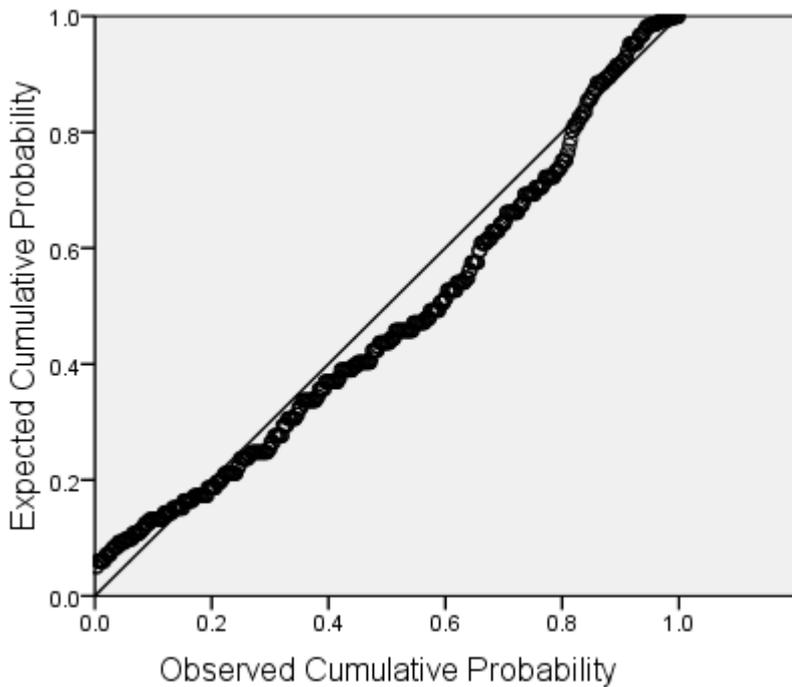


Figure J15. Normal P-P standardised residual plot for HRS-II (Item 6: Rationale) client rated scores across the course of therapy

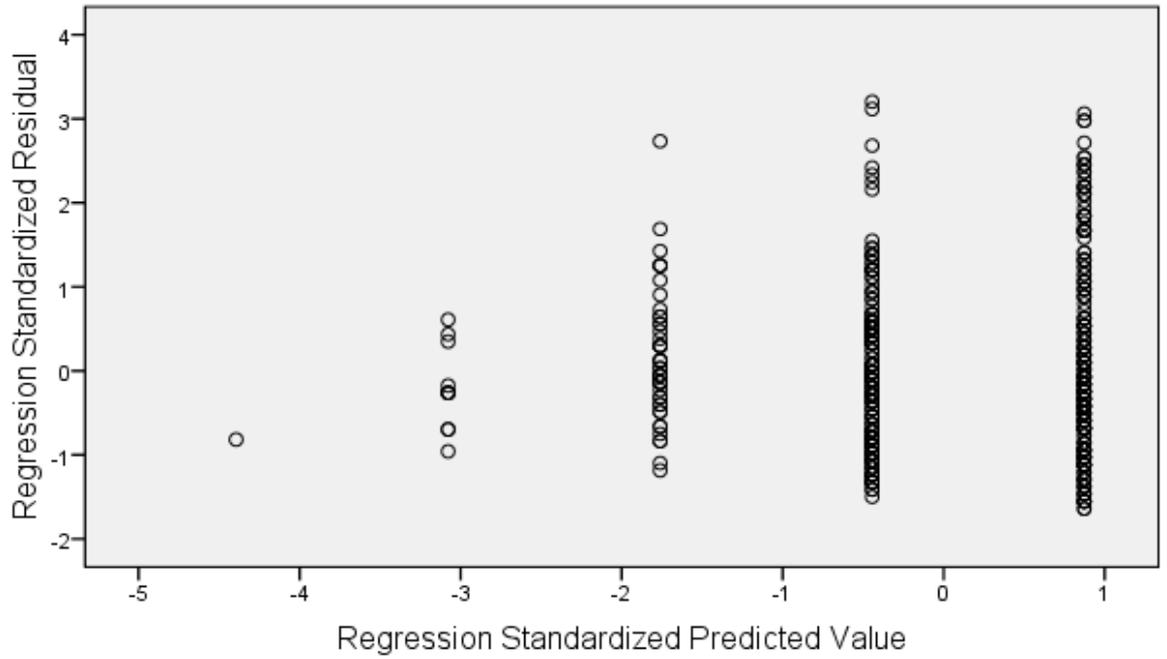


Figure J16. Standardised residual scatterplot for HRS-II (Item 6: Rationale) client rated scores across the course of therapy

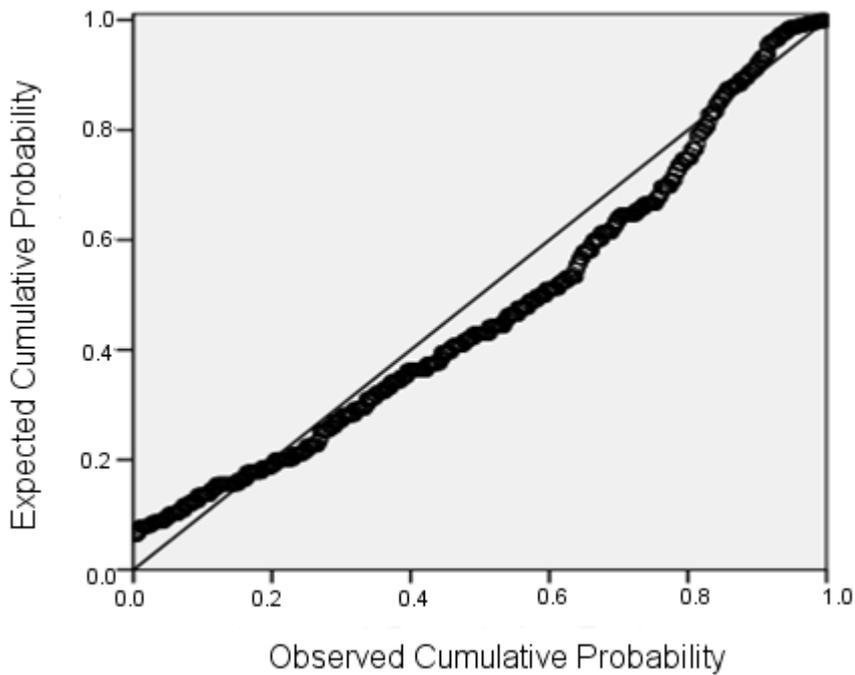


Figure J17. Normal P-P standardised residual plot for HRS-II (Item 7: Collaboration) client rated scores across the course of therapy

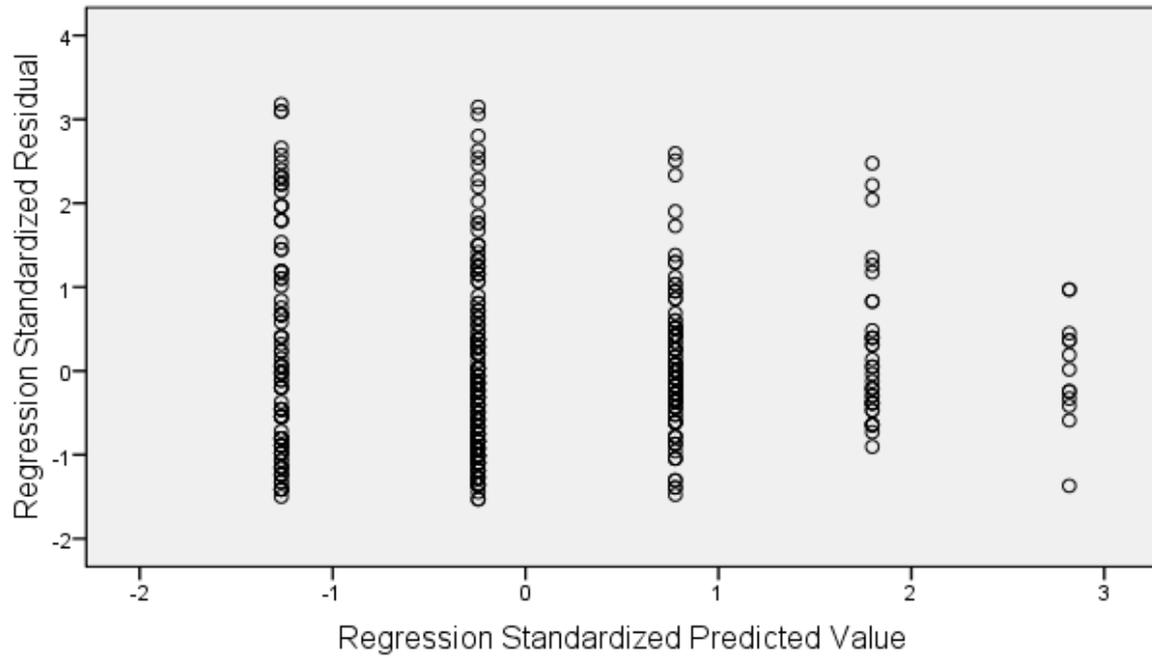


Figure J18. Standardised residual scatterplot for HRS-II (Item 7: Collaboration) client rated scores across the course of therapy

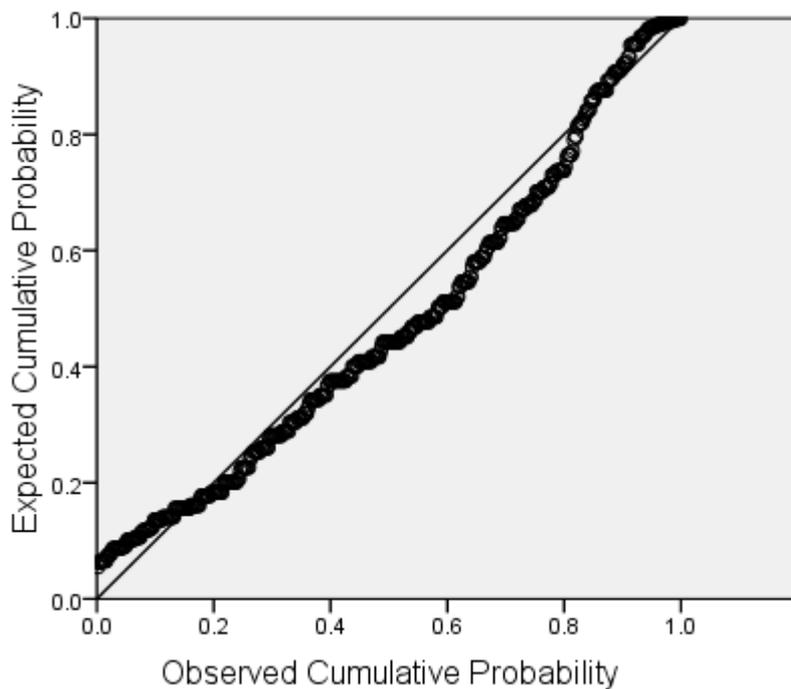


Figure J19. Normal P-P standardised residual plot for HRS-II (Item 8: Specificity) client rated scores across the course of therapy

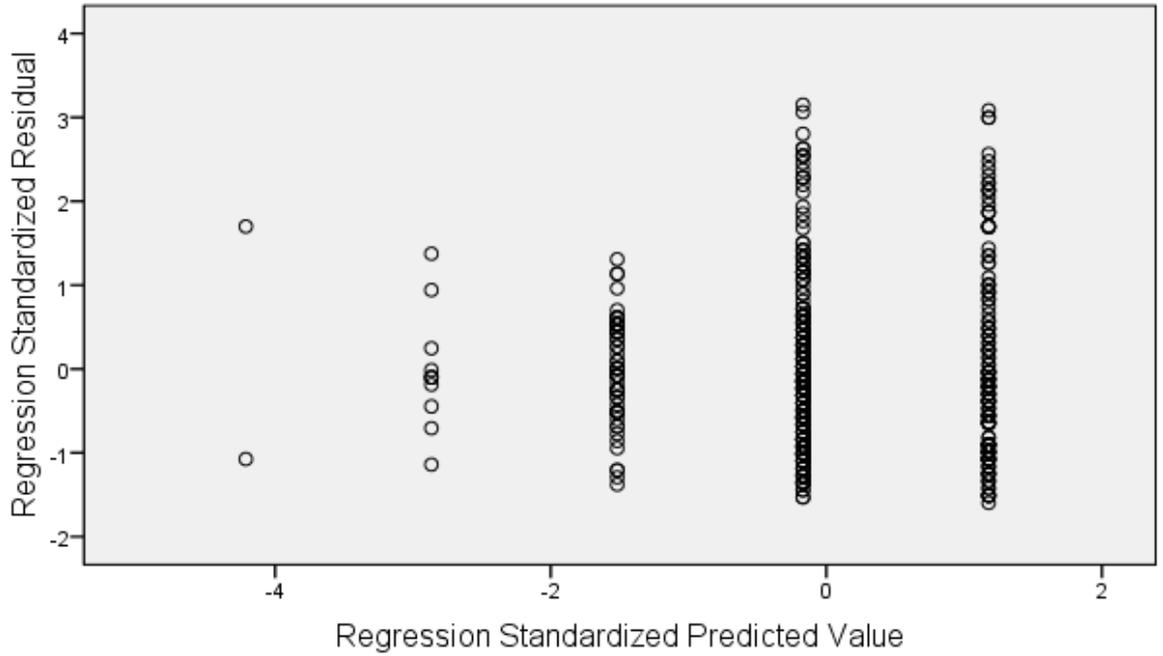


Figure J20. Standardised residual scatterplot for HRS-II (Item 8: Specificity) client rated scores across the course of therapy

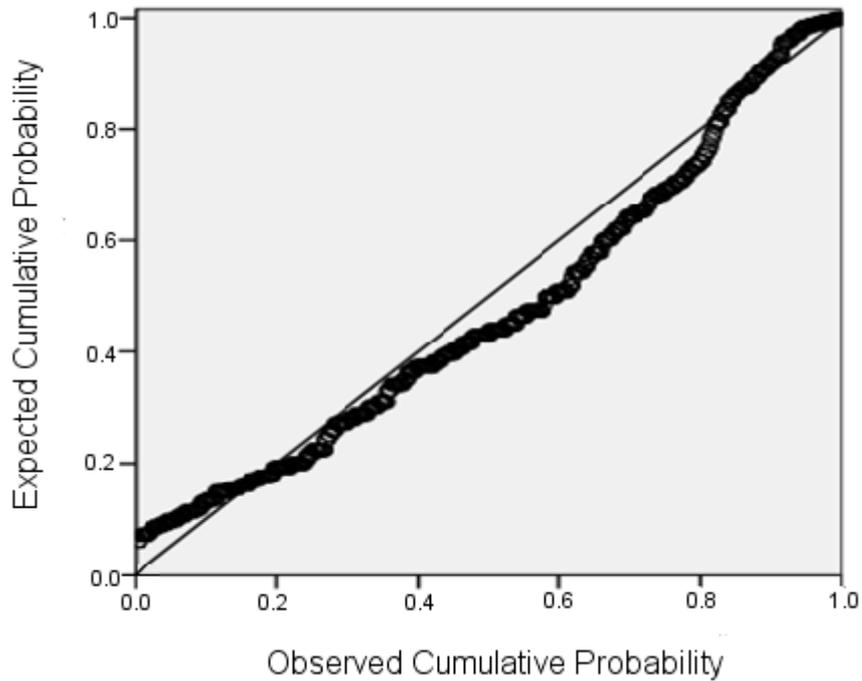


Figure J21. Normal P-P standardised residual plot for HRS-II (Item 9: Match with Therapy Goals) client rated scores across the course of therapy

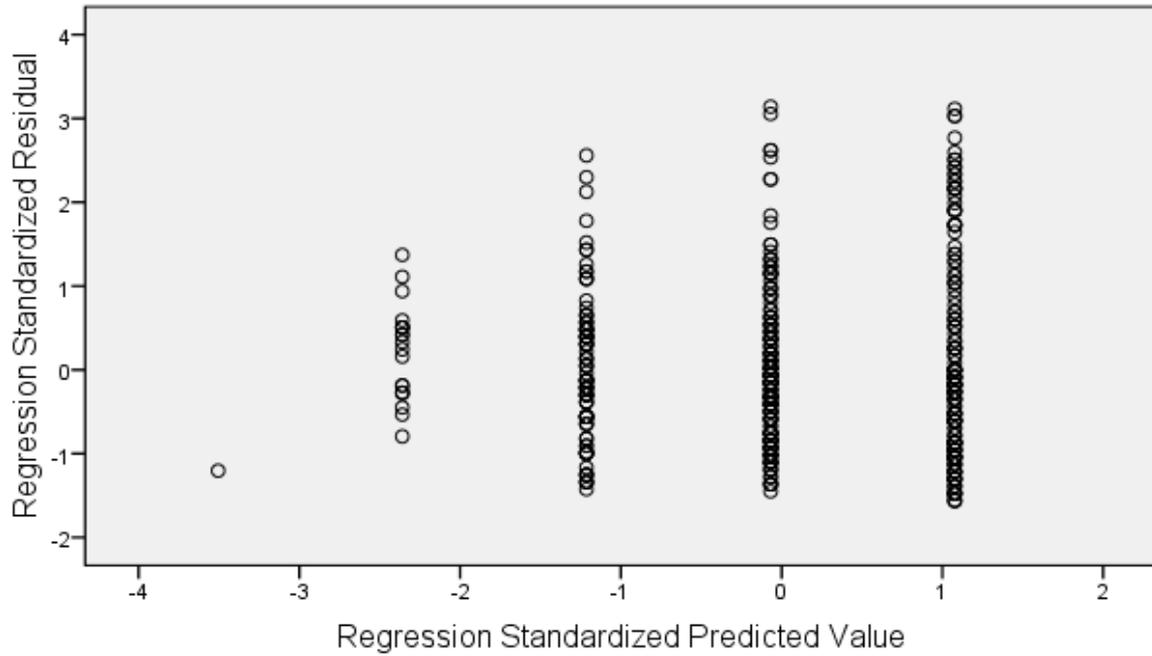


Figure J22. Standardised residual scatterplot for HRS-II (Item 9: Match with Therapy Goals) client rated scores across the course of therapy

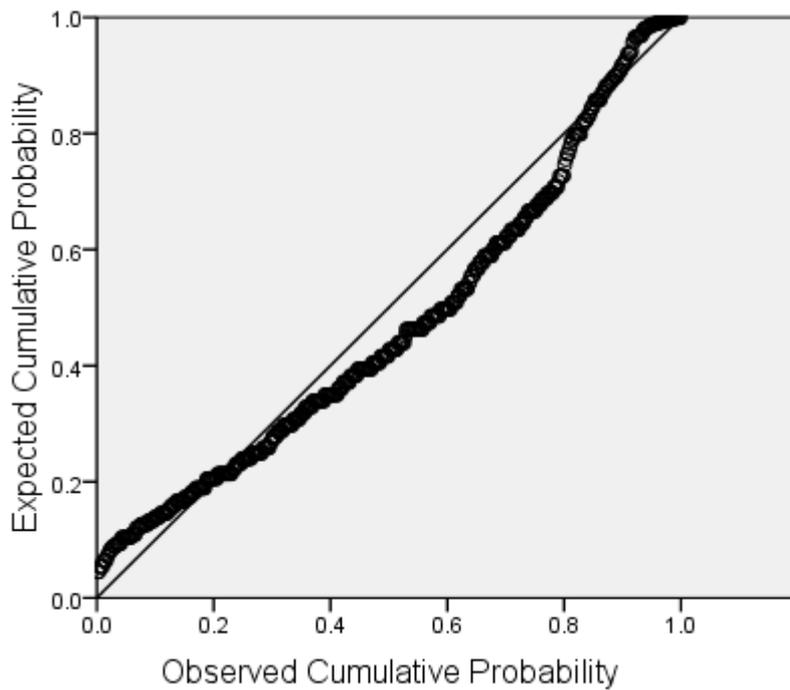


Figure J23. Normal P-P standardised residual plot for HRS-II (Item 10: Pleasure) client rated scores across the course of therapy

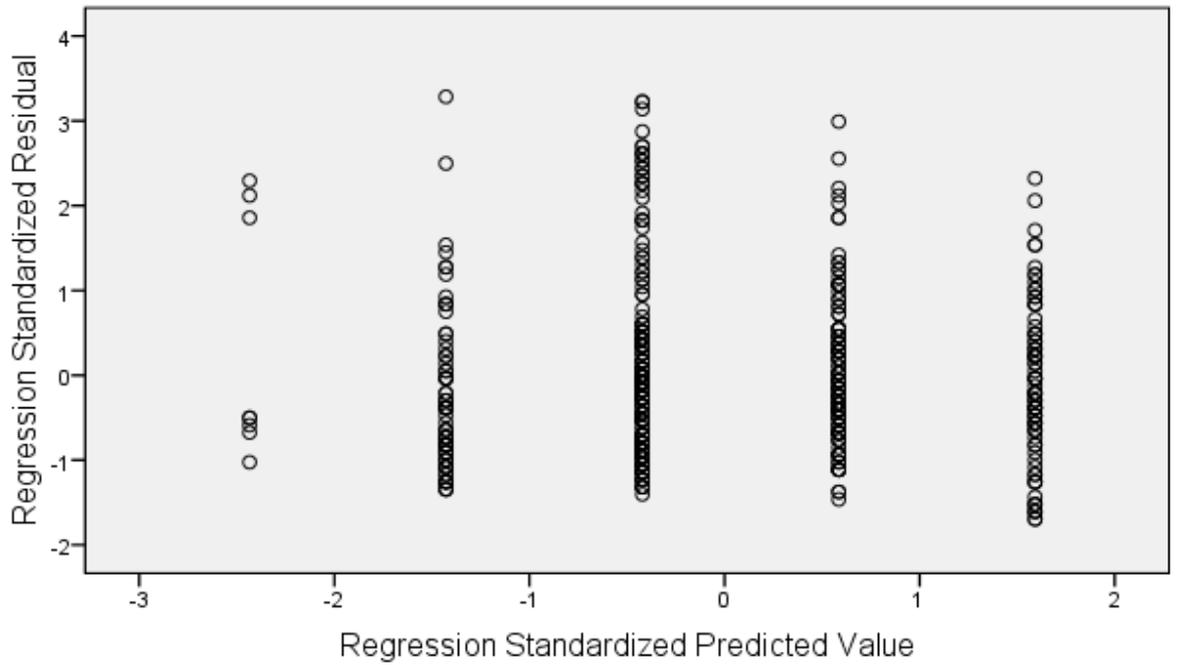


Figure J24. Standardised residual scatterplot for HRS-II (Item 10: Pleasure) client rated scores across the course of therapy

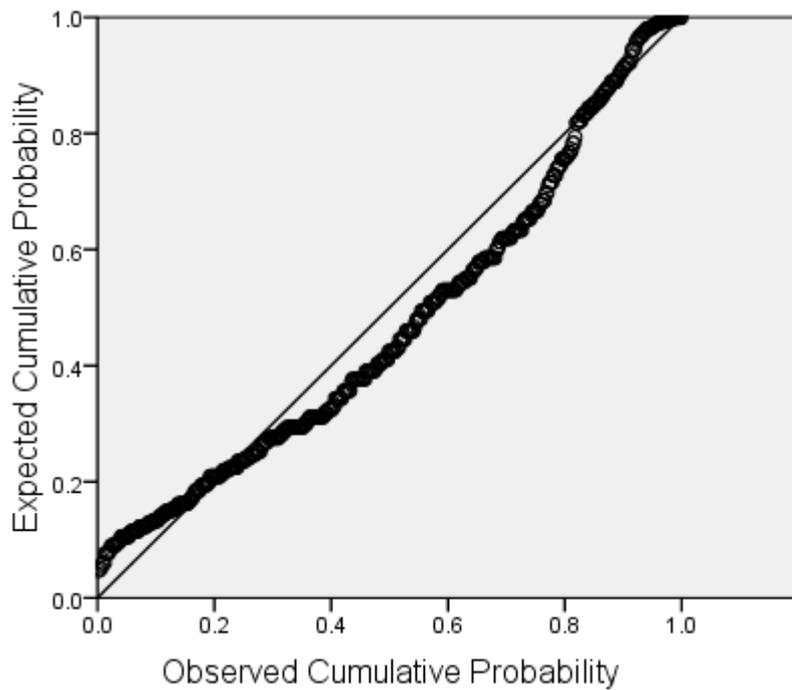


Figure J25. Normal P-P standardised residual plot for HRS-II (Item 11: Mastery) client rated scores across the course of therapy

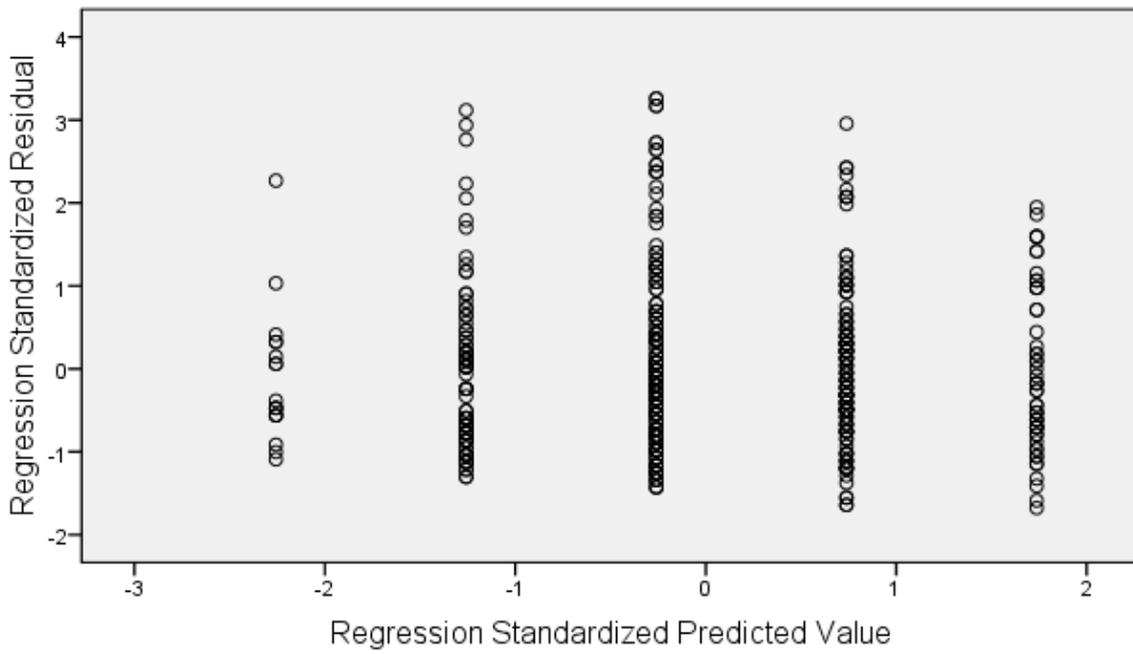


Figure J26. Standardised residual scatterplot for HRS-II (Item 11: Mastery) client rated scores across the course of therapy

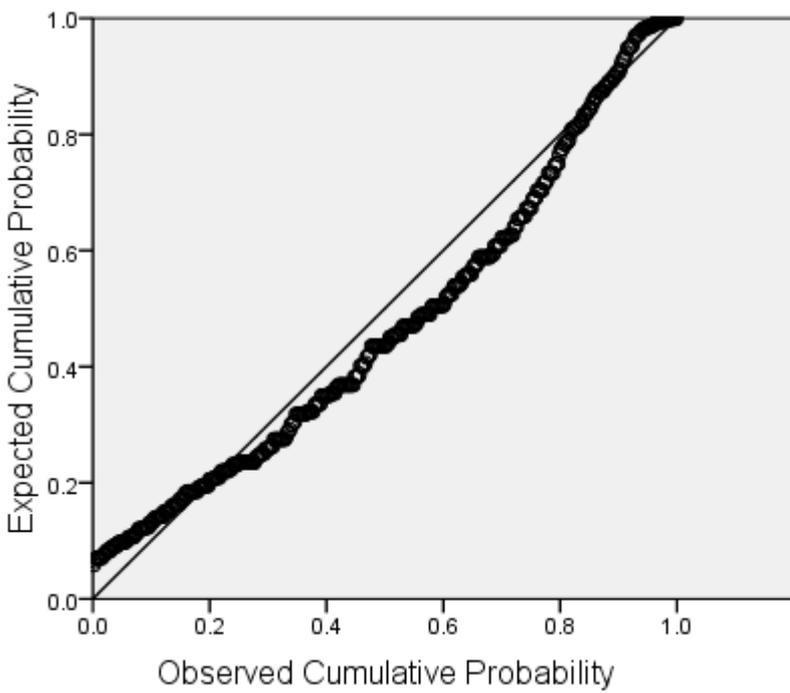


Figure J27. Normal P-P standardised residual plot for HRS-II (Item 12: Progress) client rated scores across the course of therapy

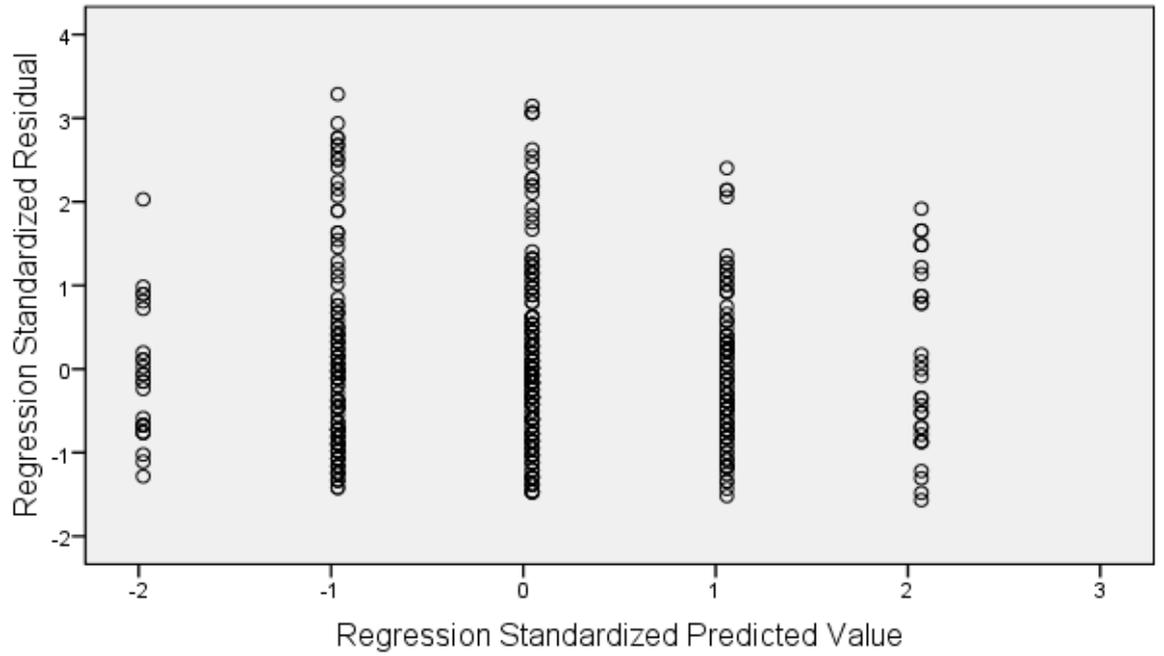


Figure J28. Standardised residual scatterplot for HRS-II (Item 12: Progress) client rated scores across the course of therapy

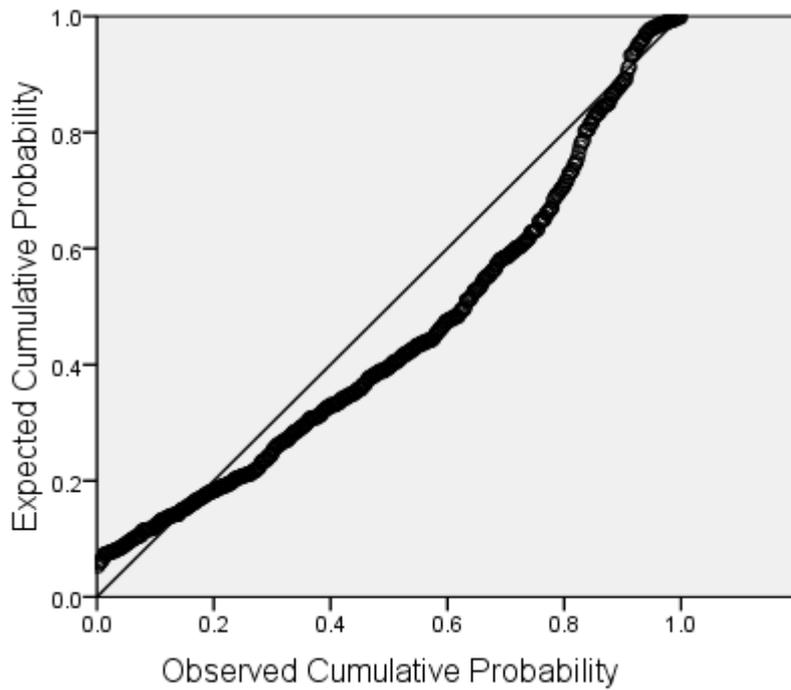


Figure J29. Standardised residual scatterplot for HRS-II (Total) client rated scores across the course of therapy

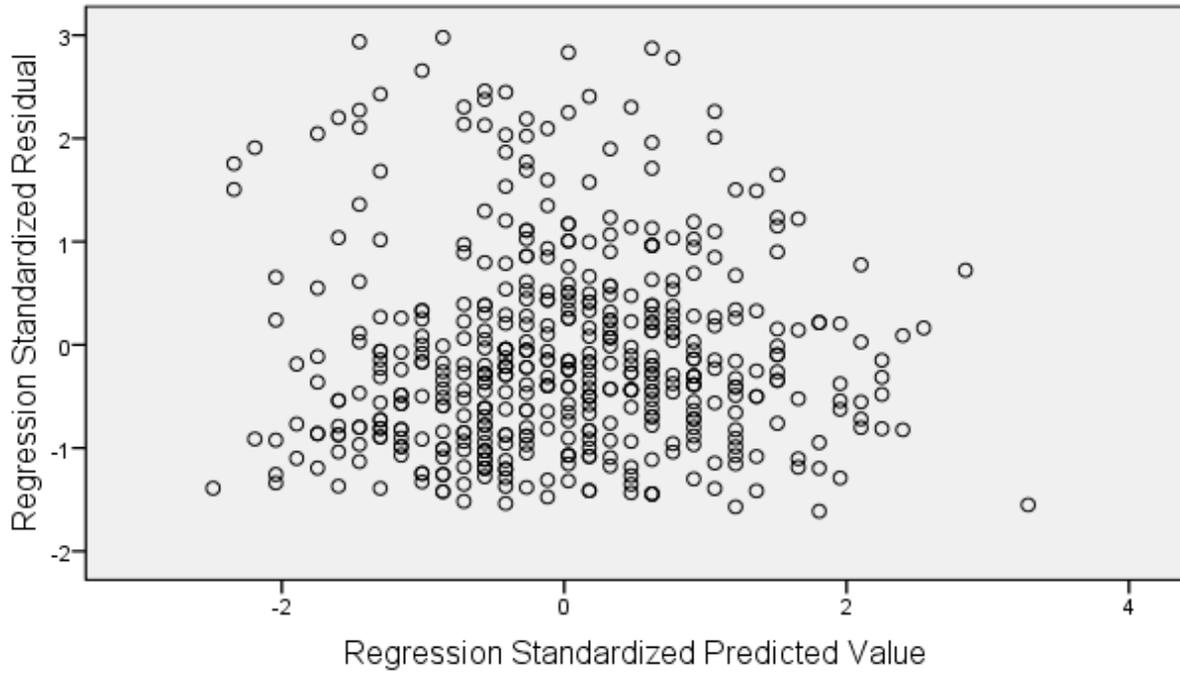


Figure J30. Standardised residual scatterplot for HRS-II (Total) client rated scores across the course of therapy

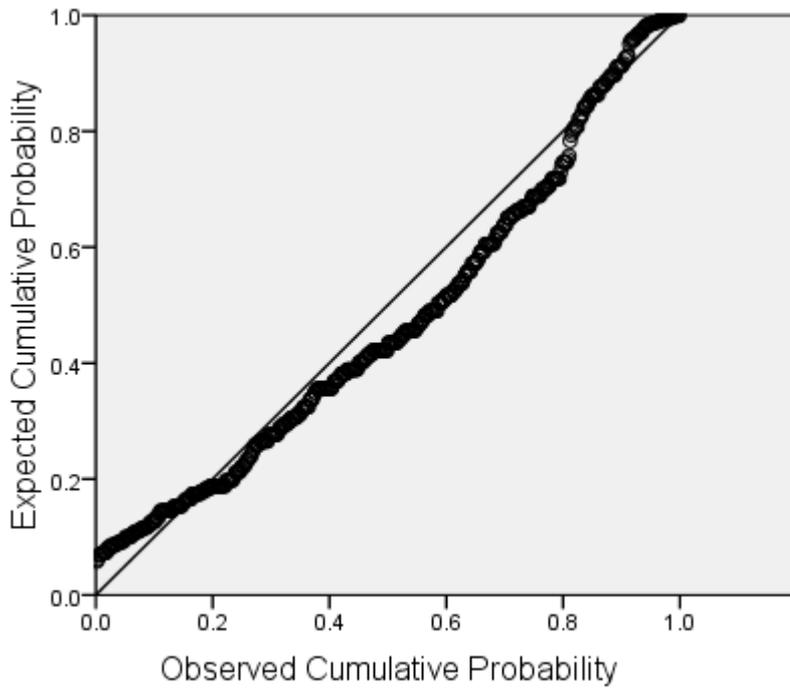


Figure J31. Normal P-P standardised residual plot for HRS-II (Item 1: Quantity) therapist rated scores across the course of therapy

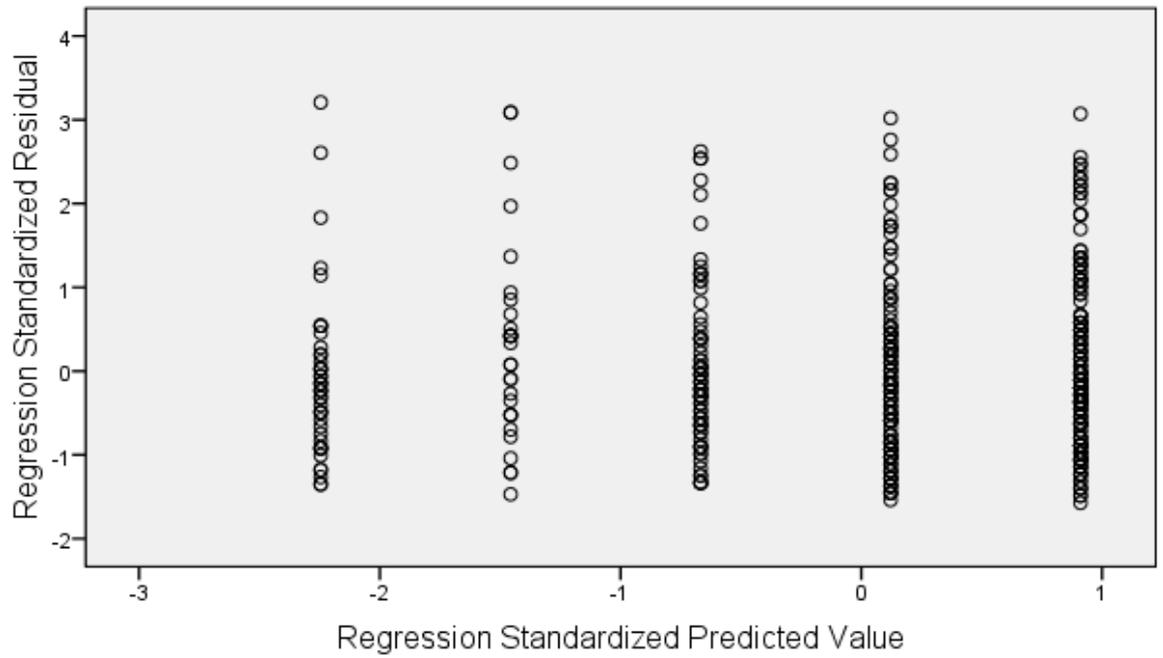


Figure J32. Standardised residual scatterplot for HRS-II (Item 1: Quantity) therapist rated scores across the course of therapy

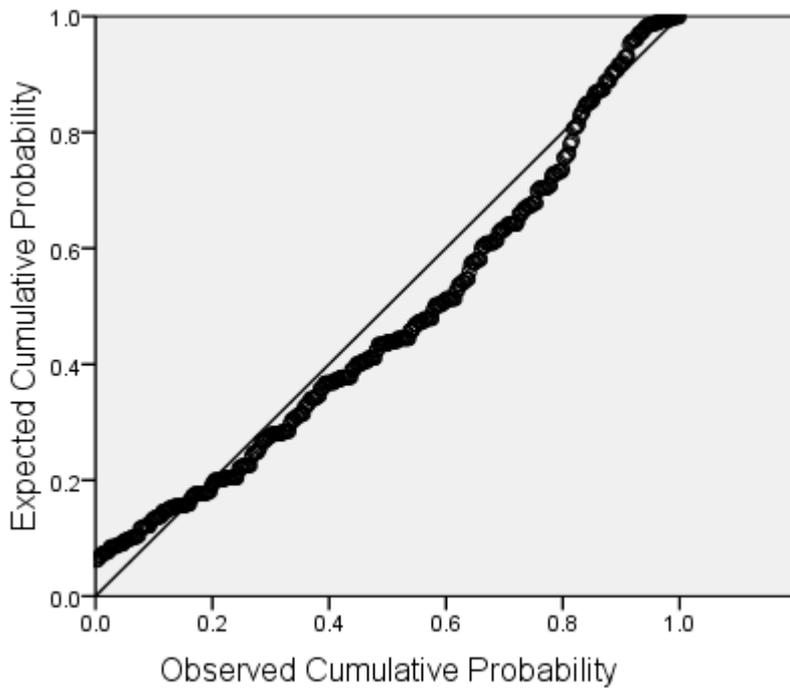


Figure J33. Normal P-P standardised residual plot for HRS-II (Item 2: Quality) therapist rated scores across the course of therapy

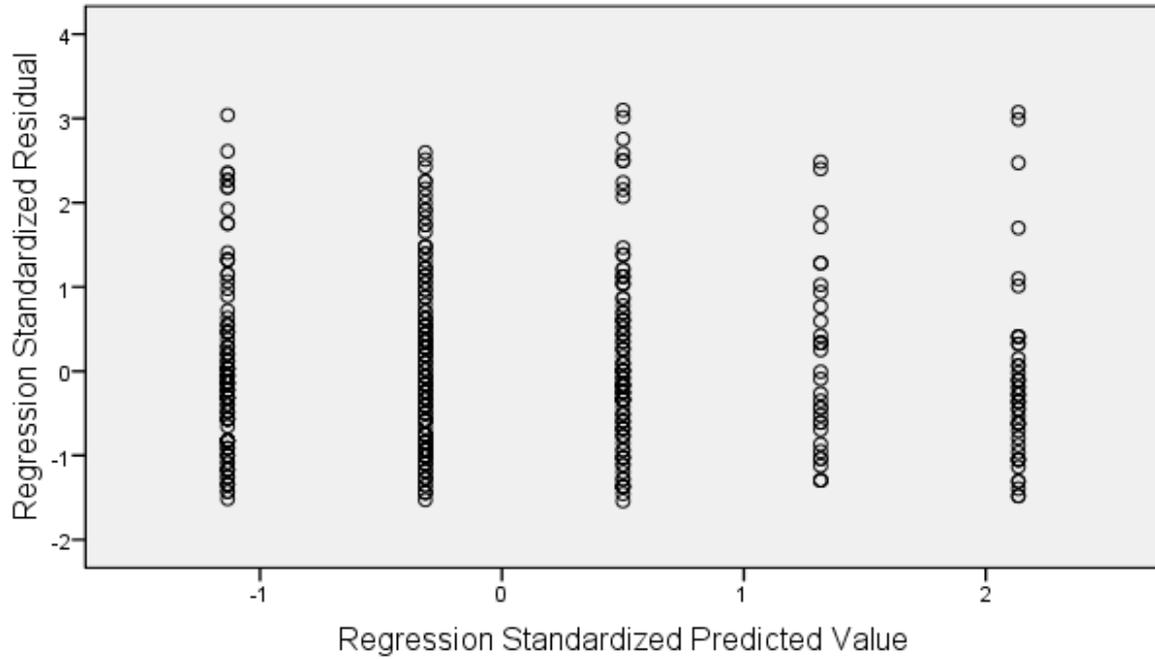


Figure J34. Standardised residual scatterplot for HRS-II (Item 2: Quality) therapist rated scores across the course of therapy

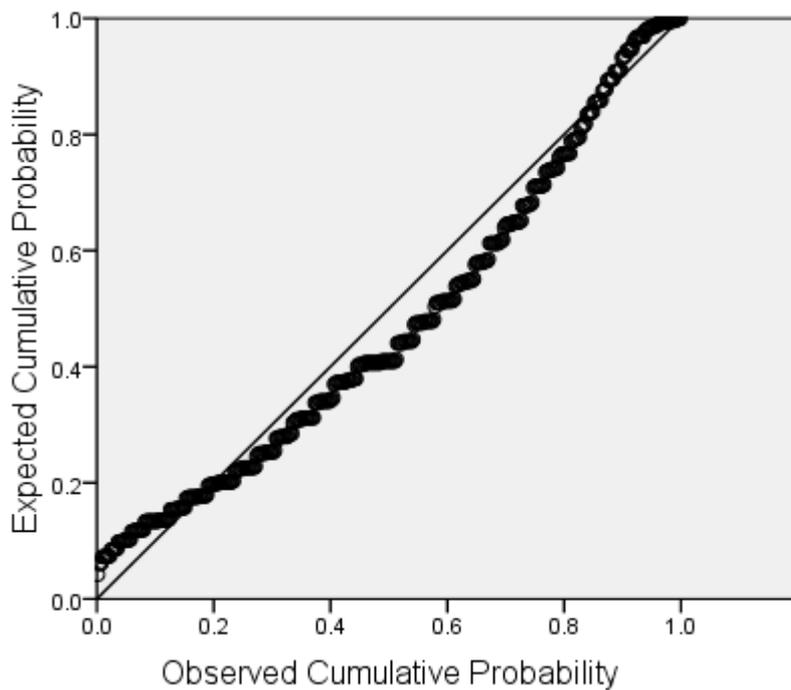


Figure J35. Normal P-P standardised residual plot for HRS-II (Item 3: Difficulty) therapist rated scores across the course of therapy

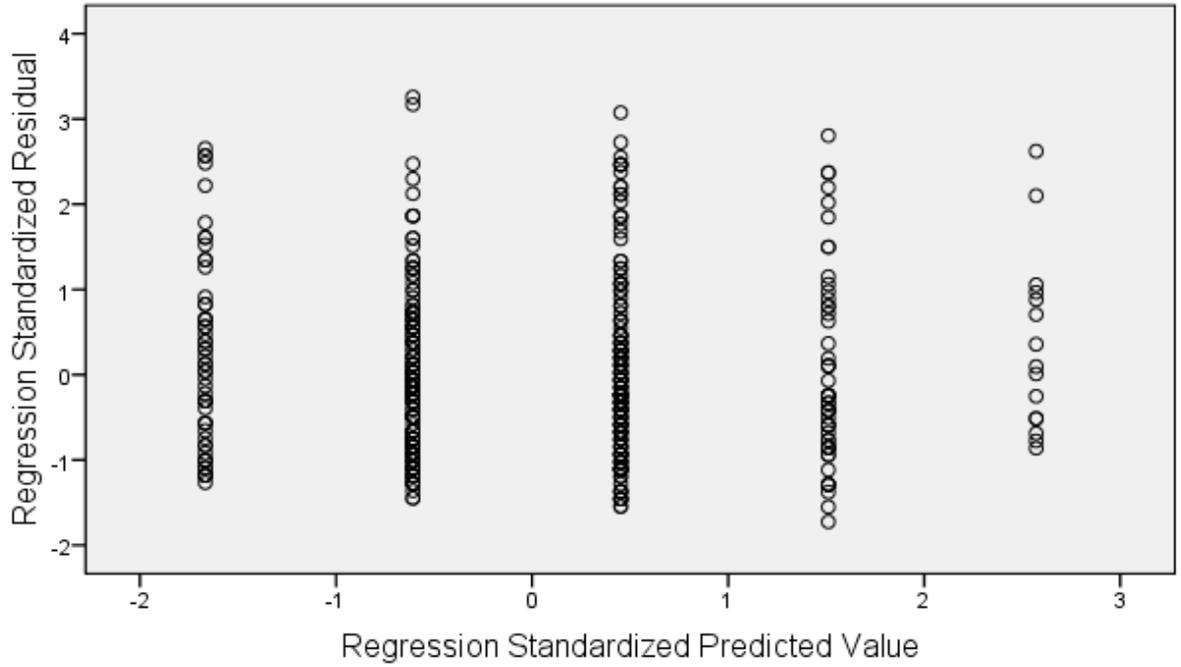


Figure J36. Standardised residual scatterplot for HRS-II (Item 3: Difficulty) therapist rated scores across the course of therapy

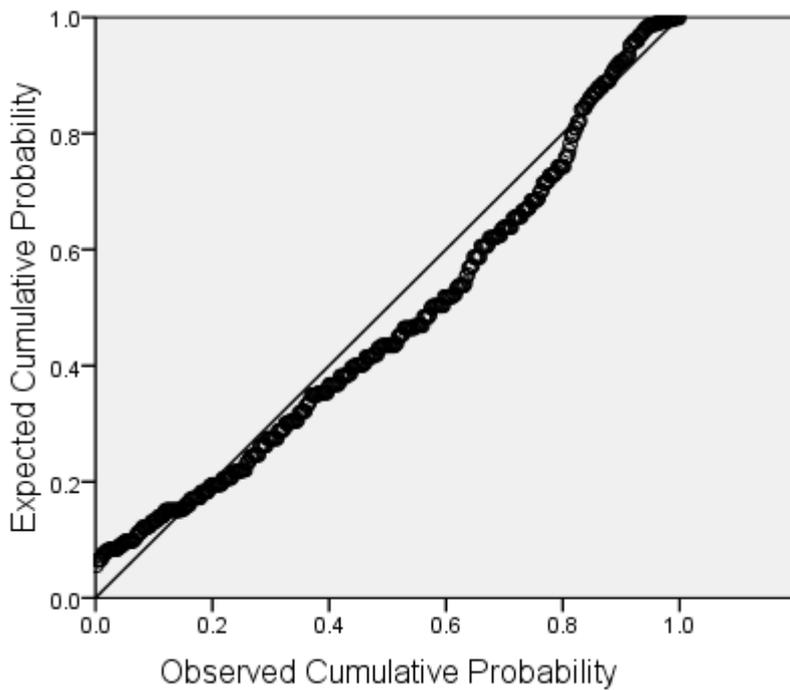


Figure J37. Normal P-P standardised residual plot for HRS-II (Item 4: Obstacles) therapist rated scores across the course of therapy

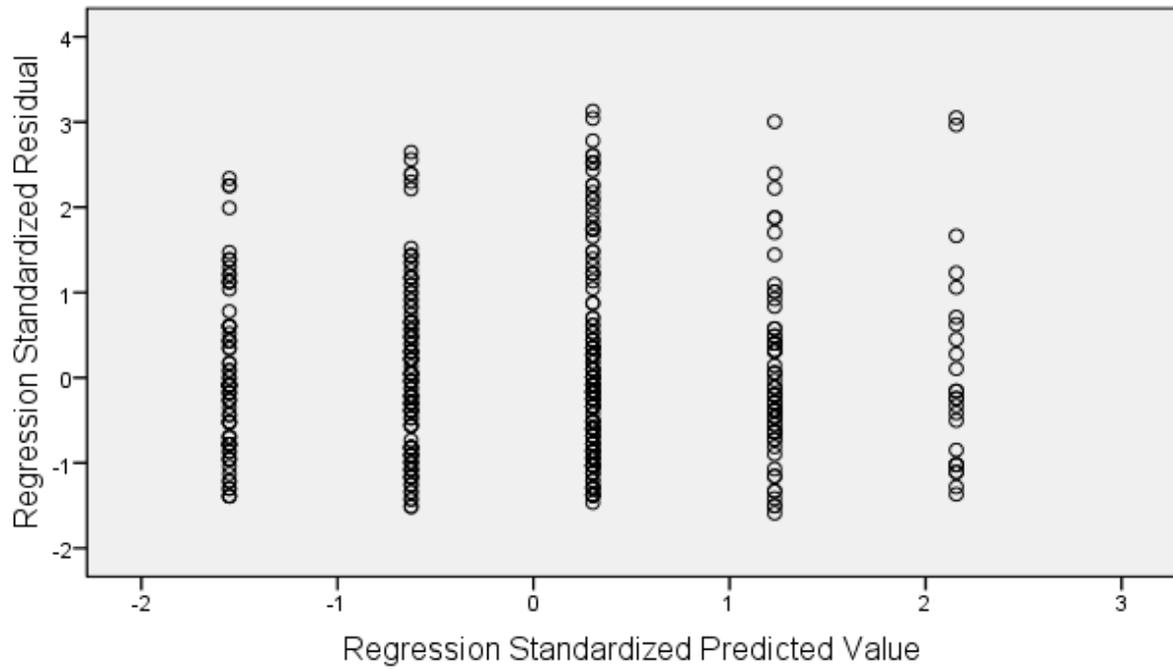


Figure J38. Standardised residual scatterplot for HRS-II (Item 4: Obstacles) therapist rated scores across the course of therapy

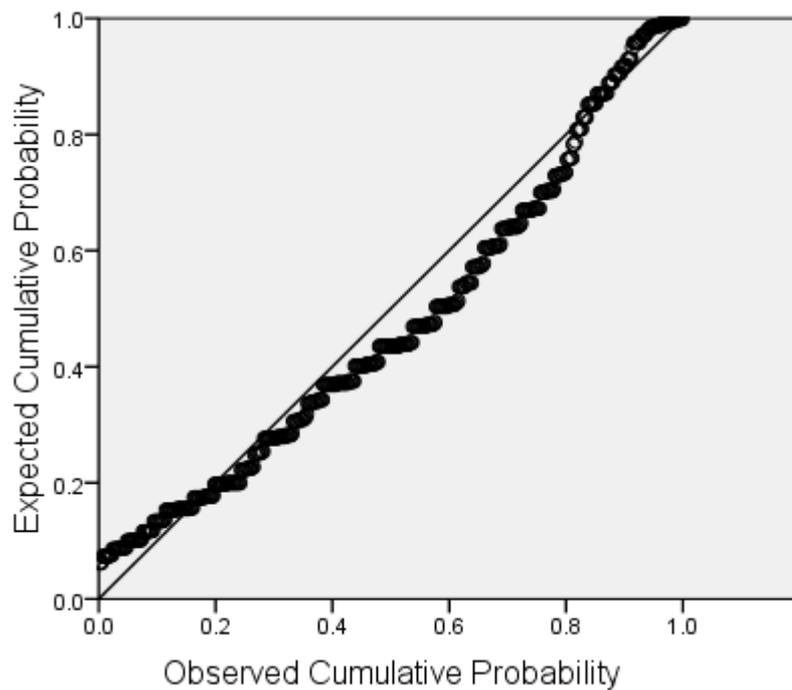


Figure J39. Normal P-P standardised residual plot for HRS-II (Item 5: Comprehension) therapist rated scores across the course of therapy

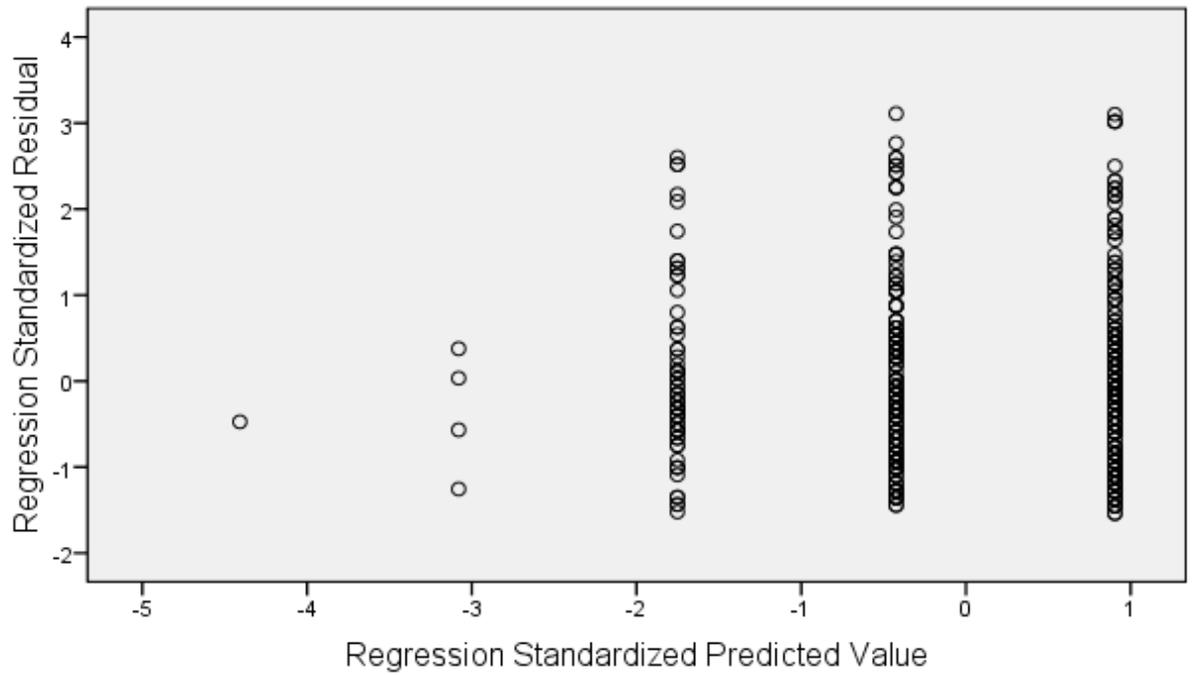


Figure J40. Standardised residual scatterplot for HRS-II (Item 5: Comprehension) therapist rated scores across the course of therapy

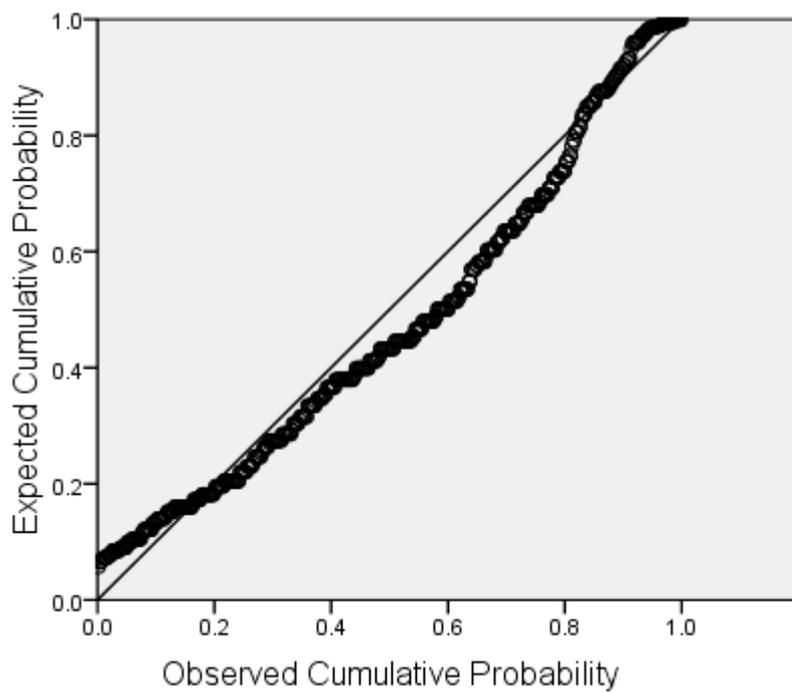


Figure J41. Normal P-P standardised residual plot for HRS-II (Item 6: Rationale) therapist rated scores across the course of therapy

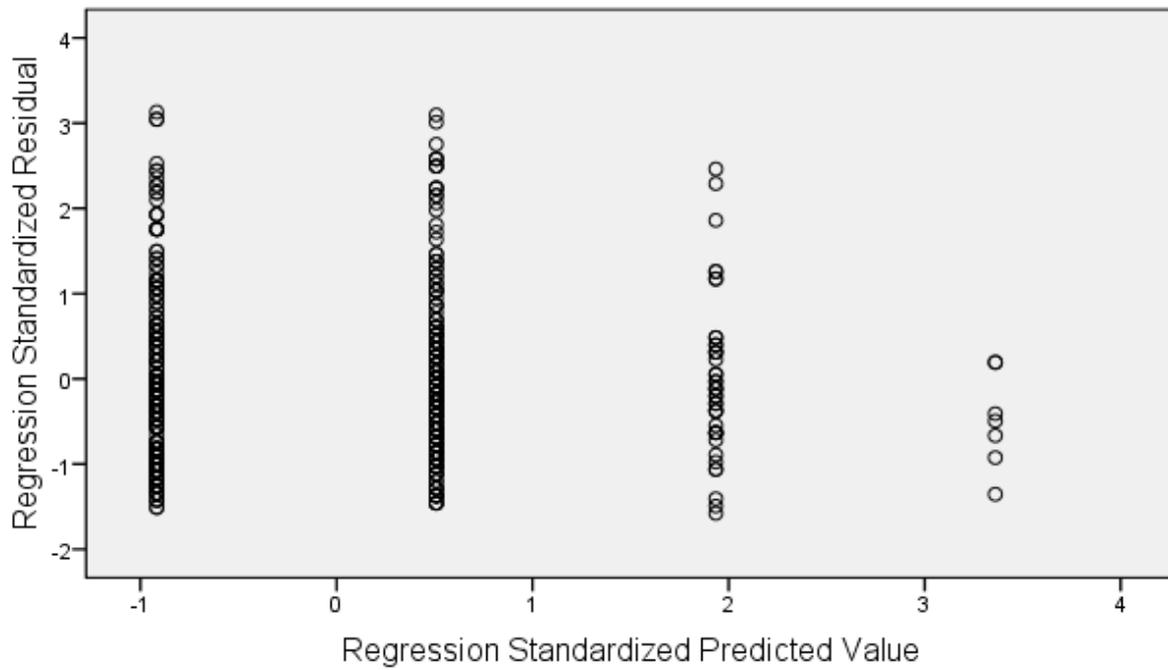


Figure J42. Standardised residual scatterplot for HRS-II (Item 6: Rationale) therapist rated scores across the course of therapy

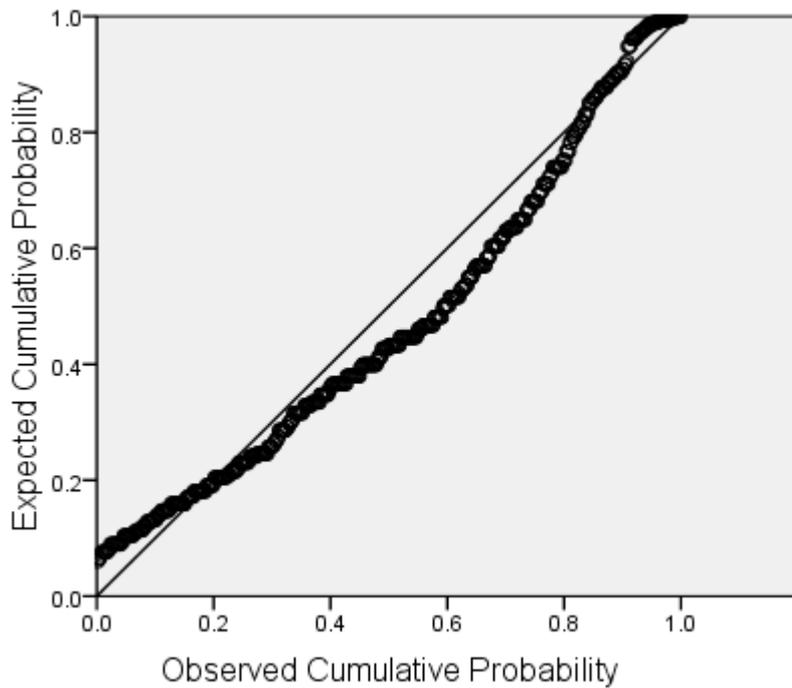


Figure J43. Normal P-P standardised residual plot for HRS-II (Item 7: Collaboration) therapist rated scores across the course of therapy

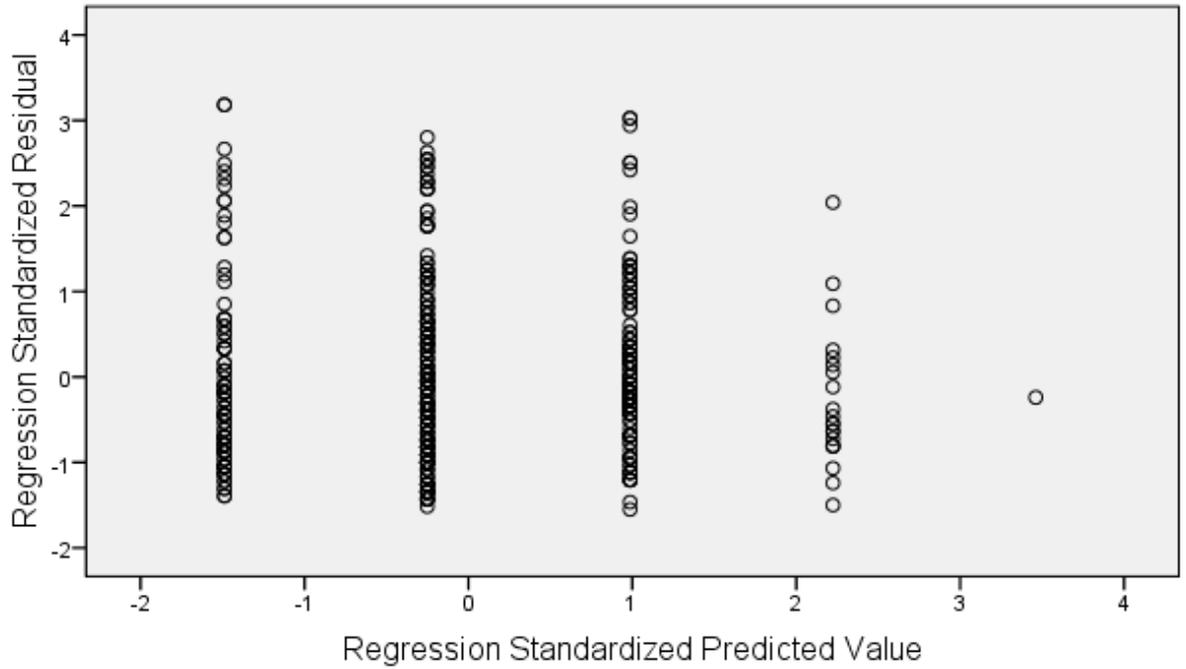


Figure J44. Standardised residual scatterplot for HRS-II (Item 7: Collaboration) therapist rated scores across the course of therapy

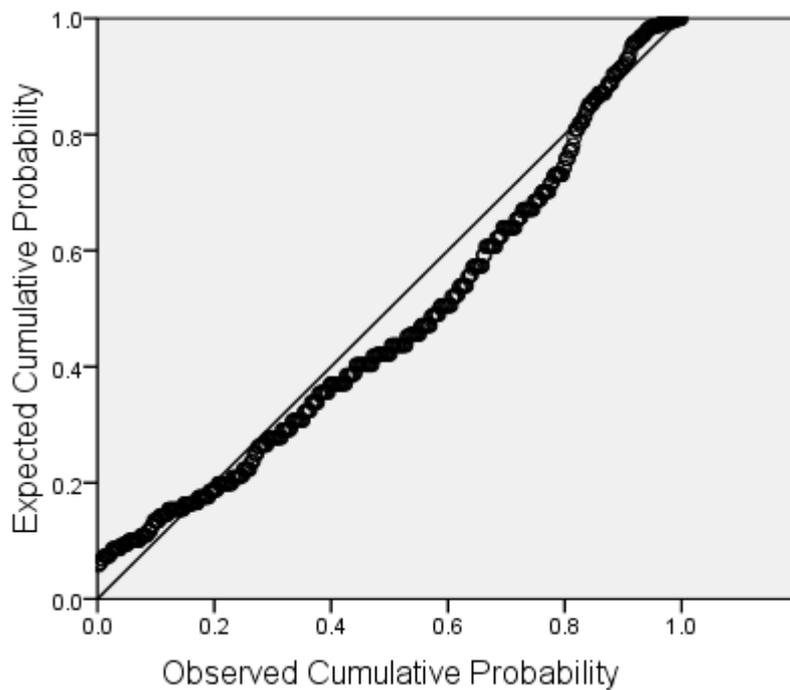


Figure J45. Normal P-P standardised residual plot for HRS-II (Item 8: Specificity) therapist rated scores across the course of therapy

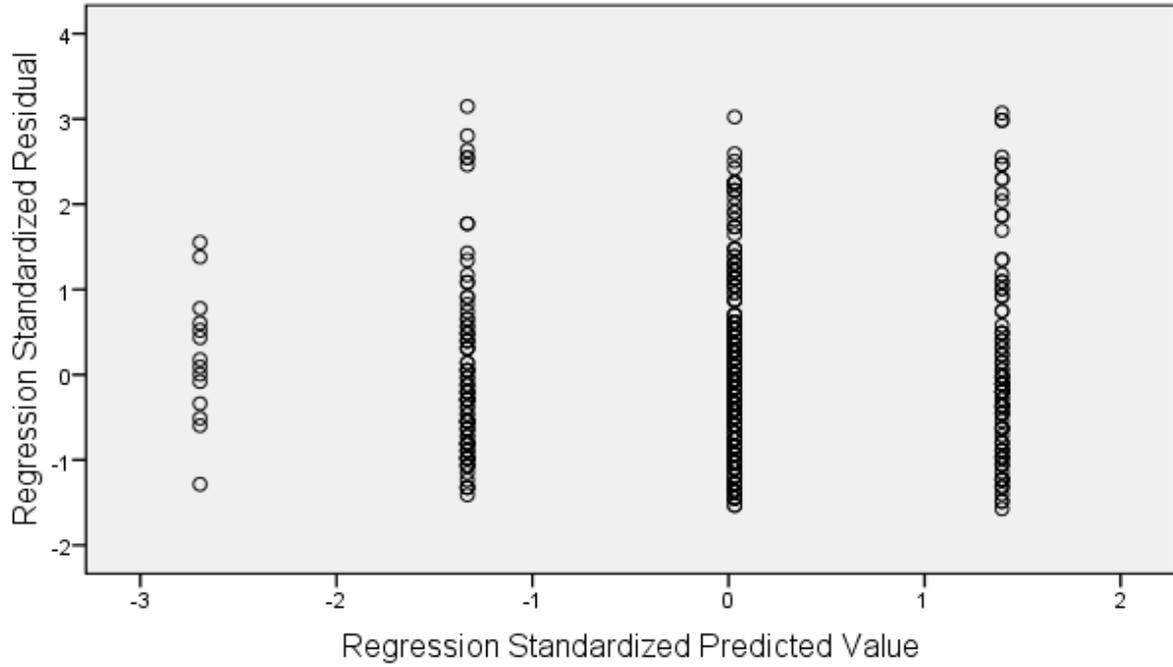


Figure J46. Standardised residual scatterplot for HRS-II (Item 8: Specificity) therapist rated scores across the course of therapy

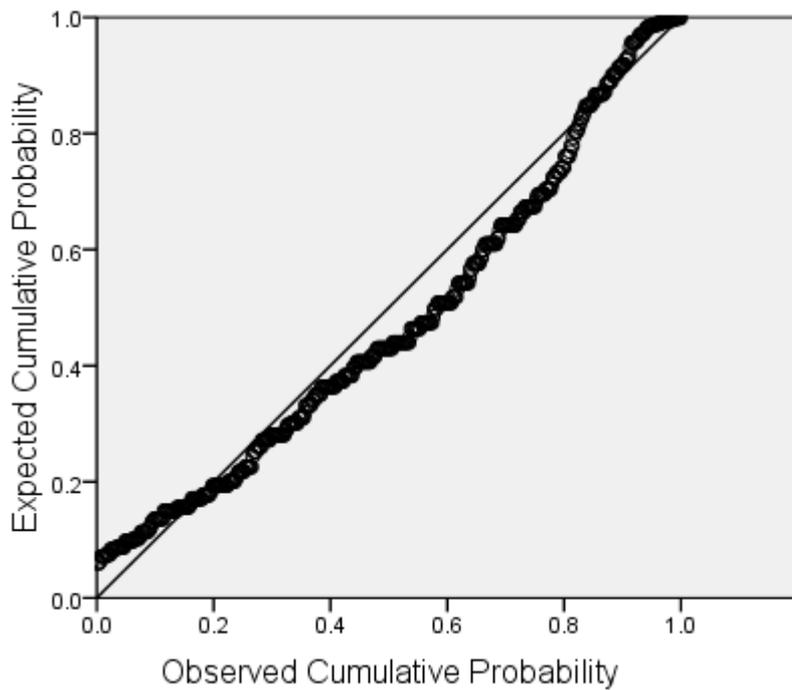


Figure J47. Normal P-P standardised residual plot for HRS-II (Item 9: Match with Therapy Goals) therapist rated scores across the course of therapy

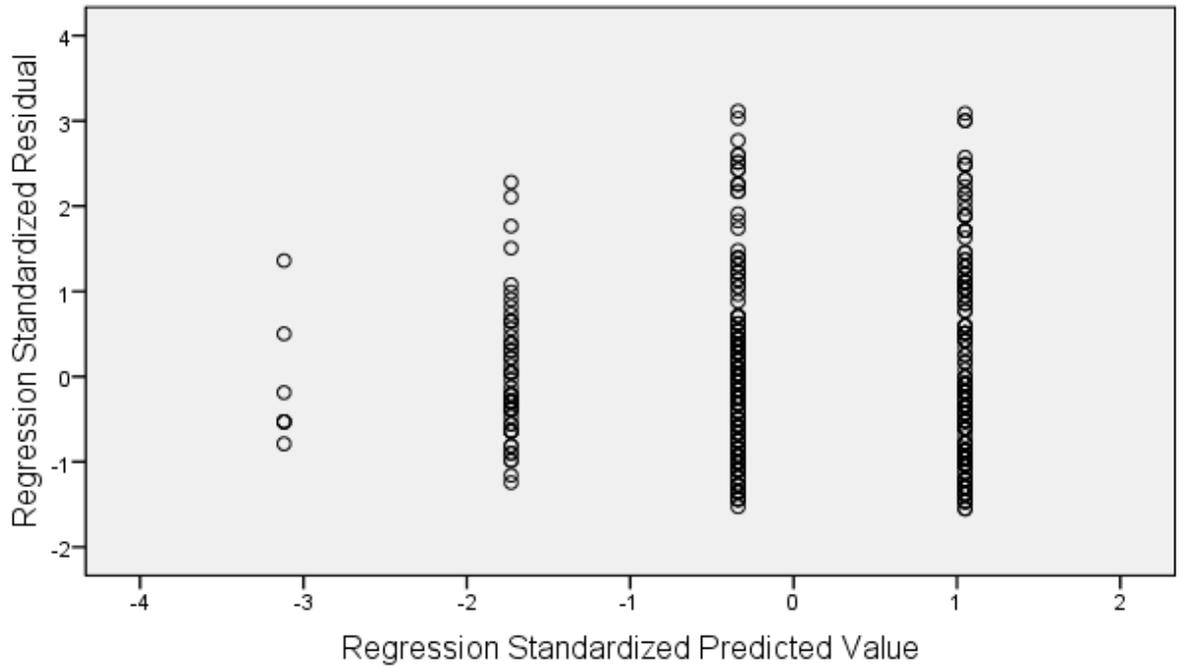


Figure J48. Standardised residual scatterplot for HRS-II (Item 9: Match with Therapy Goals) therapist rated scores across the course of therapy

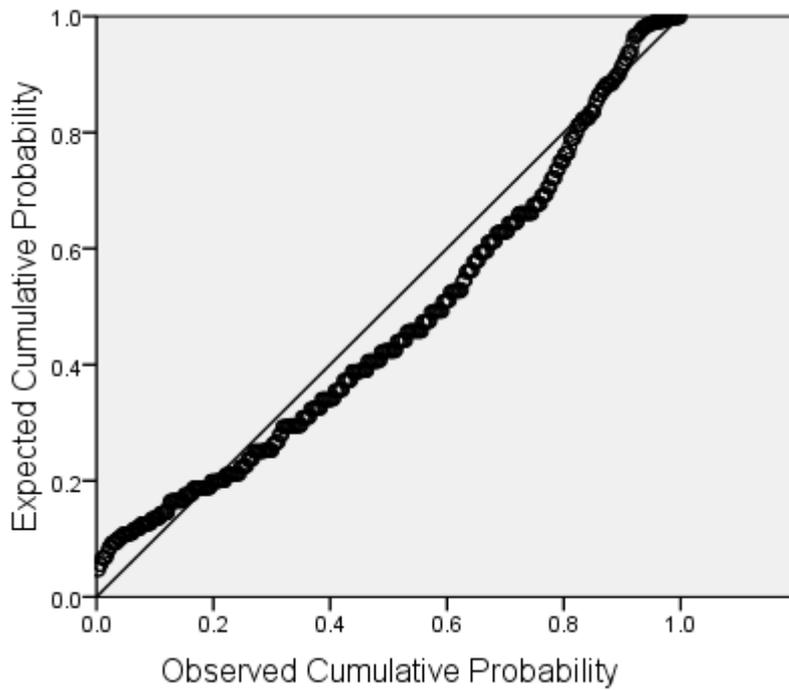


Figure J49. Normal P-P standardised residual plot for HRS-II (Item 10: Pleasure) therapist rated scores across the course of therapy

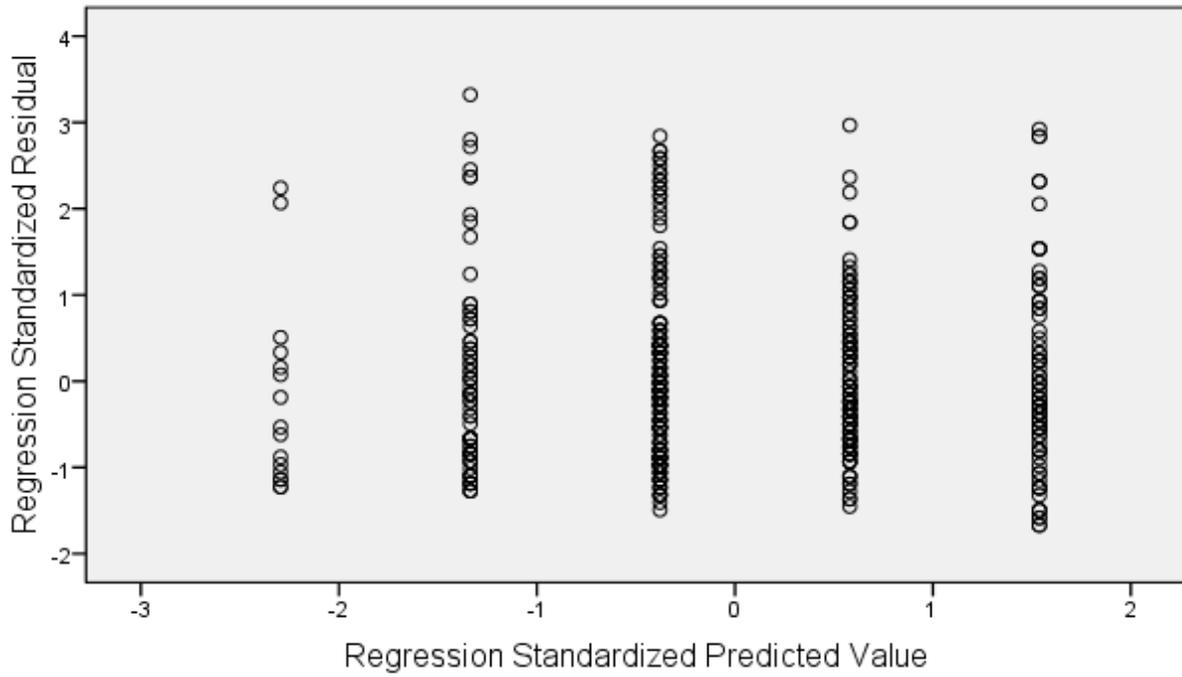


Figure J50. Standardised residual scatterplot for HRS-II (Item 10: Pleasure) therapist rated scores across the course of therapy

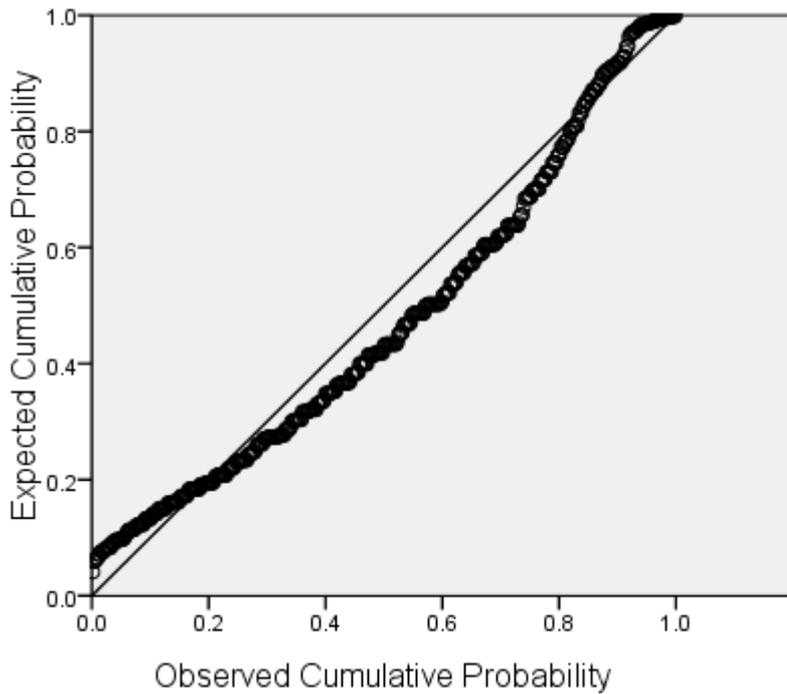


Figure J51. Normal P-P standardised residual plot for HRS-II (Item 11: Mastery) therapist rated scores across the course of therapy

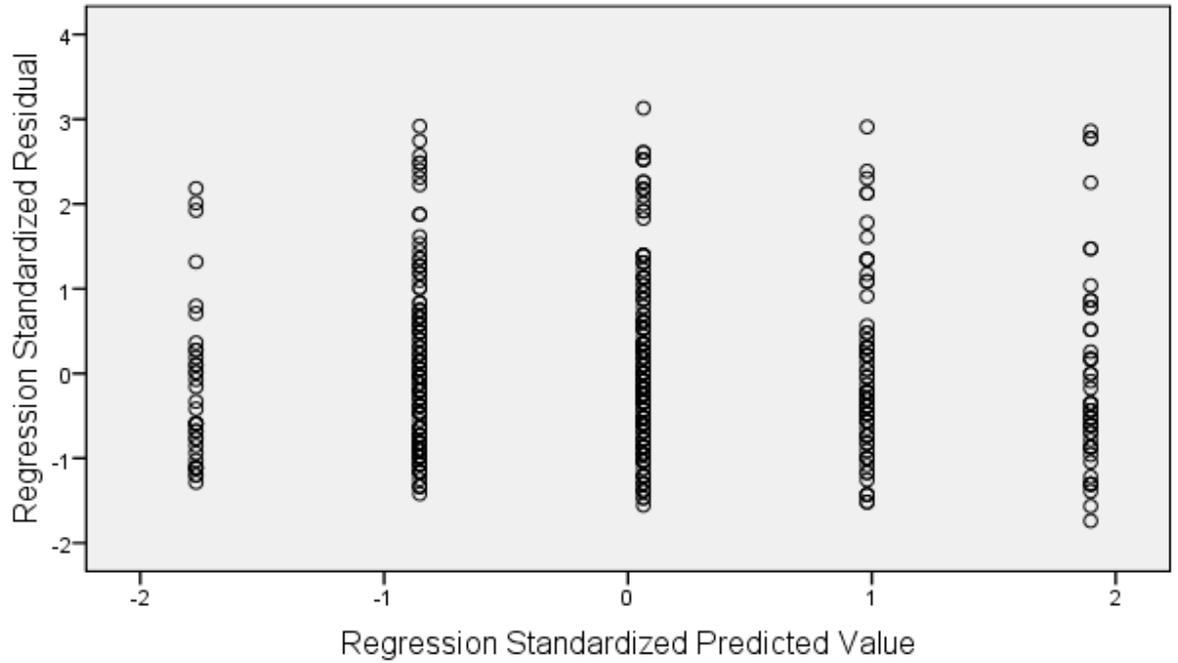


Figure J52. Standardised residual scatterplot for HRS-II (Item 11: Mastery) therapist rated scores across the course of therapy

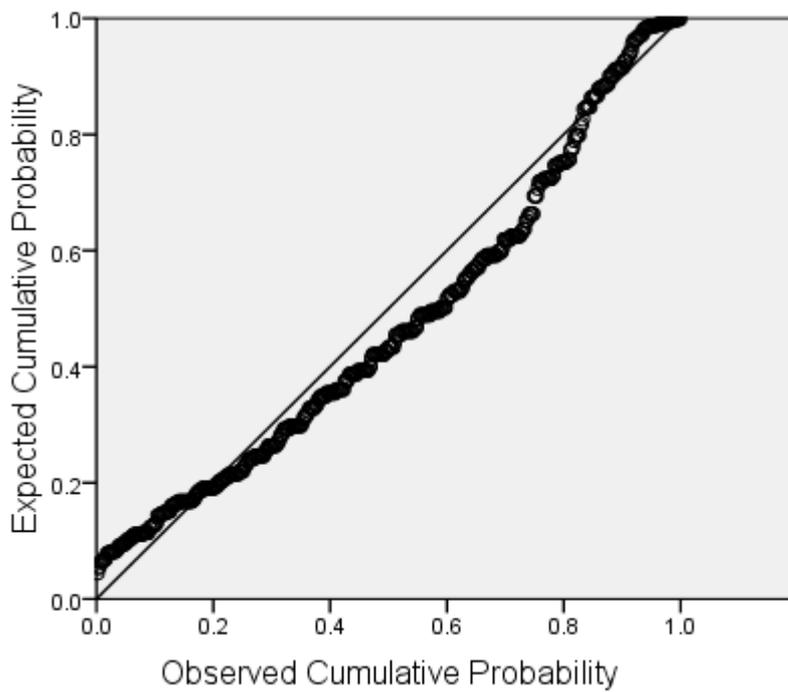


Figure J53. Normal P-P standardised residual plot for HRS-II (Item 12: Progress) therapist rated scores across the course of therapy

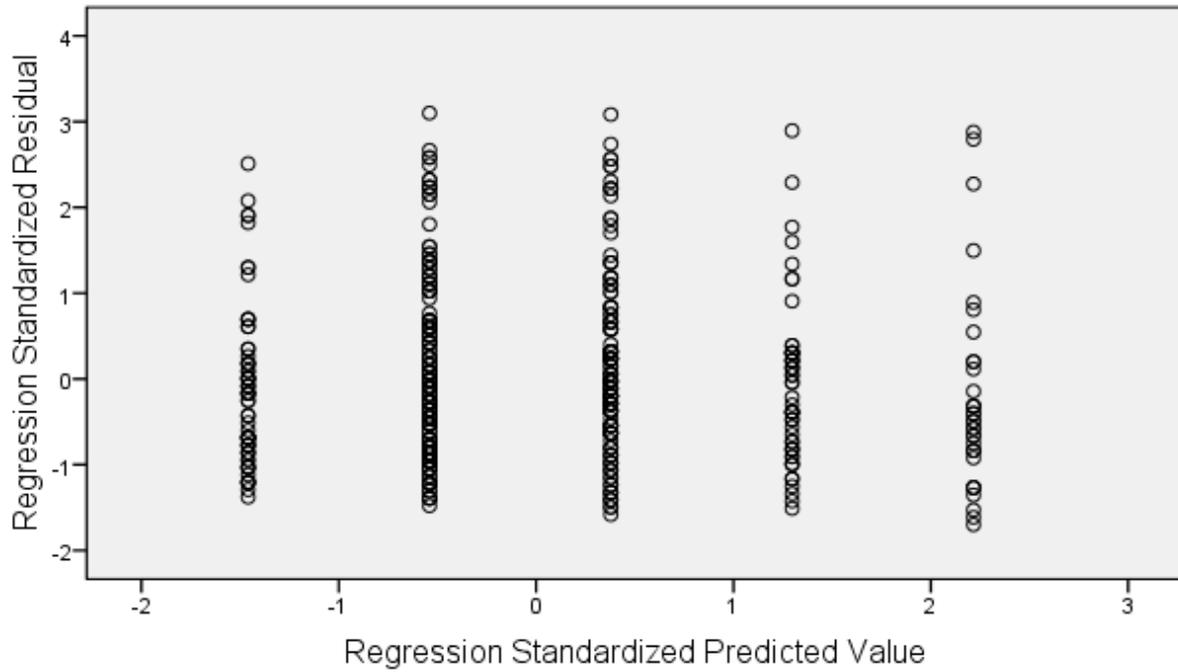


Figure J54. Standardised residual scatterplot for HRS-II (Item 12: Progress) therapist rated scores across the course of therapy

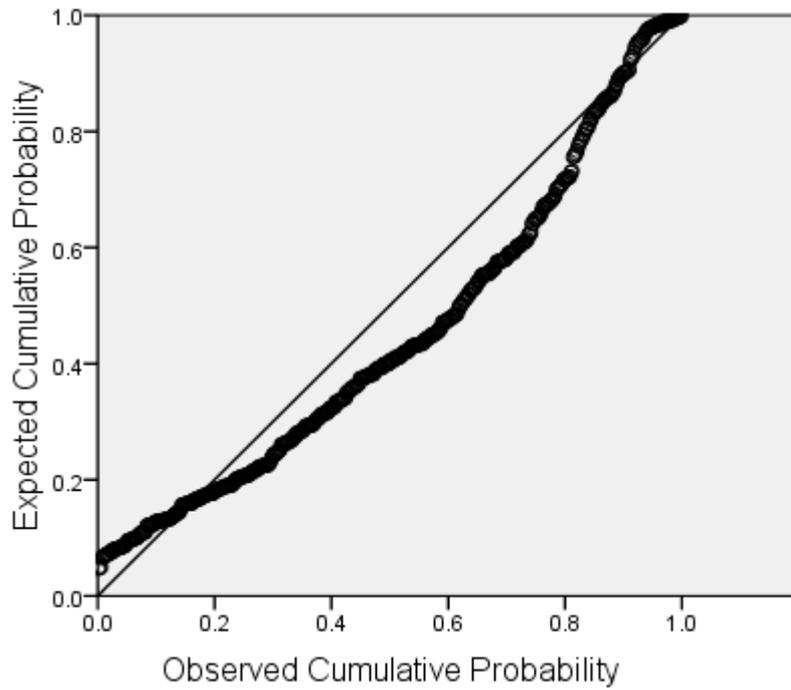


Figure J55. Normal P-P standardised residual plot for HRS-II (Total) therapist rated scores across the course of therapy

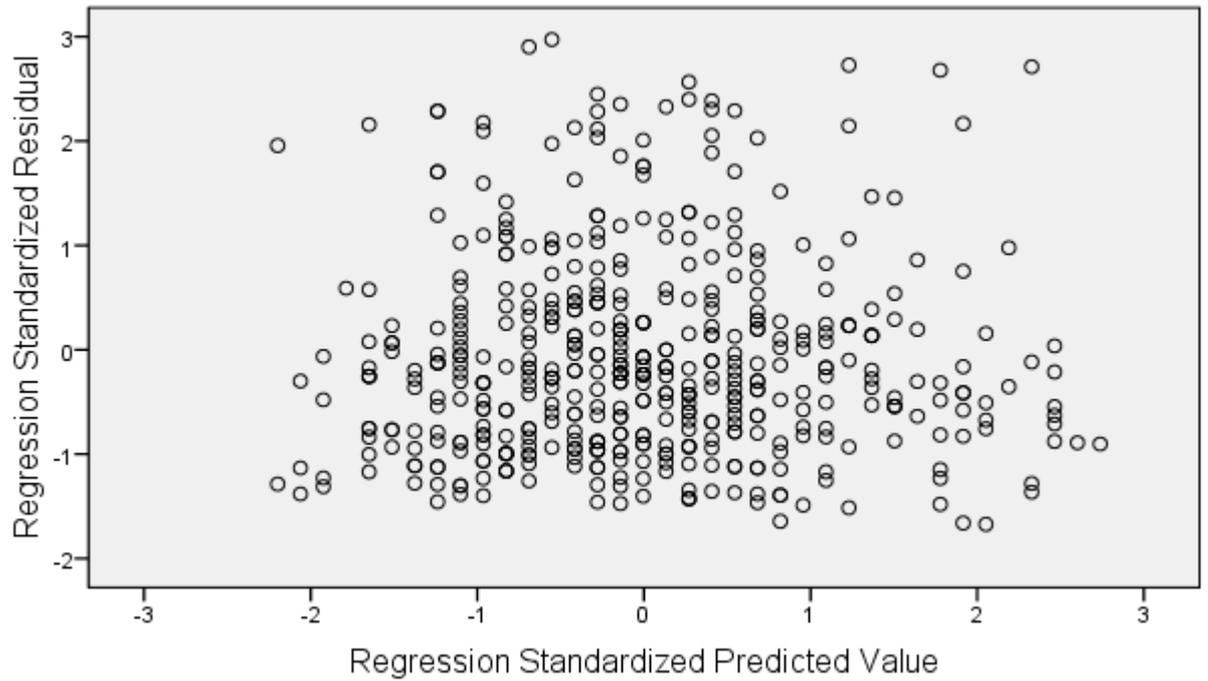


Figure J56. Standardised residual scatterplot for HRS-II (Total) therapist rated scores across the course of therapy

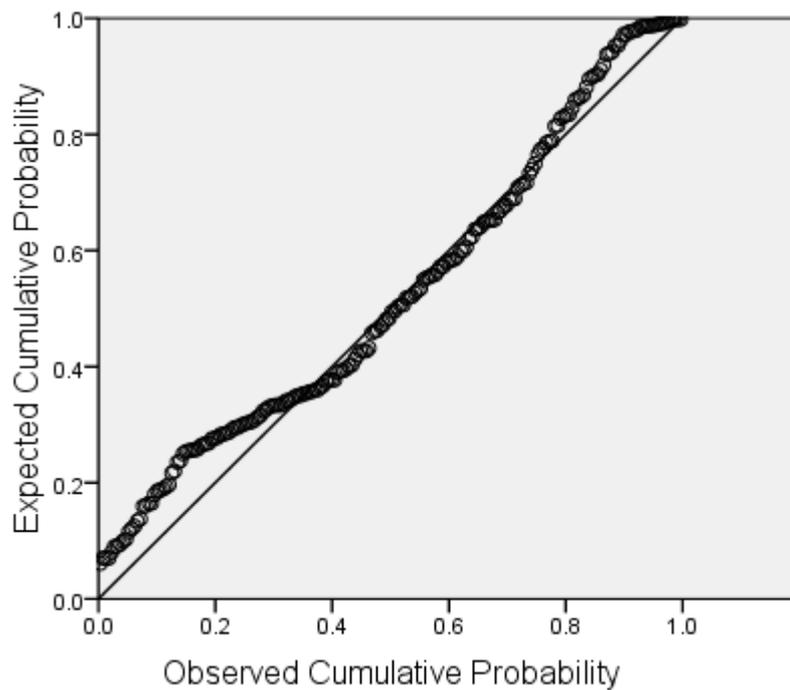


Figure J57. Normal P-P standardised residual plot for HAACS total scores (averages of the two raters' scores) across sessions two to 10

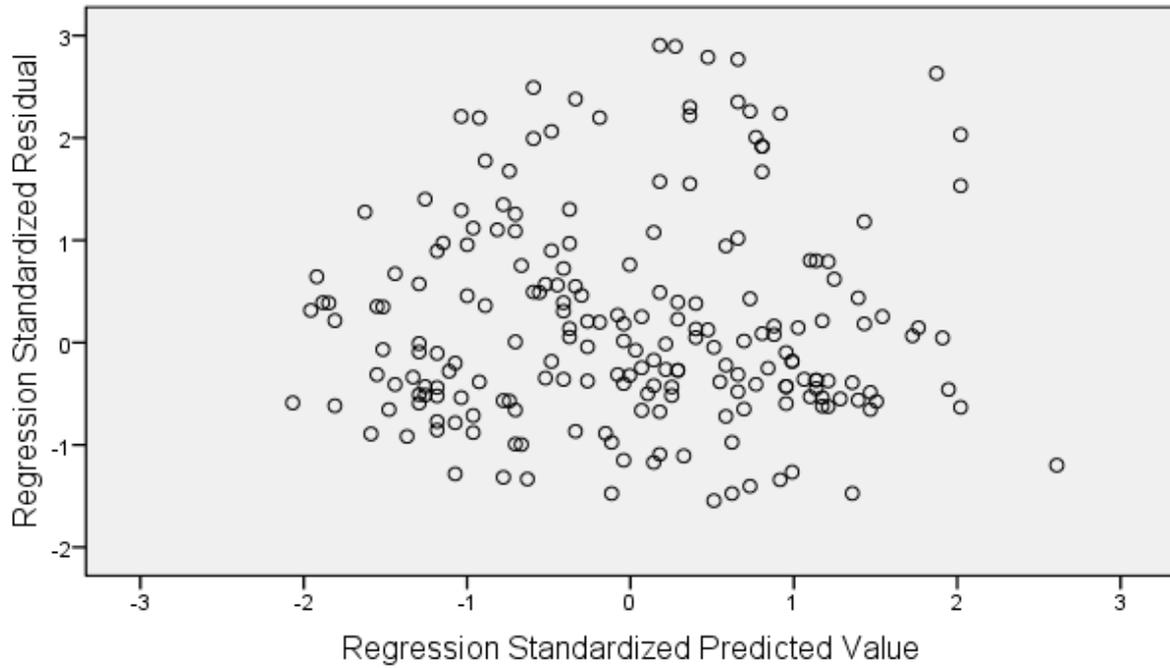


Figure J58. Standardised residual scatterplot for HAACS total scores (averages of the two raters' scores) across sessions two to 10

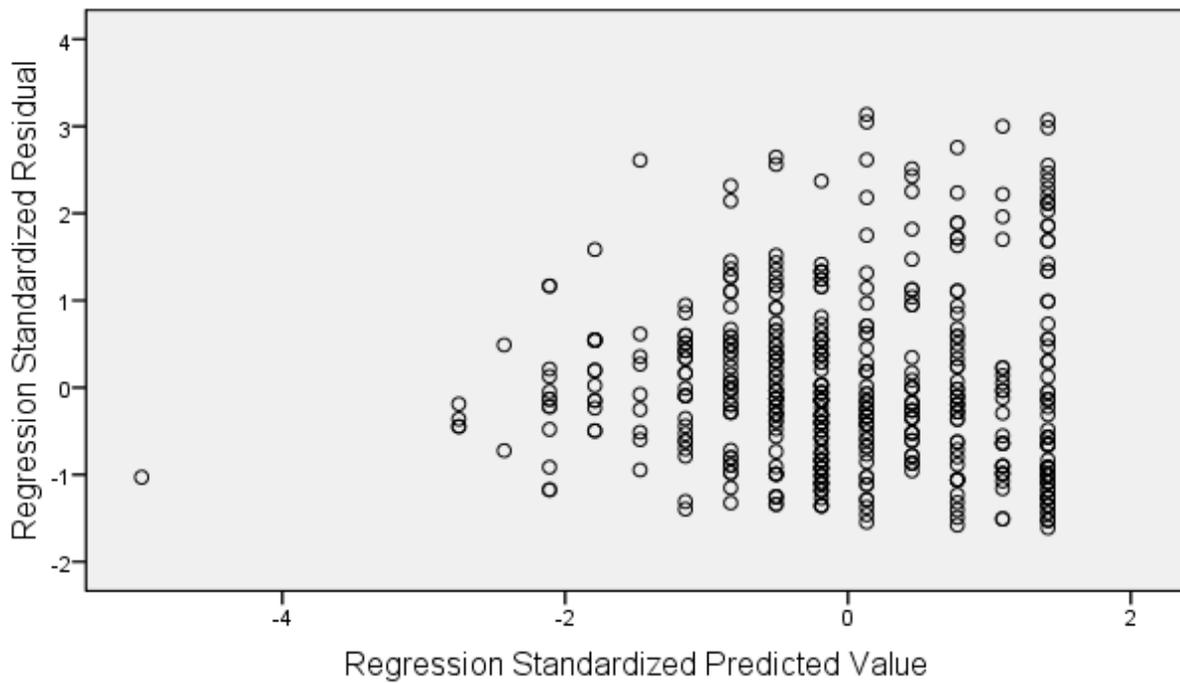


Figure J59. Standardised residual scatterplot for HRS-II Factor 3 ("beliefs") scores

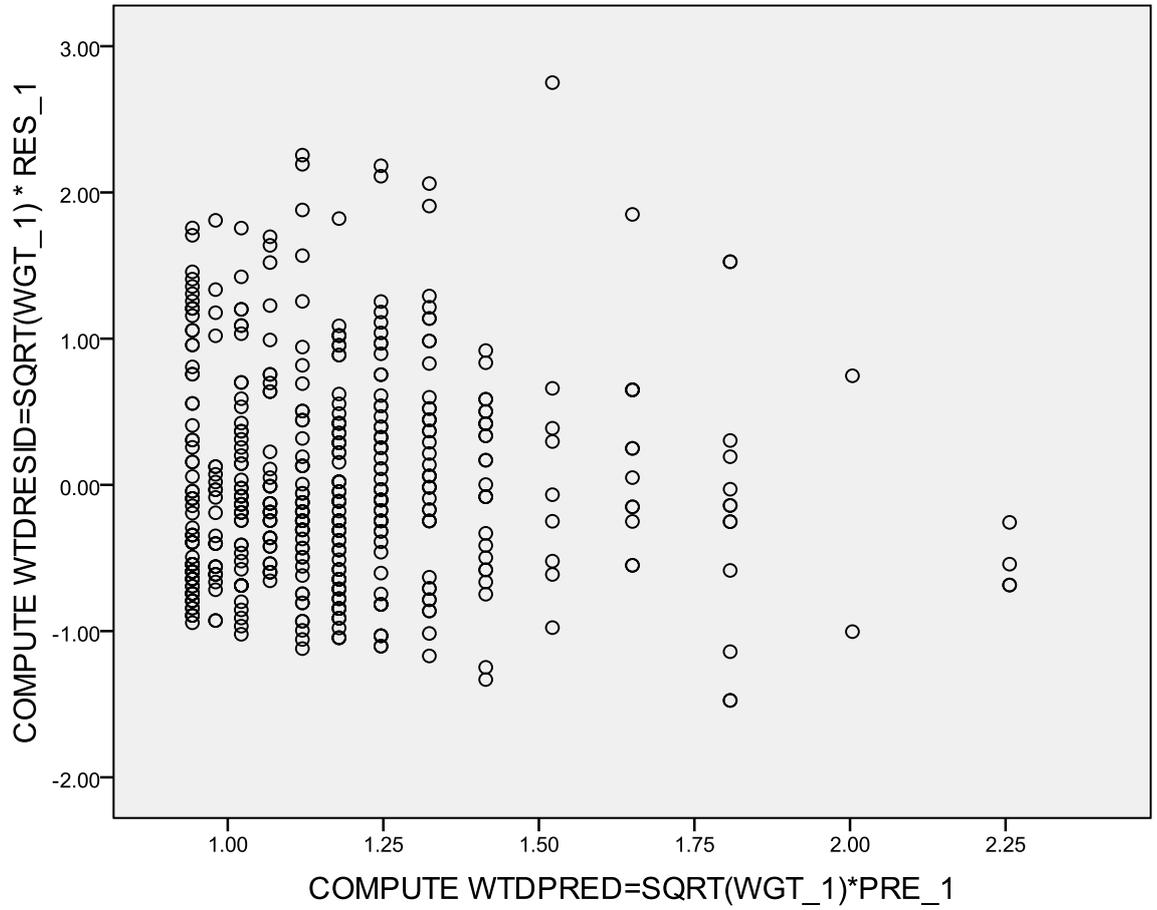


Figure J60. Standardised residual scatterplot for weighted HRS-II Factor 3 (“beliefs”) scores

Appendix K

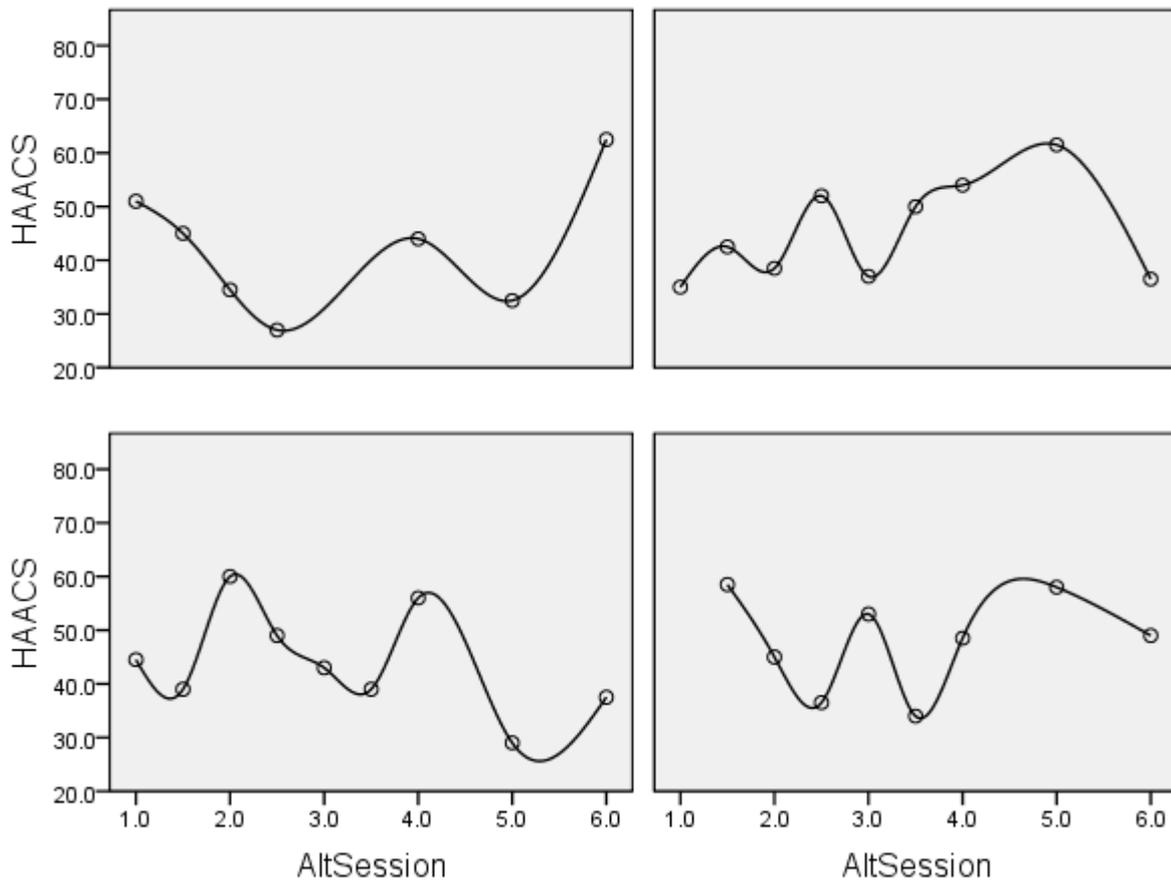


Figure K1. HAACS (homework competence) ratings of Therapist 2 over sessions two to 10 (indicated by 'AltSession') for each of their four clients (client numbers are not marked to ensure anonymity among therapists)

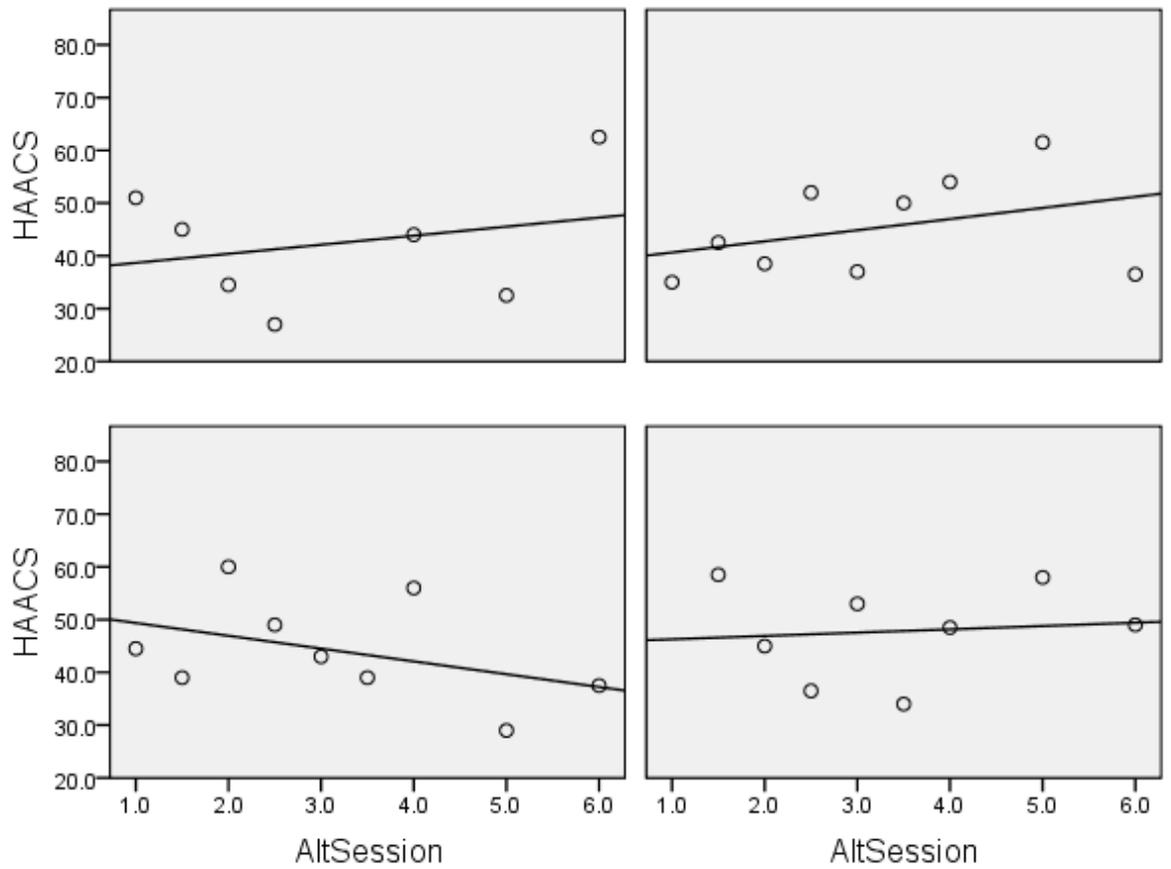


Figure K2. Ordinary Least Squares Regression (OLS) lines of HAACS (homework competence) ratings of Therapist 2 over sessions two to 10 (indicated by 'AltSession') for each of their four clients (client numbers are not marked to ensure anonymity among therapists)

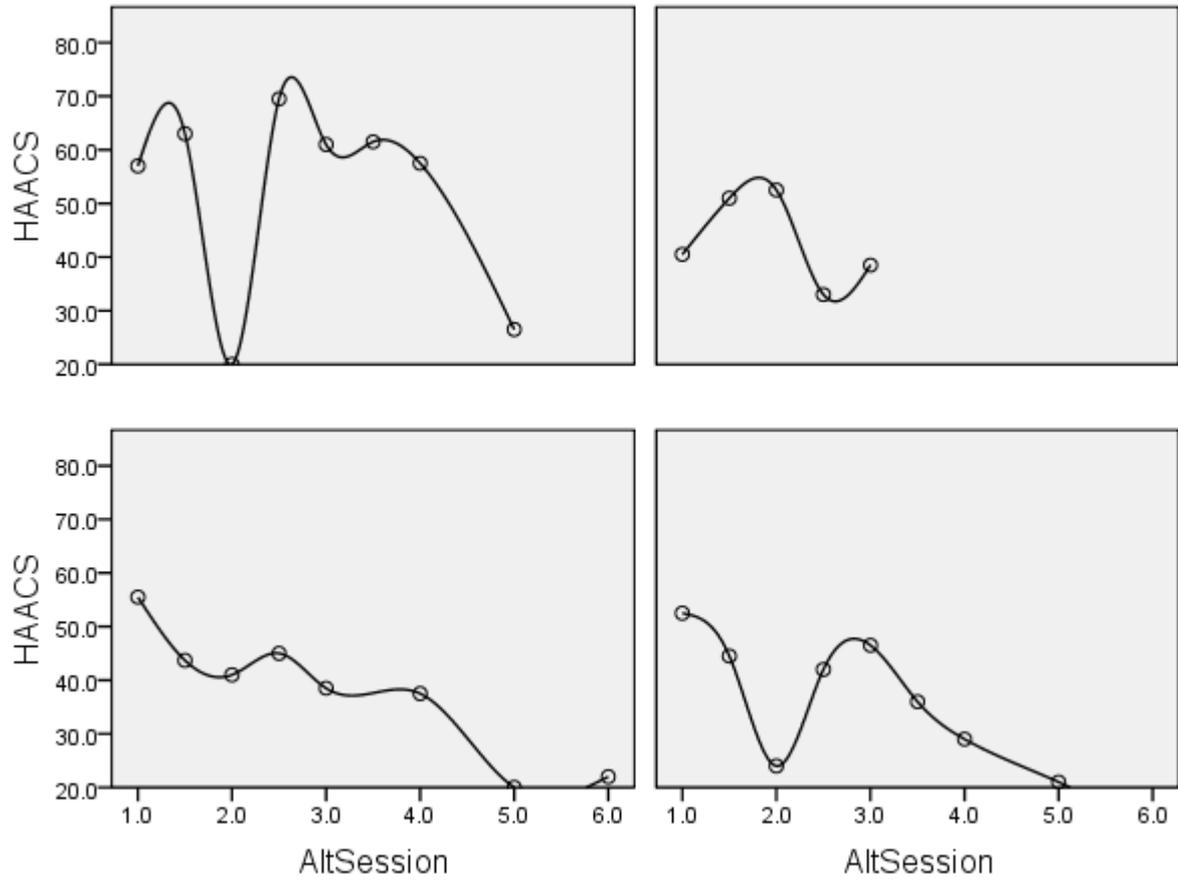


Figure K3. HAACS (homework competence) ratings of Therapist 3 over sessions two to 10 (indicated by 'AltSession') for each of their four clients (client numbers are not marked to ensure anonymity among therapists)

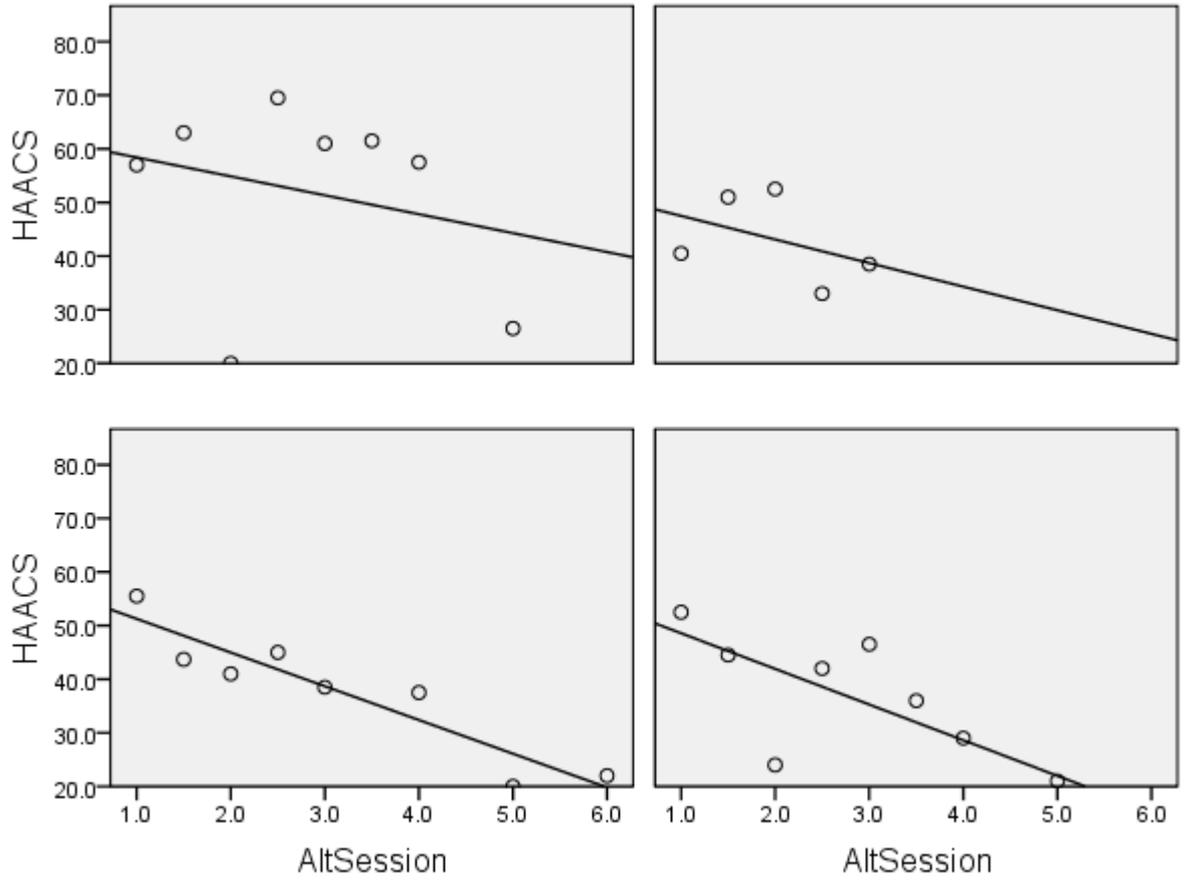


Figure K4. Ordinary Least Squares Regression (OLS) lines of HAACS (homework competence) ratings of Therapist 3 over sessions two to 10 (indicated by 'AltSession') for each of their four clients (client numbers are not marked to ensure anonymity among therapists)

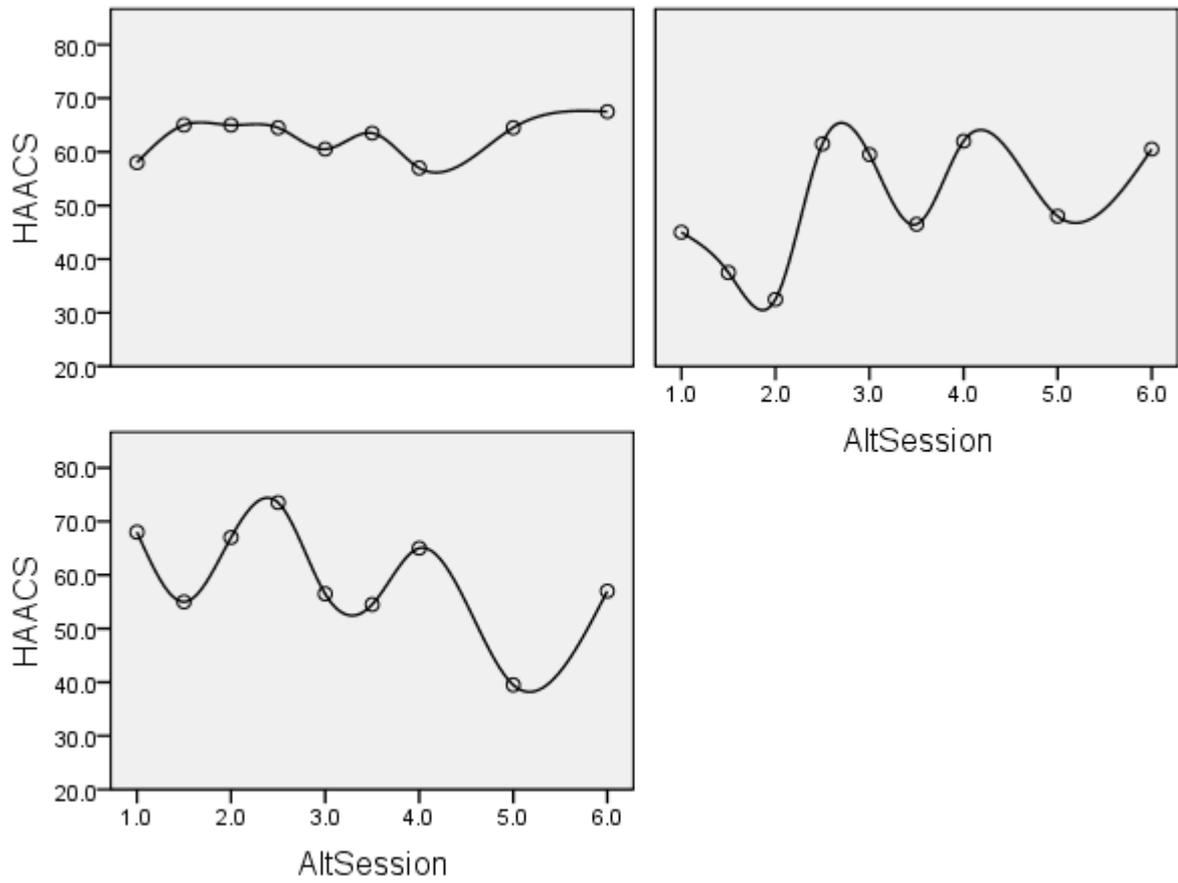


Figure K5. HAACS (homework competence) ratings of Therapist 4 over sessions two to 10 (indicated by 'AltSession') for each of their three clients (client numbers are not marked to ensure anonymity among therapists)

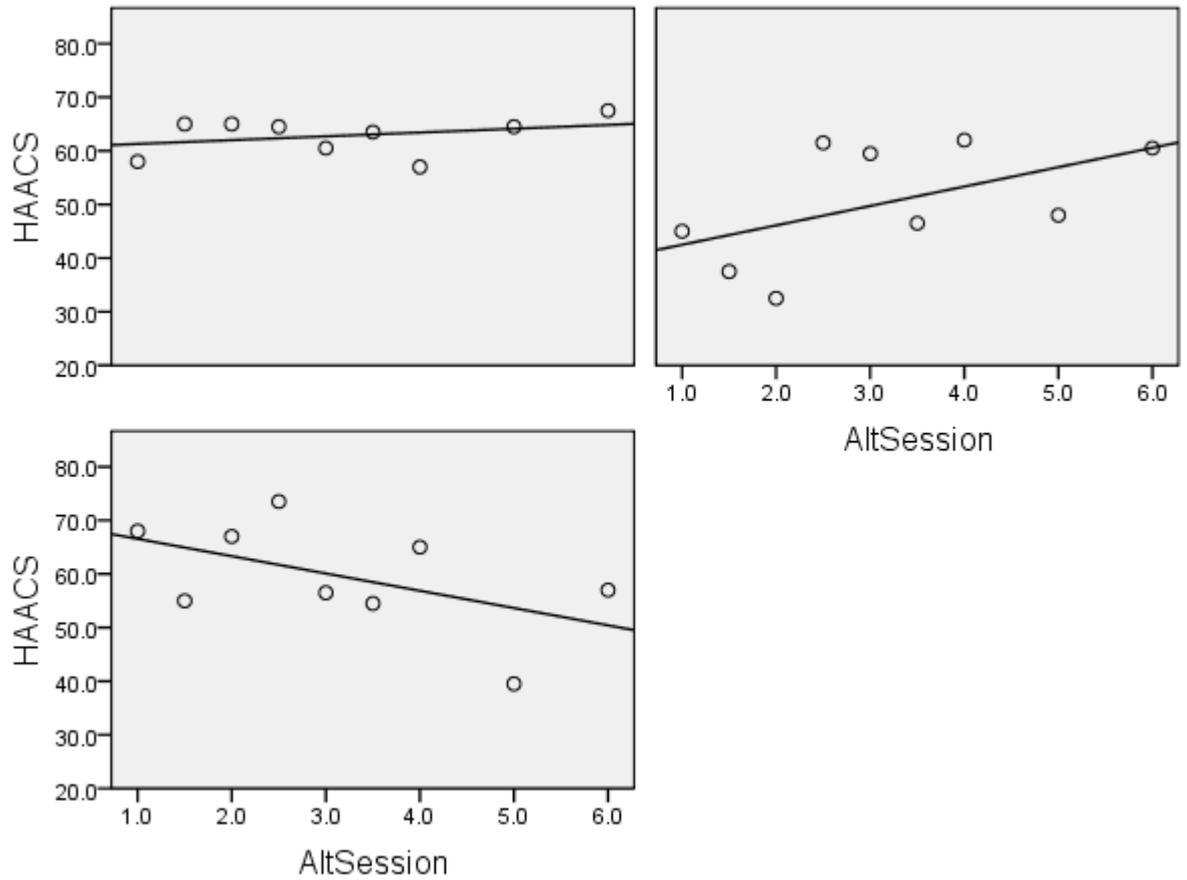


Figure K6. Ordinary Least Squares Regression (OLS) lines of HAACS (homework competence) ratings of Therapist 4 over sessions two to 10 (indicated by 'AltSession') for each of their three clients (client numbers are not marked to ensure anonymity among therapists)

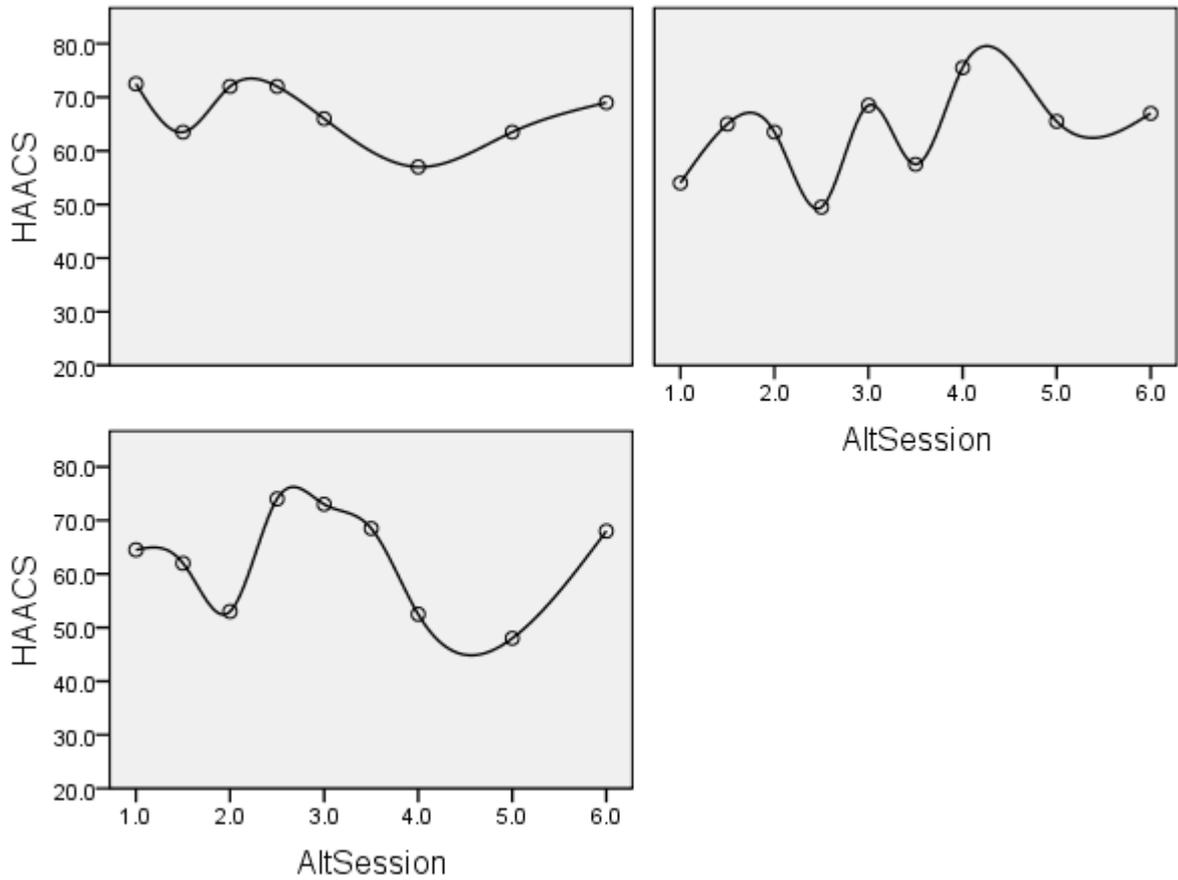


Figure K7. HAACS (homework competence) ratings of Therapist 5 over sessions two to 10 (indicated by 'AltSession') for each of their three clients (client numbers are not marked to ensure anonymity among therapists)

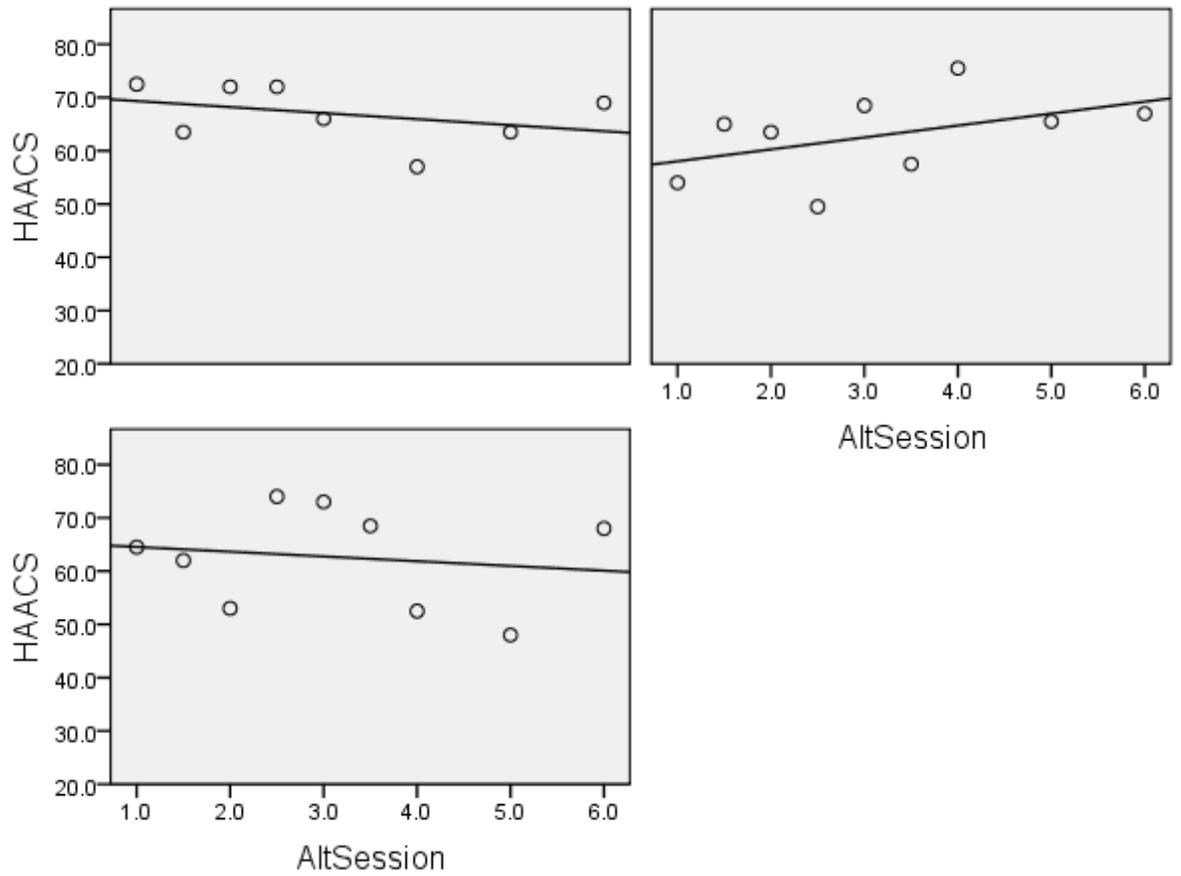


Figure K8. Ordinary Least Squares Regression (OLS) lines of HAACS (homework competence) ratings of Therapist 5 over sessions two to 10 (indicated by 'AltSession') for each of their three clients (client numbers are not marked to ensure anonymity among therapists)

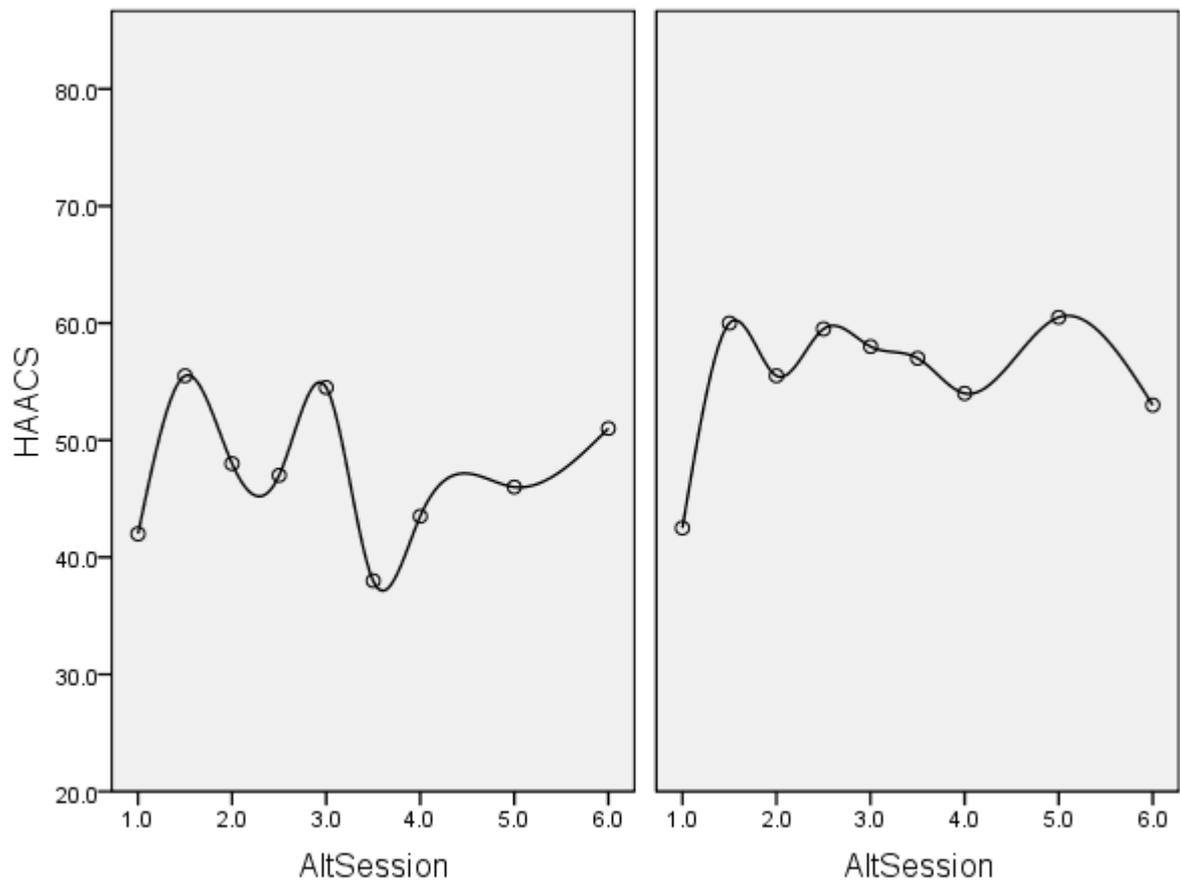


Figure K9. HAACS (homework competence) ratings of Therapist 6 over sessions two to 10 (indicated by 'AltSession') for each of their two clients (client numbers are not marked to ensure anonymity among therapists)

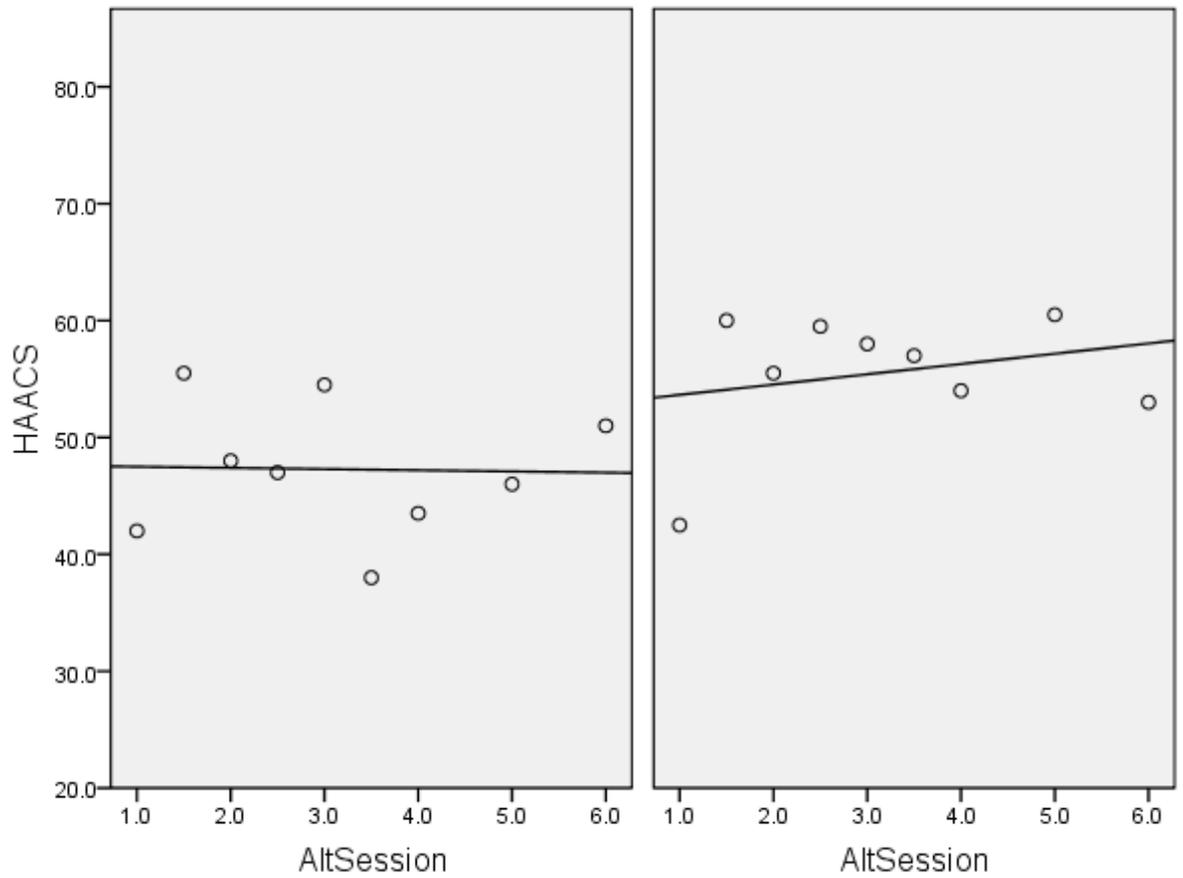


Figure K10. Ordinary Least Squares Regression (OLS) lines of HAACS (homework competence) ratings of Therapist 6 over sessions two to 10 (indicated by ‘AltSession’) for each of their two clients (client numbers are not marked to ensure anonymity among therapists)

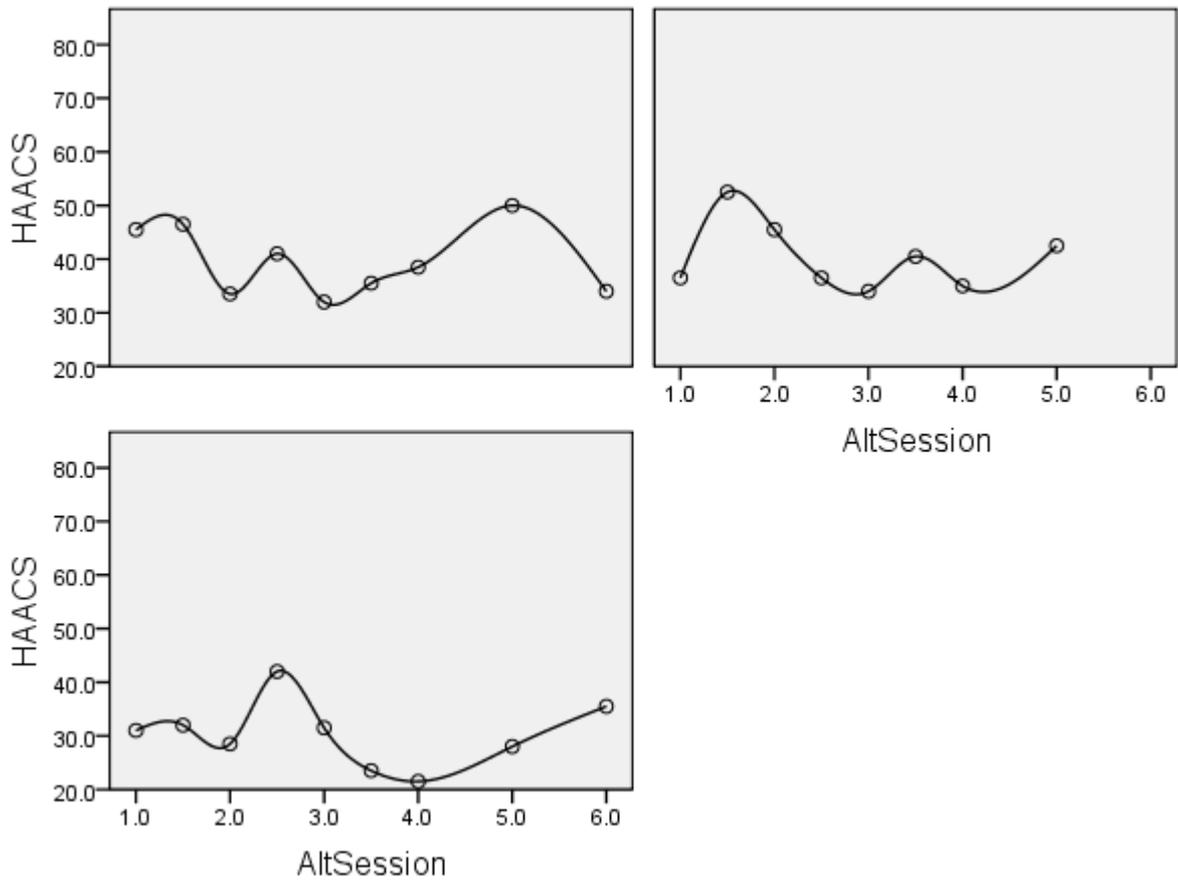


Figure K11. HAACS (homework competence) ratings of Therapist 7 over sessions two to 10 (indicated by 'AltSession') for each of their three clients (client numbers are not marked to ensure anonymity among therapists)

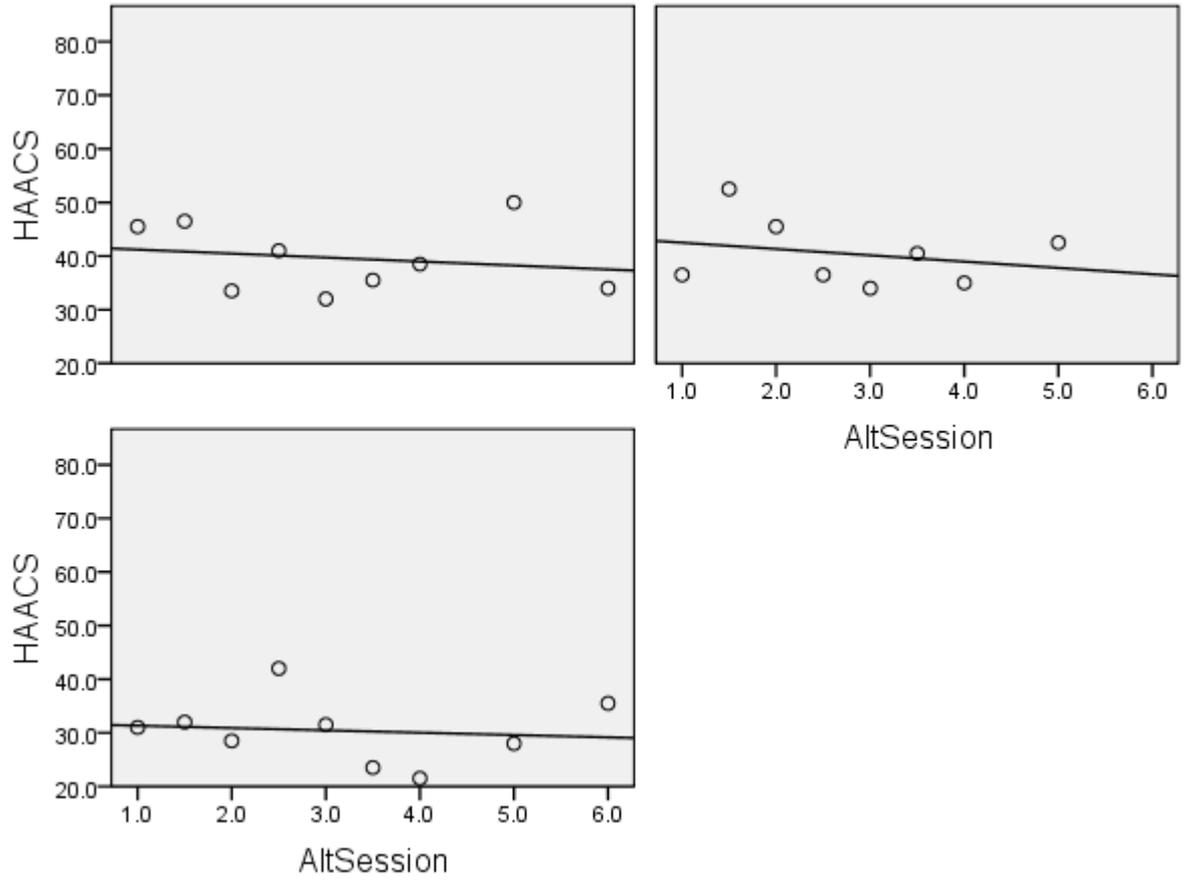


Figure K12. Ordinary Least Squares Regression (OLS) lines of HAACS (homework competence) ratings of Therapist 7 over sessions two to 10 (indicated by ‘AltSession’) for each of their three clients (client numbers are not marked to ensure anonymity among therapists)

Appendix L

Table L1

BDI-II Reliability analyses for all clients at each session

Session	Alpha	Mean	SD	N (Cases)
0	0.92	31.07	11.09	28
1	0.93	27.07	11.52	28
2	0.93	24.9	11.12	28
3	0.95	22.11	12.04	28
4	0.95	24.11	11.98	28
5	0.96	21.29	13.36	28
6	0.94	19.14	11.13	28
7	0.95	19.33	11.87	27
8	0.95	18.57	11.96	27
9	0.94	18.48	11.81	27
10	0.95	17.54	11.82	26
11	0.94	16.62	10.86	26
12	0.93	19.04	10.91	25
13	0.93	15.72	10.45	25
14	0.94	15.65	10.71	23
15	0.94	15.77	11.08	22
16	0.93	15.23	10.74	22
17	0.91	14.98	9.58	21
18	0.91	14.33	8.77	21
19	0.94	12.65	10.68	20
20	0.92	10.74	8.81	19
21	0.94	8.79	8.48	19

Table L2

HRS-II Reliability analyses for all clients at each session as rated by the clients and the therapists

Session	Alpha	Mean	SD	N (Cases)	Alpha	Mean	SD	N (Cases)
		<u>Client</u>				<u>Therapist</u>		
0	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-
2	0.82	29.71	6.17	28	0.65	33.21	4.47	28
3	0.85	29.03	7.06	28	0.80	30.14	6.02	28
4	0.71	30.86	5.56	28	0.86	31.36	7.02	28
5	0.74	29.14	5.66	28	0.84	31.00	7.00	28
6	0.72	29.68	5.20	28	0.82	29.14	6.94	28
7	0.81	29.04	6.13	27	0.73	31.28	5.20	27
8	0.87	30.04	6.55	27	0.84	31.44	6.12	27
9	0.78	28.58	6.05	26	0.82	30.48	6.69	27
10	0.82	27.93	6.32	26	0.84	29.40	7.61	25
11	0.88	29.35	7.14	26	0.89	30.32	8.30	25
12	0.83	30.29	6.18	24	0.90	33.25	8.62	24
13	0.88	30.56	8.01	25	0.88	34.33	8.17	24
14	0.86	32.86	6.30	22	0.92	32.78	8.92	23
15	0.82	30.20	7.23	22	0.84	33.36	7.55	22
16	0.88	30.24	7.61	21	0.88	33.10	8.31	21
17	0.89	33.05	7.30	21	0.84	34.62	6.67	21
18	0.87	30.07	7.65	21	0.87	33.27	7.84	20
19	0.90	30.89	8.95	19	0.84	32.21	7.25	19
20	0.86	33.42	6.89	19	0.92	35.74	8.09	19
21	0.86	32.41	6.79	17	0.85	31.39	7.20	18

Table L3

ASQ Reliability analyses for all clients at five time points

Session	0	5	8	20	21
<u>CoNeg (pessimism)</u>					
Alpha	0.85	0.80	0.86	0.67	0.62
Mean	90.42	84.72	85.44	77.43	77.03
SD	15.06	13.70	13.65	9.98	8.71
N (Cases)	28	28	27	20	19
N (Items)	18	18	18	18	18
<u>CoPos (optimism)</u>					
Alpha	0.64	0.54	0.61	0.81	0.85
Mean	86.94	85.92	88.62	92.69	91.97
SD	10.77	9.54	8.86	11.95	13.41
N (Cases)	28	28	27	20	19
N (Items)	18	18	18	18	18
<u>SUBSCALES</u>					
N (Cases) - All	28	28	27	20	19
N (Items) - All	6	6	6	6	6
<u>CoNeg (pessimism)</u>					
Internal Alpha	0.51	0.57	0.74	0.58	0.23
Stable Alpha	0.79	0.44	0.59	0.43	0.75
Global Alpha	0.73	0.77	0.77	0.71	0.88
<u>CoPos (optimism)</u>					
Internal Alpha	0.63	0.26	0.66	0.73	0.65
Stable Alpha	0.50	0.29	0.51	0.56	0.76
Global Alpha	0.51	0.58	0.69	0.75	0.78

Table L4

HAACS Reliability analyses for all clients from sessions two to 10.

Session	Alpha	Mean	SD	N (Cases)
0	-	-	-	-
1	-	-	-	-
2	0.81	48.29	11.74	21
3	0.76	48.62	11.71	26
4	0.85	45.15	14.91	24
5	0.87	50.05	14.99	21
6	0.79	49.94	11.86	23
7	0.84	44.63	13.37	23
8	0.81	48.55	12.81	22
9	0.88	45.67	15.25	23
10	0.89	46.17	16.23	21

Note. Alphas are calculated based on the average scores of the two raters at each location. The analyses were conducted with Item 4 of the HAACS deleted, leaving 18 items remaining.

Appendix M

Table M1

Model C: The uncontrolled effects of homework: Alternative versions

Level	Variable	Parameter	Factor 2	Factor 3	F1 x F2
<u>Fixed Effects</u>					
Initial status, π_{0i}	Intercept	γ_{00}	23.10*** (2.50)	26.14*** (3.39)	23.70*** (2.23)
	Factor	γ_{01}	-0.00 (0.14)	-0.21 (0.17)	-0.01 (0.01)
Rate of Change, π_{1i}	Intercept	γ_{10}	-0.60** (0.17)	-0.83** (0.30)	-0.73*** (0.12)
	Factor	γ_{11}	-0.02 (0.02)	0.00 (0.02)	-0.00 (0.00)
<u>Variance Components</u>					
Level 1	Within person	σ^2_ϵ	22.53*** (1.54)	22.73*** (1.55)	22.46*** (1.53)
Level 2	Initial status	σ^2_0	120.65*** (33.23)	124.38*** (34.37)	119.88*** (33.01)
	Rate of change	σ^2_1	0.18** (0.06)	0.18** (0.06)	0.17** (0.06)
	Covariance	σ_{01}	-2.70* (1.15)	-2.83* (1.21)	-2.62* (1.13)
<u>Pseudo R² Statistics and Goodness-of-fit</u>					
	R ² ϵ		0.535	0.531	0.536
	R ² 0		0.000	-0.030	0.007
	R ² 1		0.000	0.000	0.056
	Deviance		3032.373	3036.657	3030.18
	AIC		3048.373	3052.657	3046.18
	BIC		3081.813	3086.097	3079.62

Note. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. All three models represent different versions of Model C, testing the effects of the homework factors 2 and 3 ("costs and completion" and "beliefs") plus an interaction effect of Factor 1 and Factor 2 (F1 x F2)

Table M2

Model D: The controlled effects of homework using optimism

		Parameter	Pessimism	Optimism
<u>Fixed Effects</u>				
Initial status, π_{0i}	Intercept	γ_{00}	4.55 (5.57)	42.03*** (7.18)
	Factor 1	γ_{01}	-0.18 (0.12)	-0.16 (0.12)
	Attributional style	γ_{02}	1.43*** (0.36)	-1.21* (0.47)
Rate of Change, π_{1i}	Intercept	γ_{10}	1.27** (0.44)	-1.53** (0.55)
	Factor 1	γ_{11}	-0.01 (0.01)	-0.01 (0.01)
	Attributional style	γ_{12}	-0.15*** (0.03)	0.06 (0.04)
<u>Variance Components</u>				
Level 1	Within person	σ^2_{ϵ}	21.86*** (1.50)	22.07*** (1.51)
Level 2	Initial status	σ^2_0	91.26** (26.34)	119.66*** (32.98)
	Rate of change	σ^2_1	0.11* (0.04)	0.18** (0.06)
	Covariance	σ_{01}	-1.00 (0.80)	-2.60* (1.16)
<u>Pseudo R² Statistics and Goodness-of-fit</u>				
			R ² ϵ	0.548
			R ² ₀	0.244
			R ² ₁	0.389
			Deviance	3002.03
			AIC	3022.03
			BIC	3063.81

Note. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Pessimism is re-presented for comparison.