AN EXAMINATION OF THE SUITABILITY
OF COGNITIVE BEHAVIOURAL THERAPY
FOR PATIENTS WITH ANXIETY AND DEPRESSION

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ABSTRACT

Despite the evidence that cognitive behavioural therapy (CBT) is an efficacious treatment for depression (e.g., DeRubeis et al., 2005) and anxiety (e.g., Hofmann & Smits, 2008), there remains considerable variability in its effectiveness. However, researchers have thus far been unable to conclusively identify pre-treatment predictors of therapy outcome. One approach to examining pre-treatment predictors of outcome is to formally assess the suitability of individual patients for CBT using the Suitability for Short-term Cognitive Therapy scale ([SSCT]; Safran, Segal, Shaw, & Vallis, 1990). The present thesis explores suitability for CBT in two longitudinal, prospective treatment outcome studies. In Study 1, there were 256 out-patients with a primary diagnosis of depression or anxiety who were assessed using the SSCT, and rated on pre- and post-treatment symptom severity, using the Clinical Global Impression scale (CGI; Guy, 1976). Results of factor analyzing the SSCT scale revealed two underlying factors: 1) Capacity for Participation in CBT Process and 2) Attitudes Relevant to the CBT Process. A subsequent regression analysis demonstrated that only Capacity for Participation in CBT Process uniquely predicted symptom improvement after CBT. Study 2 examined the association between positive outcome expectancies and avoidance as measured by two SSCT items, optimism for a positive outcome and security operations, respectively. The sample consisted of 51 patients diagnosed with major depressive disorder who, prior to undergoing CBT, were assessed using the SSCT. Patients also completed the Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996) before and after treatment. A regression analysis revealed that for patients with lower levels of positive outcome expectancy, there was a significant increase in symptom severity after CBT. Overall, these findings suggest that assessing patients’ suitability for CBT using the SSCT may be a useful tool for predicting treatment outcome.
expectancies, lower levels of avoidance predicted greater improvement after CBT, whereas higher levels of avoidance predicted poorer CBT outcomes. Together, the two reported studies in this thesis demonstrate that not only does formal assessment of suitability for CBT furnish information that predicts treatment outcome, but that specific elements of the suitability assessment may be more important than others, and interact with each other to affect outcome. This knowledge can be used to help clinicians make clinical decisions regarding treatment recommendations, and points to ways of enhancing outcomes in CBT.
RÉSUMÉ

Malgré les preuves que la thérapie cognitivo-comportementale (TCC) est un traitement efficace pour la dépression (par exemple, DeRubeis et al., 2005) et l'anxiété (par exemple, Hofmann & Smits, 2008), il existe une grande variabilité dans son efficacité. De plus, aucun prédicteur prétraitement de l’efficacité thérapeutique n’a pu être identifié malgré de nombreuses études scientifiques. Une approche possible permettant d’examiner la valeur de prédicteurs pré-traitements sur les résultats thérapeutiques est d'évaluer formellement l'applicabilité de la TCC pour les patients utilisant la suitability for short-term cognitive therapy scale ([SSCT]; Safran, Segal, Shaw, & Vallis, 1990). La thèse actuelle explore l’application de la TCC dans deux études prospectives et longitudinales sur les résultats thérapeutiques. Dans l'étude 1, on comptait 256 patients externes ayant reçu un diagnostic primaire de dépression ou d'anxiété qui ont été évalués en utilisant l’échelle SSCT et cotés, pour la sévérité des symptômes en pré-traitement et en post-traitement, à l’aide de l'échelle d'impression clinique globale (CGI, Guy, 1976). Les résultats des facteurs analysant l'échelle SSCT ont révélé deux facteurs sous-jacents: 1) la capacité de participation au processus de la TCC et 2) des attitudes pertinentes au processus de la TCC. Une analyse de régression subséquente a démontré que seulement la capacité de participation au processus de la TCC prédit uniquement une plus grande amélioration des symptômes après la TCC. L'étude 2 a examiné l'association entre les attentes de résultats positifs et l'évitement tels que mesurés par deux éléments de l’échelle SSCT, l'optimisme d'un résultat positif et les opérations de sécurité, respectivement. L'échantillon était composé de 51 patients
diagnostiqués avec un trouble dépressif majeur qui, avant de suivre un traitement par la TCC, ont été évalués en utilisant l’échelle SSCT. Les patients ont également complété l'inventaire de dépression de Beck (IDB-II, Beck, Steer et Brown, 1996), avant et après le traitement. Une analyse de régression a révélé que pour les patients ayant un faible niveau d'attentes de résultats positifs, mais avec de plus bas niveaux d'évitement ont eu une plus grande amélioration après la TCC que ceux qui avaient des niveaux plus élevés d'évitement. Ensemble, les deux études rapportées dans cette thèse démontrent que non seulement l'évaluation formelle de l'applicabilité de la TCC fournit des informations prédissant le résultat du traitement, mais que des éléments spécifiques de l'évaluation de cette applicabilité peuvent être plus importants que d'autres, et interagir les uns avec les autres pour influencer le résultat. Cette connaissance peut être ainsi utilisée pour aider les cliniciens à prendre des décisions cliniques concernant les recommandations de traitement, et indique de possibles façons d’améliorer les résultats de la TCC.
ACKNOWLEDGMENTS

This thesis would not have been possible without the contributions of a several individuals. First and foremost, I would like to express my deepest gratitude to my primary supervisor, Dr. Gail Myhr, for believing in both my research and clinical potential - especially in times when I did not believe in it, myself. Over the past two and a half years, Dr. Myhr never wavered in her support and encouragement. Her trust and willingness to allow me to be independent in my work gave me the opportunity to grow and to push myself further. I have been particularly touched by her exhaustive efforts to help me achieve my academic and career aspirations. It is difficult to imagine having accomplished what I have, including the submission of this thesis, without her steadfast support. For these reasons, and many others, I am proud to have been Dr. Myhr’s student and consider myself immensely fortunate to have met her.

I would also like to express my appreciation to my co-supervisor, Dr. Jennifer Russell, in particular for sharing her valuable and limited time, statistical expertise, and love of the research process. I am very grateful of her encouragement and advice at every stage of research process. Trained as a psychologist, she served as a continuous reminder of my psychology background and helped me to integrate the traditions of our shared background with the field of psychiatry.

Several other individuals made the research in this thesis possible. I am grateful to the CBT Unit staff therapists and therapy trainees who ushered patients, as participants in this thesis, through the therapeutic process. In particular, I would like to thank Dr. Dominique Belisle and Dr. Marie Saint-
Laurent for their clinical supervision during the past two years. Their clinical wisdom has not only helped inform my development as a therapist but has influenced how I approach my clinical research. I would also like to recognize the work of Ms. Fatima Khodary who spent many hours managing the patient database and Ms. Sylvie LaFleur who kept everything running smoothly. In addition, I would like to thank the patients who participated in the research process so that we, as researchers and clinicians, can learn how we can be better.

Finally, I would like to thank my partner and soon to be husband, Carsten Wrosch, for sharing his helpful advice and invaluable support as I have made my way through this occasionally arduous but incredibly rewarding process.
CONTRIBUTIONS OF AUTHORS

The data from the two studies reported in this thesis were derived from an ongoing longitudinal study conducted by Dr. Gail Myhr in the CBT unit of the Allan Memorial Institute of the Royal Victoria Hospital. Dr. Myhr devised the methodology, obtained ethics approval, and supervised research assistants and hospital staff during the recruitment and data collection phases of the project. As the author of this thesis, I generated the specific research questions that were examined in the two reported studies. In addition, I conducted relevant literature reviews, developed specific hypotheses, statistically analyzed longitudinal data, and wrote drafts of the manuscripts. My coauthors and research supervisors, Dr. Myhr and Dr. Russell, provided statistical and conceptual feedback as well as editorial comments and suggestions for all components of this thesis.
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CHAPTER 1 – GENERAL INTRODUCTION

Depressive and anxiety disorders are psychiatric conditions characterized by significant distress and impairment across multiple domains of functioning (American Psychiatric Association [APA], 2000). Given the high societal and financial costs associated with these disorders, effective treatments are necessary. Cognitive behavioural therapy (CBT) has been identified as an empirically supported treatment of both depression (e.g., DeRubeis et al., 2005) and anxiety disorders (e.g., Hofmann & Smits, 2008) in both clinical trials and naturalistic treatment settings (e.g., Butler, Chapman, Forman, & Beck, 2006; Dobson, 1989; Stewart & Chambless, 2009). However, despite evidence supporting the efficacy and effectiveness of CBT, variability in therapy outcomes persists in both research and real-life treatment settings. Researchers have sought to explain these individual differences in treatment outcome by examining a myriad of variables, including patient and disorder-specific characteristics, as well as the match between patients and treatment. However, due to a number of methodological and conceptual limitations, the findings have been far from conclusive.

To address the disparities that exist in CBT outcomes, additional research is needed to explicitly examine predictors that might identify those individuals who can derive the most benefit from CBT. The present thesis consists of two empirical studies that explore the importance of the suitability of CBT for individual patients with anxiety and depression. More specifically, this thesis will aim to identify aspects of suitability that are particularly important for predicting therapy outcome.
Prevalence Rates and Disease Burden

It is estimated that lifetime prevalence rates for major depressive disorder (MDD) and dysthymic disorder are 16.6% and 2.5% respectively (Kessler et al., 2005). According to the World Health Organization (WHO), depression is among the leading causes of disease burden worldwide and affects every segment of the population (WHO, 2008). Among people in the middle years of life, depression is ranked as the most burdensome disease in the world when considering total disability-adjusted years (Murray & Lopez, 1996). The recurrent nature of depression increases the high public health care costs associated with the disorder. Although precise recurrence rates are unclear; some researchers have found that approximately 60% of individuals who develop a first episode of MDD will go on to develop a second episode (Solomon et al., 2000), while others have found that between 80 - 90% of individuals who experience a first episode will experience a recurrence of MDD (Kupfer & Frank, 2001). At each recurrence, researchers estimate that there is a 10 - 20% risk of the condition becoming chronic in nature (Lee, 2003). Despite the lack of a consensus regarding specific trajectories of the course of depression, what is evident is that in most cases, the effects of depression are long lasting.

Although depression is the most burdensome psychiatric disorder, anxiety disorders comprise the most commonly diagnosed class of all mental disorders (Kessler et al., 2005). Anxiety disorders include panic disorder (with or without agoraphobia), generalized anxiety disorder (GAD), post-traumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), social phobia, and specific phobias (APA, 2000). The lifetime prevalence rate for all anxiety disorders
combined is as high as 29% (Kessler et al., 2005). As compared to depression, anxiety disorders overall tend to be even more chronic in nature, with low remission rates (Barlow, 2002). Consequently, anxiety disorders are associated with an overall reduction in quality of life, high personal costs, including disability and individual suffering, and high societal costs, including placing an enormous burden on the health care system (Olatunji, Cisler, & Tolin, 2007; Tolin, Gilliam, & Dufresne, 2010).

**Cognitive Behavioural Therapy**

Given the pervasiveness of depression and anxiety disorders and the association of these conditions with significant individual and societal burden, the identification of long-lasting and effective treatments is of substantial importance. CBT is currently the most widely endorsed, empirically-supported psychotherapy for anxiety and depressive disorders (Chambless et al., 1998). CBT is an umbrella term encompassing a wide array of psychotherapies, including Aaron Beck’s original cognitive therapy (CT; Beck, Rush, Shaw, & Emory, 1979), as well as newer “third wave” therapies (e.g., acceptance and commitment therapy; Hayes, 2004). The commonality among therapies under the CBT umbrella is that they are guided by theory and empirical evidence, each emphasizing to varying degrees the roles of cognition and behaviour in maintaining psychological problems. The treatment is typically short-term and problem-focused, with interventions aimed at treating the presenting problem(s) by targeting individuals’ maladaptive cognitions and behaviours (Craske, 2009).

**Empirical Evidence for the Effectiveness of CBT**

The effectiveness of CBT for anxiety disorders and depression has been
demonstrated in several meta-analyses. Dobson (1989) conducted the first meta-analysis in which the effectiveness of the treatment was examined across 28 studies of CT for depression in naturalistic treatment settings. He found that individuals with depression experienced greater change in symptoms after CT as compared to being on a wait-list, receiving no treatment, pharmacotherapy, or other psychotherapies. Furthermore, the extent of symptom change was independent of patients’ demographic characteristics. More recently, Butler and colleagues (2006) provided additional evidence in support of the effectiveness of CBT when they reviewed the meta-analytic literature on CBT outcomes for a range of psychiatric disorders. Based on their review, the authors concluded that CBT is a highly effective treatment for unipolar depression, GAD, panic disorder, social phobia, and PTSD. They also noted that CBT was somewhat superior to medication alone for treating depression. Finally, to demonstrate the effectiveness of CBT for anxiety disorders alone, Stewart and Chambless (2009) conducted a meta-analysis to examine the results of 56 CBT effectiveness studies. The authors’ findings revealed that CBT is just as effective in naturalistic treatment settings as it is in the well-controlled conditions of randomized controlled clinical trials.

Despite clearly documented evidence supporting the effectiveness of CBT for depression and anxiety, many patients do not improve or fail to attain full remission after treatment with CBT. In reviewing the evidence for pharmacotherapy and psychotherapy in the treatment of depression, Hollon, Thase, and Markowitz (2002) estimate that while half of depressed patients respond to some form of treatment, only a third of individuals attain full
remission. In a recent review of response and adherence in the treatment of anxiety disorders, Taylor, Abramowitz, and McKay (in press) argue that determining exact treatment response rates is challenging because different studies use different criteria for classifying patients as “responders”. However, based on their own review of the literature, Taylor and colleagues found that as many as 34 - 36% of patients are considered “non-responders” after CBT. In a recent meta-analysis examining studies of the effectiveness of CBT for anxiety disorders, Stewart and Chambless (2009) found that when converting study effect sizes to a binomial effect size display, approximately 22% of individuals with anxiety disorders did not improve after treatment as compared to 78% of individuals in control groups. Despite the limitations of previous research on treatment response, it is evident that while CBT is an effective treatment for depression and anxiety disorders, there are a substantial number of individuals for whom CBT is not effective.

**Pre-treatment Predictors of CBT Outcomes**

Given the considerable variability in treatment outcome for individuals with depressive and anxiety disorders, it is important for researchers to identify variables that can distinguish individuals who derive benefit from CBT from those who do not. However, Hamilton and Dobson (2002) noted that, in the depression literature, inadequate attention has been devoted to identifying patient characteristics that could influence outcome.

In an effort to identify those characteristics of patients that may influence the outcome of CT for depression, Hamilton and Dobson (2002) reviewed the pertinent research. They found several previously examined characteristics,
including pre-treatment symptom severity, disorder-related variables (e.g., number of episodes, age of onset), demographic characteristics (e.g., gender, marital status), treatment acceptability, dysfunctional attitudes, as well as other psychosocial variables. The results of their review revealed that there are several important individual differences that may account for differential outcomes. Pertinent characteristics associated with poorer treatment responses included higher severity, chronicity of the disorder, younger age of onset, and more previous episodes. They also found that high levels of dysfunctional attitudes and some beliefs about the origins of depression predicted poorer response to CT. The authors cautioned that the results should not be considered conclusive given that some of the predictors have been examined more extensively than others. For example, they reported that at the time of their review, very little research regarding treatment acceptability existed. In addition, they noted that there were a number of methodological issues in the literature, including failure to control for pre-treatment severity.

Research aiming to identify pre-treatment predictors of CBT outcomes for anxiety disorders is even less conclusive. In Taylor and colleagues’ (in press) review of variables associated with non-response to CBT across anxiety disorders, they found that only disorder severity was associated with failure to respond to treatment. The picture is even more complex when individual anxiety disorders are examined. For example, a review of the OCD literature by Keeley and colleagues (2008) revealed that symptom severity, the OCD subtype of hoarding, the presence of a personality disorder, family dysfunction, and therapeutic alliance were consistently associated with treatment outcomes. However, the
results were less consistent for demographic variables, age of onset, illness duration, treatment history, treatment motivation, or insight. The findings for social phobia were also inconsistent. In a systematic review of pre-treatment predictors of CBT response in patients with social phobia, Eskildsen, Hoogaard, and Rosenberg (2009) found that there was some evidence suggesting that having depression or an avoidant personality disorder predicted poorer post-treatment functioning. In addition, they also found that higher pre-treatment symptom severity was associated with post-treatment symptom severity. However, despite these findings, none of their findings were associated with how much patients’ symptoms improved after treatment. After conducting their review, Eskildsen and colleagues argued that it was difficult to arrive at any conclusions regarding pre-treatment predictors of psychotherapy outcome in general given the limitations of the current research. They suggested that additional studies examining theoretically-based predictors using larger samples in naturalistic treatment settings are necessary to advance our knowledge of individual differences that influence patient outcomes.

The argument in favour of theoretically-based research on predictors of treatment outcome is not new. In 1991, Beutler argued that the empirical examination of treatment outcome predictors should stem from theoretical assumptions pertaining to the treatment itself and lamented the lack of such an approach in the extant literature. The study of theoretically-based outcome predictors confers the additional potential benefit of contributing to our understanding of the mechanisms of action in a particular form of psychotherapeutic treatment. Despite this decades-old call for more theoretically-
driven research into predictors of psychotherapy outcome, the research literature reflects little advancement in this area.

**Suitability for CBT**

In an attempt to address the lack of theoretically-driven research on patient predictors of outcome, Safran and colleagues devised the Suitability for Short-term Cognitive Therapy scale ([SSCT]; Safran, Segal, Shaw, & Vallis, 1990; Safran, Segal, Vallis, Shaw & Samstag, 1993). Guided by the theory underlying CT and presumed mechanisms of therapeutic change, the purpose of developing the measure was to identify individuals who would derive the most benefit from short-term CT by assessing patients’ perceptions of CT tasks and goals as well as their potential ability to engage in those tasks (Segal, Swallow, Bizzini, & Rouget, 2005). The original scale was comprised of nine items pertinent to CT (i.e., accessibility of automatic thoughts, awareness and differentiation of emotion, acceptance of personal responsibility for change, compatibility with the cognitive rationale, alliance potential in session, and out of session, chronicity, security operations, and focality). Each item is rated individually based on a semi-structured clinical interview. Safran and colleagues (1990) reported that a principle component analysis indicated that the SSCT scale consisted of three underlying constructs: Capacity for engaging in tasks that are relevant to CT, bond, and refractoriness of problem to change. The authors did not examine whether the three factors were associated with therapeutic improvement.

Safran and colleagues (1993) investigated whether mean SSCT scale scores were associated with therapy outcomes. The authors conducted the SSCT scale interview with a sample of 42 out-patients diagnosed with an anxiety
disorder or depression. Results of their analyses revealed that patients’ mean suitability scores were positively correlated with post-treatment functioning and negatively correlated with post-treatment symptom indicators. Based on these findings, the authors concluded that the SSCT scale was capable of identifying patients who were most likely to benefit most from short-term CT.

Since the original scale development, there has been a paucity of research employing the SSCT scale method to assess patient suitability for CT, or for CBT more broadly. Furthermore, across those studies that have been conducted, very few have examined whether the SSCT scale is associated with therapy outcome.

In one study, Vallis and his colleagues (2000) assessed a diagnostically heterogeneous sample of 36 patients using a version of the scale that included a tenth item, “optimism/pessimism for a positive outcome”. The authors found that there was an association between personality dysfunction and patient suitability. However, they did not conclude that it was sufficient to negatively impact therapy outcomes. In another study, researchers sought to identify moderator variables related to therapist competence in a sample of 20 out-patients with depression, social phobia and OCD (James, Blackburn, Milne, & Reichfelt, 2001). The authors found that therapists demonstrated greater competence at administering therapy when patients were rated as more suitable for treatment.

In a study that attempted to examine the association between suitability and CBT outcomes, Dunn, Morrison, and Bentall (2006) investigated links between patient suitability, therapeutic alliance, homework compliance and the outcome of CBT for 29 patients with psychosis. Although they found that a low suitability rating was associated with poorer therapeutic alliance, the SSCT ratings
did not predict therapy outcome. However, the SSCT scale was designed to assess patient suitability prior to the first therapy session, while Dunn and colleagues only rated patients on the suitability items at the third session.

In an attempt to explore the associations between CBT outcomes and specific SSCT scale items in addition to mean suitability ratings, Myhr and colleagues collected a heterogeneous psychiatric out-patient sample (Myhr, Talbot, Annable, & Pinard; 2007). In their sample of 113 patients, the authors found that mean suitability scores predicted symptom improvement after CBT. The authors’ analysis of individual items, however, revealed that only half of the SSCT scale items (i.e., awareness and differentiation of emotion, security operations, acceptance of personal responsibility for change, and alliance potential in and out of session) were significantly and positively correlated with improvement in patients’ symptoms after CBT.

In a more recent study, Myhr and colleagues (2013) examined whether suitability for CBT predicted therapy outcomes in different diagnostic categories. Although the particular focus of the paper was on the suitability of CBT for psychosis, their outcome analyses included a sample of 237 psychiatric out patients with a primary diagnosis of anxiety disorders \( (n = 152) \), depressive disorders \( (n = 58) \) or psychotic disorders \( (n = 27) \). Regardless of diagnosis, the authors found that mean suitability scores predicted successful therapy outcomes. They also found that most of the individual suitability items were correlated with symptom change.

Despite increased interest in the SSCT scale in recent years, there remain significant gaps in the literature. For example, to my knowledge, there has been
no attempt to examine whether the underlying factor structure initially proposed by Safran and colleagues (1990) can be replicated in larger samples. In addition, much of the research that has been conducted thus far has contained methodological short-comings. In particular, the vast majority of the research conducted thus far has been correlational and the samples investigated have been relatively small. Further research is necessary to address these limitations and to clarify the role of patient suitability for predicting CBT outcome.

**Research Objectives**

The broader aim of the present studies was to address the paucity of research examining the pertinent individual differences that determine whether CBT is suitable for individuals with anxiety or depression. The specific objectives of the two interrelated studies presented in this thesis were to ascertain which suitability constructs are most informative in making clinical decisions regarding treatment recommendations. This knowledge can potentially lead to more effective utilization of mental health care resources, thereby reducing wait lists for CBT and improving treatment outcomes for individuals who complete CBT.

Study 1, which has been submitted to the Journal of Clinical Psychology (Renaud, Russell, & Myhr, submitted), had two related goals. The first objective was to determine whether the SSCT scale consisted of broader underlying constructs in a larger sample of 256 patients with a primary diagnosis of an anxiety disorder, major depressive disorder, or dysthymic disorder. Second, this study examined whether these underlying constructs predicted CBT outcomes in this sample. Although the first study was exploratory, it was expected that individual differences in the resulting underlying factors would be associated with
better therapy outcomes.

Study 2 has been published in the British Journal of Clinical Psychology (Renaud, Russell, & Myhr, 2013). The goal of Study 2 was to examine whether specific items from the SSCT interact to predict CBT outcomes. This research question was tested in a sample of individuals with a primary diagnosis of major depressive disorder (MDD). Specifically, it was examined whether optimism (or outcome expectancies) and avoidance were associated with changes in depressive symptoms after CBT. We expected that avoidance and outcome expectancies would interact to predict symptom improvement after CBT.
Predicting Who Benefits Most from
Cognitive Behavioural Therapy for Anxiety and Depression

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Key Words: Cognitive behavioural therapy, suitability, depression, anxiety,
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Abstract

**Objectives:** We examined core features of patient suitability for cognitive behavioural therapy (CBT) and their ability to predict CBT outcomes. **Method:** A sample of 256 out-patients diagnosed with depression and anxiety disorders were assessed using the suitability for short-term cognitive therapy scale ([SSCT]; Safran, Segal, Shaw, & Vallis, 1990). Therapists rated patients’ symptom severity using the Clinical Global Impression scale (CGI; Guy, 1976) before and after therapy. **Results:** A factor analysis of the SSCT scale yielded two factors: 1) Capacity for Participation in CBT Process and 2) Attitudes Relevant to the CBT Process. A multiple regression analysis revealed that only Capacity for Participation in CBT Process uniquely predicted improvement at termination. **Conclusions:** These findings highlight the importance of assessing the suitability of CBT for individual patients. Specifically, patients with greater capacity to identify and articulate thoughts and feelings and to share them in a non-defensive, focused way benefit most from CBT.
SUITABILITY OF COGNITIVE BEHAVIOURAL THERAPY

Predicting Who Benefits Most from
Cognitive Behavioural Therapy for Anxiety and Depression

Although the effectiveness of cognitive behavioural therapy (CBT) for depression (e.g., Dobson, 1989; Roth & Fonagy, 1996; Scott, 1996) and anxiety disorders (e.g., Norton & Price, 2007; Stewart & Chambless, 2009) is no longer a matter of debate, the struggle to account for variability in patient outcomes continues. Despite efforts to identify putative factors associated with treatment outcomes, few studies have been designed to explicitly investigate the role of pre-treatment patient factors in predicting CBT outcome. The present study aims to address this gap in the literature by examining the role of a broad range of suitability characteristics to determine for whom CBT is more beneficial.

To date, researchers have examined specific prognostic variables related to patient characteristics (e.g., age, marital status) as well as diagnosis (e.g., chronicity, severity, age of onset). However, there has been little consensus across studies regarding the association of these patient and clinical variables with treatment outcome. In the depression literature, a frequent criticism levied against these inconsistencies is that those studies addressing the disparity in outcomes have employed a post hoc analysis of diagnostic and patient characteristics (e.g., Hamilton & Dobson, 2002). Unfortunately, the most frequently examined prognostic variables tend to be demographic characteristics that researchers can collect haphazardly (e.g., pre-treatment severity). This trend is surprising given that the determination of “what works for whom” has enormous consequences for the allocation of limited resources and the ability of clinicians to tailor treatment to meet the needs of different patient populations. Therefore, further research is
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necessary to explicitly identify and examine specific variables that may play an important role in determining who succeeds in therapy.

In addition to the call for more a priori analyses of prognostic variables, it has been argued that there ought to be a stronger conceptual link between the predictors investigated and the treatment itself (Beutler, 1991). Elucidating the association between patient predictors and outcomes could contribute to the overall understanding of the mechanisms of action in CBT. In recent years, there has been a proliferation of papers attempting to demonstrate the role of cognition in predicting the outcome of CBT for depression. However, these results have been far from conclusive. For example, some studies have reported that higher pre-treatment levels of dysfunctional attitudes were associated with poorer therapy outcomes (e.g., Jarrett, Eaves, Grannemann, & Rush, 1991; Sotsky et al., 1991), while others have found no relation between initial cognitive dysfunction and outcome (Hardy, Cahill, Shapiro, Barkham, Rees, & Macaskill; 2001). This contradiction underscores the need for alternative methods of identifying important predictors of treatment outcome.

Safran, Segal, Shaw, and Vallis (1990) devised the Suitability for Short-term Cognitive Therapy (SSCT) scale in an effort to prospectively examine theoretically pertinent psychological variables that predict treatment outcomes. The SSCT scale is a measure that consists of 10 items that are rated on a 5-point Likert-type scale based on a semi-structured clinical interview. The items are: 1) Accessibility of Automatic Thoughts: Patient’s ability to access cognitions when describing specific problem situations, 2) Awareness and Differentiation of Emotion: Patients’ ability to identify and distinguish past and present emotions, 3)
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Acceptance of Personal Responsibility for Change: The extent to which patients’ view themselves as responsible for their own recovery or defer the responsibility of change to external sources, 4) Compatibility with the Cognitive Rationale: The extent to which patients’ believes the tasks of CBT are valuable, and relevant to their disorder, 5) Alliance Potential In Session: Patients’ level of engagement and trust with the therapist, 6) Alliance Potential Out of Session: Patients’ ability to develop and maintain trusting and meaningful relationships with others outside of therapy, 7) Chronicity: The duration of the primary diagnosis or presenting problem, 8) Security Operations: Psychological processes/behaviors that decrease anxiety and maintain positive view of self, 9) Focality: Capacity to identify and work in depth on a particular theme, 10) Optimism/pessimism for a Positive Outcome: The extent to which the patient believes that cognitive behavioural therapy will be helpful.

The SSCT scale (Safran et al., 1990) was developed using a small sample of patients (N = 42) who were predominantly diagnosed with anxiety disorders and depression. The authors found that mean suitability scores were correlated with improved post-treatment functioning as assessed by the Global Assessment of Functioning scale (American Psychiatric Association, 2000). In another study, Myhr and colleagues used the SSCT in a mixed psychiatric out-patient sample (N = 113) and found that mean suitability scores predicted symptom improvement after CBT (Myhr, Talbot, Annable, & Pinard, 2007). The authors’ analysis of individual items, however, revealed that only a few of the SSCT scale items (i.e., awareness and differentiation of emotions, security operations, acceptance of personal responsibility for change, and alliance potential in and out of session)
were significantly and positively correlated with improvement in patients’ symptoms after CBT. A more recent study comparing out-patients with psychosis to those with anxiety or depression found that mean suitability scores were predictive of successful outcomes regardless of diagnosis (Myhr et al., 2013). Furthermore, this investigation found that the acceptance of personal responsibility for change suitability item predicted whether individuals would drop out of therapy as well as how much symptom improvement they experienced if they completed treatment.

In another recent study, Renaud, Russell, and Myhr (2013) examined the associations between different suitability items in patients with anxiety and depression. They found that individual suitability items (i.e., security operations and optimism/pessimism for a positive outcome) interacted to predict better treatment outcomes in patients with depression and anxiety disorders. The results of this study suggest that there may be underlying factors within the SSCT scale and that associations between factors may contribute to a better understanding of the types of patients who are most likely to improve after CBT.

In the development of the SSCT scale, Safran and colleagues (1990) did indeed further analyze the scale items to identify underlying constructs. However, their analysis did not include the tenth item (i.e., optimism/pessimism for a positive outcome), which was added to scale at a later date. Their analyses indicated that the nine items loaded on three distinct components: 1) Capacity for engaging in tasks that are relevant to CBT, 2) bond, and 3) refractoriness of problem to change. However they did not investigate whether these components predicted treatment outcome. To our knowledge, there has been no attempt to
replicate these findings.

The approach taken by Safran and colleagues (1990), which attempted to identify more global indicators of treatment outcome by uncovering underlying constructs, merits additional consideration. However, it has yet to be examined whether the underlying constructs of the SSCT scale predict treatment outcome. It is possible that further examination of the underlying constructs of the SSCT scale could help clarify inconsistencies in the literature regarding specific variables and outcome by capturing the constructs of interest more comprehensively. For example, it may be possible to garner more information by examining the association between treatment outcomes and a general capacity to engage in CBT, rather than focusing on the capacity to perform discrete tasks (i.e., accessibility of automatic thoughts). In addition, given the methodological limitations of their work (e.g., small sample size), it is necessary to replicate their initial findings in a larger sample.

The Present Study

Motivated by the potential implications of identifying more global constructs and the need to address the limitations of previous research, the present study had two primary goals. First, we aimed to identify the underlying constructs of the SSCT scale. Second, we aimed to explore the association between the resulting underlying constructs and CBT outcomes. We expected that our results would be similar to those found by Safran and colleagues (1990). In addition, although the present study was exploratory in nature, we expected that our efforts to capture a broader picture of the constructs related to the match between patients and CBT would result in a greater ability to predict patient outcomes.
Method

Participants

Data for the present study was collected from a subsample of 256 patients (88 males and 168 females) who completed treatment as part of a larger prospective study conducted in the Cognitive Behavioural Therapy Unit at the McGill University Health Centre between July 2001 and July 2011. Patients were included in the study if they met the diagnostic criteria outlined in Text Revision of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders ([DSM-IV-TR]; American Psychiatric Association, 2000) for an anxiety disorder (i.e., generalized anxiety disorder, obsessive-compulsive disorder, specific phobia, panic disorder with or without agoraphobia, social phobia, posttraumatic stress disorder, anxiety disorder not otherwise specified), major depressive disorder, or dysthymic disorder. Patients ranged in age from 17 - 69 years old ($M = 37.2$ years; $SD = 12.45$). Approximately two-thirds of the sample was employed, while 12% were unemployed, 27% were students, and 16% were retired. Sixty-two percent of participants were single, 23.4% were married, 4.3% were common law, 7% were divorced, and 1.2% were widowed. The majority of patients (71.1%) had already previously received psychotherapy.

Procedure

Patients were assessed by the CBT unit team, which consisted of psychiatrists, psychologists and trainees of various mental health disciplines. A semi-structured interview was conducted to ascertain the patient’s diagnosis according to DSM-IV-TR (APA, 2000) and to rate the suitability of CBT for the patient using the SSCT scale (Safran et al., 1990). Two members of the team
interviewed the patient, while the other team members observed the interview through a two-way mirror. Once the assessment was complete, the team rated the suitability of CBT for each patient using the SSCT scale (patients were not excluded for CBT based on their SSCT scores). Patients were also given a rating on the Clinical Global Impression (CGI) scale (Guy, 1976) to assess symptom severity. Patients who agreed to weekly sessions of CBT were assigned to a therapist of the CBT unit team and completed an average of 19 (SD = 11) sessions. The CBT administered was problem-focused, individualized and formulation based, using empirically accepted models of the presenting disorders (Persons, 1989; 2008). Therapy endpoints were decided collaboratively between patient and therapist. Once therapy was completed, the questionnaires, including the CGI, were re-administered.

**Measures**

The measures consisted of the 10 items from the SSCT scale: Accessibility of automatic thoughts, awareness and differentiation of emotion, acceptance of personal responsibility for change, compatibility with the cognitive rationale, alliance potential in-session, alliance potential-out of session, chronicity, security operations, focality, and optimism/pessimism for a positive outcome. Each of the 10 items was rated on a 1 - 5 anchored scale. The CGI was used to assess severity of illness before and after treatment, with possible scores ranging from 1 (normal, not at all ill) to 7 (among the most extremely ill patients). The mean pre-treatment CGI score was 4.01 (SD = .79), indicating “moderate” symptom severity, and the mean post-treatment CGI score was 2.73 (SD = 1.19), indicating “borderline to mild” symptom severity.
Statistical Analyses

To determine whether there were distinct underlying factors within the SSCT scale items, an exploratory factor analysis was conducted, followed by correlations between each of the factors and post-treatment CGI, controlling for pre-treatment CGI. Subsequently, the saved factor scores from the factor analysis were entered into a multiple regression model to determine whether the resulting factors predicted residualized change in CGI. Residualized CGI change scores were calculated in a regression analysis by predicting post-treatment CGI scores by pre-treatment CGI scores and saving the standardized residuals.

Results

To uncover underlying factors within the SSCT scale items, a maximum likelihood exploratory factor analysis was conducted using a direct oblimin rotation. An initial analysis revealed three components with eigenvalues above the Kaiser’s criterion of one that explained a cumulative 73.24% of the variance. However, the third factor consisted of only a single SSCT scale item (i.e., chronicity). We, therefore, removed the chronicity item from the variables and repeated the analysis. The factor analysis of these nine items indicated a two-factor solution which accounted for 68.70% of the variance. The scree plot supported this 2-factor solution. Factor loadings after rotation can be found in Table 2.1.
Table 2.1

*Factor Loadings for Exploratory Factor Analysis with Direct Oblimin Rotation of Suitability for Short-term Cognitive Therapy Scale*

<table>
<thead>
<tr>
<th>Suitability Items</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity for Participation in the CBT Process</td>
</tr>
<tr>
<td>Security Operations</td>
<td>.78</td>
</tr>
<tr>
<td>Accessibility of Automatic Thoughts</td>
<td>.77</td>
</tr>
<tr>
<td>Awareness and Differentiation of Emotions</td>
<td>.76</td>
</tr>
<tr>
<td>Focality</td>
<td>.72</td>
</tr>
<tr>
<td>Optimism/pessimism for a Positive Outcome</td>
<td>-.15</td>
</tr>
<tr>
<td>Compatibility with the Cognitive Rationale</td>
<td>.14</td>
</tr>
<tr>
<td>Acceptance of Personal Responsibility for Change</td>
<td>.11</td>
</tr>
<tr>
<td>Alliance in Session</td>
<td>.45</td>
</tr>
<tr>
<td>Alliance out of Session</td>
<td>.29</td>
</tr>
</tbody>
</table>
Interpretation of the factor loadings suggests that the first factor reflects the ability to identify and articulate thoughts and feelings, and share them in a non-defensive, focused way in the therapeutic setting. The factor includes the items: Security operations, accessibility of automatic thoughts, awareness and differentiation of emotions, and focality, and is therefore labeled as “Capacity for Participation in CBT Process”. The second factor reflects the patient’s attitudes and expectations towards the CBT model, proposed tasks of therapy and their own role in achieving change. We have labeled this second factor as “Attitudes Relevant to the CBT Process”. Given that the loadings for the second factor were negative (see Table 2.1), higher scores indicate less optimism for a positive outcome, lower compatibility with the cognitive rationale, less acceptance of personal responsibility for change, and poorer alliance potential outside of session. We also note that alliance potential in session loaded equally on both factors, suggesting that the degree of empathic resonance and trust established during the assessment with the interview may be related to both a patient’s capacity to participate in the CBT process as well as the patient’s attitudes toward the CBT process.

To examine associations between these factors and CGI, partial correlations were computed, controlling for pre-treatment CGI. Results indicated that both factors were associated with CGI. We found that higher scores on the Capacity for Participation in the CBT Process were negatively correlated with post-treatment CGI scores \((r = -.27; p = .000)\) and higher scores on Attitudes Relevant to CBT Process were positively correlated with post-treatment CGI scores \((r = .18; p = .004)\).
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To assess whether the factors uniquely predicted post-treatment CGI in CBT, the two factor scores (i.e., Capacity for Participation in the CBT Process and Attitudes toward the CBT Process) were saved and then entered into a multiple regression analysis predicting residualized change in CGI scores. Routine inspection of the data revealed one multivariate outlier. The case was removed and the regression analysis was rerun. The results of the final regression analysis (reported in Table 2.2) indicate that higher ratings on the first factor, Capacity to Participate in the CBT Process, predicted greater reductions in CGI scores after treatment, independent of Attitudes Relevant to the CBT Process. However, the second factor, Attitudes Relevant to the CBT Process did not predict change in CGI after treatment independent of patients’ Capacity to Participate in the CBT Process.
Table 2.2

Multiple Regression Analysis Predicting Residual Change in CGI Scores

<table>
<thead>
<tr>
<th>Predictor</th>
<th>t</th>
<th>df</th>
<th>β</th>
<th>SE</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>0.07</td>
<td></td>
<td></td>
<td></td>
<td>.07***</td>
</tr>
<tr>
<td>Capacity for Participation in the CBT Process</td>
<td>-3.30</td>
<td>(2, 253)</td>
<td>-.31***</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td>Attitudes Relevant to the CBT Process</td>
<td>-.23</td>
<td>(2, 253)</td>
<td>-.02</td>
<td>.09</td>
<td></td>
</tr>
</tbody>
</table>

*Note.*** $p < .001.$
Discussion

The findings of the present study suggest that the suitability of CBT for a particular patient may be an important consideration in determining who will derive the most benefit from CBT. In addition, it may be more advantageous to examine broader suitability constructs (i.e., general capacity to participate in CBT), rather than a global assessment of suitability (i.e., mean suitability scores) or specific dimensions of suitability (e.g., accessibility of automatic thoughts). Specifically, we have demonstrated that the SSCT scale is comprised of two broader factors: Capacity for Participation in the CBT Process and Attitudes Relevant to the CBT Process. The first factor, Capacity for Participation in the CBT Process, consists of the items: Security operations, accessibility of automatic thoughts, awareness and differentiation of emotions, and focality. The second factor, Attitudes Relevant to the CBT Process, includes the items: Optimism/pessimism for a positive outcome, acceptance of personal responsibility for change, compatibility with the cognitive rationale, and alliance potential out of session.

Our results also indicate that although there are two broader aspects of suitability associated with outcome, only Capacity for Participation in the CBT Process uniquely predicted symptom improvement as measured by the CGI in those patients who have completed CBT. Specifically, we found that patients who were rated as having a higher capacity to participate in the CBT process experienced greater symptom improvements after CBT than those with lower capacity to participate, regardless of whether or not they had negative attitudes toward the CBT process. This implies that patients’ overall capacity is an
especially important indicator of potential therapeutic gains. Although some individuals may not be able to access and articulate their emotions, they may still have positive therapy outcomes if they are able to access their thoughts, engage in few security operations and focus on specific topics. This would imply that patients’ general capacity ought to be the focus when assessing the suitability of CBT.

Based on the preliminary correlation analyses, we had expected that the second factor would also predict patient improvement. However, when controlling for patients’ Capacity to Participate in the CBT Process, there was no significant association between Attitudes Relevant to the CBT Process and CGI. This implies that individuals with positive attitudes, who experience improvements in symptoms, are also more likely to have the necessary skills or capacity for CBT. By contrast, individuals who have more negative attitudes and who do not improve after CBT are more likely to lack that capacity. Therefore, Attitudes Relevant to the CBT Process may not be the primary aspect of suitability for predicting outcome of individuals completing therapy.

**Clinical Implications**

The present study highlights the importance of assessing suitability for improving CBT outcomes. The ability to identify individuals for whom CBT is likely to be more or less effective can contribute to better utilization of limited hospital and community resources by reducing waitlist times. The results from our study suggest that clinicians should pay particular attention to patients’ general capacity to participate in the CBT process and be less concerned about a patient’s initial negative attitudes toward treatment. Given that the patient’s capacity is
likely to provide the most useful information about whether or not a patient will derive benefit from CBT, clinicians who are concerned about limited resources and long wait-lists are encouraged to undertake a suitability assessment prior to therapy, identify patients low in their general Capacity to Participate in the CBT Process, and consider making referrals to alternative treatments (e.g., other psychotherapeutic approaches, pharmacotherapy). Alternatively, clinicians may choose to tailor early interventions to explicitly target the pertinent skill deficits. For example, therapists can help patients learn to identify automatic thoughts and emotions in specific situations by devoting more time to this practice in session. The practice of identifying thoughts and emotions in specific situations can also help patients improve their ability to focus on a specific topic - another important aspect of the capacity to participate in CBT process.

Limitations and Future Research

Although the findings from the present study demonstrate the utility of assessing suitability for predicting the outcome of CBT for anxiety and depression, some limitations ought to be addressed in future research. First, despite initially finding a 3-factor solution, only chronicity loaded on the third factor. This item was consequently removed from the analyses. Therefore, we were not able to replicate the 3-factor solution reported by Safran and colleagues (1990) in the initial development of the SSCT scale. To clarify whether characteristics associated with the diagnosis ought to be considered when assessing suitability, future studies may benefit from the addition of other diagnosis-related variables to enhance the validity of a third factor. In addition, it is also possible that the discrepancy between our findings and those of Safran and
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colleagues is attributable to the fact that our sample size was significantly larger
than the one used in the initial development of the SSCT scale. Therefore, we
recommend that future research should attempt to replicate the findings from our
study in order to verify the stability of the general suitability factors identified
here.

In addition, while previous research has demonstrated the importance of
individual suitability items for predicting therapy completion (e.g., Myhr et al.,
2013), our study only included patients who completed CBT. Therefore, we did
not examine whether the Capacity to Participate in the CBT Process factor or the
Attitudes Relevant to the CBT Process factor were associated with early treatment
termination. Given that previous work identified the “acceptance of responsibility
for change” item as the suitability item most predictive of dropout (Myhr et al.)
and that this item loads on the attitudes factor, it may be that while negative
attitudes do not predict treatment outcome in completers, they are associated with
whether or not the patient completes treatment. Further research is necessary to
clarify the association between broader suitability factors and therapy completion.

Despite the fact that Attitudes Relevant to the CBT Process did not
independently predict symptom improvement, it would be worthwhile to
determine whether the items and the general attitudes factor remain stable or
change over the course of CBT. Given the nature of CBT, it is plausible that
patients’ beliefs about the helpfulness of CBT, how much responsibility they
shoulder for the outcome, and whether the CBT model makes sense to them may
change over the course of treatment. Once patients begin treatment, therapists
spend considerable time emphasizing the value of CBT for particular disorders

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and socializing patients to the CBT model. Part of the socialization process includes patients learning that they are expected to actively contribute to the therapeutic process by setting the agenda, determining specific attainable goals, and completing homework tasks in between sessions (Beck, 1995). As a consequence, patients may be more willing to accept the link between their contributions in therapy and improvement. They may also become increasingly convinced that this particular treatment will work for them. Additional research could clarify whether exposure to the CBT model is associated with changes in attitudes about the treatment. If attitudes toward CBT do indeed change over time, it may be that these changes account for some unique variance in patient outcomes above and beyond a patient’s Capacity to Participate in the CBT Process.

**Conclusions**

The present research is one of only a handful of studies examining the issue of patient suitability for predicting the outcome of CBT. We have demonstrated that the SSCT scale is comprised of two factors: The Capacity to Participate in the Process of CBT and Attitudes Relevant to the Process of CBT. Furthermore, we have shown that the Capacity to Participate in the CBT Process is associated with better therapy outcomes for individuals with anxiety and depression who complete courses of CBT. The knowledge gained from this research has the potential to contribute to improved patient outcomes in CBT as well as more efficient use of clinical care services.
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Connecting Text

Study 1 explored the associations between the different suitability items to determine whether the SSCT scale consisted of underlying factors that were associated with CBT outcomes in patients with anxiety and depression. Results from this study indicated that the SSCT scale is comprised of two factors: 1) Capacity for Participation in CBT Process and 2) Attitudes Relevant to the CBT Process. Further analyses revealed that while both factors are associated with therapy outcomes, only Capacity for Participation in CBT Process uniquely predicted greater symptom improvement after CBT.

To further explore the role of suitability for predicting CBT outcome, Study 2 examined whether associations between specific suitability items from each of the factors from Study 1 interacted to predict CBT outcome. Specifically, Study 2 tested whether the interaction between optimism for a positive therapy outcome and security operations predicted changes in depressive symptoms in patients diagnosed with major depressive disorder.
The Association between Positive Outcome Expectancies and Avoidance in Predicting the Outcome of Cognitive-Behavioural Therapy for Major Depressive Disorder

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Gail Myhr

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McGill University Health Centre

Running head: The Association between Positive Outcome Expectancies and Avoidance in Predicting the Outcome of Cognitive-Behavioural Therapy for Major Depressive Disorder
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Abstract

Objectives: Although cognitive behavioural therapy (CBT) is an empirically supported treatment for major depressive disorder (MDD), individual differences in the effectiveness of CBT have been observed. Preliminary evidence suggests that positive outcome expectancies for treatment predict better therapy outcomes (Constantino, Arnkoff, Glass & Smith, 2011); however, researchers have not examined whether avoidance, an important predictor of depressive symptoms (Ottenbreit & Dobson, 2004), may play an important role in this association. In the present study, we examined whether the association between positive outcome expectancies and therapy outcome is associated with patient’s level of avoidance.

Design: Data were collected as part of a prospective, longitudinal study.

Methods: The sample consisted of 51 patients diagnosed with MDD who underwent CBT. Prior to treatment, clinicians rated patients on their levels of avoidance and positive outcome expectancies. A self-report rating of positive outcome expectancies was also obtained, and the Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996) was completed pre- and post-treatment. A hierarchical regression analysis was conducted to examine the association between positive outcome expectancies and avoidance for predicting changes in depressive symptoms after CBT.

Results: For patients with lower levels of positive outcome expectancies, lower levels of avoidance predicted greater improvement after CBT and higher levels of avoidance predicted poorer treatment outcomes.
Conclusions: These findings suggest that the impact lower positive outcome expectancies have on therapy outcome can be attenuated if patients do not avoid dealing with emotionally difficult material in session.
The Association between Positive Outcome Expectancies and Avoidance in Predicting the Outcome of Cognitive Behavioural Therapy for Major Depressive Disorder

Cognitive Behavioural Therapy (CBT) is one of the American Psychological Association’s (APA) empirically supported treatments (APA Presidential Task Force on Evidence-Based Practice, 2006) whose efficacy in the treatment of Major Depressive Disorder (MDD) is well established. However, there is considerable variability in its effectiveness in real-life treatment settings. Many possible factors might explain the variability in treatment outcomes, including patient characteristics, as well as factors associated with the disorder itself. In community treatment settings where resources are scarce, determining which factors differentiate those patients who will be more amenable to psychotherapy is an important task. Furthermore, the ability to identify patient characteristics that require early intervention will serve to facilitate the therapeutic process and result in better treatment outcomes.

One frequently examined individual difference variable for predicting the success of psychotherapy are patient outcome expectancies. Outcome expectancies in the context of psychotherapy refer to the patients’ belief about whether therapy will be beneficial or harmful (Constantino, Arnkoff, Glass, Ametrano & Smith, 2011; Greenberg, Constantino & Bruce, 2006). Given that patients must play an active role in treatment, outcome expectancies are particularly important for CBT. However, the overall evidence regarding the association between outcome expectancies and therapy outcome has been mixed (see reviews, Arnkoff, Glass & Shapiro, 2002; Constantino et al., 2011;
Delsignore & Schnyder, 2007; Greenberg et al., 2006). Researchers have cited many possible methodological causes for the discrepancy, including the mode of assessment, the time at which the assessment was taken (e.g., Arnkoff et al., 2002), and the statistical analysis used (e.g., Price, Anderson, Heinrich & Rothbaum, 2008). Other researchers have suggested that this inconsistency is due to the distinction between global and specific treatment expectancies (Delsignore & Schnyder, 2007).

Although, the above methodological issues are well noted, we suggest that an additional explanation may arise from the lack of examination into other factors that may qualify the association between expectancies and outcome, in particular those related to engagement in treatment. To explore this possibility, we suggest that the extent to which an individual is avoidant can play an important role the association between outcome expectancies and therapy outcome.

Avoidance has frequently been conceptualized as having both cognitive and behavioural dimensions with researchers generally finding support for the association between avoidance and depressive symptoms (see review by Ottenbriet & Dobson, 2004). However, despite recognizing the apparent importance of the association after reviewing the literature, Ottenbreit and Dobson argued that, given the different approaches to defining avoidance, it is difficult to draw conclusions regarding the effects. In addition, the authors called for future studies to examine clinical populations in longitudinal studies to gain a better understanding of the role of avoidance in predicting clinical depression.

One approach to examining avoidance in clinical populations has occurred in the context of assessing the suitability of short term CBT for patients with
different psychiatric disorders. Safran and colleagues (1990) developed the Suitability for Short-term Cognitive Therapy Rating Scale (SSCT) in an attempt to identify important factors related to patient suitability for CBT. One factor that they found to be important for predicting suitability was a patient’s avoidance. To assess avoidance, the SSCT contains the item “security operations”, where higher scores capture a patient’s willingness to explore emotionally laden material without the use of self-protective strategies to buffer the emotional consequences. In other words, it is a measure of the extent to which patients are able to be emotionally present in treatment and actively address the presenting issues without engaging in avoidant strategies to deal with their emotions. Patients who tend to employ security operations may exhibit intellectualizing, attempt to control the interview, or change the subject to avoid discussing difficult material. This item appears to be primarily tapping into the cognitive dimension of avoidance and may be an important avenue to illuminate whether patients who have a tendency to avoid dealing with difficult material may not benefit as much from CBT as patients who do not avoid.

There is a paucity of research addressing the question of whether security operations predicts treatment outcome. In the development of the scale, Safran and colleagues (1990) found that greater use of security operations was associated with poorer therapy outcomes. More recently, Myhr and colleagues (2007) examined a mixed psychiatric sample and also found that better CBT outcomes were associated higher scores on security operations (i.e. lower use of security operations). However, the aforementioned research was correlational in nature. Furthermore, the samples of patients were diagnostically heterogeneous. Thus, to
conclude that security operations predict changes in depression additional research specifically examining this question is necessary.

Given the association between avoidance and therapy outcome, we think that avoidance may also influence how different outcome expectancies predict therapy outcome. Individuals who differ in their level of avoidance may or may not expect that therapy will be successful. Consequently, the conceptual independence of these constructs allows us to conceptualize interactions to emerge between these variables. In this regard, it is possible that high levels of avoidance may exacerbate an adverse effect of negative outcome expectancies on therapy outcome thus resulting in particularly poor therapy outcome among avoidant individuals who have negative outcome expectancies. By contrast, low levels of avoidance may ensure that patients with negative outcome expectancies will engage in the therapeutic process, which is likely to contribute to better therapy outcome. Alternatively, it is also plausible that low levels of avoidance could enhance the adaptive value of positive outcome expectancies for therapy outcome, just as high levels of avoidance could interfere with therapy outcome among individuals who have positive outcome expectancies. We note that in both scenarios outcome expectancies and avoidance would interact with each other, and examining these possibilities could clarify the conditions under which outcome expectancies influence therapy outcome.

The Present Study

This study examined the roles of outcome expectancies and avoidance in therapy outcome among individuals who were diagnosed with MDD and received CBT. We hypothesized that patients’ outcome expectancies would interact with
their levels of avoidance in predicting therapy outcome. We tested the possibility of two different scenarios. First, we examined whether high levels of avoidance (i.e. lower scores on the security operations item) would enhance the adverse effect of lower positive outcome expectancies on therapy outcome, and whether low levels of avoidance (i.e. higher scores on the security operations item) would be associated with better therapy outcome among patients with lower positive outcome expectancies. Second, we investigated whether low levels of avoidance (i.e. lower scores on the security operations item) would enhance the adaptive effect of positive outcome expectancies on therapy outcome, while high levels of avoidance (lower scores on the security operations item) would be associated with relatively poor therapy outcome among patients with positive outcome expectancies.

Method

Participants

The data used in the present study were collected as part of an ongoing longitudinal prospective study conducted at the McGill University Health Centre CBT unit. The patient data described here was collected between July 2001 and May 2011. Patients were referred to the unit for treatment either by a hospital physician or a physician from within the community. All patients were triaged to ascertain presenting problem and to determine whether they were acutely suicidal. Those who required emergency services were then referred to more appropriate resources.

All patients referred to the CBT unit underwent an initial assessment. Prior to the assessment they completed a questionnaire package, including questions to
identify the presenting problem, whether they attended previous psychotherapy, whether they had previous knowledge or expectations of CBT, and whether they felt hopeful that CBT could be helpful for them. A staff psychiatrist and a trainee then conducted a semi-structured interview, while the other team members observed the interview through a one-way mirror. The team consisted of psychiatrists, psychiatry residents, psychology interns, and other mental health trainees (i.e. social workers, counsellors, and nurses). The interview lasted approximately 1.5 hours with the aim of establishing multi-axial diagnoses according to the Diagnostic and Statistical Manual of Mental Disorders (4th ed.) (DSM-IV; American Psychiatric Association, 1994) and to assess each patient on suitability criteria outlined in the SSCT (Safran et al., 1990). Team members subsequently completed the SSCT items, a diagnosis was established by consensus, and treatment recommendations were made. Patients were then placed on a waiting list for treatment. Alternative recommendations were made for patients who were not accepted for treatment.

For the present study, we included only patients with primary diagnosis of MDD and for whom baseline depression scores were available (N = 85). Sixty-nine patients with MDD completed treatment and 16 patients did not complete treatment. There were no significant differences between completers and non-completers with respect to age t(83) = .53, p > .05, gender X²(1) = 2.71, p > .05, or baseline BDI-II (Beck et al., 1996) scores, t(83) = -.10, p > .05. Of the 69 patients who completed treatment, 16 patients were removed because of missing data on the measures of post-treatment BDI-II scores, optimism, and avoidance. Thus, the final sample of the present study consisted of 53 (Female = 33, Male =
20) patients who completed treatment and for whom complete data was available. Patients were on average 38.15 years old ($SD = 11.23$). Nearly half of all participants (47.06%) were diagnosed with a secondary axis I disorder ($n = 24$). Secondary diagnoses included anxiety disorders (27.45%), dysthymic disorder (5.9%), substance abuse (1.96%), Aspergers disorder (1.96%), oppositional defiant disorder (1.96%), and attention-deficit/hyperactivity disorder NOS (1.96%). In addition, 23.53% ($n = 12$) were also diagnosed with a personality disorder. The majority of patients diagnosed with a personality disorder were in Cluster C (11.76%), followed by Cluster B (5.88%), Cluster A (3.92%) and personality disorder NOS (1.96%).

**Measures**

The main measures of the present study included both self-report and clinician-rated measures. The clinician rated items included patients’ tendency to avoid and their positive outcome expectancies. These items were obtained from the SSCT (Safran et al., 1990) and rated by the team after viewing the assessment interview prior to treatment. The self-report measures included one item to assess patients’ positive outcome expectancies, and the BDI-II (Beck et al., 1996) to assess depressive symptoms. In Table 3.1, we report means and standard deviations of the main measures.
Table 3.1

*Descriptive Statistics for Key Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security operations</td>
<td>51</td>
<td>3.42</td>
<td>.70</td>
</tr>
<tr>
<td>Positive outcome expectancies</td>
<td>51</td>
<td>3.85</td>
<td>.65</td>
</tr>
<tr>
<td>Pre-treatment BDI-II scores</td>
<td>51</td>
<td>22.00</td>
<td>10.16</td>
</tr>
<tr>
<td>Post-treatment BDI-II scores</td>
<td>51</td>
<td>9.06</td>
<td>7.34</td>
</tr>
</tbody>
</table>
**Avoidance.** Avoidance was measured using the SSCT (Safran et al., 1990) item “security operations”, which assesses the “psychological processes and behaviours which decrease anxiety and maintain positive view of self”, where 1 = “security operations disruptive to therapeutic process, (e.g., marked avoidance of anxiety-producing areas which are maintained with intensity throughout the interview)”, and 5 = “No reason to believe security operations will pose an obstacle to CBT”.

**Positive outcome expectancies.** Patients’ levels of positive outcome expectancies for therapy were assessed using both the clinician-rated SSCT (Safran et al., 1990) item, and the patient-rated item, assessing patient’s optimism for a positive outcome. The clinician-rated SSCT item required raters to assess the “patient’s optimism/pessimism regarding therapy: where 1= “patient believes there is no possibility that therapy can help”, to 5 = “patient very optimistic that therapy can help change his or her life”. The self-report measure of positive outcome expectancies, required patients to rate, prior to the assessment interview, how hopeful they felt CBT would be helpful for them on a 5-point Likert-type scale ranging from 1 = “Not at all” to 5 = “Extremely”. Given the high correlation, $r = .68, p < .05$, between clinician-rated and self-reported outcome expectancies, we computed a composite mean score to obtain a more reliable measure of positive outcome expectancies.
Table 3.2  
*Zero-Order Correlations Between Key Variables*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Patient-Rated Outcome Expectancies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Clinician-Rated Outcome Expectancies</td>
<td>.68**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Security Operations</td>
<td>.27</td>
<td>.45**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Pre-treatment BDI-II</td>
<td>.21</td>
<td>.05</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>(5) Post-treatment BDI-II</td>
<td>.08</td>
<td>-.05</td>
<td>-.29*</td>
<td>.39**</td>
</tr>
</tbody>
</table>
Depression. To assess change in depressive symptoms, the BDI-II (Beck et al., 1996), a 21 item self-report measure, was administered to the sample prior to treatment and at termination.

Procedure

CBT was administered by staff psychiatrists and psychologists, and trainees. Staff therapists had all undergone extensive CBT training. All trainees videotaped their sessions, which were periodically rated during weekly supervision, using the Cognitive Therapy Scale (Young & Beck, 1980), to ensure adherence to CBT framework. Therapy sessions were scheduled weekly for approximately one hour and lasted between 6 and 62 sessions ($M = 19.31, SD = 10.30$). Therapy was standard CBT based on a case formulation approach (Persons, 1989; Persons & Davidson, 2001; Persons & Tompkins, 2007). Once therapy was completed, the questionnaires, including the BDI-II (Beck et al., 1996) were re-administered.

Results

We first conducted a hierarchical regression analysis to compute residual change in depression. To achieve this, we entered baseline BDI-II scores into the analysis to predict post-treatment BDI-II scores as the outcome variable, and saved the residuals. We then examined whether positive outcome expectancies interacted with avoidance to predict changes in depression after CBT, using the residual change scores as the dependent variable. We expected a significant interaction effect to emerge between positive outcome expectancies and avoidance for predicting change in depression. In the first step of the regression analysis, we controlled for the main effects of avoidance and positive outcome
expectancies. In the second step, we entered the interaction term, positive outcome expectancies X avoidance. All predictor variables were standardized prior to conducting the analysis. We found two multivariate outliers in the analyses, which were subsequently removed, resulting in an $N = 51$. The regression analysis was repeated and the results are reported in Table 3.3. There was no main effect for positive outcome expectancies, $t(1, 48) = .32, p > .05$, or for avoidance, $t (1, 48) = -1.97, p > .05$. However, there was a significant interaction between positive outcome expectancies and avoidance for predicting change in depression (Table 3.3).\(^1\)

\(^1\) The results remained significant when regression analyses were computed separately for self-reported and clinician rated positive outcome expectancies.
Table 3.3  
*Hierarchical Regression Analyses for Positive Outcome Expectancies X Avoidance*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$t$</th>
<th>df</th>
<th>$\beta$</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td>.08</td>
</tr>
<tr>
<td>Positive outcome expectancies</td>
<td>.32</td>
<td>1, 48</td>
<td>.48</td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td>-1.97</td>
<td>1, 48</td>
<td>-.30</td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td>.18*</td>
</tr>
<tr>
<td>Positive outcome expectancies</td>
<td>.56</td>
<td>1, 47</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td>-2.02</td>
<td>1, 47</td>
<td>-.29</td>
<td></td>
</tr>
<tr>
<td>Positive outcome expectancies X avoidance</td>
<td>2.38</td>
<td>1, 47</td>
<td>.32*</td>
<td></td>
</tr>
</tbody>
</table>
To illustrate the shape of the significant interaction, we employed the procedures specified by Aiken and West (1991) by plotting the associations between positive outcome expectancies and changes in depression one standard deviation above and below the mean of avoidance. The significant interaction is illustrated in Figure 3.1.
The pattern of the obtained interaction effect shows that lower avoidance, as compared to higher avoidance, was associated with greater decreases in depression for those participants who were rated as lower in positive outcome expectancies, $\beta = -.61, p < .01$, but not for those who were rated as higher in positive outcome expectancies, $\beta = .03, p > .05$. However, for lower positive outcome expectancies, as compared to higher positive outcome expectancies, there was no significant association with changes in depression for participants who were also rated as lower on avoidance, $\beta = .40, p > .05$, nor for those rated as higher in avoidance, $\beta = -.24 p > .05$. Overall, these findings indicate that for patients who were lower in positive outcome expectancies, higher levels of avoidance were associated with lower reduction in depressive symptoms, whereas lower levels of avoidance were associated with greater reduction in depressive symptoms. This association was not apparent among patients with higher positive outcome expectancies.

**Discussion**

In the present study, we examined whether patients’ level of positive outcome expectancies would interact with avoidance to predict changes in depressive symptoms after CBT. Specifically, we expected one of two possible scenarios to emerge. First, we hypothesized that higher levels of avoidance would lead to poorer treatment outcomes among patients with lower positive outcome expectancies. By contrast, we expected that lower levels of avoidance would buffer the negative consequences of lower positive outcome expectancies and results in greater reductions in depressive symptoms. Second, we hypothesized
that lower levels of avoidance, as compared to higher levels of avoidance, would be associated with better treatment outcomes for patients who were higher in positive outcome expectancies.

The results from our study strongly support the first hypothesis. Neither positive outcome expectancies, nor avoidance, alone predicted changes in depressive symptoms. However, consistent with our hypothesis, among patients with lower positive outcome expectancies, lower as compared to higher levels of avoidance were significantly associated with a greater reduction in depressive symptoms after CBT. By contrast, avoidance was not significantly associated with changes in depressive symptoms among patients with higher positive outcome expectancies, and positive outcome expectancies did not significantly predict changes in depressive symptoms among patients with either higher or lower levels of avoidance.

These findings suggest that the inconsistency of findings in attempts to demonstrate the detrimental effects of low positive outcome expectancies in predicting treatment outcomes (e.g., Arnkoff et al., 2002; Constantino et al., 2011; Delsignore & Schnyder, 2007; Greenberg et al., 2006) may depend in part on the extent to which a patient avoids. In particular, the findings from the present study suggest that not being avoidant can buffer the negative consequences of lower positive outcome expectancies. This process may occur as patients have the opportunity to overcome their low expectancies over time, as they engage in the process, and receive positive reinforcement from their efforts. The experience of success in therapy may subsequently contribute to the development of more positive outcome expectancies, which in turn are likely to lead to further
engagement in the therapeutic process and ultimately better treatment outcomes. This process may be especially evident in the context of CBT, wherein patients are required to actively participate in their treatment and therefore may have more opportunities to engage and overcome their low positive outcome expectancies.

In addition, despite the previous research linking avoidance with depression (e.g., Ottenbreit & Dobson, 2004), our findings suggest that whether or not a patient avoids at the outset of treatment may not be detrimental for therapy outcome, as long as the patient expects that treatment will be beneficial for them. Despite their initial inclinations to avoid, patients with higher positive outcome expectancies may eventually overcome avoidance and engage in the therapeutic process. This may occur because patients are typically informed early on in CBT that avoidance contributes to depression and that their active engagement is necessary to achieve symptom reduction. As a consequence, patients may link the importance of not avoiding and engaging in the treatment with their positive outcome expectancies for a positive outcome.

The findings from this study suggest important clinical implications. First, while a patient’s initial pessimism about the beneficial effects of therapy may be discouraging for some therapists, it may not necessarily result in poorer treatment outcomes. Rather, therapists should be aware that a patient with lower positive outcome expectancies can overcome this pessimistic view by engaging early in treatment. Therapists should make efforts to encourage engagement and provide reinforcement for patient efforts. There may be two potential implications for patients who are both lower in positive outcome expectancies and higher in avoidance as such patients appear to be particularly susceptible to poorer
treatment outcomes. First, it may be important for therapists to target patients’ negative cognitions regarding their expectancies before beginning behavioural activation. Second, patients might benefit from early activation experiences, which can provide opportunities for success and in turn may challenge their initial beliefs about the potential benefits of therapy.

**Limitations and Future Research**

Although the findings from the present study supported our hypothesis, there are important limitations that ought to be addressed in future research. First, although baseline levels of avoidance and positive outcome expectancies appear to be important for predicting CBT outcome, we did not have a control group to verify difference in outcome expectancies and avoidance in other treatment conditions. Thus, our findings are specific to CBT and cannot be extended to other treatments. Therefore, we recommend that additional research is necessary to disentangle this issue.

Second, we did not measure the predictor variables at multiple time points. Consequently, our conclusion that low avoidance may have contributed to increased positive outcome expectancies over time, which could explain improved treatment outcomes, cannot be verified empirically in the present study. Future studies should assess the stability of both avoidance and positive outcome expectancies to determine the exact relationship between the two constructs over time. We further suggest that this approach should be extended to other individual difference characteristics that may be susceptible to change over the course of the therapeutic process.
Third, our study focused on whether a composite score of clinician-rated and self-reported measure of cognitive avoidance predicted changes in depressive symptoms. Although both clinician-rated and self-reported outcome expectancies consisted each of only one item, both items were highly correlated and predicted change in depression. We also note that the measure of security operations was not explicitly designed to measure cognitive avoidance. Although we argue that the ratings were based on observations of avoidance, additional research ought to clarify the accuracy of the measure. Furthermore, that there may be other aspects of avoidance not captured by our measure (i.e., behavioural avoidance), which other researchers have suggested may also be important for influencing treatment outcome (e.g., Ottenbreit & Dobson, 2004). Future research should replicate our findings by using a more comprehensive measure of avoidance.

Fourth, the treatment provided to patients was based on a case formulation approach, and we therefore did not verify fidelity to a specific treatment protocol. However, all staff therapists had undergone extensive supervised training in CBT. Furthermore, staff psychiatrists and psychologists provided supervision to all trainees and all trainees’ sessions were videotaped and periodically rated using the CTS to ensure adherence to a CBT framework. Therefore, we feel confident that, while there was variability in treatment length and specific techniques used with individual patients, therapists provided treatment within a CBT framework.

Finally, although all patients were given a primary diagnosis of MDD, many of them had comorbid anxiety and/or personality disorders. Due to the small sample size of our study and the issue of missing data, it was not possible to disentangle the effects of multiple diagnoses on treatment outcome. We note,
however, that heterogeneous samples, such as ours, are common in community
treatment settings and therefore provide an ecological validity to our findings that
is often lacking in studies with randomized, homogeneous samples (Westbrook &
Kirk, 2005).

**Conclusions**

The results from the present study point to the important contribution of
individual differences to therapy outcome. While previous researchers have
attempted to identify patient suitability characteristics to determine which patient
characteristics contribute to better treatment outcomes (e.g., Myhr et al., 2007;
Safran et al., 1992), our findings are the first to highlight the role of the
associations between different patient characteristics. Specifically, we have
demonstrated that the roles of avoidance and positive outcome expectancies in
therapy outcome can be further illuminated when examined together, rather than
separately. We suggest that future research examining patient suitability should
involve gaining additional understanding about how individual differences can
interact and influence each other, and thereby provide a more complete
understanding of patients and for whom CBT is most effective. Such knowledge
regarding the associations between individual differences may lead clinicians to
modify aspects of treatment to accommodate for a particular patient’s needs.
References


Chambless, Baker, Baucom, Beutler, Calhoun, Crits-Christoph et al., 1998).


CHAPTER 4 – GENERAL CONCLUSIONS

The aim of this thesis was to address the paucity of research focused on the explicit examination of individual differences that may determine whether CBT is suitable for individuals with anxiety or depression and the ability of these suitability factors to predict treatment outcome. The specific objective of the two interrelated studies presented in this thesis was to ascertain which suitability constructs could be most informative in making clinical decisions regarding treatment recommendations. The knowledge gained from this research could ultimately result in more effective utilization of mental health care resources.

Study 1 examined the importance of broader suitability constructs (e.g., general capacity to participate in CBT), rather than a global assessment of suitability (e.g., mean suitability scores) or specific dimensions of suitability (e.g., accessibility of automatic thoughts). It was demonstrated that the SSCT scale was comprised of two broader factors: Capacity for Participation in the CBT Process and Attitudes Relevant to the CBT Process. The first factor, Capacity for Participation in the CBT Process, consisted of the items: Security operations, accessibility of automatic thoughts, awareness and differentiation of emotions, and focality. The second factor, Attitudes Relevant to the CBT Process, included the items: Optimism/pessimism for a positive outcome, acceptance of personal responsibility for change, compatibility with the cognitive rationale, and alliance potential out of session. Results of Study 1 also indicated that Capacity for Participation in the CBT Process was a unique predictor of symptom improvement in those patients who completed CBT. These findings highlight the
importance of suitability for predicting CBT outcomes, as well as the specific role of a patient’s capacity for engaging in the tasks relevant to the process of CBT.

Study 2 examined whether patients’ level of positive outcome expectancies would interact with avoidance to predict post-CBT changes in depressive symptoms. Results indicated that although neither positive outcome expectancies nor avoidance predicted CBT outcome separately, patients with lower positive outcome expectancies who also had lower levels of avoidance experienced a greater reduction in depressive symptoms after CBT as compared to other individuals. This finding demonstrates the importance of examining suitability for CBT outcomes by exploring the combined effects of discrete suitability constructs.

Together, the results from these two studies suggest that treatment suitability is an important consideration in attempts to predict which patients will derive benefit from CBT. Furthermore, findings suggest that the SSCT scale is a useful tool in making this assessment of suitability. In addition, the results suggest that while previous research has demonstrated the utility of using mean suitability scores (e.g., Safran et al., 1993) and individual suitability items (e.g., Myhr et al., 2007; Myhr et al., 2013) to predict therapy outcomes and treatment adherence, there may also be utility in examining the two underlying factors of suitability, in particular, Capacity to Participate in the CBT Process, as well as interactions between specific suitability items, in particular, avoidance and optimism for a positive outcome.
Clinical Implications

The results from the two studies presented in this thesis highlight the importance of assessing suitability in the prediction of CBT outcomes. This increased knowledge about which individual differences are most predictive of CBT outcomes provides clinicians with the ability to identify those individuals who could potentially derive the most benefit from CBT. The advantages and potential consequences of this capacity are twofold. First, clinicians may use this knowledge to select those patients who are most likely to respond to CBT while directing other patients toward alternative treatment modalities. Second, in cases where clinicians identify a patient for whom CBT appears to be less suitable, clinicians may opt to implement specific interventions to target areas of suitability that might pose an impediment to successful therapy outcomes.

Limitations and Future Directions

Despite the original contributions of the two studies presented in this thesis, additional research is necessary to replicate and elaborate on the reported findings. First, given that we did not find the same factor structure as Safran and colleagues (1990) further attempts to uncover the underlying factors of the SSCT scale would help to clarify any discrepancies found among different studies.

A second important endeavour for future research, as mentioned in both manuscripts, is the need to examine whether the individual suitability items and the broader factors (i.e., Capacity for Participation in the CBT Process and Attitudes Relevant to the CBT Process) found in the first study remain stable or change over the course of treatment. This research has potential implications for the interpretation of pre-treatment suitability and can inform clinical predictions...
about outcome as well as the use of specific therapeutic interventions. Furthermore, knowledge gained about the stability of suitability constructs can potentially contribute to our understanding of the mechanisms of change in CBT. For example, if future studies could document changes in the ability to access automatic thoughts over the course of CBT, this finding could lend support to the cognitive mediation hypothesis. Thus the examination of the stability of suitability throughout treatment has many potential benefits.

Another important area of research that has yet to be addressed in depth is the use of the SSCT scale as a tool to predict which patients are likely to adhere to treatment or terminate prematurely. The studies included in this thesis did not examine whether any of the suitability items, factors, or associations between different items predicted therapy adherence. Given that the results of past research (i.e., Myhr et al., 2013) have suggested that the SSCT scale can identify individuals who are more likely to terminate CBT before completion, further exploration of this area would be informative for clinicians seeking an efficient means of selecting patients who are most likely to complete CBT.

**Conclusion**

In sum, the assessment of suitability for CBT is an important approach for developing an understanding of individual differences that affect CBT outcomes. It is evident that the process of assessing suitability is complex and can be accomplished in a variety of ways. The studies included in this thesis have described two of these methods and have demonstrated their utility in predicting therapy outcome.
REFERENCES


