THE EFFECT OF A MOTIVATIONAL INTERVIEWING STYLE IN COGNITIVE THERAPY FOR DEPRESSION

by

Erica Carlin

A Dissertation Submitted to the Faculty of the

DEPARTMENT OF PSYCHOLOGY

In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College

THE UNIVERSITY OF ARIZONA

2010

THE UNIVERSITY OF ARIZONA
GRADUATE COLLEGE

As members of the Dissertation Committee, we certify that we have read the dissertation

prepared by Erica Carlin

entitled The Effect of a Motivational Interviewing Style in Cognitive Therapy for Depression

and recommend that it be accepted as fulfilling the dissertation requirement for the

Degree of Doctor of Philosophy

_____ Date: 9/2/2010
Harold Arkowitz, Ph.D.

_____ Date: 9/2/2010
Susan Silverberg Koerner, Ph.D.

_____ Date: 9/2/2010
David Sbarra, Ph.D.

_____ Date: 9/2/2010
Varda Shoham, Ph.D.

Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copies of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

_____ Date: 9/2/2010
Dissertation Director: Harold Arkowitz, Ph.D.

STATEMENT BY AUTHOR

This dissertation has been submitted in partial fulfillment of requirements for an advanced degree at the University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

SIGNED: Erica Rachael Carlin

ACKNOWLEDGEMENTS

This project would have never come to fruition without the tremendous advice, support, and guidance that I received from my colleagues, mentors, and loves ones. I would like to acknowledge a number of people who contributed to this project: Drs. Steven Hollon and Robert DeRubeis who graciously allowed me to examine data from their project and who are responsible for making this project come to life; Dr. Ben Shahar, my dear friend and colleague, for his invaluable input and critical feedback, along with his assistance with statistical analyses and designing this study's methodology; and Autumn Wiley, for all her hours dedicated to coding therapy tapes, her enthusiastic input, and for reminding me to slow down and enjoy the process. I would like to thank my committee members: Dr. David Sbarra, for all of his guidance, support, and encouragement throughout the years and for his thoughtful and prompt feedback on this project; Drs. Varda Shoham and Sue Koerner, for their support and assistance in designing this project; and Dr. Hal Arkowitz, my mentor, who has provided me with countless hours of feedback and encouraging words of advice, who instilled in me humanistic roots, and who allowed me to thrive in this program. I would also like to acknowledge my loving parents, for their continual encouragement and advice and for providing me with the tools that have gotten me to where I am today.

Once I receive my Ph.D., I can only hope to "pay it forward" by extending all that I have learned in the service of helping others.

TABLE OF CONTENTS

TABLE OF CONTENTS-Continued

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

While cognitive therapy (CT) is one of the most well-validated and widely used treatments for patients with Major Depressive Disorder (MDD), many individuals remain symptomatic at the end of treatment or drop out prematurely (Cuijpers, van Straten, Anderson, & van Oppen, 2008; Vittengl, Clark, Dunn, & Jarrett, 2007). Evidence suggests that certain types of therapist relational styles, such as one characterized by empathy and support, are facilitative of better therapeutic outcomes (Keijsers, Schaap, & Hoogduin, 1997) and motivational interviewing (MI; Miller & Rollnick, 2002) is a therapeutic approach which emphasizes this type of relational stance. The present study examined whether cognitive therapists exhibit a relational stance that is emphasized in motivational interviewing and whether this relational stance is associated with greater symptomatic improvement in cognitive therapy for depression. The Motivational Interviewing Treatment Integrity Skills Code (MITI; Moyers, Martin, Manuel, Miller, & Ernst, 2007), an observational coding system originated for assessing fidelity to MI, was used to assess three aspect of MI relational stance (MI Spirit, MI Adherent behaviors, and MI Nonadherent behaviors) among cognitive therapists in a randomized-controlled of CT for individuals with moderate to severe depression. Multilevel modeling was employed to examine the effect of MI relational stance on overall symptom trajectories throughout treatment and subsequent symptom reduction immediately after the use of MI relational stance. In order to rule out early symptom reduction as a potential confound, shared variance between MI relational stance and early symptom reduction was removed. The

hypothesis that MI relational stance would be associated with more rapid symptom reduction was confirmed for MI Adherent behaviors but not for MI Spirit or MI Nonadherent behaviors. The prediction that initial depression severity would moderate the effect of MI relational stance on symptomatic improvement was not confirmed; however, a three-way interaction between initial depression severity, MI Adherence, and session number revealed that patients with high initial depression severity did not significantly improve through the course of therapy unless they received high MI Adherence. The hypothesis that MI relational stance in a given session would be associated with a reduction in depressive symptoms in the following sessions across the first four sessions was not confirmed. As predicted, early clinical improvement was not associated with MI relational stance in a later session, suggesting that MI relational stance was not merely an artifact of early clinical improvement. There was no support for the prediction that MI relational stance would be associated with subsequent retention in therapy or the therapeutic alliance. Overall, these findings suggest that a specific type of MI relational stance, MI Adherent behaviors, contribute to more symptomatic improvement. Implications of the role of MI relational stance in cognitive therapy are discussed.

BACKGROUND AND RATIONALE

Introduction

Major Depressive Disorder (MDD) is a highly prevalent and debilitating disorder. It is the most commonly occurring psychiatric disorder in the United States with an estimated overall lifetime prevalence of over 16 % (Kessler & Wang, 2008). MDD is often associated with severe impairments in daily functioning and it is the leading cause of disability among individuals between ages 15 and 44 living in the U.S. and other economically developed countries. The large majority of individuals with a MDD will experience a recurrence (APA Practice guidelines, 2000; Mueller et al., 1999) and the probability of relapse increases with each subsequent recurrence (Solomon et al., 2000). Psychotherapy and medications are the most widely used interventions for MDD. However, many patients fail to respond to existing treatments or relapse after treatment is discontinued (i.e. Hollon, Jarrett, Nierenberg, Thase, Trivedi, & Rush, 2005; De Maat, Dekker, Schoevers, & DeJonghe, 2006). The present study examined therapist variables during the course of cognitive therapy (CT) for depression that may have implications for furthering improving the efficacy and applicability of CT and perhaps other treatments as well. Specifically, a coding system developed for motivational interviewing (described below), which assesses therapist relational stance, such as empathy and supportiveness, was applied to CT therapists working with depressed patients. Below, I review the outcome research on CT for depression and examine research on the role of therapist relational stance, such as empathy and supportiveness, in predicting outcome.

The efficacy of CBT for depression

CT, a form of cognitive behavioral therapy originated by Beck and colleagues (1979), is the most widely studied psychosocial treatments for MDD, accruing a large amount of empirical support for the treatment of this disorder. Research suggests that CBT yields significant improvement at the end of treatment and has enduring effects that reduce the risk of relapse (Gloaguen, Cottraux, Cucherat, & Blackburn 1998; Hollon & Shelton, 2001). CBT has proven superior to waiting list and other control groups with medium to large effect sizes and has been shown to be equally effective as other psychotherapeutic and pharmacological interventions for depression (Gloaguen et al., 1998; DeRubeis, Gelfand, Tang, & Simons, 1999; DeMaat, et al., 2006; Hollon et al., 2005).

However, despite its efficacy, many patients undergoing CBT for depression remain symptomatic at the end of treatment or fail to maintain their treatment gains (i.e. Cuijpers, van Straten, Andersson, & van Oppen, 2008; Westen & Morrison, 2001; Hollon, Thase, & Markowitz, 2002). In a comparative review of treatments for depression, Hollon and colleagues reported that approximately 50% of patients respond to CBT, which is comparable to responses to Interpersonal Psychotherapy (IPT) and antidepressant medications (2002). Vittengl, Clark, Dunn, & Jarrett (2007) conducted a meta-analysis on 28 studies investigating CBT for depression and found that 54% of patients relapsed within two years of stopping acute phase. In addition, many patients never accrue the benefits of CBT due to prematurely dropping out of treatment. Although

estimates of attrition vary, a recent meta-analysis on 53 psychotherapy outcome studies for the treatment of depression found that dropout rates were significantly higher in CBT compared to other active treatments (Cuijpers, et al., 2009).

Therapist effects

One factor that may explain the variable outcomes in response to CBT is differences among therapists. (i.e. Luborsky, Mclellan, Diguer, Woody, & Seligman, 1997; Huppert, Bufka, Barlow, Gorman, Shear, & Woods, 2001). For example, in the National Institute of Mental Health (NIMH) Treatment of Depression Collaborative Research Program (TDCRP) study, CBT was found to be less effective than IPT or medication and no more effective than placebo for the treatment of severely depressed patients (Elkin et al., 1989). However, closer examination revealed large variability in CBT outcomes so that CBT was effective as medication at the site where therapists possessed the most CBT experience and no more effective than placebo at the remaining two sites (Jacobson & Hollon, 1996; Hollon et al, 2005). In trying to identify therapist variables that influence therapy outcomes, researchers have investigated demographic characteristics, personality characteristics, psychological well-being, experience level, values, expectations, and therapy styles (Lambert, 2010; Beutler, Machado, and Neufeldt, 1994; Laferty, Beutler, & Crago, 1989). Few therapist characteristics have emerged as strong predictors of outcome and the correlational nature of much of this research renders it difficult to reach definitive conclusions. However, characteristics associated with therapists' relational style have repeatedly emerged as predictors of positive outcome. In particular, research suggests that therapists who are more empathic and supportive as

opposed to directive and authoritative obtain better therapeutic outcomes (Keijsers, Schaap, & Hoogduin, 1997; Patterson & Forgatch, 1985; Bohart, Elliott, Greenberg, & Watson, 2002).

While the definition of empathy and support is varied, Moyers, Martin, Manuel, and Miller (2007) have developed a definition and coding system for these variables which is consistent with the tenets of Carl Rogers. The authors defined empathy as "the extent to which the therapist understands and/or makes an effort to grasp the client's perspective" (Moyers et al., 2007). A supportive therapist style emphasizes a respect for client autonomy and collaboration, while minimizing confrontation, and directiveness. An approach, such as Rogers' client centered therapy (1961), which places a very strong emphasis on empathy and support, has been found efficacious in a number of studies (i.e. Goldman, Greenberg, & Angus, 2006; King et al., 2000) and in meta-analyses (Elliott, Greenberg, & Lietaer, 2003).

Therapist support

Direct evidence regarding the impact of an empathic and supportive therapy style comes from research which directly examines the relative impact of each of these variables on outcome. There is some evidence suggesting that a supportive therapist style is linked to more positive outcomes whereas a more directive style is negatively associated with client outcomes (i.e. Beutler et al., 1994). In a study of family therapy, Patterson and Forgatch (1985) experimentally manipulated therapist teaching and confronting behaviors to examine the effect of therapist behaviors on client resistance. The researchers found that therapist use of teaching and confronting increased patient

resistance, whereas therapist facilitation and support decreased patient resistance. Piper and colleagues (1998) found that the drop out rates for individuals receiving a more directive therapy/interpretive therapy were significantly higher than the dropout rates among individuals receiving more supportive therapy. In a study comparing the effect of a directive feedback intervention versus client centered feedback intervention on drinking outcomes among problem drinkers, the degree of therapist confrontation during the therapy session was positively correlated with immediate client resistance which later predicted worse drinking outcomes during the 12 month follow-up (Miller, Benefield, & Tonigan, 1993).

There is some evidence suggesting that a supportive relational stance enhances the effects of CBT. In a review of therapist and patient interpersonal behaviors associated with outcomes in CBT, Keijsers and colleagues (1997) concluded that the Rogerian facilitative conditions (consisting of empathy, nonppossessive warmth, positive regard, and genuineness) and the therapeutic alliance were therapist variables most consistently and strongly associated with CBT outcomes. Indirect evidence comes from a study conducted by Castonguay, Goldfried, Wiser, Raue, & Hayes (1996) which examined the effect of therapeutic processes in CBT for depression The researchers found that focusing on client affect was associated with positive outcomes whereas focusing on the association between thoughts and feelings (a CT intervention) was associated with poorer outcomes. Exploratory analyses suggested that therapist persistence in imparting the cognitive model when there were strains in the therapeutic alliance could have accounted for the negative association between this CT technique and outcomes. Overall, these

results suggest that a high emphasis on teaching and directing, particularly during alliance ruptures, can have a negative effect on client outcomes in CBT for depression.

On the other hand, there is some research suggesting a positive association between a directive therapy style and outcome (i.e. Beutler et al., 1994; Moyers, Miller, & Hendrickson, 2005). One explanation for these mixed findings is that the relationship between a directive therapy style and outcome depends on the relational context in which it occurs. For example, Moyers and colleagues (2005) reported a positive association between therapist confrontation, directiveness, and warning only when these behaviors were embedded in a larger relational context, consisting of therapist warmth, empathy, egalitarianism, support of patient autonomy, and acceptance.

Therapist empathy

There is strong support for the role of empathy in facilitating successful therapeutic outcomes (Bohart, et al., 2002). Bohart et al (2002) reviewed 47 studies examining the relationship between empathy and outcome and found that empathy accounted for between 7% and 10% of the variance in outcome, with effect sizes ranging from .26 to .36. The authors point out that empathy accounts for a proportion of variance in outcome that is equivalent or even greater than the proportion of variance that is accounted for by specific techniques. Moreover, the authors found a trend suggesting that empathy might be more important in CBT than in other therapeutic modalities. Another study by Burns and Nolen-Hoeksema (1992) is particularly relevant to the present study. It was found that patients whose therapists were more empathic exhibited larger reductions in depressive symptoms than less empathic therapists even after statistically

controlling for homework compliance. Thus, empathy helps facilitate better therapeutic outcomes and there is some evidence suggesting that this variable may be particularly important in a more directive therapy such as CBT.

In sum, there is accumulating evidence pointing to the importance of therapist empathy and support in contributing to client outcomes. One particularly promising intervention that incorporates these elements is motivational interviewing.

Motivational Interviewing

Motivational interviewing (MI; Miller & Rollnick, 2002) is a treatment approach in which the therapist's relational stance, including empathy, support, and collaboration, plays a critical role in treatment outcome. MI is built on the foundation of the principles and methods of Carl Roger's client-centered therapy (Rogers, 1961), while adding an emphasis on reducing ambivalence about change and increasing intrinsic motivation for change (Miller & Rollnick, 2002). A central component of MI is what Miller and Rollnick call the "MI spirit," which emphasizes the relational stance of the therapist (Arkowitz & Miller, 2007). In this approach, therapists who adhere to the "MI spirit" assume a more collaborative approach (equal partnership) with the client, evoke the client's opinions and attitudes to elicit intrinsic motivation for change, and accept and foster the client's autonomy (Arkowitz & Miller, 2007). Arkowitz and Miller point out that without MI spirit, this treatment would not constitute MI. In addition, Miller & Rollnick (2002) place a great deal of importance on the role of a supportive versus directive approach as well as therapist empathy. An essential philosophy of MI is the idea

that the therapist's interpersonal style is essential in either promoting or impeding change (Miller & Rollnick, 2002).

Although initially designed for treating problem drinking, recent years have witnessed a surge of research and clinical applications of MI for a variety of psychological and health-related problems, including depression, anxiety disorders, eating disorders, chronic disease management, drug abuse, and gambling (Arkowitz, Westra, Miller, & Rollnick, 2007).

Numerous studies (i.e. Connors, Walitzer, & Dermen, 2002; Project Match Research Group, 1997; Carroll, et al., 2006) and meta-analyses (Burke, Arkowitz, & Menchola, 2003; Hettema, Steele, & Miller, 2005) have supported the efficacy of MI as well as its ability to increase client's treatment adherence and reduce premature dropout. Meta-analyses have shown that MI yields the largest effects when used as a pre-treatment to another intervention as opposed to a stand-alone treatment (Burke et al., 2003; Hettema et al., 2005). The potential for combining CBT and MI has been gaining increasing attention. While some have advocated for using MI as a pretreatment for CBT (i.e. Westra & Dozois, 2006), others have suggested that MI can serve as a framework within which CBT can be integrated (Flynn, In press; Driessen & Hollon, In press; Arkowitz & Burke, 2007). In fact, Driessen and Hollon (2010) posit that well-delivered CBT already incorporates the relational stance emphasized in MI.

Arkowitz and Burke (2008) provide a framework for integrating MI with CBT for the treatment of depression. These authors suggest that MI is particularly suited for depression because it targets the motivational deficits often accompanying this disorder,

it can address client resistance and enhance compliance with behavioral interventions found to be effective in improving symptoms, and it contains many of the therapeutic relationship elements found to facilitate better therapeutic outcomes. This framework emphasizes the therapist relationship stance that characterizes MI along with therapist attunement to clients' ambivalence about change. In this way, this MI relational context serves as a foundation for integrating and balancing the more action-oriented techniques of CBT.

To the author's knowledge, the only empirical research on the effects of MI for the treatment of depression has involved an examination of a one-session MI-based pretreatment designed to increase adherence and participation in IPT for depression (Swartz et al, 2007; Grote, Zuckoff, Swartz, Bledsoe, Geibel, 2007). Pilot research has provided preliminary support for the effects of this one-session intervention in increasing subsequent participation in IPT among depressed pregnant women and depressed mothers (Grote et al, 2007; Swartz et al, 2006). While these results provide some support for the use of MI for the treatment of depression, researchers have yet to examine the effectiveness of either combining or integrating MI with CBT for the treatment of depression.

Research on the effects of using MI with CBT for the treatment of other psychological disorders has also yielded positive results (Westra, Arkowitz, & Dozois, 2009; Anton et al., 2006). Westra and colleagues investigated the effects of four sessions of motivational interviewing as a pretreatment to CBT for patients with generalized anxiety disorder and found that patients who received MI as a pretreatment to CBT fared

better than those receiving no pretreatment before CBT (Westra et al., 2009). While these outcomes cannot specifically be attributed to MI, these results are promising and warrant further follow-up. Findings also revealed that worry severity at the start of treatment moderated the effect of MI on overall outcomes. More specifically, severe worriers receiving MI before entering CBT were highly responsive to CBT, as indicated by large effect sizes, whereas moderate worriers responded only either minimally or not at all. Apparently, less severe worriers were less in need of the MI pretreatment compared to more severe worriers. In trying to understand what it was about the severe worriers that made them more responsive to the MI pretreatment, it was discovered that severe worriers exhibited higher levels of comorbidity, irrational beliefs about worry, along with more symptoms of depression, anxiety, and stress, which suggests that MI may be particularly effective for more complex patients.

The only example of using MI as an integrative framework for CBT is found in the COMBINE study, a multisite trial examining treatments for alcohol dependence. In this study, the researchers examined the effects of a combined behavioral intervention, which integrated aspects of MI and CBT. Specifically, MI was administered as a prelude to CBT and an MI style was used throughout the course of treatment. Findings revealed that those receiving the combined treatment with medical management fared as well as those receiving medication (naltrexone) with medical management, and both of these groups had superior outcomes compared those receiving a placebo without psychotherapy (Anton et al., 2006).

MI relational stance and outcomes

Two widely used observational coding systems, the Motivational Interviewing Skills Code (MISC; Miller & Mount, 2001) and its abbreviated version, the Motivational Interviewing Treatment Integrity Code (MITI; Moyers Martin, Manuel, Hendrickson, & Miller, 2005; Moyers, Martine, Manuel, & Miller, 2003), have allowed researchers to measure MI relational skills which will now be referred to as the "MI relational stance." These instruments quantify three categories of therapist MI relational stance: Global MI relational stance (i.e. MI Spirit and Empathy), MI-consistent (or MI Adherent) behaviors (i.e. advising only after getting permission from the client, affirming the client, emphasizing client's control, supporting the client, asking open ended questions, reflecting, and reframing) and MI-inconsistent (or MI Nonadherent) behaviors (i.e. Advising without permission, confronting, directing, raising concern without permission, and warning).

Unfortunately, only three studies to date have examined the association between therapist adherence to an MI relational stance and outcomes. Gaume, Gmel, Faouzi, & Daeppen (2009) examined the effects of MI relational variables on drinking outcomes in a one-session alcohol intervention and found that MI Spirit and MI-consistent behaviors were associated with positive drinking outcomes 12 months post-treatment and MI-inconsistent behaviors predicted worse drinking outcomes at 12 months post-treatment. In another study examining the effects of therapist and client speech on drinking outcomes among clients assigned to the motivational interviewing group in Project MATCH, MI-consistent behaviors were associated with a reduction in drinking mid-way

through treatment. Unfortunately, the researchers failed to examine the effect of MI consistent behaviors on drinking outcomes at the end of treatment and they did not assess for MI Spirit. In another study conducted by Gaume, Gmel, Faouzi, & Daeppen (2008), MI Spirit, MI-consistent behaviors, and MI-inconsistent behaviors during a one-session alcohol intervention failed to predict a change in drinking behaviors from baseline to 12 months.

There has been a scarcity of research examining the association between the MI relational stance and the working alliance. While some research has suggested that MI relational stance is associated with more productive within-session client behaviors, such as cooperation, disclosure, and expression of affect (Catley, et al., 2006; Moyers et al., 2005), only one study has examined the association between MI relational stance and an empirically-validated measure of the working alliance. This study found that higher levels of MI Spirit were positively associated with scores on the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) among individuals undergoing an MI intervention for smoking cessation (Boardman, Catley, Grobe, Little & Ahluwalia, 2006). In this study, confronting (an MI-inconsistent behavior) was negatively associated with the working alliance whereas frequency counts of MI-consistent behaviors were not correlated with the working alliance. Thus, there is some evidence suggesting that MI relational stance increases client involvement in therapy and evidence from one study suggesting that global MI relational stance facilitates a stronger working alliance.

In sum, there is strong evidence for the efficacy of MI in enhancing therapeutic outcomes for a variety of psychological problems and a few studies have found that the

supportive and empathic relational skills emphasized in MI facilitate more positive client outcomes. However, researchers have yet to ascertain that the relational stance is one of the active ingredients of MI, thus making this hypothesis merely speculative at this point.

MI relational stance and the therapeutic alliance

While there is some overlap between the relational stance emphasized in MI and the working alliance, the latter is a broader construct that captures both therapist and client behavior. The therapeutic alliance refers to multiple aspects of the relationship between therapist and clients: Collaborative activity, the emotional bond, and goal consensus (Bordin, 1979). Whereas the alliance is essentially an interpersonal construct, MI relational stance describes only therapist attitudes and behaviors.

Despite the differences between these two constructs, there has been a growing debate in response to the therapeutic alliance literature that is also relevant to research on MI relational stance. While an abundance of studies have found a positive association between the working alliance and symptom reduction (i.e. Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000), critics remain uncertain that a causal relationship exists between the working alliance and symptom reduction (DeRubeis, Brotman, & Gibbons, 2005; Feeley, DeRubeis, & Gelfand, 1999). Critics have pointed out that the majority of these studies are fraught with methodological limitations, which include not ruling out other third variables explanations or failing to establish a temporal relationship between the working alliance and subsequent clinical improvement (DeRubeis et al., 2005; Feeley, et al., 1999). In fact, some suggest that the working alliance is a result (rather than a cause) of early clinical symptom reduction, since people who are feeling better are likely

to have more positive views of the therapeutic alliance (i.e. DeRubeis, Brotman, & Gibbons, 2005; Feeley, DeRubeis, & Gelfand, 1999; Tang & DeRubeis, 1999). Although focused on the alliance literature, these criticisms are equally applicable to other domains of psychotherapy process research and thus were taken into account when designing the current study.

In order to establish causality, three conditions must be met: "Covariation" between the process and outcome measures, temporal precedence of the process measure, and "nonspuriousness" (Feeley, et al., 1999; Judd & Kenny, 1981). Although impossible to completely rule out the possibility that a third variable is accounting for outcomes, certain measures can be taken to reduce this possibility. One way to minimize the potential confounding effect of early clinical improvement is to measure the process measure early on in treatment and examine its relationship to symptom reduction subsequent to the assessment of these variables (DeRubeis et al., 2005). Zuroff and Blatt (2006) implemented a rigorous methodology to better establish causality between the therapeutic alliance and symptomatic improvement. First, they statistically controlled for early symptom change by calculating residualized alliance measures in which shared variance between early symptom change and the alliance was removed. Next, they examined the association between this residualized alliance measure and subsequent symptom trajectories. Because the researchers were able to establish temporal precedence between the alliance and outcome and minimize the potential confounding effect of early symptom change, they were able to make more substantiated inferences about causal relationships. This type of methodology was also employed in the current study.

THE PRESENT STUDY

The studies reviewed above highlight the importance of the therapist's relational stance in CBT and perhaps other therapies. This review points to the value of various MI-consistent behaviors that may lead to more positive outcomes. Specifically, research suggests that the relational stance in MI which includes supportiveness and empathy facilitate more positive therapy outcomes compared to MI-inconsistent behaviors such as being directive and confrontational and less empathic.

Given how quickly MI research and applications are growing (Arkowitz, Westra, Miller, & Rollnick, 2008), I sought to discover the extent to which MI relational variables predict therapeutic outcomes in CT for depression. While the relational stance is central to MI, very few studies to date have examined its specific effect on symptom reduction. The current study examined whether adherence to an MI relational stance early in treatment (session 2) would influence the rate of subsequent symptom reduction throughout the course of CT for depression. In order to examine this relationship, three separate steps were taken to rule out early symptom reduction as a potential confound. First, shared variance with early symptom reduction was statistically removed from all of the MI relational stance predictors. Second, these MI relational stance variables were examined as predictors of symptom reduction occurring subsequent to the measurement of MI relational stance. Third, the association between early clinical improvement and subsequent MI relational stance was examined in order to rule out the possibility that MI relational stance was merely a product of early clinical improvement.

In line with previous research suggesting that a brief dose of motivational interviewing is associated with symptomatic improvement (Hettema et al., 2005, Burke et al., 2003), it follows that MI relational stance might have an immediate effect on symptomatic improvement. Thus, the second goal of this study was to examine the immediate impact of MI relational stance by assessing whether MI relational stance in a given session would lead to a greater reduction of symptoms from that session to the next during the first four sessions of CT.

Third, given the preliminary evidence that MI may be particularly effective for clients with more severe symptoms at the start of treatment (Westra et al., 2008), this study examined whether depression severity at the start of CBT moderates the effect of MI relational stance on outcome. That is, this study examined whether more severely depressed clients would exhibit more rapid improvement in response to higher levels of MI relational stance compared to clients with moderate depression severity.

While research on the association between the therapeutic alliance and outcome has been mixed, some studies have found a positive relationship between the working alliance and outcome after controlling for initial symptom reduction (Blatt et al., 2006; Klein, Schwartz, Santiago, Vivian, Vocisano, & Castonguay, 2003; Barber, Connolly, Crits-Christoph, Gladis, & Siqueland, 2000). Moreover, given that the relational stance emphasized in MI has been linked to higher engagement and a stronger working alliance (Moyers et al., 2005; Catley et al., 2006; Boardman et al., 2006), the fourth goal of this study was to examine the association between MI relational stance and subsequent

retention in therapy and the association between MI relational stance and the therapeutic alliance.

Hypotheses

Hypothesis 1. Patients whose therapists exhibit higher levels of an MI relational stance will exhibit greater subsequent symptomatic improvement, as indicated by a self-report and interviewer-rated measure of depression.

Hypothesis 2. Depression severity at the start of CT will moderate the effect of MI relational stance on depressive trajectories. That is, for more severely depressed patients, there will be a stronger association between MI relational stance and symptomatic improvement over time compared to less severely depressed patients.

Hypothesis 3. Patients whose therapists exhibit higher levels of MI relational stance in a given session will exhibit a greater reduction of BDI scores from that session to the next during the first four sessions of therapy.

Hypothesis 4. MI relational stance in a later session will be predicted by MI relational stance at the beginning of treatment and will not be predicted by prior symptom reduction.

Hypothesis 5. Patients whose therapists exhibit higher levels of MI relational stance in the first two sessions of therapy will be less likely to drop out of therapy compared to patients whose therapists exhibit lower levels of MI relational stance in the first two sessions of therapy.

Hypothesis 6. Patients will have a stronger working alliance with therapists who exhibit higher levels of MI relational stance during the beginning of treatment compared

to therapists who exhibit lower levels of MI relational stance at the beginning of treatment.

METHOD

Overall design

The results of this study are based on a multi-site randomized controlled trial for MDD that was conducted and completed at the Adult Psychiatry Clinic at Vanderbilt University Medical Center and at the Depression Research Unit at the University of Pennsylvania. In the primary study (DeRubeis et al., 2005; Hollon et al., 2005), patients were randomly assigned to either receive 16 weeks of CT (N=60), 16 weeks of antidepressant medication (N=120), or 8 weeks of pill placebo (n=60).

The main goal of the current study was to examine whether cognitive therapists' adherence to a relational stance consistent with MI during the early stage of therapy would be associated with subsequent symptomatic improvement through the end of treatment for the CT group. This association was examined after accounting for the relationship between early symptomatic change and MI style to rule out early symptom change as a potential confound. The relationship between MI relational stance and session-to-session symptom change early in treatment was also investigated. In addition, this study examined the role of initial depression severity in moderating the effect of MI style on trajectories of depressive symptoms. Finally, the relationship between MI style and subsequent retention in therapy and the association between MI relational stance and the therapeutic alliance was examined.

Data Source

All procedures for this study were approved and overseen by the Institutional Review Board (IRB) at the University of Arizona. Permission for coding and analyzing

the CT sessions was also granted from IRB committees at the University of Pennsylvania and Vanderbilt University. All available CT tapes containing the first three sessions were obtained from both the University of Pennsylvania and Vanderbilt University Research sites.

Subjects

In the original study, 60 adults with a primary Axis I diagnosis of moderate to severe MDD were randomly assigned to the CT condition of a two-site (University of Pennsylvania and Vanderbilt University) clinical trial of CT, pharmacotherapy, and placebo (see DeRubeis et al., 2005). Patients met criteria for a current episode of MDD according to the Structured Clinical Interview for DSM-IV Diagnosis (First, Spitzer, Gibbon, & Williams, 2001) and scored 20 or higher on the modified 17-item version of the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960). Exclusion criteria included those with psychotic features, a history of bipolar disorder, current substance abuse, borderline personality disorder, antisocial personality disorder, schizotypal personality disorder, or a primary diagnosis of an Axis I disorder other than MDD were excluded from participation.

For the current study, all available CT tapes from sessions 1, 2, and 3 for the 60 patients in the cognitive therapy group were requested and 159 were obtained. Of these tapes, 52 were audible session 1 tapes, 53 were audible session 2 tapes, and 49 were audible session three tapes. Fifty-eight patients were represented in these tapes. Two of the patients represented in the tapes were excluded from the analysis due to missing outcome data. Thus, data analysis for the present study was based on 56 (both completers

and non-completers) of the 60 patients who underwent cognitive therapy. Of the 56 patients included in the study, 47 were completers and 9 were non-completers. In this sample, 57% were female, and ages ranged from 19-68 years (M=40, SD=11.48). The majority of patients were White (79%), 13% were African American, and 8% were other ethnicities. The mean HRSD score for patients at baseline was 22.8 (SD=4.3). Approximately 66% of patients had at least one other secondary comorbid Axis I disorder and 29% had another comorbid Axis II disorder. Sample characteristics are presented in Table 1.

Table 1
Sample characteristics

Variable	**Whole sample (n=56)**
HRSD score, mean ± SD	22.8 ± 4.3
BDI-II score, mean ± SD	27.9 ± 9.2
Sex (% female)	57
White (%)	79
Education, mean ± SD (years)	14 ± 2
Income, mean ± SD (in thousands of US dollars)	39 ± 29
Age of depression onset, mean ± SD (years)	24 ± 13
Number of prior episodes	2 ± 2
Duration of current episode (weeks), mean ± SD	35 ± 59
Any Axis I comorbidity (%) SD	66
Dysthymia (%)	16
Any anxiety disorders (%)	55
Comorbid PTSD (%)	22
Comorbid eating disorders (%)	16
Any Axis II comorbidity (%)	29
Cluster A personality disorder (%)	6
Cluster B personality disorder (%)	0
Cluster C personality disorder (%)	29

Therapists

Four male and two female clinicians served as cognitive therapists. Five of the therapists were licensed Ph.D. psychologists, and one was a psychiatric nurse practitioner (MSN). Four of the therapists had high levels of CT experience prior to the study initiation (7-21 years); two of the therapists began the trial with two years of CT experience and received additional training from the Beck Institute for Cognitive Therapy during the trial. It is unknown if therapists had any prior training in MI. All therapists were White, with ages ranging from 40 to 51 years (M=45, SD=4). Therapists were assigned approximately equal numbers of patients and followed the procedures outlined in standard texts of CT for depression (Beck, Rush, Shaw, & Emery, 1979; Beck, 1995). Sessions were twice weekly for the first 4-12 weeks (at the therapist's discretion) and once weekly thereafter.

Dependent Variables

Hamilton Depression Rating Scale (HRSD; Hamilton, 1960). Depressive symptoms were measured with the standard 17-item version of the HRSD. This structured clinical interview contains 17 items assessing symptom severity over the past week. Items are rated either on a 0-4 or 0-2 scale and scores can range from 0-52. The HRSD was administered at Intake and then weekly for the first 4 weeks of treatment and biweekly for the subsequent 12 weeks of treatment. The HRSD is considered the "gold standard" for assessing depressive symptoms and it has demonstrated adequate levels of reliability and validity in a variety of studies (Williams, 1989; Bagby, Ryder, Schuller, & Marshall, 2004).

Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown 1996). This 21-item self-report measure of depressive symptoms was self-administered to patients prior to every session. Patients rate symptoms and attitudes reflective of the DSM-IV criteria for MDD on a 0-3 scale. The overall score is calculated by summing ratings for all items and scores can range from 0-63. The BDI is the most widely used self-report measure of depressive symptoms and has excellent psychometric properties (Beck et al., 1996; Svanborg & Masberg, 2001).

Working Alliance Inventory-short form (WAI; Horvath and Greenberg, 1989; Tracey & Kokotovic, 1989). The 12-item short form, which contains parallel versions for both clients and therapist, was administered during weeks 2, 4, 8, and 16 of treatment. The WAI is based on Bordin's (1979) conceptualization of the alliance, which assesses three aspects of the therapeutic relationship: Agreement on the goals of therapy, agreement on tasks, and strength of the therapeutic bond. This measure produces scores for three subscales (Task, Bond, and Goals), along with overall scores ranging from 12-84. The WAI has demonstrated high levels of internal consistency, content validity (Horvath & Greenberg, 1989) and discriminant validity (Safran & Wallner, 1991). There is evidence to suggest that the shortened version of the WAI exhibits similar psychometric properties as the longer version (Tracey & Kokotovic, 1989; Busseri & Tyler, 2003).

Independent variables

The Motivational Interviewing Treatment Integrity Code (MITI 3.0; Moyers, Martin, Manuel, Miller, & Ernst, 2007) was used to evaluate therapist MI relational

stance. The MITI was developed to assess overall treatment integrity to MI by producing five global scores of therapist behaviors (Autonomy/Support, Collaboration, Evocation, Empathy, and Directiveness) and frequency counts of therapist behaviors (MI Adherence, MI Nonadherence, closed-ended questions, open-ended questions, giving information, simple reflections, and complex reflections). Appendix A contains a description of all MITI categories. For each global scale, coders assign a number on a 5-point Likert scale, capturing coders' overall impression of the therapists' behavior. In the current study, the most up-to-date version of the MITI was used. The newest addition of the MITI differs from its predecessor in that the MI Spirit score is based on three scales rather than one scale. Specifically, the previous version derived MI Spirit from one 7-point Likert scale for MI Spirit whereas the current MI Spirit score is based on the average score from three separate 5-point Likert subscales (the Evocation scale, Collaboration scale, and Autonomy/Support scale). Research has shown that an earlier version of the MITI demonstrates good-to-excellent interrater reliability, exhibits adequate internal consistency, and is sensitive to therapist change (Moyers et al., 2005; Pierson et al., 2007). In the present study, three MITI categories were used to quantify MI relational stance: MI Spirit, MI Adherent behaviors and MI Nonadherent behaviors.

MI Spirit. This construct reflects the extent to which the therapist embodies the relational "spirit" of MI. According to the MITI manual, MI Spirit reflects the average score for the Evocation, Autonomy/Support, and Collaboration scales. However, the internal consistency coefficient for these components together with the Empathy scale was high enough (α=.742) to justify creating one MI Spirit score that included all four

components. Thus, in the current study, MI Spirit represented the average score of Evocation (the extent to which the therapist elicits patients' own ideas about how and whether change should occur), Autonomy/Support (the extent to which therapists support patients' personal control), Collaboration (the extent to which therapists allow for equal power-sharing in the session), and Empathy (the extent to which therapists attempt to understand patients' worldview). MI Spirit scores range from 1-5.

MI Adherent behaviors. This MITI category is based on frequency counts of therapist behaviors that are consistent with MI. Four categories of therapist behaviors can be classified as MI Adherent behavior: Asking permission before giving advice, affirming, emphasizing the client's control, and making supportive statements. The internal consistency coefficient for MI Adherence together with MI Spirit was low enough (α=.500) to suggest keeping these constructs separate. The following exemplifies an affirming statement that would be classified as MI Adherent: "I am very impressed that you got out every day and walked, even when you didn't feel like it. That took a lot of dedication and persistence on your part."

MI Nonadherent behaviors. This MITI category is based on frequency counts of therapist behaviors that are inconsistent with MI. Three categories of therapist behaviors can be classified as MI Nonadherent behavior: Advising without asking for permission, confronting, or giving directives/commands. The following exemplifies a directive statement that would be classified as MI Nonadherent. "It's obvious that you have been isolating from your friends which merely worsens your depression. This week I want you to make plans with a friend to go to dinner."

Residualized relationship variables. Two sets of residualized MI variables were created, one set which controlled for early change in BDI scores and one set which controlled for early change in HRSD scores. First, MI Spirit, MI Adherence, and MI Nonadherence from session 2 were regressed on early change in BDI scores (change occurring from baseline to session 2). These residualized MI scores were used as predictors in models predicting BDI trajectories. Second, MI Spirit, MI Adherence, and MI Nonadherence were regressed on early change in HRSD scores (change occurring from baseline to week 2). These residualized MI scores were used in models predicting HRSD trajectories. The residuals from these analyses represented measures of MI relational stance free from any potential confound with early symptomatic improvement.

Coders

Two graduate students at the University of Arizona were trained to use the MITI coding system. All training took place under the supervision of an expert in the MITI, Paulette Christopher. Initial training involved using a review of books and tapes introducing the basic principles of MI (Miller & Rollnick, 1991; Miller Rollnick, and Moyers, 1998). Next, coders were introduced to a series of graded coding tasks, which increased in difficulty as coders became more competent in the coding system. Proficiency was determined by comparing coder scores with gold standard examples. Only when coders had achieved acceptable reliability were they assigned tapes from the data pool. Coders then independently coded the rest of the sample with biweekly "drift-check" sessions to ensure consistency in coding over time. Ninety-two percent of the tapes were double coded (Coder 1=142 tapes and Coder 2=154 tapes).

Approach to data analyses

The data analytic strategy for examining the relationship between MI relational stance and subsequent symptom change (Hypotheses 1, 2, and 3) was multilevel modeling (MLM), carried out using Hierarchical Linear Modeling (HLM Version 6.08; Raudenbush, Bryk, & Congdon, 2007). MLM was chosen due to its advantage over more traditional statistical approaches, including its ability to model nested data (i.e. data that is hierarchically organized) over time and its ability to accurately model individual trajectories in spite of missing data (Tasca & Gallop, 2009). In this study, multiple assessments of depressive symptoms (assessed with the BDI or HRSD) were nested within patients. MLM operates on two different levels. At the lower level, each individual's trajectory is modeled as a function of a person-specific intercept, a person-specific slope, and error. At the second level, the parameters modeled in level one become the dependent variables and can be predicted from additional variables such as patient or therapist characteristics. In this way, MLM can be viewed as "a regression within a regression" (Tasca & Gallop, 2009).

In all multilevel models, the residual variance at level one was explained by an unstructured covariance structure. In all models that included time (either week or session #) as a predictor of depressive symptoms, the time variable was log-transformed to achieve a nearly linear relationship of depressive symptoms over time (Tasca & Gallop, 2009; Blatt & Zuroff, 2006). All available data was used for every model, making the HLM application a full intent-to-treat analysis. For dropouts, all data gathered prior to the point of attrition were used in the models.

Hypothesis one predicted that MI relational stance would be associated with more rapid subsequent symptom reduction. This hypothesis was examined by modeling the effect of each residualized measure of MI relational stance on subsequent symptom trajectories, while controlling for any relationship between early symptom change and MI variables. Six MLMs were created, three in which BDI scores after session two through the end of treatment served as the dependent variable and each residualized MI variable (residualized MI Spirit, residualized MI Adherence, and residualized MI Nonadherence) served as the predictor and three MLMs in which HRSD scores from week 2 through the end of treatment served as the dependent variable and each of the residualized MI variables served as the predictors.

For example, the level one equation for BDI scores as the dependent variable involved modeling individual BDI score trajectories as a function of log-transformed time. The random components of these models included a random intercept, a random effect for time, and an unstructured error structure. Time was centered at session 3. The level one equation is as follows:

$$BDI_{ij} = \pi_{01} + \pi_{1i}(\text{LOG-SESSION \#})_{ij} + \varepsilon_{ij} \quad (1)$$

$BDI_{ij,}$ the depression score for participant *i* on day *j*, is modeled as a function of the intercept (π_{01}), which is the participant's BDI score at session 3; the linear slope of depression scores (π_{1i}), which represents the participant's change in depression score for each unit in log-transformed time (measured in sessions); and the measurement error around participant *i*'s time slope (ε_{ij}). The three residualized MI relational stance variables served as level two predictors and were entered as z-score variables. This

standardization provides a fixed interval scale that helps in the interpretation of these effects across the two different depression outcome scales. A separate model was examined for each of the three MI predictors. The level 2 equations are as follows:

$$\pi_{0i} = \gamma_{00} + \gamma_{01}\,(\text{RESIDUALIZED MI RELATIONAL STANCE}_i) + \zeta_{0i} \quad (2)$$

$$\pi_{1i} = \gamma_{10} + \gamma_{11}\,(\text{RESIDUALIZED MI RELATIONAL STANCE}_i) + \zeta_{1i} \quad (3)$$

where $\pi_{0i,}$ the level one intercept, is modeled as a function of γ_{00}, which is the mean intercept for patients with a mean score of the residualized MI relational stance variable (i.e., score of zero because the MI predictors were standardized), the effect of the residualized MI relational stance variable on the intercept (γ_{01}), and intercept-specific error (ζ_{0i}). The slope of BDI scores over sessions for participant *i* (π_{1i}) is modeled as a function of the mean slope for patients receiving a mean score of the residualized MI relational stance variable(γ_{10}), the effect of the MI relational stance variable on that slope (γ_{11}), and slope specific error (ζ_{1i}). These models were examined for evidence of a significant MI relational stance X Session # interaction (γ_{11}), which would suggest that MI relational stance predicted symptom trajectories. Specifically, it was predicted that higher levels of MI Adherence and MI Spirit would be associated with steeper linear decreases in BDI and HRSD scores over time and higher levels of MI Nonadherence would be associated with less of a reduction in depressive symptoms over time. The same set of analyses was then examined with HRSD scores after week 2 as the dependent variable and the residualized MI relational stance variables as level two predictors. In these models, time was measured in weeks and was log-transformed and centered at week 3. The initial random components of these models included a random intercept, a random

effect for time, and an unstructured error structure. The variance components associated with the intercepts for the HRSD models were not significant and the models were re-estimated with fixed intercepts.

Hypothesis two predicted that initial depression severity would moderate the relationship between MI relational stance and symptomatic improvement. In order to examine this hypothesis, BDI scores from session 3 through the end of treatment served as the dependent variable and was modeled as a function of session number, baseline BDI scores, the residualized MI relational stance predictor, all two-way interactions among these three predictors, and the three-way interaction. The level one equation remained the same as in Equation 1. For the level two equation, all level two predictor were entered as z-score standardized variables. Each residualized MI relational stance predictor was examined alone in a separate MLM. The level two equations are as follows:

$$\pi_{0i} = \gamma_{00} + \gamma_{01}\,(\text{RESIDUALIZED MI RELATIONAL STANCE}_i) + \gamma_{02}(\text{BASELINE BDI}_i) + \gamma_{03}(\text{RESIDUALIZED MI RELATIONAL STANCE X BASELINE BDI}_i) + \zeta_{0i} \quad (4)$$

$$\pi_{1i} = \gamma_{10} + \gamma_{11}\,(\text{RESIDUALIZED MI RELATIONAL STANCE}_i) + \gamma_{12}(\text{BASELINE BDI}_i) + \gamma_{13}(\text{RESIDUALIZED MI RELATIONAL STANCE X BASELINE BDI}_i) + \zeta_{1i} \quad (5)$$

where $\pi_{0i,}$ the level one intercept, is modeled as a function of the mean intercept (i.e., BDI score at session 3) for patients receiving a mean score on all predictors in the model (because they were standardized), the effect of the residualized MI relational stance variable on the intercept (γ_{01}), the effect of baseline BDI severity on the intercept (γ_{02}), the effect of the interaction between these two variables on the intercept(γ_{03}), and

intercept-specific error. The slope of BDI scores over time for participant *i* (π_{1i}) is modeled as a function of the mean slope for patients receiving a mean score on all predictors in the model(γ_{10}), the effect of the MI relational stance variable on that slope (γ_{11}), the effect of baseline BDI scores on that slope (γ_{12}), the effect of the interaction of these variables on the slope (γ_{13}), and slope specific error (ζ_{1i}). It was predicted that γ_{13} would be significant, as it represents the three-way interaction between MI relational stance, baseline BDI scores, and session. A parallel set of analyses were examined with HRSD scores after week 2 as the dependent variable, which were modeled as a function of week number, baseline HRSD scores, the residualized MI relational stance predictor, all two-way interactions among these three predictors, and the three-way interaction.

Hypothesis three predicted a lagged association between MI relational stance in a given session and BDI scores in the subsequent session during the first 4 sessions of therapy. In order to examine this hypothesis, each of the MI relational stance predictors in session *j*-1 was used to predict subsequent BDI scores from session *j*-1 to session *j,* while statistically controlling for the participant's BDI score in session *j*-1. [1] BDI scores from sessions 2 through 4 served as the dependent variable and BDI scores from the previous session (1-3) were entered as a covariate. Three separate models were examined, one for each of the MI relational stance variables (MI Spirit, MI Adherence, and MI Nonadherence). BDI scores in session *j*-1 and the MI predictors were group mean centered (each participant's mean on the predictor was subtracted from each session's score on the predictor). In these models, a significant main effect for a given MI

[1] MI relational stance predictors were not residualized for this analysis

relational stance variable suggested that it predicted BDI changes from one session to the next during the early stage of CT.

Hypothesis four predicted that MI relational stance at session 3 would be associated with MI relational stance at session 1 and would not be predicted by prior symptom reduction. Three separate multiple regressions were employed, with each of the MI relational stance variables serving as the dependent variable. For the first regression analysis, MI Spirit in session 3 was entered as the dependent variable and was predicted from early symptom change (session 3 BDI scores regressed onto session 1 BDI scores) and MI Spirit in session 1. For the second regression analysis, MI Adherence at session 3 was entered as the dependent variable with early symptom change and MI Adherence in session 1 as the predictors. The third regression involved entering MI Nonadherence in session 3 as the dependent variable and early symptom change and MI Nonadherence in session 1 as the independent variables. It was expected that each MI relational stance variables in session 1 would predict its counterpart in session 3 whereas early symptom change would not predict the MI variables in session 3.

In order to examine hypothesis five, which predicted that MI relational stance would be associated with subsequent retention in therapy, three separate independent t-tests were employed to test for mean differences in MI relational stance (averaged across sessions 1 and 2) between dropouts and completers. It was predicted that mean scores on MI relational stance would be lower for dropouts versus completers.

Finally, hypothesis six predicted that patients whose therapist exhibit higher levels of MI relational stance would have a stronger working alliance with their therapists

compared to patients whose therapists exhibit lower levels of MI relational stance. Ideally, MLM would have been used to examine this hypothesis as well, but due to high amounts of missing data in the working alliance data sets, MLM was unable to be employed. Instead, Pearson's r correlation coefficients were computed between each of the MI relational stance predictors and the early, middle, and late working alliance. The correlations between MI relational stance and the working alliance were examined separately for therapist reports and client reports of the working alliance. It was predicted that there would be a moderate significant correlation between MI relational stance and the working alliance.

RESULTS

Interrater reliability

Inter-rater agreement for the MITI codes was calculated using intraclass correlation coefficients (ICC; two way random effects model), displayed in Table 1. According to Cicchetti (1994), ICCs below 40 indicate "poor" agreement, ICCs from .40 to .59 indicate "fair" agreement, ICCs from .60 to .74 indicate "good" agreement, and ICCs .75 and higher "excellent" agreement. For the current study, ICCs ranged from good to excellent and are depicted in Table 2. Due to high levels of agreement, an average score for coder 1 and coder 2 was used for each MITI predictor.

Table 2
Interrater reliabilities

Global Ratings	***ICC***
Evocation	.64
Autonomy/Support	.73
Collaboration	.76
Empathy	.72
MI Spirit	.74
Direction	.85
Behavior Counts	***ICC***
MI Adherent	.85
MI Nonadherent	.91
Closed Question	.86
Open Question	.93
Simple Reflection	.87
Complex Reflection	.83
Giving Information	.79

Note. ICCs reflect absolute agreement

Therapist MITI scores

For descriptive purposes, therapist behaviors were classified using all MITI categories (which include categories unrelated to MI relational stance). Table 3 depicts therapists' scores on the MITI. For global MITI scales, a score of 4 or greater is considered competent in MI. As depicted in Table 3, Therapist #4 scored greater than 4 on the Collaboration and Empathy scales and Therapist # 2 averaged a mean score of 4 on the Collaboration scale. Therapists did not meet criteria for competency in any other MITI categories.

Therapist differences in MI relational stance

The extent to which therapists differed in average MI relational stance was examined. Three separate one-way ANOVAs were conducted with therapist as the independent variable and each of the MI relational stance variables at session 2 as the dependent variable. There was a nonsignificant trend for differences in mean ratings of MI Spirit $F(5,39) = 2.19$, $p =. 078$. There were no differences in mean ratings of MI Adherence $F(5,39) = .534$, $p = .749$ or MI Nonadherence $F(5,39) = .719$, $p = .614$. This finding indicates that on average, therapists did not differ in the mean ratings of MI relational stance.

Table 3
Average MITI scores for each therapist

	Therapist (#)						
MITI Category	**1**	**2**	**3**	**4**	**5**	**6**	**Competency**
Global Collaboration Mean (SD)	3.1 (.57)	4.00 (.71)	3.36 (.69)	4.13 (1.03)	3.71 (.39)	3.22 (.79)	**4**
Global Evocation Mean (SD)	2.75 (.59)	3.00 (.46)	2.26 (.90)	3.13 (.44)	3.21 (.39)	2.91 (.30)	**4**
Global Autonomy/Support Mean (SD)	2.80 (.42)	3.69 (.70)	3.14 (.63)	3.75 (.71)	3.29 (.39)	3.32 (.72)	**4**
Global Empathy Mean (SD)	3.00 (.82)	3.69 (.70)	3.21 (.95)	4.31 (.59)	3.79 (.70)	3.32 (.72)	**4**
Global MI Spirit Mean (SD)	2.93 (.53)	3.56 (.34)	3.25 (.67)	3.67 (.60)	3.50 (.28)	3.10 (.55)	**4**
MI Adherent (frequency) Mean (SD)	4.1 (2.58)	4.56 (2.93)	3.93 (1.40)	5.38 (3.90)	3.79 (4.18)	3.18 (2.76)	
MI Nonadherent (frequency) Mean (SD)	1.85 (1.27)	2.31 (2.05)	4.07 (4.12)	3.19 (1.94)	2.07 (3.22)	3.36 (3.66)	
Percent MI Adherent	77%	72%	61%	53%	67%	33%	**100%**
Percent Open Questions	29%	57%	30%	26%	37%	12%	**70%**
Percent Complex Reflections	19%	48%	24%	34%	35%	25%	**50%**

Note. Mean scores and standard deviations are based on session 2. Therapists are labeled by number. Collaboration, Evocation, Autonomy, and Empathy scores are based on 5-point Likert scales. MI Spirit represents average score for the Collaboration, Evocation, Autonomy, and Empathy scales and can range from 1-5. MI Adherent and MI Nonadherent scores are based on frequency counts. Column labeled "Competency" describes MITI standard for competency in each MI category.

Preliminary multilevel modeling analyses

There were three main steps to fitting the MLMs, proceeding from the most simple unconditional means model to more complex conditional growth models. First, an unconditional means model was fit with no predictors at either level. From this model, intraclass correlations were computed in order to determine if a more complex model would be necessary (Nezlek, 2007). An unconditional means model with BDI scores as the dependent variable yielded an ICC of .67, indicating that 67% of total variation in BDI scores was due to differences between patients. A parallel set of analyses was conducted with HRSD scores as the dependent variable. An unconditional means model with HRSD scores as the dependent variable yielded an ICC of .63, indicating that 63% of total variation in HRSD scores was due to differences between patients. These ICCs showed that there were significant amount of variance remained to be predicted at each level.

Next, an unconditional growth model with time as the only level one predictor was assessed in order to determine the effects of time on symptom reduction. These models revealed that BDI scores and HRSD scores significantly decreased over time supporting the overall efficacy of CT for depression. An examination of the variance components associated with the slopes of BDI and HRSD revealed that both slopes significantly varied between patients, suggesting that different patients had different depressive trajectories, indicating the need to examine level two predictors to explain this variability.

Hypothesis 1. Patients whose therapists exhibit higher levels of an MI relational stance will exhibit greater subsequent symptomatic improvement, as indicated by a self-report and interviewer-rated measure of depression.

Three Multilevel models were fit with BDI scores from sessions 3 through the end of treatment as the dependent variable and three MLMs were fit with HRSD scores from weeks 3 through the end of treatment as the dependent variable. When examining BDI scores as the dependent variable, the interaction between residualized MI Adherence and session # emerged as a significant predictor of symptom improvement (B = -5.61 SE = 1.59, t(46) = -3.52, p
= .001), revealing that higher residualized MI Adherence was followed by more rapid symptomatic improvement throughout the course of therapy. The main effect for residualized MI Adherence on BDI scores was also statistically significant (B = 4.23, SE = 1.57, t(46) = 2.69, p = .01), showing that MI Adherence was associated with higher BDI scores at session 3 (i.e., patients whose therapist exhibited more MI Adherence were more depressed at session 3). In order to examine whether the relationship between residualized MI Adherence and depressive trajectories may have been accounted for by the association between MI Adherence and higher BDI scores at session 3, BDI scores at session 3 was added as a covariate in the model. As shown in Table 4, MI Adherence X Session # remained a significant predictor after controlling for BDI scores as session 3, (B = -5.17, SE =1.48, t(45) = -3.48, p = .000) Following the guidelines set forth by Aiken and West (1991), simple slopes corresponding to high (1 + SD) or low (1-SD) levels of residualized MI Adherence were calculated to further probe this interaction. As

depicted in Figure 1, improvement in BDI scores was more rapid for patients receiving high levels of MI Adherence (slope = -19.21, SE = 2.29, p =.000) compared to low levels of MI Adherence (slope = -8.88, SE = 1.69, p = .000) and they ended up with less symptoms. MI Spirit X Session # nearly emerged as a significant predictor of subsequent improvement in BDI scores (B = -3.23, SE = 1.62, t(46) = -1.97, p = .055). Because the main effect of residualized MI Spirit was also significant (B = 4.01, SE = 1.64, t(46) = 2.45, p = .019), this model was reexamined while controlling for BDI scores at session 3. The MI Spirit X Session # interaction became nonsignificant after controlling for BDI scores at session 3, (B = -2.31, SE = 1.52, t(45) = -1.52, p = .137), which suggests that the higher intercepts were accounting for the significant interaction. The model examining the main effect for MI Nonadherence and the interaction between MI Nonadherence and Session # were not nonsignificant. In sum, all final models predicting BDI trajectories included BDI scores at session 3 as a covariate. MI Adherence emerged as the only significant predictor of BDI scores over time.

Next, parallel models with subsequent HRSD scores as the outcome variable were examined while controlling for HRSD scores at week 3. The effect for MI Adherence X Week # was statistically significant after controlling for HRSD scores at week 3 (B = -3.63, SE = 1.59, t(34) = -2.29, p = .028). Simple slopes corresponding to high (1+ SD) and low (1-SD) residualized MI Adherence indicated that improvement in HRSD scores was more rapid for patients receiving high levels of MI Adherence (slope = -12.63, SE = 2.38, p = .000) compared to low levels of MI Adherence (slope = -5.38, SE = 1.95, p =

.010). The effects for MI Spirit X Week # and MI Nonadherence X Week # on HRSD scores after controlling for HRSD scores at session 3 were not significant.

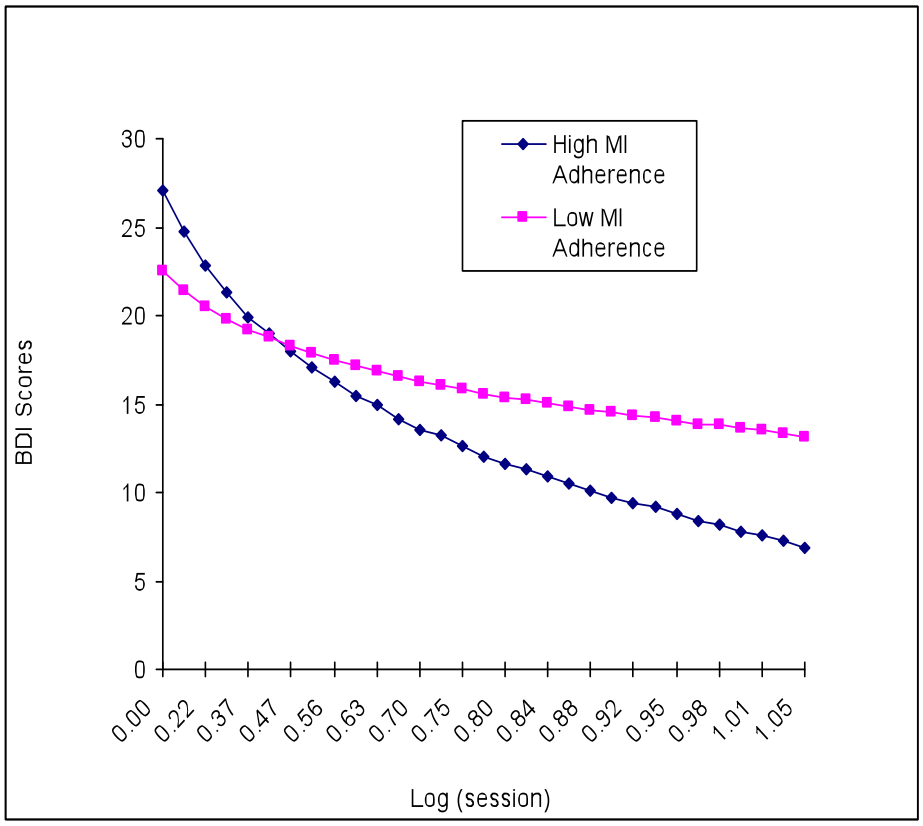
Table 4
The effect of MI relational stance on BDI trajectories from sessions 3-34

Effect variable	**Coefficient**	**SE**	**t**	**P-value**
For residualized MI Spirit				
Intercept	24.76*	.69	35.73	.000
Session	-13.90*	1.47	-9.45	.000
Residualized MI Spirit	.33	0.56	.59	.555
Residualized MI Spirit X Session	-2.31	1.52	1.52	.137
For residualized MI Adherence				
Intercept	24.76*	.63	39.27	.000
Session	-14.05*	1.35	-10.37	.000
Residualized MI Adherence	2.27*	.76	2.98	.005
Residualized MI Adherence X Session	-5.17*	1.48	-3.48	.000
For residualized MI Nonadherence				
Intercept	24.74*	.69	35.60	.000
Session	-13.92*	1.50	-9.31	.000
Residualized MI Nonadherence	.55	.51	1.08	.288
Residualized MI Nonadherence X Session	-1.89	1.23	-1.54	.131

Note. N=48 (df=45 for each model). Each predictor was examined in a separate multilevel model. Residualized MI variables represent the MI predictor in session 2 regressed on early symptom change (BDI scores in session 2 regressed on BDI scores at baseline). Coefficients are based on z-score standardized variables. BDI scores at session 3 were included as a covariate. Study hypotheses predicted a negative coefficient for MI Spirit and MI Adherence and a positive coefficient for MI Nonadherence.
*p<.05

Figure 1

The effect of high (+1 SD) and low (-1SD) MI Adherence on BDI-II Scores from sessions 3-34.



Note. Time, as measured in sessions, has been log-transformed and centered so that the intercept represents session 3. Patients received a maximum number of 34 sessions during the acute phase of CT treatment. The correspondences between Log (session) and actual session is the following:

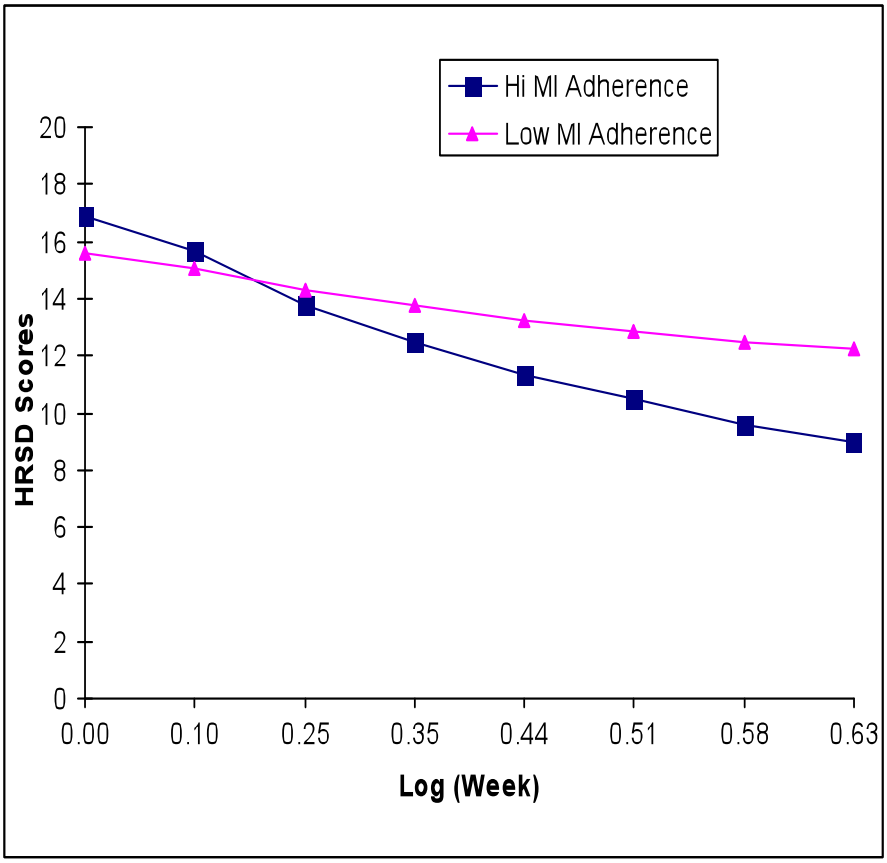
Session #	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	34
Log (session)	.00	.22	.37	.47	.56	.63	.70	.75	.80	.84	.88	.92	.95	.98	1.01	1.04	1.05

Table 5
The effect of MI relational stance on HRSD trajectories from week 3-16.

Effect variable	Coefficient	SE	t	P-value
For residualized MI Spirit				
Intercept	16.27*	.33	50.40	.000
Week	-9.08*	1.67	-5.44	.000
Residualized MI Spirit	-.12	.29	-.41	.684
Residualized MI Spirit X Week	1.16	1.91	.61	.547
For residualized MI Adherence				
Intercept	16.26*	.32	52.70	.000
Week	-9.01*	1.60	-5.63	.000
Residualized MI Adherence	.64*	.23	2.75	.007
Residualized MI Adherence X Week	-3.63*	1.59	2.29	.000
For residualized MI Nonadherence				
Intercept	16.29*	.31	52.35	.000
Week	-9.11*	1.68	-5.41	.000
Residualized MI Nonadherence	.46†	.24	1.89	.059
Residualized MI Nonadherence X Week	-1.40	1.20	-1.16	.253

N=37 (df=34 for each model). Each predictor was examined in a separate multilevel model. Residualized MI variables represent the MI predictor in session 2 regressed on early symptom change (HRSD scores in week 2 regressed on HRSD scores at baseline). Coefficients are based on z-score standardized variables. HRSD scores at week 3 were included as a covariate. Study hypotheses predicted a negative coefficient for MI Spirit and MI Adherence and a positive coefficient for MI Nonadherence.
*p<.05
†p<.10

Figure 2
The effect of high (+1 SD) and low (-1 SD) MI Adherence on HRSD scores from weeks 3-16 of treatment.



Note. Time, as measured in weeks, has been log-transformed and centered so that the intercept represents week 3 of treatment. The correspondences between Log (Week) and actual week is the following:

Week #	3	4	6	8	10	12	14	16
Log (week)	0	.10	.25	.35	.44	.51	.58	.63

Exploratory Analyses: Therapist and patient effects

In order to examine whether therapist effects might have accounted for variation in symptom trajectories, the effect of therapist was entered in the final models predicting BDI trajectories and HRSD trajectories. Therapist was not a significant predictor of BDI trajectories ($p = .511$) or HRSD trajectories ($p = .814$) and MI Adherence X time

remained significant for both BDI trajectories (p = .002) and HRSD trajectories (p = .025). In these models, MI Spirit X time and MI Nonadherence X time remained nonsignificant. Thus, there was no evidence that the MI Adherence X time interaction was attributed to therapist effects.

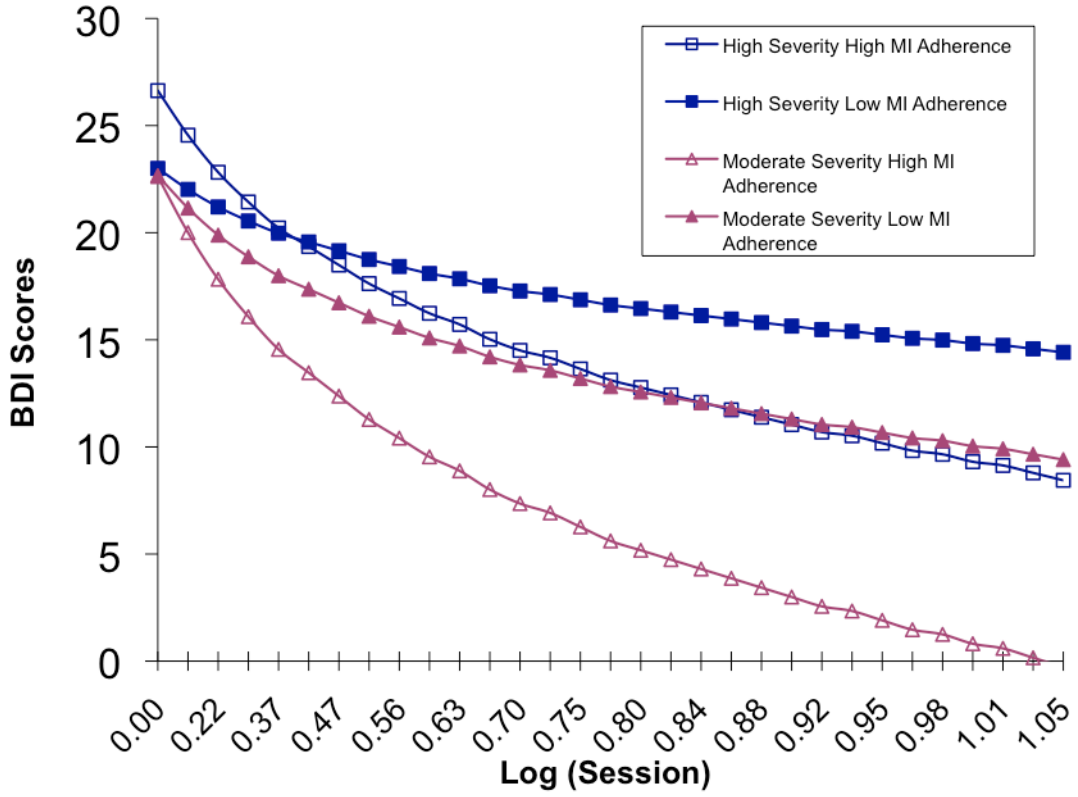
Next, the final models were reexamined with four participant characteristics entered as covariates: Age, sex, duration of current episode, and Axis I comorbidity. Because the MLMs for HRSD scores were unable to converge, the main analyses were only examined for BDI scores as the dependent variable. None of these participant characteristics emerged as significant predictors of BDI trajectories (ps > .3) and the effect of MI Adherence X Session # on BDI scores remained significant while controlling for BDI scores at session 3 (p = .002). MI Spirit X Session # and MI Nonadherence X Session # remained nonsignificant. Therefore, these four participant characteristics were not accounting for the statistically significant effect of MI Adherence X Time on BDI trajectories.

Hypothesis 2. Depression severity at the start of CT will moderate the effect of MI relational stance on depressive trajectories. That is, for more severely depressed patients, there will be a stronger association between MI relational stance and symptomatic improvement over time compared to less severely depressed patients.

To examine this hypothesis, baseline depression was added to the models from hypothesis 1. Three Multilevel models were fit with BDI scores from sessions 3 through the end of treatment as the dependent variable and three MLMs were fit with HRSD scores from weeks 3 through the end of treatment as the dependent variable. In each

model, depressive symptoms were predicted from time, initial depression severity, the residualized MI predictor, all 2-way interactions, and the 3-way interaction among these predictors. For BDI scores as the dependent variable, results revealed that the interaction between baseline depression severity, MI Adherence and session # was statistically significant (B = -1.99, SE = .850, t (45) = -2.34, p = .024). In order to probe this interaction further, a median split was used to dichotomize initial depression severity into high depression severity and moderate depression severity. As depicted in Figure 3, the MI Adherence X Session # interaction was examined separately for patients categorized as more severely depressed versus less severely depressed before treatment started.

Figure 3.
The effect of high (+1 SD) and low (-1SD) MI Adherence on symptom reduction for patients with high severity depression and moderate severity depression.



Note. Time, as measured in sessions, has been log-transformed and centered so that the intercept represents session 3. Patients received a maximum number of 34 CT sessions.

Session #	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	34
Log (session)	.00	.22	.37	.47	.56	.63	.70	.75	.80	.84	.88	.92	.95	.98	1.01	1.04	1.05

Simple slopes were calculated to describe the MI Adherence X Session # interaction for patients with high initial depression severity versus patients with moderate depression severity. Patients with high initial depression severity improved more rapidly when receiving high levels of MI Adherence (B = -15.21 SE = 3.70, t(20) = -4.11, p = .001) compared to when they received low levels of MI Adherence (B = -6.46 SE = 3.67, t(20)

= -1.76, p = .093). In fact, these simple slopes revealed that patients with high initial depression severity experienced a statistically significant reduction in depressive symptoms when receiving high levels of MI Adherence but failed to exhibit significant improvements (simple slope was not significantly different than 0) when receiving low levels of MI Adherence. Patients with moderate initial depression severity also improved more rapidly when receiving high levels of MI Adherence (B = -21.76, SE = 3.60, t(23) = -6.03, p = .000) compared to low levels of MI Adherence (B = -11.90, SE = 2.19, t(23) = -5.46, p = .000). However, unlike patients with high initial depression severity, patients with moderate initial depression severity still experienced a reduction in depressive symptoms when receiving low levels of MI Adherence (simple slope significantly different than 0). This finding suggests that low MI Adherence is associated with less rapid improvement throughout therapy particularly among those with more severe depression.

The other two three-way interactions, one with MI Spirit and one with MI Nonadherence, predicting BDI scores were not statistically significant (Initial Depression Severity X MI Spirit X Session #: B = 2.19, SE = 2.90, t(45) = .336, p = .454; Initial Depression Severity X MI Nonadherence X Session #: B =.-1.81, SE = 2.26, t(45) = -.803, p = .426). A parallel set of analyses were conducted for HRSD scores as the dependent variable. None of the three way interactions in this analysis were statistically significant (Initial Depression Severity X MI Adherence X Week #: B = -2.62, SE = 1.56, t(36) = -1.70, p =.101; Initial Depression Severity X MI Spirit x Week #: B = 5.33, SE =

3.86, t(36) = 1.38, p = .175; Initial Depression Severity X MI Nonadherence X Week #: B = 1.04, SE = 1.17, t(36) = 0.89, p = .380).

Hypothesis 3. Patients whose therapists exhibit high levels of an MI relational stance in a given session will exhibit a greater reduction of BDI scores from that session to the next during the first four sessions.

As depicted in Table 6, none of the MI relational stance variables were significant in predicting session-to-session symptom change (ps > .3).

Table 6
The effect of MI relational stance on session-to-session reductions in BDI scores

Level 1 Effect variable	**Coefficient**	**SE**	**t**	**P-value**
MI Spirit	-.323	.417	-.369	.712
MI Adherence	-.088	.140	-.630	.530
MI Nonadherence	-.089	.102	-.879	.381

Note. Coefficients represent the relationship between an MI relational stance process variable at session *j*-1 and subsequent symptoms at session j while controlling for symptoms at session *j*-1. Study hypotheses predicted a negative coefficient for MI Spirit and MI Adherence and a positive coefficient for MI Nonadherence. All predictors were group mean centered. Predictors were not standardized into z-score values.

Hypothesis 4. MI relational stance in a later session will be predicted by MI relational stance at the beginning of treatment and will not be predicted by prior symptom reduction.

Three separate multiple regressions were employed, one for each of the MI relational stance predictors (MI Spirit, MI Adherence, and MI Nonadherence). The independent variables included early symptom change scores (BDI scores in session 3 regressed on BDI scores in session 1) and the MI relational stance predictor at session 1. As expected, MI Spirit at session 1 was a significant predictor of MI Spirit in session 3

(B= .606, t(41)=4.64, p=.000) and early symptom change was not a significant predictor of MI Sprit in session 3 (B= .052, t(41) = .399, p = .692). Similarly, MI Adherence at session 1 was a significant predictor of MI Adherence at session 3 (B = .381, t(41) = 2.64, p = .012) and early symptom change was not a significant predictor of MI Adherence at session 3 (B = -.122, t(41) = -.836, p = .408). The effect of MI Nonadherence at session 1 on MI Nonadherence at session 3 approached significance (B = .309, t(41) = 1.97, p = .057) and early symptom change was not a significant predictor of MI Nonadherence at session 3 (B = .012, t(41) = .077, p = .939).

Hypothesis 5. MI relational stance in session 1 and session 2 will predict greater subsequent retention in therapy.

Because only nine patients prematurely terminated treatment, there was limited statistical power to detect mean differences between dropouts and completers. However, 3 separate independent samples t-test were computed to compare mean differences in MI relational stance between dropouts and completers. As shown in Table 7, independent samples t-tests revealed no significant differences between dropouts versus completers on any of the three MI relational stance variables. However, there was a marginally significant trend suggesting that MI Spirit was lower for dropouts (M = 2.99, SD = .63) compared to completers (M = 3.34, SD = .50), t(49) = 1.81, p = .076.

Table 7
Mean differences in MI relational stance variables for dropouts versus completers

	Dropouts		Completers		
	M	SD	M	SD	t
p-value					
MI Spirit	2.99	.63	3.34	.50	1.81
.076					
MI Adherence	3.75	2.63	3.68	2.33	-.074
.941					
MI Nonadherence	3.14	2.27	2.77	2.98	-.347
.730					

Note. Dropouts: N=9. Completers: N=42. Df=49. Only patients with MI data available for both sessions 1 and session 2 were included in this analysis.

Hypothesis 6. Therapists whose relational style is more consistent with MI during the beginning of treatment will exhibit a better working alliance than therapists whose relational style is less consistent with MI.

Mean scores were computed for early, middle, and late working alliance. Average working alliance scores from sessions 1-5 were labeled Early Alliance, average scores from sessions 6-13 were labeled Middle Alliance, and average scores from sessions 13-34 were labeled Late Alliance. These averages were computed because working alliance data was not collected on a consistent time schedule. In order to determine whether therapist and client reports of the working alliance could be combined for the current analysis, correlations between therapist reports and client reports of the working alliance were examined. Results revealed that therapist and client reports of the working alliance became more correlated with one another as therapy progressed (Early Alliance: $r = .38$, $p=.012$; Middle Alliance: $r = .43$, $p=.008$; Late Alliance: $r = .63$, $p =.000$). Due to the variable correlations, this hypothesis was examined separately for therapist versus client

reports of the working alliance. As depicted in Table 8, MI relational stance was not significantly correlated with client or therapist reports of the therapeutic alliance. However, there was a nonsignificant trend indicating that MI Spirit was associated with client reports of a stronger working alliance during the middle of phase of psychotherapy ($r = .30$, $p = .09$). There was a nonsignificant trend indicating that MI Nonadherence was associated with therapist reports of a stronger working alliance during the middle phase of psychotherapy.

Table 8
The association between MI relational stance predictors and the working alliance

Correlations between MI relational stance and client reports of the working alliance

	Early Alliance	Middle Alliance	Late Alliance
	r	r	r
MI Spirit	.22	.30†	-.20
MI Adherence	.18	.20	-.01
MI Nonadherence	-.08	.00	.08

Note. Early Alliance represents mean WAI-C scores for sessions 1-5, Middle Alliance represents mean WAI-C scores for sessions 6-13, and Late Alliance represents mean WAI-C scores after session 13.
† $p < .1$

Correlations between MI relational stance and therapist reports of the working alliance

	Early Alliance	Middle Alliance	Late Alliance
	r	r	r
MI Spirit	.24	.22	.24
MI Adherence	.24	.15	.27
MI Nonadherence	-.06	.28†	.14

Note. Early Alliance represents mean WAI-T scores for sessions 1-5, Middle Alliance represents mean WAI-T scores for sessions 6-13 and Late Alliance represents mean WAI-T scores after session 13.
† $p < .1$

DISCUSSION

This study examined the extent to which using a motivational interviewing relational stance is associated with better depressive outcomes in cognitive therapy for depression. To the author's knowledge, this is the first study providing evidence for the importance of using motivational interviewing principles in the context of CT for depression. Three aspects of MI relational stance were examined: MI Adherence, MI Nonadherence, and MI Spirit. The first hypothesis, which predicted that MI relational stance would predict more favorable depressive trajectories, was supported for MI Adherence but not MI Nonadherence or MI Spirit. Specifically, patients whose therapists engaged in more MI adherent behaviors (asked permission before giving advice, affirmed client strengths, made supportive statements, or made statements supporting the client's ability to make choices) in session two had greater rates of symptomatic improvements subsequent to the measurement of MI stance. Importantly, following the methodology of Zuroff and Blatt (2006), this association was adjusted for earlier clinical improvement. Similar results were obtained using two separate measures of depressive symptoms, which included both a self-report and interviewer-rated measure of depression. Several patient characteristics (age, sex, Axis I comorbidity, and length of current episode) were ruled out as potential alternatives for the effects of MI Adherence on the rate of self-reported symptomatic improvement. Furthermore, probing the 3-way interaction between MI Adherence, baseline depression severity, and session number showed that using an MI relational stance is particularly important with patients who started the trial with more severe depression. Patients with more severe baseline depression whose therapists were

low in MI Adherence in session two were very slow to improve and, in fact, their rate of change over the course of therapy (i.e., simple slope) was not significantly different than zero. These findings suggest that engaging in MI behaviors is important in the context of CBT for depression, particularly with patients with higher levels of depressive symptoms.

MI relational stance and symptom trajectories

It is surprising that MI Spirit failed to predict rates of symptomatic improvement, given that MI Spirit includes several elements such as empathy that have been previously identified as predictors of therapeutic change in both cognitive behavioral therapy and other psychotherapies (i.e. Burns & Nolen-Hoeksema, 1992; Bohart et al., 2002; Keijsers et al., 1997). One possibility is that MI Spirit is not an active ingredient of therapeutic change. This is the first study to ever examine the association between MI relational stance and symptomatic improvement in a therapeutic intervention lasting more than one session and existing research has been mixed. For example, Gaume and colleagues conducted two separate studies examining the effect of MI Spirit on drinking outcomes in a one-session alcohol intervention and one of these studies found that MI Spirit predicted better drinking outcomes (Gaume et al., 2009) whereas the other study failed to find this association (Gaume et al., 2008). In another study examining the role of empathy (as defined by the MITI) in a single session MI intervention for underage college drinkers, empathy failed to predict outcomes (Feldstein & Forcehimes, 2007). A second possible explanation for the null MI Spirit findings is the limited range of MI Spirit scores. Although there was some variability in MI Spirit scores, therapists never achieved extreme scores on this scale and tended to fall in the middle range of this scale. It is

possible that mild differences in MI Spirit have a minimal impact on symptomatic improvement whereas more extreme differences in MI Spirit could have a more significant influence on therapeutic outcomes. Third, it is possible that the MITI definition of empathy and support is different that other measures of empathy and support, which is consistent with previous research finding low correlations among the disparate measures of empathy (Bohart, et al., 2002). Research examining the association between the MITI measure of empathy and support and other empirically validated instruments assessing these constructs would help clarify this question. Finally, many of psychotherapy process-outcome studies which have examined the effect of therapist relational characteristics (i.e. empathy and support) on therapeutic outcomes have failed to control for early symptom change, thus failing to rule out the potential confound of early clinical improvement. Therefore, the degree to which these relational ingredients enhance therapeutic outcomes is somewhat ambiguous. Future research that takes into account these methodological considerations would help clarify the nature of the association between MI Spirit and subsequent symptom reduction.

The moderate correlation between MI Adherence and MI Spirit suggests that these are two distinct constructs, which helps explain the discrepant results for these two measures. MI Adherence scores were derived from tallying frequencies of therapists' behaviors. Any one of the four types of MI Adherent behaviors counted toward the overall MI Adherence score so that therapists did not have to exhibit all four behaviors to achieve high MI Adherence scores. MI Spirit, on the other hand, required therapists to demonstrate high levels of empathy, collaboration, support of client autonomy and

evocation of clients' ideas for change. In order to achieve high MI Spirit, therapists must have scored high on all of these scales. Therefore, therapists were able to achieve high levels of MI Adherence without necessarily achieving high MI Spirit.

Failure to find a statistically significant inverse relationship between MI Nonadherent behaviors and symptom reduction throughout therapy was less surprising. Many of the behaviors that were classified as MI Nonadherent would be considered adherent behaviors in cognitive therapy (Strunk, Brotman, & DeRubeis, & Hollon, 2010). For example, therapist directives such as "write that down" or "I would like you to try doing this worksheet for homework" were coded as MI Nonadherent. Therapists who were nonadherent to MI were likely quite adherent to CT which is what they were trained to deliver.

In sum, given that the frequency count measure of MI Adherence was a robust predictor of symptom change, it appears that at least some aspects of therapist relational stance are associated with a more positive response to cognitive therapy. The question remains, however, as to why the other two relational variables failed to predict symptomatic change.

The moderation effect of initial depression severity

The second hypothesis, which predicted a stronger association between MI relational stance and symptomatic improvement for more severely depressed patients compared to less severely depressed patients, was not supported. In fact, the strength of the association between MI Adherence and symptom reduction was stronger for patients with moderate depression severity compared to patients with high depression severity.

However, as mentioned above, MI Adherence emerged as a more essential ingredient for patients with high depression severity versus patients with moderate depression severity. Specifically, patients with high initial depression failed to experience symptomatic improvement when they had therapists who were low on MI Adherence whereas patients with moderate depression severity still significantly improved with therapists low on MI Adherence. Given that depression severity has been identified as a robust predictor of treatment resistant depression (Souery et al., 2007; Katon, Unützer, Russo, 2010), the potential benefits of MI Adherence for high severity depression has important implications worth further investigation.

Inconsistent with the results in the current study, other studies have found that MI is more effective for patients with more severe symptoms (Handmaker, Miller, & Manicke, 1999; Westra et al., 2008). For example, Westra and colleagues found that highly symptomatic patients responded more favorably to MI versus no MI as a pretreatment for CBT for GAD whereas patients with moderate worry severity did not benefit more from receiving MI versus no MI as a pretreatment (2008). Similarly, in a study examining the effects of a one-session MI alcohol intervention for pregnant women, Handmaker and colleagues (1999) found that more severe drinkers benefitted from a one-session MI intervention versus a control intervention whereas patients with less severe symptoms did not accrue more benefits from the MI intervention, suggesting that MI is only advantageous for a more severe population. It is difficult to draw comparisons between the results of these studies and the current findings because these studies were not examining depressed patients or MI style in the context of CT.

In sum, unlike previous findings which found that MI is more warranted for patients with more severe symptoms, the current study suggests that an MI relational style is beneficial for patients with varying levels of baseline severity, but perhaps more essential for more severely depressed patients.

MI relational stance as a predictor of session-to-session symptom change

Hypothesis three, which predicted that MI relational stance in a given session would lead to a greater reduction in symptoms between that session and the next over the first four sessions, was not supported. Specifically, none of the three measures of MI relational stance variables predicted session-to-session symptom change, which suggests that MI relational stance does not have an immediate impact on symptomatic improvement. While previous research suggests that MI relational stance has an immediate effect on client engagement (Moyers et al., 2005; Catley et al., 2006), this is the first study ever to examine the association between motivational interviewing and session-to-session symptom change. One possibility is that MI relational stance takes time to produce symptomatic improvement. Another alternative is that an MI relational stance has an immediate impact on other aspects of client functioning in CT. For example, MI relational stance might increase compliance with between-session homework assignments, although this hypothesis is merely speculative. Therefore, while MI relational stance does not have an immediate impact on depression symptoms, the question remains whether MI relational stance takes time to produce positive effects or has an immediate on other therapeutic processes.

The association between early clinical improvement and MI relational stance

Hypothesis 4, which predicted that MI style at session 3 would be predicted only from MI style at session 1 and not early symptom change, was supported. Regression analyses showed that each of the MI variables at session 1 predicted their counterparts at session 3 while early symptom change did not. The lack of significant correlation between symptom reduction and MI relational stance provides further evidence that MI relational stance is not merely an artifact of prior symptom reduction. However, because symptom reduction was measured from sessions 1-3, conclusions about the relationship between prior symptom reduction and subsequent MI relational stance should be interpreted with caution. It is also possible that participant characteristics other than the ones examined in the current study influenced levels of MI relational stance. Consistent with this explanation, therapists tended to exhibit higher levels of MI Spirit and MI Adherence with more severely depressed patients (as evidenced by the higher intercepts in the multilevel models). Moreover, anecdotal evidence in the current study suggests that therapists tended to use more MI related strategies when working with clients who were more reluctant to engage in cognitive therapy, although this hypothesis is only speculative at this point.

MI relational stance, subsequent dropout from CT, and the working alliance

The fifth hypothesis, which predicted that MI relational stance would be associated with subsequent retention in therapy, was not supported, although there was a nonsignificant trend that was consistent with the hypothesis. Specifically, there was a nonsignificant trend suggesting that MI Spirit was higher for patients completing therapy

compared to those who dropped out. Frequency counts of MI Adherence and MI Nonadherence did not differ between dropouts and completers. Given that there were only 9 patients who dropped out of this study prematurely, the statistical power to detect mean differences was limited in this analysis. Further testing of this hypothesis with a larger sample with a higher proportion of dropouts would be revealing on this point.

The sixth hypothesis, which proposed that MI relational stance would predict stronger working alliances throughout therapy, was not supported. None of the MI relational stance predictors were significantly correlated with the therapeutic alliance, although there was a marginally significant correlation between MI Spirit in session 2 and client reports of the working alliance in the middle stages of therapy. These results provide further evidence that MI relational stance is a separate construct than the working alliance. The findings from this analysis should be interpreted with caution. Although MLM would have been a more appropriate analysis for examining the association between MI relational stance and subsequent working alliance, while controlling for prior symptom reduction, this analysis was unable to be employed due to large amount of missing working alliance data. The present finding is inconsistent previous research suggesting that an MI relational stance is associated with greater involvement in therapy and a stronger working alliance (Catley et al., 2006; Boardman et al., 2006; Moyers et al., 2005). Only one of these studies, however, specifically examined the association between an MI relational stance and an empirically validated measure of the working alliance (Boardman et al., 2006). The other two studies coded client speech to infer client participation and involvement (Catley et al., 2006; Moyers et al., 2005) and they did not

assess whether client speech was correlated with the working alliance. Thus, future research is warranted to better understand how MI relational stance affects the working alliance.

LIMITATIONS

Several limitations in the current study should be noted. First, despite attempts to code the first three sessions for every participant, not all videotapes were available or audible. Several statistical trends emerged that did not meet statistical significance and it is possible that an increased sample size would have enabled the emergence of clearer statistical effects.

There are also several potential limitations associated with the coding methodology employed in the current study. First, although the MITI treatment fidelity system is one of the standard instruments for assessing competency in motivational interviewing, only a few studies to date have examined its psychometric properties (Pierson et al., 2007; Moyers et al., 2005) and no published studies to date have used the most up-to-date version of the MITI. The most recent version of the MITI was used in the current study due to its close resemblance to its predecessor along with its inclusion of additional scales to assess MI Spirit. It is possible that further refinements of this scale will be warranted in the future. It should also be noted that this is the first study to date that has applied the MITI coding system to assess therapist behavior in cognitive therapy. While coders were able to achieve good to excellent interrater reliability, the psychometric properties of this coding system as it is applied to cognitive therapists has never been established. A second potential limitation associated with this study's coding methodology is the decision to use a random 20-minute segment to code for MI relational stance. While this decision was based on MITI guidelines, it remains questionable if MI relational stance in a given segment is reflective of what is happening in the other parts of

the session or in later therapy sessions. Third, there are potential shortcomings associated with the use of an observational coding system for assessing therapist relational stance. It is possible that a self-report measure assessing participant perceptions of therapist relational stance would be a more accurate predictor of therapeutic outcomes. In addition, raters were not blind to the main hypothesis of the study, creating the potential for prior knowledge to have influenced coder's impressions of therapist MI relational stance. In order to minimize the potential for bias, raters were kept blind to participant outcome data, they double-coded most sessions, and recoded a random sample of videotapes to ensure consistency.

A last but important limitation relates to the inherently correlational design of the study that does not allow for causal assumptions to be made. While the methodology employed in the current study was intended to make more substantiated inferences about the existence of a causal relationship, there is still the possibility that other variables not examined in the current study influenced the association between MI relational stance and symptomatic improvement.

SUMMARY AND CONCLUSIONS

In conclusion, this study suggests that cognitive therapists who are more adherent to the relational style emphasized in motivational interviewing facilitate more rapid symptomatic improvement among individuals undergoing cognitive therapy for depression. Moreover, MI Adherence seems to be particularly important when treating more severely depressed individuals, as patients with severe baseline depression failed to improve if their therapists were low on MI Adherence. However, future research is necessary to clarify which MI Adherent behaviors are most facilitative of better outcomes. In recent years, there has been increased speculation about the potential beneficial effects of integrating CT and MI (Arkowitz & Burke, 2008; Flynn, Driessen & Hollon, In press; Moyers & Houck, In press). This study provides important evidence to support integration of CT and MI in order to create a more effective treatment for major depressive disorder. The feasibility of integrating these two approaches is supported by findings in the current study, which suggest that cognitive therapists are already naturally adhering to the relational principles emphasized in MI. It will be important to replicate this study an experimental design comparing an integrated MI-CT approach versus a standard CT approach. There are also broader implications of this study. While the extent to which cognitive therapists sufficiently attend to the therapeutic relationship is an empirical question, it is possible that providing cognitive therapists training in motivational interviewing can help reinforce relational stance that are facilitative of client outcomes (Driessen & Hollon, In press; Flynn, In press; Moyers & Houck, In press; Arkowitz & Burke, 2008).

In sum, although further research is necessary to pinpoint which MI relational ingredients enhance CT's effectiveness, results in this study show promise for integrating these two well-validated therapeutic approaches to more effectively treat individuals suffering from major depressive disorder.

APPENDIX A

Description of MITI Codes

Global Ratings	***Description***
Evocation	The extent to which the therapist draws out client's own reasons for change and how change should happen
Autonomy/Support	The extent to which the therapist supports client's sense of control
Collaboration	The extent to which the therapist fosters equal power sharing and allows the client to influence the topics of the session
Empathy	The extent to which the therapist understands and makes an attempt to understand client's worldview
MI Spirit	A sum score of Evocation, Autonomy/Support, Collaboration, and Autonomy, and Empathy
Direction	The extent to which the therapist directs session to address target behavior for change
Behavior Counts	
MI Adherent	Frequency counts of behaviors that are consistent with a motivational interviewing approach (asking permission, affirming, emphasizing client control, or supporting)
MI Nonadherent	Frequency counts of behaviors that are inconsistent with a motivational interviewing approach (Advising, confronting, or giving directives/ commands)
Closed Question	The therapist asks a question that can only be answered as "yes" or "no"
Open Question	The therapist asks a question than allows for a wide range of possible answers
Simple Reflection	Statements that convey an understanding or facilitate client exchanges without adding substantial meaning to what the client has said.
Complex Reflection	Statements that add a more complex picture to what the client has said by adding substantial meaning.

Note. Adapted from Moyers, et al., 2007

REFERENCES

Aiken, L., & West, S. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks: Sage Publications.

American Psychiatric Association (2000b). Practice guideline for the treatment of patients with major depressive disorder. *American Journal of Psychiatry*, *157* (Suppl. 4), 1-45.

Anton, R.F., O'Malley, S.S., Ciraulo, D.A., Cisler, R.A., Couper, D., Donovan, D.M., et al. (2006). Combined pharmacotherapies and behavioral interventions for alcohol dependence. The COMBINE study: A randomized controlled trial. *Journal of the American Medical Association*, *295,* 2003-2017.

Arkowitz, H., & Burke, B. (2007). Motivational interviewing as an integrative framework for the treatment of depression. In H. Arkowitz, H.A. Westra, W.R. Miller, & S. Rollnick (Eds.), *Motivational interviewing in the treatment of psychological problems*. New York: Guilford Press.

Arkowitz, H., Westra, H.A., Miller, W.R., & Rollnick, S. (2007). *Motivational interviewing in the treatment of psychological problems*. New York: Guilford Press.

Arkowitz, H., & Miller, W.R. (2007). Learning, applying, and extending motivational interviewing. In H. Arkowitz, H.A. Westra, W.R. Miller, & S. Rollnick (Eds.), *Motivational interviewing in the treatment of psychological problems* (pp.1-25). New York: Guilford Press.

Bagby, R.M., Ryder, A.G., Schuller, D.R., & Marshall, M.B. (2004). The Hamilton Depression Rating Scale: Has the gold standard become a lead weight?. *The American Journal of Psychiatry 161*, 2163-2177.

Barber, J.P., Connolly, M.B., Crits-Christoph, P., Gladis, L., & Siqueland, L. (2000). Alliance predicts patients' outcome beyond in-treatment change in symptoms. *Journal of Consulting and Clinical Psychology, 68,* 1027-1032.

Beck, A.T., Steer, R.A., & Brown, G.K. (1996). *Manual for the Beck Depression Inventory (2nd ed.).* San Antonio, TX: The Psychological Corporation.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. New York: Harper & Row.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: Meridian.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy for depression*. New York: Guilford Press.

Beck, J.S. (1995). *Cognitive therapy: Basics and beyon*d. New York: Guilford Press.

Beutler, L.E., Machado, P.P., & Neufeldt, S. (1994). Therapist variables. In A.E. Bergin & S.L. Garfield (Eds.), *Handbook of psychotherapy behavior change* (4th ed., pp. 229-269). New York: Wiley.

Boardman, T., Catley, D., Grobe, J.E., Little, T.D.; Ahluwalia, J. S. (2003). Using motivational interviewing with smokers: Do therapist behaviors relate to engagement and therapeutic alliance?. *Journal of Substance Abuse Treatment*, *31*, 329-339.

Bohart, A.C, Elliott, R., Greenberg, L.S., & Watson, J.S. (2002). Empathy. In J.C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 89-108). New York, NY, US: Oxford University Press.

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research, and Practice, 16,* 252–260.

Burke, B.L., Arkowitz, H., Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology*, 71, 843-861.

Burns, D., & Nolen-Hoeksma, S. (1992). Therapeutic empathy and recovery from depression: A structural equation model. *Journal of Consulting and Clinical Psychology, 92,* 441-449.

Busseri, M.A., Tyler, J.D. (2003). Interchangeability of the Working Alliance Inventory And Working Alliance Inventory, Short Form. *Psychological Assessment*, *15,* 193-197.

Carroll, K.M., Ball, S.A., Nich, C., Martino, S., Frankforter, T.L., Farentinos, C., et al. (2006). Motivational Interviewing to improve treatment engagement and outcomes in individuals seeking treatment for substance abuse: A multisite effectiveness study. *Drug and Alcohol Dependence*, *81*, 301-312.

Catley, D., Harris, K.J., Mayo, M.S., Hall, S., Okuyemi, K.S., Boardman, T. et al. (2006). Adherence to principles of motivational interviewing and client within-session behavior. *Behavioural and Cognitive Psychotherapy*, *34*, 43-56.

Castonguay, L.G., Goldfried, M.R., Wiser, S., Raue, P.J., & Hayes, A.M. (1996).

Predicting the effect of cognitive therapy for depression: A study of unique and common factors. *Journal of Consulting and Clinical Psychology, 64*, 497-504.

Cicchetti, D.V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessments in psychology. *Psychological Assessment, 6,* 284-290.

Connors, G.J., Walitzer, K.S., & Dermen, K.H. (2002). Preparing clients for alcoholism treatment: Effects on treatment participation and outcomes. *Journal of Consulting and Clinical Psychology,* 70, 1161-1169.

Cuijpers, P., van Straten, A., Andersson, G., van Oppen, P. (2008). Psychotherapy for depression in adults: A meta-analysis of comparative outcome studies. *Journal of Consulting and Clinical Psychology,* 76, 909-922.

DeMaat, S.M., Dekker, J., Schoevers, R.A, & DeJonghe, F. (2006). Relative efficacy of psychotherapy and pharmacotherapy in the treatment of depression: A meta-analysis. *Psychotherapy Research,* 16, 566-578.

DeRubeis, R. J., Hollon, S. D., Amsterdam, J. D., Shelton, R. C., Young, P. R., Salomon, R. M., et al. (2005). Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of General Psychiatry*, 62, 409-416.

DeRubeis, R.J., Brotman, M.A., & Gibbons, C.J. (2005). A conceptual and methodological analysis of the nonspecifics argument. *Clinical Psychology: Science and Practice*, *12,* 174-183.

DeRubeis, R.J., Gelfand, L.A., Amsterdam, J.D., et al (1999). Medication versus cognitive behavioral therapy for severely depressed outpatients: Mega-analysis of four randomized comparisons. *American Journal of Psychiatry,* 156, 1007-1013.

DeRubeis, R.J., & Feeley, M. (1990). Determinants of change in cognitive therapy for depression. *Cognitive Therapy and Research, 14,* 469-482.

Driessen, E., & Hollon, S.D. (In press). Motivational Interviewing from a cognitive behavioral perspective. *Cognitive Behavioral Practice*,

Elkin, I., Shea, M.T., Watkins, J.T., Imber, S. D., Sotsky, S.M., & Collins, J.F. (1989). National Institute of Mental Health Treatment of Depression Collaborative Research Program: General effectiveness of treatments. *Archives of General Psychiatry*, 46, 971-982.

Feely, M., DeRubeis, R.J., & Gelfand, L.A. (1999). The temporal relation of adherence

and alliance to symptom change in cognitive therapy for depression. *Journal of Consulting and Clinical and Psychology, 67*, 578-582.

Feldstein, S.W., & Forcehimes, A.A. (2007). Motivational interviewing with underage college drinkers: A preliminary look at the role of empathy and alliance. *The American Journal of Drug and Alcohol Abuse*, *33*, 737-746.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2001). *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition with Psychotic Screen (SCID-I/PW/PSY SCREEN).* New York, NY: Biometrics Research, New York State Psychiatric Institute.

Flynn, H. A. (In press). Setting the stage for the integration of motivational interviewing with cognitive behavioral therapy in the treatment of depression. *Cognitive and Behavioral Practice.*

Gaume, J., Gmel, G., Faouzi, M., & Daeppen, J. (2009). Counselor skill influences outcomes of brief motivational interventions. *Journal of Substance Abuse Treatment*, *37*, 151-159.

Gaume, J., Gmel, G., Faouzi, M., & Daeppen, J. (2008). Counselor behaviours and patient language during brief motivational interventions: A sequential analysis of speech. *Addiction*, *103*, 1793-1800.

Gloaguen, V., Cottraux, J., Cucherat, M., & Blackburn, I. (1998). A meta-analysis of the effects of cognitive therapy in depressed patients. *Journal of Affective Disorders, 49,* 59-72.

Goldman, R.N., Greenberg, L.S., & Angus, L. (2006). The effects of adding emotion-focused interventions to the client-centered relationship conditions in the treatment of depression. *Psychotherapy Research, 16,* 536-546.

Greenberg, L.S., Elliott, R. K., Lietaer, G. Research on experiential psychotherapies. In A.E. Bergin, S.L. Garfield (Eds.), Handbook of psychotherapy and behavior change (5th ed.) Oxford: John Wiley & Sons, pp.493-539.

Grote, N.K., Zuckoff, A, Swartz, H., Bledsoe, S.E., Geibel, S. (2007). Engaging women who are depressed and economically disadvantaged in mental health treatment. *Social Work, 52,* 295-308.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery & Psychiatry*, 23, 56-62.

Handmaker, N.S., Miller, W.R., & Manicke, M. (1999). Findings of a pilot study of

motivational interviewing with pregnant drinkers. *Journal of Studies on Alcohol*, *60*, 285-287.

Hettema, Jennifer; Steele, Julie; Miller, William R. (2005). Motivational interviewing. *Annual Review of Clinical Psychology, 1,* 91-111.

Hollon, S. D., DeRubeis, R. J., Shelton, R. C., Amsterdam, J. D., Salomon, R. M., O'Reardon, J.P., et al. (2005). Prevention of relapse following cognitive therapy vs medications in moderate to severe depression. *Archives of General Psychiatry*, *62*, 417-422.

Hollon, S.D., Jarrett, R.B., Nierenberg, A.A., Thase, M.E., Trivedi, M., & Rush, A.J. (2005). Psychotherapy and medication in the treatment of adult and geriatric depression: which monotherapy or combined treatment? *Journal of Clinical Psychiatry, 66,* 455-468.

Hollon, S.D., Thase, M.E., & Markowitz, J.C. (2002). Treatment and prevention of depression. *Psychological Science in the Public Interest*, *3,* 29-77.

Hollon, S.D., & Shelton, R.C. (2001). Treatment guidelines for major depressive disorder. *Behavior Therapy, 32*, 235-238.

Horvath, A.O., & Greenberg, L.S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36,* 223-233.

Horvath, A.O., & Bedi, R.P. (2002). The alliance. In J.C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 37-68). New York, NY: Oxford University Press.

Horvath, A.O., & Symonds, B.D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Consulting and Clinical Psychology*, *38,* 139-149.

Huppert, J.D. Bufka, L.F., Barlow, D.H., Gorman, J.M., & Shear, M.K. (2001). Therapists, therapist variables, and cognitive-behavioral therapy outcome in a multicenter trial for panic disorder. *Journal of Consulting and Clinical Psychology*, *69*, 747-55.

Jacobson N.S., Hollon S.D. (1996). Cognitive-behavior therapy versus pharmacotherapy: now that the jury's returned its verdict, it's time to present the rest of the evidence. *Journal of Consulting and Clinical Psychology*, 64, 74–80

Judd, L.L. (1997). The clinical course of unipolar major depressive disorders. *Archives of General Psychiatry*, 54, 540-548.

Katon, W., Unützer, J., & Russo, J. (2010). Major depression: The importance of clinical characteristics and treatment response to prognosis. *Depression and Anxiety*, *27*, 19-26.

Keijsers, G.P.J., Schaap, C.P.D.R., Hoogduin, C.A.L. (2000). The impact of interpersonal patient and therapist behavior on outcome in cognitive-behavioral therapy: A review of empirical studies. *Behavior Modification, 24*, 264-297.

Kessler, R.C., Wang, P.S. (2008). The descriptive epidemiology of commonly occurring mental disorders in the United States. *Annual Review of Public Health,* 29, 115-129.

King, M., Sibbald, B., Ward, E., Bower, P., Lloyd, M., Gabbay, M., & Byford, S. (2000). Randomised controlled trial of nondirective counseling, cognitive-behavior therapy and usual general practitioner care in the management of depression as well as mixed anxiety and depression in primary care. *Health Technology Assessment , 4*, 1-84.

Klein, D. N., Schwartz, J. E., Santiago, N. J., Vivian, D., Vocisano, C., Castonguay, L. G., et al. (2003). Therapeutic alliance in depression treatment: Controlling for prior change and patient characteristics. *Journal of Consulting and Clinical Psychology, 71,* 997–1006.

Lafferty, P., Beutler, L.E., & Crago, M. (1989). Differences between more and less effective psychotherapists. A study of select therapist variables. *Journal of Consulting and Clinical Psychology,* 57, 76-80.

Lambert, M. (2010). Therapist effects. *Prevention of treatment failure: The use of measuring, monitoring, and feedback in clinical practice* (pp. 175-202). Washington, DC:American Psychological Association.

Luborsky, L. McLellan, A.T., Diguer, L., Woody, G., & Seligman, D. A. (1997). The psychotherapist matters: Comparison of outcomes across twenty-two therapists and seven patient samples. *Clinical Psychology: Science and Practice, 4*, 53-65.

Martin, D.J., Garske, J.P., & Davis, M.K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *68,* 438-450.

Miller, W. R., Benefield, R. G., & Tonigan, J. S. (1993). Enhancing motivation for change in problem drinking: A controlled comparison of two therapist styles. *Journal of Consulting and Clinical Psychology, 61,* 455-461.

Miller W.R., & Mount, K. (2001). A small study of training in motivational interviewing:

Does one workshop change clinician and client behavior? *Behavioural and Cognitive Psychotherapy,* 29, 457-471.

Miller, W.R. & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change.* New York: Guilford Press.

Moyers, T.B., Miller, W.R., & Hendrickson, S. (2005). How does motivational interviewing work? Therapist interpersonal skill predicts client involvement within motivational interviewing sessions. *Journal of Consulting and Clinical Psychology, 73*, 590-598.

Moyers, T.B., Martin, T., Manuel, J.K., Miller, W.R., & Ernst, D. (2007). The motivational interviewing treatment integrity (MITI) code (coding manual). University of New Mexico, Center on Alcoholism, Substance Abuse and Addictions (CASAA), Albuquerque, NM.

Moyers, T.B., Martin, T., Houck, J.M., Christopher, P.J., Tonigan, J.S. (2009). From in-session behaviors to drinking outcomes: A causal chain for motivational interviewing. *Journal of Consulting and Clinical Psychology* 77.

Moyers, T.B., Martin, T., Manuel, J.K., Hendrickson, S., & Miller, W. R. (2005). Assessing competence in the use of motivational interviewing. *Journal of Substance Abuse Treatment,* 28, 19-26.

Mueller, T.I., Leon, A.C., Keller, M.B., Solomon, D.A., Endicott, J., Coryell, W., et al. (1999). Recurrence after recovery from major depressive disorder during 15 years of observational follow-up. *The American Journal of Psychiatry, 156,* 1000-1006.

Nezlek, J. (2007). A multilevel framework for understanding relationships among traits, states, situations and behaviours. *European Journal of Personality, 21,* 789-810.

Patterson, G.R., & Forgatch, M.S. (1985). Therapist behavior as a determinant for client noncompliance: A paradox for the behavior modifier. *Journal of Consulting and Clinical Psychology*, 53, 846-851.

Project MATCH Research Group. (1997). Matching alcoholism treatments to client heterogeneity: Project Match post-treatment drinking outcomes. *Journal of Studies on Alcohol,* 58, 7-29.

Raudenbush, S., Bryk, A., & Congdon, R. (2007). HLM for Windows (Version 6.04) [Computer software]. Lincolnwood, IL: Scientific Software International.

Rogers, C.R. (1961). *On Becoming a Person*. Boston: Houghton Mifflin.

Safran, J.D., & Wallner, L.K. (1991). The relative predictability of two alliance measures in cognitive therapy for depression. *Psychological Assessment: A Journal of Consulting and Clinical Psychology,* 3, 188-195.

Solomon, D.A., Keller, M.B., Leon, A.C., Mueller, T,I., Lavori, P.W., Shea, M.T., et al., (2000). Multiple recurrences in major depressive disorder. *The American Journal of Psychiatry*, 157, 229-233

Souery, D., Oswald, P., Massat, I., Bailer, U., Bollen, J., Demyttenaere, K., et al. (2007). Clinical factors associated with treatment resistance in major depressive disorder: Results from a European multicenter study. *Journal of Clinical Psychiatry*, *68*, 1062-1070

Strunk, D.R., Brotman, M.A., DeRubeis, R.J, & Hollon, S.D (2010). Therapist competence in cognitive therapy for depression: Predicting subsequent symptom change. *Journal of Consulting and Clinical Psychology*, *78*, 429-437.

Svanborg, P., & Asberg, A. (2001). A comparison between the Beck Depression Inventory (BDI) and the self-rating version of the Montgomery Asberg Depression Rating Scale (MADRS), *Journal of Affective Disorders, 64***,** 203–216.

Swartz, H.A., Zuckoff, A., Grote, N.K., Spielvogle, H.N., Bledsoe, S.E., Shear, M. K., et al (2007). Engaging depressed patients in psychotherapy: Integrating techniques from motivational interviewing and ethnographic interviewing to improve treatment participation. *Professional Psychology: Research and Practice*, 38, 430-439.

Tang, T.Z., & DeRubeis, R.J. (1999). Sudden gains and critical sessions in cognitive-behavioral therapy for depression. *Journal of Consulting and Clinical Psychology,* 67, 894-904.

Tasca, G.A., & Gallop, R. (2009). Multilevel modeling of longitudinal data for psychotherapy researchers: The basics. *Psychotherapy Research, 19*, 429-437.

Tracey, T.J., & Kokotovic, A.M. (1989). Factor structure of the working alliance inventory. *Psychological Assessment*, 1, 207-210.

Vittengl, J.R., Clark, L., & Jarrett, R. B. (2009). Continuation-phase cognitive therapy's effects on remission and recovery from depression. *Journal of Consulting and Clinical Psychology*, 77, 367-371.

Westen, D., & Morrison, K. (2001). A multidimensional meta-analysis of treatments for depression, panic, and generalized anxiety disorder: An empirical examination of

the status of empirically supported therapies. *Journal of Consulting and Clinical Psychology,69,* 875-899.

Westra, H. A., Dozois, D.D. (2006). Preparing clients for cognitive-behavioral therapy: A randomized pilot study of motivational interviewing for anxiety. *Cognitive Therapy and Research*, *30,* 481-498.

Westra, H.A., Arkowitz, H., & Dozois, D.A. (2009). Adding a motivational interviewing pretreatment to cognitive behavioral therapy for generalized anxiety disorder: A preliminary randomized controlled trial. *Journal of Anxiety Disorders, 23,* 1106-1117.

Williams, Janet B. (1989). A structured interview guide for the Hamilton depression rating scale. *Archives of General Psychiatry,* 45, 742-747.

Zuroff, D.C., & Blatt, S.J. (2006). The therapeutic relationship in the brief treatment of depression: Contributions to clinical improvement and enhanced adaptive capabilities. *Journal of Consulting and Clinical Psychology, 74*, 130-140.