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Preparing Clients for Cognitive Behavioral Therapy: A Randomized Pilot Study of Motivational Interviewing for Anxiety

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Abstract

Although Cognitive Behavioural Therapy (CBT) is a well-supported treatment for anxiety, recovery rates and compliance with treatment procedures are less than optimal. Using adjunctive brief preparatory interventions may help bolster response rates and engagement with therapy procedures. Motivational Interviewing (MI: Miller & Rollnick, 1991, 2002) is a valuable treatment prelude in the addictions domain. Prior to group CBT, 55 individuals with a principal anxiety diagnosis were randomly assigned to receive either three sessions of MI adapted for anxiety or no pretreatment (NPT). The MI pretreatment group, compared to NPT, showed significantly higher expectancy for anxiety control and greater homework compliance in CBT. Although both groups demonstrated clinically significant anxiety symptom improvements, the MI pretreatment group had a significantly higher number of CBT responders compared to NPT. At six-month follow-up, both groups evidenced maintenance of gains. These results, while not supportive of MI in particular, provide suggestive evidence that brief pretreatments may enhance engagement with and outcome from CBT.

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The Cognitive Behavioural Therapies (CBT) have received the most empirical support in the treatment of anxiety disorders (e.g., Chambless et al., 1996; Westra & Stewart, 1998). Nonetheless, a substantial proportion of individuals either fail to respond to CBT, respond only partially, or drop out prematurely. In a multi-dimensional meta-analysis of CBT for depression, generalized anxiety disorder (GAD), and panic disorder, Westen and Morrison (2001) reported that about half of individuals who complete treatment, and 40% of those in intent-to-treat analyses, evidence significant improvement. Moreover, they concluded that the average client remains symptomatic post-treatment to at least a mild degree and that up to one-half seek further treatment. Thus, a substantial number of people fail to benefit significantly from CBT for these disorders.

There is also considerable room to *engage* individuals with existing effective treatments such as CBT. Compliance with necessary treatment activities is often variable and dropout in psychotherapy is common (from 23% to 49% of clients fail to attend more than one session and two-thirds terminate treatment prematurely; Garfield, 1994). Although dropout rates are somewhat lower in CBT compared to other therapies (Chambless & Gillis, 1993), homework noncompliance is a commonly acknowledged issue among CBT practitioners (Huppert & Baker-Morissette, 2003; Leahy, 2001), and rates of compliance show much individual variability throughout CBT (e.g., Burns & Spangler, 2000; Schmidt & Woolaway-Bickel, 2000). In obsessive-compulsive disorder for example, up to 25% of individuals will refuse to engage with recommended CBT

procedures (Franklin & Foa, 2002) and compliance rates for homework assignments in CBT has been estimated at a mere 50% (Detweiler & Whisman, 1999). Moreover, client involvement in treatment is significantly related to positive outcomes in CBT (Burns & Spangler, 2000).

In part, fluctuating compliance may be related to high levels of ambivalence about change, even in those entering treatment. For example, up to two-thirds of individuals entering treatment for mental health problems can be classified as being in either the precontemplation or the contemplation stage of change; that is significantly ambivalent about change so as to preclude the active adoption of change-based strategies (Dozois, Westra, Collins, Fung, & Garry, 2004; O'Hare, 1996). In the area of GAD for example, researchers have identified conflicting beliefs about worry. Borkovec and Roemer (1995) found that while GAD clients see their worry as a problem, they also hold *positive* beliefs about their worry (e.g., worry is motivating) and are therefore ambivalent about relinquishing worry. Consistent with these observations, there is increasing recognition of the need to develop treatment-engagement strategies as a means of maximizing response rates (Collins, Westra, Dozois, & Burns, 2004). In fact, in two previous randomized clinical trials of CBT for GAD, the only non-clinical variable to predict treatment outcome was client motivation (Dugas et al., 2003; Léger, Dugas, Langlois, & Ladouceur, 1998).

Prelude Interventions

The idea of using brief prelude interventions to increase response to subsequent psychotherapy was introduced many years ago (cf. Hoehn-Saric, Frank, & Imber, 1964; Orne & Wender, 1968; see review by Walitzer, Dermen, & Connors, 1999) but has

garnered very little serious empirical attention. Rather than developing new treatments, preparatory interventions can be conceptualized as “catalysts” for enhancing utilization of and therefore response to existing effective treatments. For example, Frank and associates developed and evaluated a Role Induction Interview (RII) as a prelude to psychotherapy (Frank, 1974; Hoehn-Saric et al., 1964) which included such things as the rationale for treatment and clarification of role expectations. In a controlled study by Hoehn-Saric and colleagues (1964), compared with no pretreatment, outpatients randomly assigned to the RII condition showed significantly better attendance, greater symptom improvement and exhibited higher rates of therapy-facilitative behaviors during subsequent treatment. Subsequent studies of the RII (Walitzer et al., 1999; Connors, Walitzer, & Dermen, 2002) have been variable, sometimes showing improvements on process measures, sometimes on outcome measures, and sometimes on both.

Motivational Interviewing (MI)

MI may be particularly promising as a pretreatment since it is specifically directed at increasing motivation and resolving ambivalence about change. Arkowitz (2002a, 2002b) and Engle and Arkowitz (2004) suggested that much of what is thought of as resistance or noncompliance in psychotherapy is a reflection of ambivalence about change. Arkowitz and Westra (2004) further suggested that a combination of MI and CBT may be particularly promising for the treatment of anxiety and depression, with MI directed at increasing motivation and resolving ambivalence about change, and CBT directed at helping the client achieve the desired changes.

MI was originally developed by Miller and Rollnick (1991, 2002) who defined it as "a client-centered, directive approach designed to enhance intrinsic motivation for change through understanding and resolving ambivalence about change" (Miller & Rollnick, 2002). In MI the therapist actively cultivates a posture of equipoise in relation to ambivalence about change in order to allow the clients to explore their own thoughts and feelings regarding change. MI departs from traditional CBT in the therapist's role with respect to change. In CBT, the therapist takes the role of an advocate for change, to at least some degree. However, in MI, the therapist does not advocate for change, but helps the client become a more effective advocate for their own change. Moreover, while MI has a directive component, oriented toward increasing client self-change statements, the focus is on enhancement of motivation for change, not on employment of change strategies per se.

Although research in the area of psychotherapy pretreatment is limited, existing data suggest that such treatment preludes improve treatment attendance (for a review see Walitzer, et al., 1999). In addition, existing studies that have used brief courses of MI as preludes to other treatments have produced very promising results in the addictions domain (for a review see Burke, Arkowitz, & Melanchola, 2003), even when subsequent treatments were based on models and techniques quite different from MI. Burke and colleagues (2003) reported that effect sizes for MI as a prelude were substantially higher than for MI as a stand-alone treatment. To date, there have been only a few studies evaluating the efficacy of MI (either as prelude or stand-alone treatment) to problems outside the domains of substance abuse and health-related behaviors. The available data suggest that MI prelude may positively impact

attendance and treatment outcome for other mental health problems as well (e.g., dual diagnosis: Humfress, Igel, Lamont, Tanner, Morgan, & Schmidt, 2002; Martino, Carroll, O'Malley & Rounsaville, 1999; Swanson, Pantalon, & Cohen, 1999; schizophrenia, Kemp, Hayward, Applehaite, Everitt, & David, 1996; Kemp, Kirov, Everitt, Hayward, & David, 1998).

The present study involved an initial examination of the efficacy of a manualized treatment: MI for anxiety (Westra & Dozois, 2003) as a pretreatment to CBT. Before group CBT for anxiety, individuals with a principal anxiety disorder were randomly assigned to receive either three sessions of MI pretreatment or no pretreatment (NPT). Outcome variables included engagement with CBT (homework compliance, treatment completion rates) and symptom change in CBT. The motivational intervention was developed through generalizing MI (Miller & Rollnick, 2002) to be specifically applicable to anxiety. Treatment development steps included expert consultation, numerous case studies to refine and adapt the protocol (Westra, 2004; Westra & Phoenix, 2003), and development of a treatment manual (Westra & Dozois, 2003).

Method

All measures and procedures in the present study were approved by a local Institutional Ethics Review Boards to ensure ethical conduct for research with human participants.

Participants

Fifty-five individuals meeting diagnostic criteria for at least one anxiety disorder (either panic disorder with or without agoraphobia, social phobia, or generalized anxiety disorder) participated in the study. Participants were selected from successive referrals

to the Anxiety and Affective Disorders Service, London Health Sciences Centre. The Centre is a public hospital seeing predominantly Caucasian clients of low to middle-class socio-economic status. Diagnoses were determined according to DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; American Psychiatric Association, 1994) criteria as assessed by the Structured Clinical Interview for Axis I Disorders: Version IV (Spitzer, Williams, & Gibbon, 1994), conducted at initial clinic intake. Diagnosticians were trained in diagnostic interviewing by the first author and each had at least two years experience in SCID interviewing. Diagnostic reliability was not formally assessed. Rather, weekly meetings were held as a routine practice in the clinic to review diagnostic decisions. Principal diagnosis was determined by the therapist's determination of the most functionally disabling disorder at the time of assessment. Clients were excluded from consideration for the study if they had a principal mood disorder or another nonanxiety principal diagnosis, any history of psychotic symptoms, any major deficits in neurocognitive functioning (e.g., learning disability, illiteracy), or active substance abuse.

The diagnostic composition of the group was as follows: 45% panic disorder with or without agoraphobia (PDA), 31% social phobia (SP), and 24% GAD. The average age of participants was 38 years (*SD* = 11) with a long chronicity of illness (Median 10 years, Range = 3 months to 40 years). The majority of the sample (62%) met criteria for at least one other mood or anxiety disorder diagnosis. The sample was predominantly female (70%), with nearly half (48%) being unemployed. Marital status was as follows: 54% married, 35% single, and 11% divorced/separated/widowed. The sample was of average to moderate educational attainment (*M* = 13 years; *SD* = 1.89). The majority of

the sample was concomitantly using psychotropic medications (71%), with 44% on an antidepressant alone (the vast majority on an SSRI or newer antidepressants), 25% on both an antidepressant and a benzodiazepine, and only one participant on a benzodiazepine alone. Forty-one percent of the sample was currently involved with another mental health practitioner (58% psychiatrist, 42% other counselor). Fifty-one percent of the sample had at least one previous counselor (*M* = 0.83; *SD* = 0.5, Range = 0 to 3). Twenty-five percent of the sample had at least one previous psychiatric admission.

Design and Procedure

Participants were randomly assigned to receive either NPT (n = 30) or three weekly one-hour sessions of MI for Anxiety (n = 25) prior to participating in group CBT for anxiety management.

Treatment

MI for Anxiety (Westra & Dozois, 2003[1]). This treatment was based on MI (Miller & Rollnick, 1991, 2002) generalized to be applicable specifically to anxiety. The treatment embodies all of the core strategies and principles of MI (expressing empathy, rolling with resistance, developing discrepancy, and enhancing self-efficacy) and focuses on ambivalence about both anxiety change and treatment procedures to manage anxiety (e.g., doing exposure, reducing worry, reducing avoidance). For example, in developing discrepancy, the therapist would highlight discrepancies between client articulated values and the impact of anxiety symptoms (e.g., "Worry gives you an important sense of control, yet you also indicated that you feel out of control when you worry" or "How is it that someone who really values freedom, ends up staying close to home most of the

time?"). As another illustration, the therapist would also judiciously use empathy in exploring the 'good things' behind avoidance (e.g., “Your only experiences with standing out in front of others have involved humiliation. It makes a lot of sense that you want to prevent that from happening again. And staying out of the spotlight at all times provides a much needed sense of safety from these painful experiences”).

The only major element not included in the protocol, which is typically a component of most MI applications in other domains, is feedback about the problem. This element has been added to other MI treatments but, as Burke and colleagues (2003) note, it is not a component of MI as described by Miller and Rollnick and hence, few studies have tested pure MI. Participants were told that the purpose of the MI pretreatment was to discuss ambivalence about anxiety change prior to engaging with activities to produce such change (i.e., group CBT). The goals of the MI pretreatment were to identify and explore reasons for changing (e.g., interference of anxiety problems) as well as obstacles to changing (i.e., good things about not changing such as functional/adaptive aspects of the problem and fears of both change and engaging with the techniques of anxiety change). The client-centered stance of the therapist is critical and the goal was to create a nonjudgmental, validating atmosphere in which the client can freely explore their thoughts about change and it's positive and/or negative implications, with the therapist providing a reflective role designed to evoke deeper client processing of their own ambivalence.

This adaptation of MI has undergone extensive development and revision from initial inception with treatment development steps including:

- consultation with individuals having expertise in motivational therapies and anxiety
- extensive training of the first author in MI
- a series of case studies for piloting the procedures and further refining the protocol in CBT nonresponders or refusers (e.g., Arkowitz & Westra, 2004; Westra, 2004; Westra & Phoenix, 2003)
- further protocol refinement in early cases seen by the research therapist in this study

There was a single research therapist in this study who was a Ph.D. level Clinical Psychologist trained intensively in MI and MI for Anxiety and supervised closely by the first author. Training was conducted over a six-month period (five hours per week) and involved readings and discussion, co-therapy cases with the first author, and direct observation of each videotaped MI session for the first 15 cases, with random as well as therapist-driven selection of videotaped segments on later cases to ensure protocol adherence (e.g., the therapist would select segments of more challenging sessions for supervisory input on proper application of the protocol). Protocol adherence was not formally measured, but the three initial cases were excluded for therapist nonadherence to the protocol. These protocol violations reflected failure to consistently use MI strategies for the majority of sessions, rather than introduction of non-MI strategies (e.g., such as CBT techniques). Finally, the research therapist delivering the MI was not involved in the group CBT administration.

Group CBT (GCBT). After pretreatment (or a three-week waiting period in those not receiving a pretreatment), all participants were enrolled in GCBT for anxiety

management. This treatment was eight sessions (2.5 hours per session) twice weekly. The GCBT consisted of a heterogeneous group of anxiety disorders including panic disorder, social phobia, and GAD. Treatment was manualized (Westra, 1998) and based on well-evaluated treatments for anxiety (cf. Craske & Barlow, 2000; Craske, Barlow, & O'Leary, 1992). Moreover, this particular group program implementing CBT principles has demonstrated efficacy in producing significant anxiety symptom reduction (Westra, Stewart, & Conrad, 2002; Dozois, Westra, Collins, Fung, & Garry, 2004). The therapists were a variety of allied mental health professionals who were all extensively trained by the first author in CBT; each had at least two years of experience in successfully implementing group CBT for anxiety.

Group leaders were blind to the experimental condition of participants. To verify the degree to which this was maintained, at the end of the study, group leaders identified the experimental group membership (MI or NPT) of each of the study participants. No group therapist scored above chance levels on this task.

Measures

CBT-engagement. Treatment compliance was assessed in two ways: rate of treatment completion (a drop-out was defined as failing to attend the last two sessions of treatment without contacting the clinic) and homework compliance. Both client- and therapist-rated homework compliance were assessed using a three-item author-developed scale completed on a session-by-session basis in CBT. Items tapping effort, amount of homework, and time spent on homework were rated on a 5-point Likert scale with poles of 'none' to 'a whole lot'. Scores were averaged, separately for therapists and clients, over all sessions to obtain an index of homework compliance. Using the data

from this study, the internal consistency coefficients were high for both the client-rated version (alpha = .93) and the therapist-rated version (alpha = .88).

Motivation for change. *Anxiety Change Expectancy Scale* (ACES: Dozois & Westra, 2003; in press). The ACES is a 20-item self-report inventory designed to assess individual expectancies regarding the ability to control anxiety. Items are rated on a Likert scale from 1 to 7, with poles of strongly disagree to strongly agree. Higher scores indicate higher expectancy for anxiety change. The ACES exhibits excellent psychometric properties in initial validation studies on college, community and a clinically anxious sample. In these studies, the ACES demonstrated excellent internal consistency and good convergent and divergent validity. The ACES also predicted anxiety symptom change in CBT for GAD over and above baseline symptomatology and general hopelessness (Dozois & Westra, in press). The ACES was administered at baseline and post pretreatment (post MI or post NPT).

GCBT Response. A battery of commonly used and recommended scales for the assessment of anxiety symptoms was administered at baseline, pre- and post-CBT. These included:

Anxiety Sensitivity Index (ASI, Peterson & Reiss, 1992). The ASI is a 16-item scale designed to assess fear of anxiety-related physical sensations such as heart racing or dizziness. Items are rated on a 1 to 5 Likert scale with higher scores indicating higher anxiety sensitivity. The ASI has demonstrated adequate reliability and construct validity (Peterson & Reiss, 1992) and has been found to predict the onset of panic disorder for up to three years (Maller & Reiss, 1992). The ASI is also highly sensitive to treatment related changes as a function of CBT (Westra et al., 2002).

Fear of Negative Evaluation Scale - Brief Version (FNEB, Leary, 1983). The FNEB is a brief form of the original FNE (Watson & Friend, 1969). Items are rated on a 5-point Likert scale with higher scores indicating higher fear of negative evaluation. This 12-item scale correlates highly with the full scale (r = .96) and demonstrates comparable reliability and validity with the original full-scale FNE (Leary, 1983). The FNEB has also been shown to differentiate between social and agoraphobic avoidance in a clinical sample, to have excellent factorial validity, and to be sensitive to CBT outcome in social phobia (Collins, Westra, Dozois, & Stewart, 2005)**.**

Penn State Worry Questionnaire (PSWQ, Meyer, Miller, Metzger, & Borkovec, 1990). The PSWQ is a 16-item widely used measure assessing trait worry. Items are rated on a 5-point Likert scale with higher scores indicating more worry. The PSWQ has been found to possess high internal consistency and temporal stability, as well as good convergent and discriminant validity (Brown, Antony, & Barlow, 1992; Meyer et al., 1990). This measure also differentiates individuals with GAD from those with other anxiety disorders (Brown et al., 1992).

Beck Depression Inventory II (Beck, Steer, & Brown, 1996). This 21-item self-report questionnaire is widely used to assess the presence and severity of depression. Items are rated from 0 to 3 with higher scores reflecting more depressive symptoms. The BDI-II, has demonstrated high internal consistency (alpha = .91 - .93 among college students; alpha = .92 among outpatients) and good factorial validity (Beck et al., 1996; Dozois, Dobson, & Ahnberg, 1998). In fact, the BDI-II appears to be a stronger instrument than its predecessor with respect to its overall factor structure (Dozois et al., 1998).

Results

Two periods of possible change were considered: (1) baseline to post pretreatment (or the passage of time in the NPT group) and (2) post pretreatment/pre-CBT to post-CBT. From baseline to post pretreatment, change was examined on:

1a - change expectancy
1b - anxiety symptoms
Following completion of the pretreatment period, three indices were examined:

2a - retention in GCBT
2b - homework compliance during CBT
2c - symptom change pre to post CBT

Impact of MI versus NPT on Motivation for Change

Anxiety Change Expectancy Scale (ACES). A repeated measures analysis of variance (ANOVA), with ACES scores as the dependent variable and time (baseline, pre-GCBT) and group (MI, NPT) as the independent variables, revealed a significant interaction, $F(1,34) = 4.82$, $p < .05$ (effect size, $d = .60$). Whereas the passage of time (i.e., NPT) was not associated with increased expectancy for anxiety change, individuals in the pretreatment group demonstrated a significant increase in their ACES scores from baseline to post-MI (i.e., pre-CBT; see Figure 1) reflecting greater expectancy for changing anxiety post pretreatment compared to baseline levels. A t-test of change in ACES scores from baseline to post pretreatment was significant indicating greater improvement in expectancies in the pretreatment group (*M* ACES change = 4.94, SD = 6.51, *M* ACES change in NPT = 0.93, SD = 2.89, $t(29) = 2.28$, $p < .05$).

These data were also explored by diagnostic subgroup. Given the small sample sizes in such analyses, however, only effect sizes are reported since statistical tests are not appropriate. For change in ACES from baseline to post pretreatment, comparing pretreatment to NPT, effect sizes (Cohen's d) ranged from .38 for PDA, .54 for GAD, and 1.65 for SP. In all diagnostic subgroups, improvements in expectancies for change were greater in MI pretreatment compared with NPT suggesting that those individuals with varying diagnoses may profit from pretreatment with increased expectancy for change, particularly perhaps those individuals with social phobia.

Impact of Pretreatment on Anxiety Symptoms

Given that a heterogeneous anxiety group was used in this study, a principal outcome measure was defined for each diagnostic group to examine changes in symptoms over the course of CBT. These were as follows: the ASI for panic disorder, the FNEB for social phobia, and the PSWQ for GAD. Standardized scores were calculated in order to meaningfully compare scores across groups differing in principal diagnosis. Standard scores were calculated using norms from nonpsychiatric, nonanxious populations reported in previous studies for each measure (ASI see Peterson & Reiss, 1992; FNEB see Collins et al., 2005; PSWQ see Brown et al., 1992).

To examine whether symptom change occurred as a result of pretreatment alone or the passage of time, in the case of NPT, a 2-way repeated measures ANOVA was conducted. Time (baseline, post pretreatment) and pretreatment group (MI, NPT) were the independent variables and scores on the individual's principal outcome measure was the dependent variable. Neither the main effect of time, $F (1, 32) = 0.29$, $p = ns$, nor the group by time interaction, $F (1, 32) = 0.06$, $p = ns$, were significant, suggesting

that anxiety symptomatology did not change as a result of pretreatment or time alone. In a similar analysis, participants scores on the BDI-II were not found to differ significantly from baseline to post pretreatment, F (1, 32) = 0.32, p = ns.

GCBT-Retention

Eighty-four percent of the MI pretreatment group completed GCBT compared with 63% of the NPT group. Although this trend was in favour of greater retention in the pre-treatment group, this difference only approached statistical significance, χ^2 (1) = 2.94, p = .08. However, if replicated with a larger sample, this finding may have clinical significance. There were no differences between dropouts and completers on age, gender composition, marital status, employment status, chronicity of anxiety disorder, number of Axis I disorders, or current use of psychotropic medications. Completers tended to be more highly educated than dropouts, t (53) = 2.09, p < .05.

Homework Compliance in CBT

A multivariate analysis of variance (MANOVA) with client- and therapist-rated homework compliance as dependent measures, and pretreatment group (MI or NPT) as the independent variable, revealed a significant effect of group on client-rated homework compliance, F (1,31) = 7.74, p < .05 (effect size, d = 0.96). Here, individuals in the MI pretreatment group indicated that they had completed significantly more homework (*M* = 4.28 on a 5 point scale, *SD* = 0.49) than did the NPT group (*M* = 3.79, *SD* = 0.52).

No significant between-group differences were found for therapist-rated homework compliance, F (1,31) = .026, p = ns (effect size, d = .33). The convergence between client- and therapist-rated homework compliance was modest (r = .37, p <

.05), suggesting that these two measures are tapping different constructs. This finding is consistent with the results of previous studies showing modest convergence between therapist and client ratings of homework compliance (e.g., Burns & Nolen-Hoeksema, r = .39). However, the reliability of the therapist-rated measure is questionable in this study because the correlation between GCBT co-leaders in homework ratings was only modest ($r = .63$, $p < .05$). Moreover, it may be noteworthy, that early therapist rated homework compliance (post session 2) was only weakly associated with CBT outcomes ($r = .24$, $p = ns$) but later (post session 8) therapist-rated homework compliance was significantly related to symptom change ($r = .44$, $p < .05$). As such, it may be that therapists, particularly in a group setting with little time for individual homework discussion, tended to rate progress more than homework compliance i.e., as clients began to show progress in later sessions, therapists might have inferred that they must be doing more homework. In contrast, in earlier sessions such progress markers would be less available in client's reports and consequently influence therapist homework ratings less.

Again, these results were examined by diagnostic subgroup. Since significant results were only obtained for client reported homework compliance, these analyses were conducted on this homework measure alone. Effect sizes for homework compliance differences (Cohen's d) between diagnostic subgroups ranged from .25 in SP, 1.13 in PDA, and 1.82 in GAD. In each case the results reflected higher self-reported rates of homework compliance in the MI group compared to NPT, with some suggestion that those with PDA and GAD may particularly profit from pre-treatment in terms of increased involvement in subsequent CBT.

GCBT Response

Standard scores on principal outcome measures were analyzed using repeated measures ANOVA with time (pre- to post-CBT) and group (MI pretreatment, NPT) as independent variables. The results revealed a significant main effect of principal outcome measure, $F(1,34) = 71.12$, $p < .05$, with both groups showing significant improvement on this index. There was also a significant two-way interaction, $F(1,34) = 7.32$, $p < .05$ (effect size, $d = .38$), which is depicted in Figure 2. The pretreatment group showed significantly greater reductions in the principal outcome measure compared with the NPT group [*M* Z score change in MI pretreatment = 2.57, SD = 1.47, *M* Z-score change in NPT = 1.27, SD = 1.27, $t(30) = 2.69$, $p < .05$]. In addition, a similar pattern of results was obtained on the BDI-II showing marginally greater reductions in depressive symptoms in the pretreatment group compared to the NPT group, $F(1, 34) = 4.06$, $p < .06$, ES $d = .64$.

To provide a preliminary examination of the potential of pretreatment across diagnostic subgroups, effect sizes on change in primary outcome variable were calculated, broken down across the major anxiety disorders represented in this sample. Here, the largest effect size for pretreatment compared to NPT was for GAD ($d = 1.29$), followed by panic disorder ($d = .69$) and social phobia ($d = .44$). While suggestive only, these findings may indicate that pretreatments, such as MI in this case, may hold particular promise as a CBT adjunct in GAD.

Clinical Significance

CBT outcome data were also analyzed using criteria for defining clinical significance of treatment response outlined by Jacobson and Truax (1991). Clinical

cutoff scores and reliability change indices were determined for each principal outcome measure. Clinical cutoff scores were determined on the basis of evaluating individual scores relative to published norms for each primary outcome measure. In the case of the ASI, a cutoff indicating clinically significant symptoms was defined in the manual (Peterson, & Reiss, 1992). In the cases of the PSWQ and the FNEB, clinical cutoff scores were derived by using a score of one standard deviation above the mean for normals on each measure based on published means with normal samples (Meyer et al., 1990; Collins et al., 2005).

To be considered a responder, the individual was required to have a score below the clinical cutoff score on the principal outcome measure post-CBT (i.e., be closer to the normal than the clinical range) and to have evidenced reliable change (i.e., the magnitude of change must be significant). A nonresponder was defined as an individual who met neither of these criteria, and an individual was considered to be a partial responder if he or she evidenced reliable change but did not meet the clinical cutoff post-CBT (i.e., was still not within the normal range).

Figure 3 depicts the percentage of individuals meeting responder criteria. A chi-square analysis revealed significant group effects, $\chi^2(2) = 6.53$, $p<.05$. Whereas 50% of the NPT group was classified as responders, 75% of the MI pretreatment group achieved responder status. Similarly, the NPT group had a 44% nonresponse rate, while the pretreatment group showed a 10% nonresponse rate.

Relating Changes in Pretreatment to Symptom Change in CBT

It was of interest to examine how changes in proximal outcome variables for the pretreatment phase (e.g., ACES, homework compliance) might be associated with

changes during CBT. With respect to expectancies, positive changes in ACES scores from pre to post pretreatment were strongly associated with positive changes in primary outcome variable in the CBT phase, $r = .49$, $p < .05$. When broken down by pretreatment group, positive correlations were observed in each instance (MI: $r = .34$, NPT: $r = .59$). This suggests that at the level of the individual (rather than group) increases in positive expectancies for change are associated with improved symptom outcomes regardless of pretreatment assignment. Finally, increased homework compliance was associated with greater changes in primary outcome variable for the sample collectively ($r=.37$, $p < .05$). Thus from the perspective of which pretreatment changes relate to change in CBT, improvements in expectancy and homework compliance appear to be related to more positive CBT responses.

Group Differences.

No differences were found between those assigned to the MI pretreatment and those assigned to NPT on demographic variables (age, education, marital status, employment status, gender composition), symptom severity variables (baseline scores on principal outcome measure, presence of comorbid anxiety or mood diagnoses, chronicity of anxiety), treatment history (e.g., number of previous counselors, number of previous psychiatric admissions), concomitant medication or psychotherapy use, or expectancy (i.e., ACES scores at baseline). The distribution of principal diagnosis (i.e., panic disorder, social phobia, generalized anxiety disorder) across the two groups was also similar.

One significant group differences were obtained, however, despite random assignment. The pretreatment group had a higher number of GP visits in the past six

months. This suggests that the pretreatment group may have been higher in treatment seeking at baseline. Controlling statistically for this variable in the analyses presented above did not alter the direction or significance of the findings. It could also be that a group differences would be obtained by chance given the high number of comparisons.

Six-Month Follow-up

At follow-up, respondents were contacted by telephone and the SCID was readministered. Three individuals could not be reached to gather follow-up information (2 from NPT and 1 from the MI group). As expected, a two-way repeated measures ANOVA with pretreatment group (MI, NPT) and time (baseline, follow-up) as independent variables and number of diagnoses as the dependent variable, revealed a significant main effect of time, $F(1,30) = 33.10$, $p < .05$, but no significant interaction. The number of diagnoses for which participants met criteria declined significantly from baseline to follow-up ($M_{\text{baseline}} = 1.75$, $SD = 0.80$, $M_{\text{follow-up}} = 0.66$, $SD = 0.90$). These findings suggest that participants maintained treatment gains, regardless of pretreatment group assignment. Taken together with the finding of increased response in the pretreatment group post-CBT, this suggests that these gains were maintained for an overall enhanced CBT response with pretreatment that does not deteriorate at follow-up. Three individuals met criteria for a new diagnosis, two from the NPT group and one from the MI pretreatment group. All three new diagnoses were major depression. Two of these were classified as nonresponders post GCBT and one was originally classified as a responder.

Discussion

Overall the results of this randomized pilot investigation provide strong preliminary support for the viability and potential contribution of a brief prelude to CBT for anxiety, in this case MI. Positive findings were obtained on indices of both treatment engagement and response. With respect to the former, participants in the MI pretreatment condition exhibited enhanced expectancy for anxiety change following the pretreatment phase, whereas the passage of time did not influence anxiety change expectancy (i.e., NPT). Previous research has shown that expectancy significantly influences CBT outcomes. For example, lower treatment expectancy, as measured by the Treatment Expectancy Scale (Borkovec & Nau, 1972) is related to poorer treatment response in individuals participating in CBT for anxiety (Chambless, Tran and Glass, 1997; Safren, Heimberg, & Juster, 1997). In contrast, higher expectancy in one's ability to change anxiety prior to CBT, has been found to predict more positive CBT outcomes in GAD (Dozois & Westra, in press) and was significantly correlated with change in primary outcome measure in this study. As such, the present study suggests that pretreatment, in this case with MI, may enhance such expectancies, thereby potentially enhancing subsequent treatment outcomes. Further, in the present study, increases in change expectancy were significantly associated with better CBT outcomes. As such, these results further suggest that pretreatment may serve as a catalyst for initiating change even prior to beginning subsequent therapy.

In further support of beneficial effects of pretreatment on engagement in subsequent therapy, participants in the MI pretreatment condition reported greater CBT homework compliance relative to those who did not receive pretreatment. This finding suggests that individuals receiving pretreatment indicated greater involvement in

subsequent treatment. Moreover, higher homework compliance was also significantly related to better CBT response in this study, suggesting that such increased engagement may be important in promoting a positive response to CBT. In regard to how expectancies and engagement might function to enhance CBT response, Westra and Dozois (2004) found support for increased homework compliance as a mediator of the relationship between positive anxiety change expectancy and superior CBT outcomes in anxiety. Future studies attempting to replicate these findings, should systematically include measurement of possible mediating and moderating variables, in order to elucidate the nature of the influence of pretreatment on psychotherapy outcome. Such studies would also lead to an understanding of the individuals who might benefit most from pretreatment and/or MI.

When using therapist-rated homework compliance however, no differences between pretreatment and no pretreatment were observed. Low convergence between therapist and client rated measures of homework has also been noted in a recent review (Kazantzis, Deane & Ronan, 2004). The moderate convergence between group CBT co-therapists on homework ratings suggests that there was limited reliability of the therapist-rated version of this scale in this study. In part, this may be the result of limited exposure to clients' discussion of homework due to the relatively large anxiety groups run in the clinic (e.g., 10 to 15 members per group). The validity of the therapist rated measure of homework compliance is further questioned in view of findings that early homework compliance was weakly related to change (r=.23), whereas later therapist ratings were highly related to client change (r=.64). Thus, it is possible that the therapist’s rating of homework compliance was confounded with client change. Clearly,

low convergence between clients and therapists on homework ratings suggest that these were relatively independent measures in this study.

The present study also found enhancement of response rates to CBT in the MI pretreatment group. That is, while the rate of improvement in the NPT (i.e., CBT alone) group was comparable to that obtained in other CBT anxiety studies (cf., Westen & Morrisson, 2001), the pretreatment group evidenced a significantly higher number of individuals making clinically significant gains in anxiety symptom management. Moreover, these gains were maintained (in both groups) at six-month follow-up. These results support the potential of a pretreatment to enhance response rates to existing treatments such as CBT for anxiety. Interestingly, while pretreatment alone failed to produce anxiety or mood symptom change (which only occurred during CBT in this study), ultimately it was associated with superior response to CBT compared to no treatment prelude. This finding suggests that the impact of pretreatment may be indirect, rather than direct; affecting orientation to treatment (e.g., increased positive expectancy) and consequently represent a synergy with CBT rather than an additive effect. Follow-up studies investigating these relationships are clearly warranted on the basis of these results.

It is important to point out that on the basis of this study, inferences cannot be made about MI in particular. The present results merely support the idea that the application of *some type* of pretreatment prior to CBT can enhance outcomes. Further research is required and would necessitate inclusion of additional control groups such as other pretreatments (e.g., CBT education pretreatment) before attributions to MI in particular can be advanced. Such studies might include measures tapping constructs of

theoretical importance (e.g., ambivalence about change) to the particular pretreatment under examination in order to elucidate the degree to which the intervention operates through specific hypothesized mechanisms. Moreover, the comparison group in this study was essentially a wait-list control group and the impact of waiting for treatment alone could have produced the differences observed, especially with respect to motivation and engagement. While this can only be sufficiently ruled out in a study including other therapist contact control groups, it could be noted that there was no decrease in motivation observed from baseline to the post-pretreatment period in the NPT group and three weeks is not an atypical waiting time for beginning group therapy. Finally, since this was a pilot study, there was only a single therapist and as such, the results could simply be a reflection of the excellence of this therapist. Future follow-up investigations should use multiple therapists.

The present study does provide preliminary support for the use of a pretreatment in CBT for anxiety. This is consistent with the minimal but suggestive research on pretreatments in psychotherapy. For example, evaluations of Jerome Frank and associates Role Induction Interview (RII) showed benefit in enhancing outcomes to subsequent treatment which was found to operate at least partially through increased therapy involvement (attendance, better relationship ratings; Frank, 1974; Hoehn-Saric,1964, Walitzer, et al., 1999). In the only study directly comparing a RII with MI, Connors, Walitzer, and Dermen (2002) compared a 90-minute MI pretreatment session to a 90-minute RII, and a no-pretreatment (NPT) control group, for alcohol abuse. All participants subsequently received 12 individual and 12 group therapy sessions. Clients who received the MI pretreatment attended more subsequent therapy sessions and had

fewer heavy drinking days than did subjects who received NPT, with the latter no different from those who received the RII pretreatment. Clearly, more research is needed, particularly to identify what elements of a pretreatment might be effective as this latter study failed to find significant benefit of the RII over NPT but was supportive of MI as a pretreatment.

Further investigations of psychotherapy pretreatments would be worthwhile pursuits for both potentially enhancing outcomes in psychotherapy, and also delineating further the determinants of and influences on engagement in treatment. With respect to the former, studies of treatment supplements to CBT (or other forms of psychotherapy) may be particularly important in view of increasing recognition of the need to improve response rates to interventions such as CBT (Westen & Morrisson, 2001). Pretreatments may represent novel, viable, cost-effective options for pursuing this goal. Second, given that the majority of individuals fail to access or utilize effective psychotherapies (e.g., Colesa, Turk, Jindra, & Heimberg, 2002; Collins et al., 2004), identifying strategies and mechanisms underlying engagement in psychotherapy is crucial to broadening treatment response rates. Such investigations would also further delineate the mechanisms underlying any additive or synergistic effects of treatment preludes and as such, advance our understanding of how treatment works. Important work on developing motivational pretreatments for psychotherapy (e.g., prior to CBT in anxiety) are already beginning to emerge for post-traumatic stress disorder (e.g., Murphy, Rosen, Cameron, & Thompson, 2002) and obsessive-compulsive disorder (Maltby, Tolin, & Diefenbach, 2003).

Since this is the first controlled study investigating MI in anxiety, clearly future studies using this or other similar protocols are needed before such treatments can be advocated for widespread use. Research with specific anxiety or mood disorder populations and with other therapists (other than a single therapist as used in this study) would be particularly useful so that effects can be evaluated more precisely for various clinical presentations and generalizability across other therapists can be assessed. To provide a very preliminary examination of the promise of prelude MI, we calculated effect sizes for the various findings by diagnostic subgroupings. Although inferences are clearly limited by small sample size, these analyses suggested that all anxiety diagnostic groups in this study appeared to benefit from pretreatment, compared with NPT, on one or more outcome measures. This effect might be considered the strongest for GAD with strong effect sizes for increased homework compliance in CBT and better CBT outcomes. It should be noted however that these findings are also very preliminary in view of low sample size, rendering group averages highly vulnerable to within group variance. It should also be noted that individual responses are ultimately equally critical in understanding these findings. For example, increases in expectancy for change, regardless of pretreatment assignment, were associated with more positive response to CBT.

Other limitations of this study include the failure to include formal protocol adherence procedures, the finding of two group differences for whom statistical control is inadequate (i.e., other associated systematic differences may exist in participants across the two groups potentially accounting for outcome differences in the present study), and failure to control for concomitant treatment. It could be for example, that the

MI pretreatment increased adherence to concomitant medication use, thereby enhancing outcome. It should be noted however that while such variables need to be better controlled to improve internal validity, the sample in the present study represents a typical treatment-seeking anxiety population (i.e., involvement of other providers, concurrent medication use, chronic symptoms, etc.) and as such has good external validity. However, the study also poses other external validity issues, such as having two therapists (MI & CBT) rather than a single therapist delivering all of the treatment and the inclusion of both individual and group therapy. Again, the findings of the present study should be regarded as preliminary and future research might examine for instance, an integrated MI/CBT therapy delivered by a single therapist to be used at all points when ambivalence about treatment arises. Given the promising findings of this pilot study, further studies of this nature would represent an important test of the value of MI as a CBT-adjunct and elucidate potential mechanisms underlying any synergistic or additive effects of these treatments.

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Footnotes

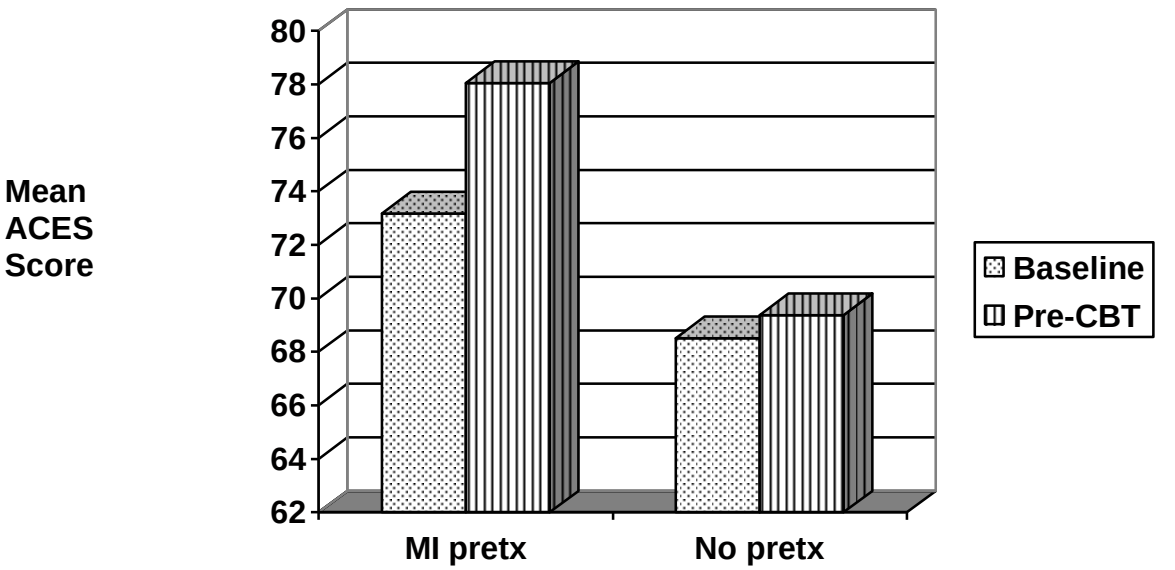
1. Manual available from hwestra@yorku.ca

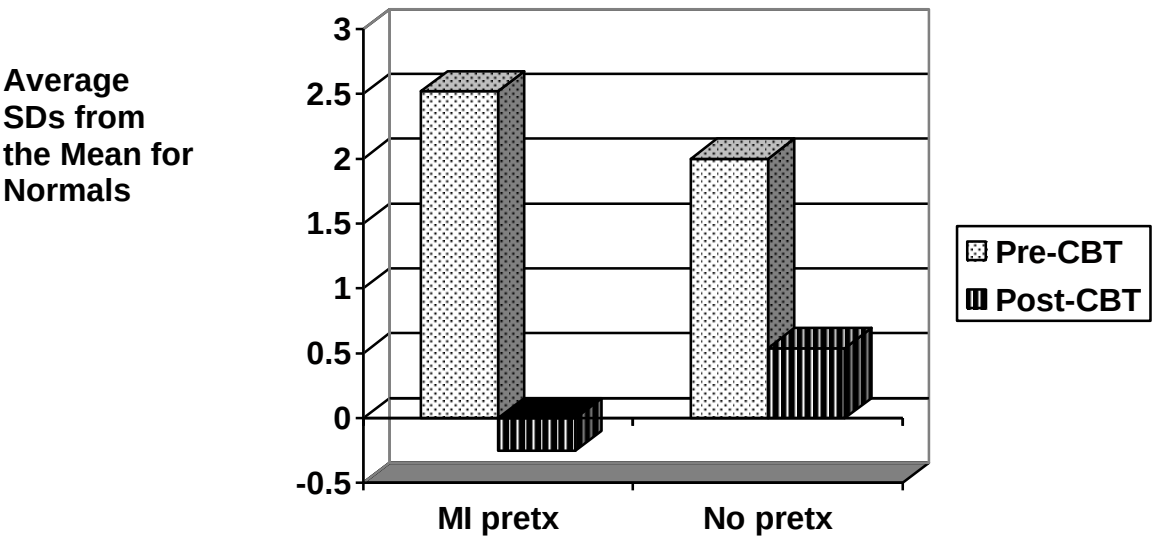
Figure Captions

Figure 1. Mean Anxiety Change Expectancy Scores baseline to pre-CBT by Pretreatment Group

Figure 2. Average Standard Deviations From the Mean for Normals, Pre- and Post-CBT as a Function of Pretreatment Group

Figure 3. Percent CBT Responders, Partial Responders, Nonresponders as a Function of Pretreatment Group


Mean ACES Score
80
78
76
74
72
70
68
66
64
62
MI pretx
No pretx
Baseline
Pre-CBT


Average SDs from the Mean for Normals
3
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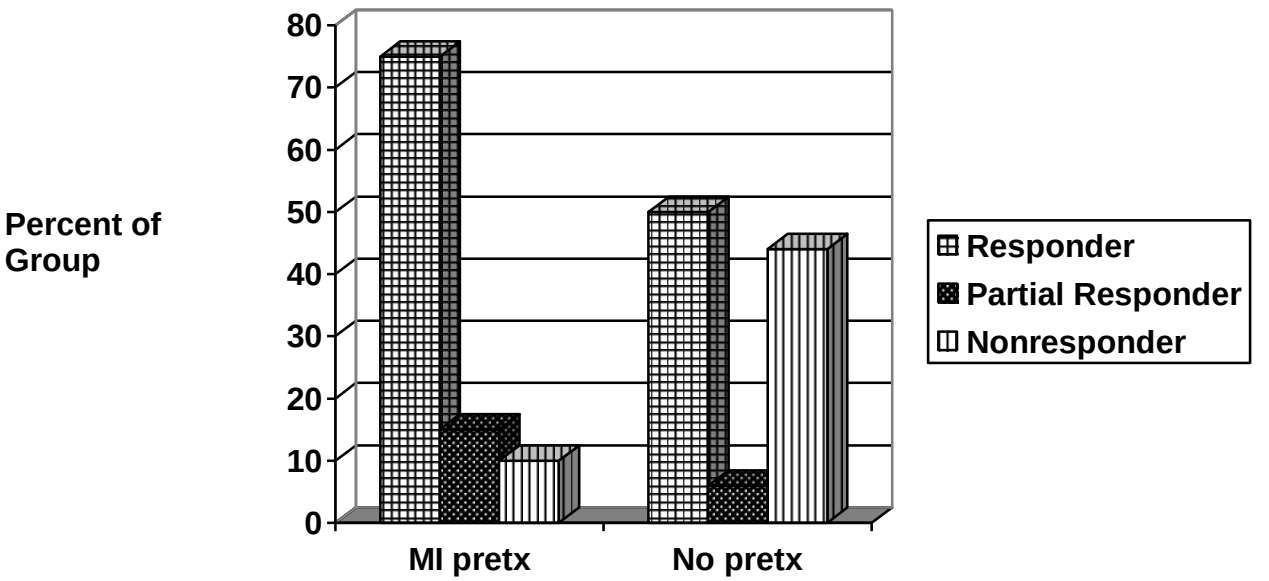
2
1.5
1
0.5
0
-0.5
MI pretx
No pretx
Pre-CBT
Post-CBT


Percent of Group
80
70
60
50
40
30
20
10
0
MI pretx
No pretx
Responder
Partial Responder
Nonresponder