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Markers for Context-Responsiveness: Client Baseline Interpersonal Problems Moderate the Efficacy of Two Psychotherapies for Generalized Anxiety Disorder

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Markers for Context-Responsiveness: Client Baseline Interpersonal Problems Moderate the Efficacy of Two Psychotherapies for Generalized Anxiety Disorder

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Objective: To follow-up a randomized clinical trial that compared the acute and long-term efficacy of 15 sessions of cognitive–behavioral therapy (CBT) versus CBT integrated with motivational interviewing (MI) for severe generalized anxiety disorder (GAD; Westra, Constantino, & Antony, 2016), we (a) characterized the sample's baseline interpersonal problems, and (b) analyzed the role of several theory-relevant problems as moderators of the comparative treatment effects on outcome. ***Method:*** We first compared clients' ($N = 85$) baseline interpersonal problems profile to a general clinical sample. We next conducted piecewise, 2-level growth models to analyze the interactive effects of treatment condition and the hypothesized interpersonal problem indices of nonassertiveness (ranging from low to high), exploitability (ranging from low to high on this specific combination of nonassertiveness and friendliness), and overall agency (ranging from more problems of being too submissive to more problems of being too domineering, including friendly or hostile variants) on acute and follow-up worry reduction. Finally, we conducted hierarchical generalized linear models to examine these interactive effects on the likelihood of achieving clinically meaningful worry reduction across follow-up. ***Results:*** As expected, the GAD clients evidenced more nonassertive and exploitable interpersonal problems than the general clinical sample. Also as predicted, clients with more problematic nonassertiveness and low overall agency in their relationships had greater follow-up worry reduction in MI-CBT versus CBT, including to a clinically significant degree for the agency by treatment interaction. ***Conclusions:*** GAD-specific interpersonal problems can serve as contextual markers for integrative treatment selection and planning.

What is the public health significance of this article?
Clients with severe GAD are characterized by certain types of baseline interpersonal problems that influence their long-term response to psychotherapy type. These interpersonal difficulties may therefore be important contextual markers for treatment planning and selection. Specifically, GAD clients who report having more problematic nonassertiveness and low overall agency may be more responsive in terms of worry reduction in the long run when CBT integrates MI.

Keywords: GAD, interpersonal problems, cognitive–behavioral therapy, motivational interviewing, context-responsive psychotherapy integration

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Despite cognitive–behavioral therapy (CBT) demonstrating efficacy in treating anxiety disorders in general (Watts, Turnell, Kladnitski, Newby, & Andrews, 2015), its specific efficacy for generalized anxiety disorder (GAD) is humbler. In a meta-analysis of CBT for GAD, the authors estimated that the number of clients needed to treat to generate one positive outcome is 2.10, suggest-

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ing that less than 50% of clients respond (Cuijpers et al., 2014). It is plausible that certain characteristics of clients with GAD could interfere with the overall efficacy of traditional CBT. Accordingly, Aptitude × Treatment interaction (ATI) models seek to identify such factors to help inform and improve client-treatment matching (Smith & Sechrest, 1991).

One set of GAD clients' characteristics that might be salient for differential treatment response is problems in interpersonal relating (Newman et al., 2011). Supporting the relevance of interpersonal functioning, social concerns represent the most frequent worry content in persons with GAD (Breitholtz, Johansson, & Öst, 1999), and these individuals are more likely than those without the disorder to perceive words and faces as socially threatening (Mogg, Millar, & Bradley, 2000). Additionally, GAD associates with insecure attachment (Cassidy, Lichtenstein-Phelps, Sibrava, Thomas, & Borkovec, 2009), and social anxiety disorder is the most frequent anxiety disorder comorbid with GAD (Newman, Przeworski, Fisher, & Borkovec, 2010).

Given these findings, some have argued that CBT's relatively humble success rates for GAD might be a function of this treatment not adequately addressing interpersonal difficulties that appear characteristic of the disorder, and that incorporating more interpersonally focused interventions might improve CBT response (Newman, Castonguay, Borkovec, Fisher, & Nordberg, 2008). Consistent with this hypothesis, GAD clients with higher levels of a dismissing attachment style demonstrated improvement in CBT that integrated specific interpersonal and emotional processing (I/EP) techniques, but not in traditional CBT with a supportive listening control component in place of I/EP (Newman, Castonguay, Jacobson, & Moore, 2015). These results highlight an ATI that may help optimize treatment fit for a specific subset of insecurely attached clients with GAD, which is consistent with the overarching movement toward personalizing mental health care (e.g., DeRubeis et al., 2014).

In light of Newman, Castonguay, Jacobson, and Moore (2015) results, it may be that other types of interpersonal variables have relevance both for understanding the nature of GAD and for informing aptitude-treatment fit for this condition. In this regard, some studies have focused specifically on analyzing interpersonal problems in individuals with GAD using the *Inventory of Interpersonal Problems* circumplex scales (IIP-C; Horowitz, Alden, Wiggins, & Pincus, 2000). Based on interpersonal theory, this instrument describes, in circular configuration, interpersonal problems according to different combinations of the main interpersonal dimensions of agency and communion. Agency, represented on the vertical axis, represents the degree of influence that someone has on others; this axis ranges from problematic submissive behaviors (negative pole) to problematic domineering behaviors (positive pole). Communion, represented on the horizontal axis, represents the degree of connection that someone seeks with others; this axis ranges from problematic cold, hostile behaviors (negative pole) to problematic caring, friendly behaviors (positive pole). The IIP-C's various two-dimensional combinations produce eight subscales: domineering (overly agentic, neutral communion), intrusive (overly agentic, overly communal), overly nurturant (neutral agency, overly communal), exploitable (under agentic, overly communal), nonassertive (under agentic, neutral communion), socially inhibited (under agentic, under communal), cold (neutral agency, under communal), and vindictive (overly agentic, under communal).

Research on GAD has shown that its sufferers have a general interpersonal problem profile of being under agentic and/or overly communal (Przeworski et al., 2011; Salzer et al., 2008). More specifically, persons with GAD present with elevations, relative to controls, in nonassertiveness, exploitability, and over nurturance (Eng & Heimberg, 2006). Consequently, these specific problem types might represent additional conditions under which clients respond better to CBT that more effectively addresses them than to traditional CBT that does not.

Potentially fitting this bill, a recent adaptation of CBT for GAD integrates motivational interviewing (MI), specifically to address client resistance to the direction of the therapist or treatment (Westra, Constantino, & Antony, 2016). Resistance in this case can be formulated as a consequence of GAD clients' ambivalence about relinquishing their cardinal symptom of worry, which despite its distress-causing nature, might also be perceived as a functional way to maintain readiness and control (Newman, Llera, Erickson, Przeworski, & Castonguay, 2013). Interpersonally, resistance can also represent an attempt at assertiveness, which in this scenario would be to protect one's need to retain worry despite the therapist's direction to relinquish it (Westra, 2012). As noted above, such interpersonal assertiveness is not a typical "aptitude" for persons with GAD. Thus, it is plausible that a CBT therapist continuing to push for change in the face of client resistance, while adherent to the treatment model, would be a recapitulation of a common interpersonal problem that characterizes GAD; that is, an interacting other dominates, and the GAD person relents by adopting his or her more typical excessively nonassertive stance (Constantino & Westra, 2012). To the extent that this typical stance characterizes, and perhaps even contributes to, GAD pathology, it would follow that the reinforcement of this pattern might render standard CBT methods ineffective for addressing this underlying interpersonal characteristic.

Instead, using MI during the interpersonal event of client resistance holds promise as a type of corrective relational experience in which one's assertiveness, especially in light of it being an interpersonal risk-taking event for GAD persons, is valued and validated. More specifically, MI is a client-centered approach in which the therapist strives not to be an external agent of change, but rather a supporter of clients' own self-efficacy and advocacy for change (Miller & Rollnick, 2002). Thus, MI therapists work from a "spirit" of empathy, collaboration, evocation, and preservation of client autonomy, while also employing strategies that assist clients to self-argue for change. In this sense, the clients' assertion of their own needs is interpersonally reinforced as a potentially therapeutic interpersonal experience that can be generalized to relationships outside of the therapy exchange (Constantino & Westra, 2012). Such autonomy-taking may allow patients to choose to relinquish, or at least diminish, their worry, perhaps paradoxically because nobody is demanding them to do so.

Testing whether integrated MI-CBT was indeed more efficacious than standard CBT for clients with high worry GAD, Westra, Constantino, and Antony (2016) found equivalent worry reduction between the conditions at posttreatment. However, MI-CBT versus CBT alone clients showed significantly greater continued worry reduction from posttreatment through 12-month follow-up. The authors posited that this "sleeper" effect was likely a function of the benefits of the corrective experience with the therapist (i.e., receiving support for enhanced interpersonal agency-taking and

self-efficacy) not emerging until the most salient time of when the therapist was no longer available.

Moreover, several follow-up analyses supported the hypothesized mechanism of the client-centered MI strategies being more effective at addressing and reducing in-session resistance than the directive CBT strategies. In a quantitative mediator study, 76% of the additive effect of MI-CBT over CBT on long-term worry was transmitted through reduced midtreatment resistance (Constantino, Westra, Antony, & Coyne, 2017). In a qualitative study with one MI-CBT client and one CBT client from the Westra et al. (2016) trial, the researchers conducted posttreatment interviews that centered on these clients' perceptions of corrective experiences in their respective treatments (Khattra et al., 2017). The MI-CBT client uniquely endorsed having greater confidence in her own agency, which corresponded to a belief that she could maintain her therapy gains now that treatment had ended. The CBT client, on the other hand, made more external change attributions; that is, she attributed corrective shifts to the therapist's expertise. Although this comparison is limited by the small sample, it supports the hypothesized notion that MI may represent a particularly good-fitting, integrative, and context-responsive strategy when the GAD client with problems of nonassertiveness takes an in-session risk by challenging the treatment's direction (see Constantino, Bernecker, Boswell, & Castonguay, 2013). Another qualitative study, though this time focused only on the MI-CBT clients ($n = 8$), yielded converging evidence (Macaulay, Angus, Khattra, Westra, & Ip, 2017). Specifically, clients (who all met recovery status at posttreatment) reported feeling as though the integrative treatment helped them increase their assertiveness and expression of needs.

Although the above results suggest a long-term benefit of assimilating MI into CBT, they do not directly assess the possibility of systematic ATIs. Even though most GAD clients will have a risk for being under agentic and/or overly communal in their relationships (Eng & Heimberg, 2006), there will still be within population individual differences on these dimensions (Przeworski et al., 2011). Thus, it is possible that integrating MI into CBT during moments of client resistance would be particularly useful for clients with the most extreme levels of nonassertiveness and exploitability, as well as being under agentic in general, whether in friendly or hostile variants. Even though MI-CBT outperformed traditional CBT over the 12-month follow-up period (Westra et al., 2016), for clients with more problematic nonassertiveness, exploitability, and generally low agency, this advantage might be even greater in the long run. Also, although the treatment groups did not differ in general at posttreatment, it is possible that treatment differences could emerge when interacting with these specific baseline interpersonal problems (i.e., ATIs).

Thus, in the present study, we tested for these putative moderating effects in the Westra et al. (2016) dataset. We hypothesized that (a) the GAD sample, relative to a general psychiatric sample, would evidence an interpersonal profile characterized by more problematic nonassertiveness, exploitability, and overall low agency in their relationships; and (b) clients with more of these types of problems would be more responsive to MI-CBT than CBT alone, at both posttreatment and follow-up. Finding that MI-CBT is especially well-matched to the interpersonal problems that are characteristic of GAD would provide additional information for helping to personalize therapy approaches beyond matching standard treatment packages to diagnostic categories.

Method

Participants

Clients were 85 adults randomly assigned to receive either MI-CBT ($n = 42$) or CBT ($n = 43$) at one of two sites in the greater Toronto area. To be eligible, clients had to (a) meet diagnostic criteria for a principal GAD diagnosis based on the *Diagnostic and Statistical Manual of Mental Disorders* version IV, Text Revision (*DSM–IV–TR*; American Psychiatric Association, 2000) and Version 5 (*DSM- 5*; American Psychiatric Association, 2013); and (b) score at or above a high severity cutoff of 68 on the *Penn State Worry Questionnaire* (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990; described below). Clients taking an antidepressant medication were eligible only if they had been using the same medication and dose for a minimum of 3 months prior to the trial and agreed to maintain their regimen during treatment. Clients who had discontinued a psychotropic medication were eligible only if they had experienced a washout period of at least 3 months before the study. Finally, clients who were unmedicated at the start of the trial were required to remain unmedicated throughout. Exclusion criteria included psychotic spectrum disorders or bipolar disorder, major cognitive impairment, substance dependence within the past 6 months, significant current suicidal ideation, and engaging in concomitant psychotherapy. The mean age of the full sample was 33.33 years ($SD = 11.29$ years). Most clients were female (88.24%), Caucasian (75.29%), and at least college educated (67.06%), and most reported an annual household income of less than $75,000 (61.17%). Diagnostic comorbidity was common, with 70.59% of clients meeting criteria for an additional anxiety disorder and 35.29% for depression/dysthymia.

Therapists were 21 female trainees. To control for allegiance and crossover effects, the therapists self-selected to treat clients in either the MI-CBT ($n = 9$) or CBT ($n = 12$) condition. Reflecting their self-interests, the majority of MI-CBT therapists identified their primary theoretical orientation as integrative (56%), whereas the majority of CBT therapists identified their primary orientation as cognitive–behavioral (83.3%). The therapists averaged 28.76 years of age ($SD = 3.46$ years) and 294.74 hr of clinical experience ($SD = 420.44$ hr), and did not differ between conditions on either of these characteristics. Therapists were trained in their selected treatment through workshops and pilot case feedback administered by a CBT expert in the CBT condition and an MI and CBT expert in the MI-CBT condition. The experts also provided intensive supervision on study cases. In both conditions, therapists saw a median of four clients (range = 1 to 6 clients in CBT, and 1 to 13 in MI-CBT).

Treatments

In both conditions, clients received 15 sessions lasting 50 min each, plus two "booster" sessions at 1- and 3-months posttreatment. In the CBT alone condition, CBT strategies commenced immediately. In MI-CBT, clients received up to four initial sessions of "pure" MI, followed by 11 sessions of the fully integrated MI-CBT. As expected with this additive design, observer ratings of therapist CBT competence were comparable between the treatment groups when the MI-CBT therapists were indeed administering CBT interventions. Moreover, observer-ratings of therapist

MI fidelity appropriately discriminated between the treatment groups on key components of MI (e.g., as a group, MI-CBT therapists demonstrated significantly more MI spirit throughout treatment than CBT therapists; see Westra et al., 2016, for details). These findings suggest that therapists were able to execute the additive design by maintaining a competently faithful CBT approach across both conditions, and assimilating MI strategies responsively in the MI-CBT condition only.

CBT. Standard CBT was adapted from several evidence-based GAD protocols (see Westra et al., 2016). The treatment amalgam included psychoeducation about worry and anxiety, imaginal exposure, progressive muscle relaxation, cognitive self-monitoring and restructuring, and, when necessary, sleep strategies. To address resistance, therapists in the CBT alone condition used orientation-specific, directive strategies, such as collaborative goal setting, reiterating the treatment rationale, and active problem solving.

MI-CBT. The integrative treatment was based on the same CBT protocol, but also included MI principles (Miller & Rollnick, 2002) adapted for GAD (Westra, 2012). MI is a client-centered treatment module consisting of a foundational "spirit" of evocation, autonomy support, and empathy, as well as focused strategies, such as developing discrepancies between clients' current and valued self, "rolling with" versus challenging or minimizing resistance, and scaffolding clients' self-efficacy for change. In contrast to substance abuse treatment where a single, consistent target behavior can be identified (e.g., drinking), target behaviors in anxiety treatment are typically variable, shifting, and multiple (e.g., worry, self-criticism, perfectionism, nonassertiveness). Thus, therapists in this study were trained to identify the multiple anxiety-related target behaviors and to move flexibly in working with them when they presented.

The initial "pure" MI sessions were aimed solely at exploring and validating clients' feelings about change. The typical client received the four initial sessions of MI alone. The exceptions to this were cases where the client was clearly highly motivated (from the therapist's perspective), as indicated by the presence of repeated markers of high levels of readiness for change or being clearly frustrated by not receiving more direct, practical direction. In those cases, the switch to CBT was made one or two sessions early (i.e., between Session 2 to 4), with every client still receiving the full 15 sessions of treatment total. This version of CBT, however, was always conducted within the technically named *spirit* of MI (i.e., characterized by the manual-prescribed attitude of therapist collaboration, empathy, evocation, and respect for client autonomy), and therapists would shift into explicit MI *strategies* in response to markers of resistance. Once the resistance appeared resolved, the therapist shifted back to MI-spirited CBT.

Measures

Interpersonal problems. To measure the moderator variables of interpersonal problems, clients completed the 32-item IIP-C (Horowitz et al., 2000). The items assess interpersonal inhibitions and excesses, with each item rated on a 5-point scale from 0 (*not at all*) to 4 (*extremely*). The IIP-32 total score (reflecting total interpersonal distress, or *elevation*) has shown adequate internal consistency (Cronbach's alpha = .68 to .89), adequate test–retest reliability (*r*s = .41 to 83), and a strong correlation with the original IIP-C (*r*s = .91 to .98; Soldz, Budman, Demby, & Merry, 1995). In the current sample, the Cronbach's alpha for the IIP-C total score was .85.

For this study, we calculated the eight aforementioned subscales (again, the two-dimensional configurations of the agency and communion dimensions) by summing the four scale-specific items and then dividing by four, resulting in a possible range of zero to four. Higher scores reflect more interpersonal problems of that type. The moderator analyses (presented below) centered on the theory-relevant subscales of nonassertive (under agentic, neutral communion) and exploitable (under agentic, overly communal). We also calculated the overall agency and communion dimensions, according to the following formulas (Ruiz et al., 2004): agency = .25 (domineering − nonassertive + .71 [intrusive + vindictive − socially inhibited − exploitable]); communion = .25 (overly nurturant − cold +.71 [intrusive − vindictive − socially inhibited + exploitable]). The possible scores for these dimensions range from −9.68 (under agentic and under communal, respectively) to 9.68 (overly agentic and overly communal, respectively), with both extremes representing problematic interpersonal behaviors. The third moderator analysis centered on the theory-relevant dimension of overall agency (in any configuration with high communion, low communion, and neutral communion), though we also examined overall communion to fully characterize the sample according to all IIP-C indices (aim 1). For the eight subscales, the αs were: domineering = .78, intrusive = .72, overly nurturant = .82, exploitable = .77, nonassertive = .85, socially inhibited = .78, cold = .85, and vindictive = .80.

Worry. To measure the outcome variable of worry, clients completed the PSWQ (Meyer et al., 1990). The PSWQ consists of 16-items rated on a scale from 1 (*not at all typical of me*) to 5 (*very typical of me*). The possible total score, which was used in this study, ranges from 16 to 80, with higher scores indicating greater worry. The PSWQ has good concurrent, discriminant, and convergent validity, as well as high test–retest reliability and internal consistency (Meyer et al., 1990). In the current sample, the PSWQ total score demonstrated excellent average internal consistency at baseline, each administration during therapy, posttreatment, 6-month follow-up, and 12-month follow-up (average α = .93).

To establish if clients achieved clinically meaningful improvement, we used the criteria developed by Jacobson and Truax (1991) and the normative data for PSWQ presented by Gillis, Haaga, and Ford (1995). As was the case in the main outcome report (Westra et al., 2016), clinically meaningful improvement criteria included two elements: (a) a PSWQ reduction greater than 9 points (indicating reliable change); and (b) a final PSWQ score of ≤58 (indicating clinically significant improvement; that is, a score closer to the normal than clinical range).

Procedures

See Westra et al. (2016) for full details on participant flow through the trial. Relevant to the present study, clients completed the IIP-C at baseline, and the PSWQ at baseline, after each session, and at 6- and 12-month follow-up. The participants also provided demographic information before treatment's initiation. All study procedures were approved by the institutional review boards at both of the sites where the data were collected.

Data Analyses

We first compared the two treatment conditions on all baseline and demographic variables. Following Westra et al. (2016), the effects of any baseline variables that differed between the two treatment conditions were residualized out of our continuous PSWQ variable. For our dichotomous outcome of clinically meaningful improvement, these variables were treated as covariates, as their effects could not be residualized out of this binary outcome. Next, to characterize the baseline profile of interpersonal problems in GAD clients (Aim 1), we compared the IIP-C data in the current sample to a general psychiatric sample by conducting a series of *t* tests. To guard against Type I error, we used a Bonferroni correction to adjust the α level. Based on the nine tests, the critical *p* value for significance was adjusted to .006 (i.e., .05/9).

For our Aim 2 analyses involving both our continuous and dichotomous outcome variables, we used hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) given its ability to address dependency in the repeated measures data. Moreover, because HLM takes into account information from all individuals in the sample when calculating parameter estimates, it is robust in handling missing within-client data (at level-1 in the HLM).[1] For the continuous PSWQ outcome, the model mimics an intent-to-treat (ITT) framework by retaining clients in the longitudinal analysis who had at least one PSWQ score from baseline through follow-up. For the dichotomous outcome of clinically meaningful change on the PSWQ, we maintained the ITT framework by carrying forward the last observation (of meeting or not meeting reliable *and* clinically significant change criteria on the PSWQ) to the relevant time point. Although HLM does not handle missing between-client predictor data (at level-2 in the HLM), this was not an issue given that there were no missing data for the IIP-C indices or treatment assignment at baseline. Thus, all 85 clients were included in all analyses. It is also important to note that although clients were nested within therapists, creating an additional source of dependency, we did not conduct a three-level model to address therapist effects given that less than 1% of the variance in acute treatment worry change, change in worry across the follow-up period, and posttreatment worry level was accounted for by the person of the therapist (Westra et al., 2016).

For the continuous PSWQ outcome, we conducted piecewise two-level growth models to simultaneously estimate both within-client weekly changes (linear and quadratic) in worry (level-1) during acute treatment (piece 1) and follow-up (piece 2), and between-client differences on these worry outcomes (level-2). As the rate of improvement during acute treatment and follow-up are expected to be different, this piecewise analysis allowed us to simultaneously test between-person (level-2) predictors of the growth rates across acute treatment and follow-up, while accounting for the dependency between the repeated measures across both periods. Time in these models was centered at Week 15, the point at which the two pieces overlap; thus, the model intercept reflects worry level at posttreatment (i.e., Week 15) and the linear slope for acute treatment (piece 1) reflects the rate of worry change at Week 15. Prior to conducting our predictor models, we first fit an unconditional model with time as the only predictor (at level-1). This model allowed us to characterize the average rate of worry change at posttreatment (piece 1 linear slope), acceleration in worry change during acute treatment (piece 1 quadratic slope), posttreatment worry level (intercept), and rate of follow-up worry change (piece 2 slope) for the entire sample (see online supplement for a full description of the parameters in this model).[2] We next conducted two conditional models for each hypothesized IIP-C index moderator (i.e., nonassertive subscale, exploitable subscale, and agency dimension). For the purpose of comparison, we first ran a conditional model with only the main effects as predictors (i.e., treatment condition [MI-CBT = 0; CBT = 1] and the relevant baseline IIP-C index). We then ran a model that included the main effects and the relevant IIP-C index by treatment condition interaction term. This two-step procedure allowed us to isolate the effects of the interaction term, and to calculate the amount of added variance in the worry outcomes explained by the addition of the interaction term to the model. All IIP-C indices were grand mean centered.[3] See the online supplement for the general equation for the models examining the IIP-C index by treatment condition interaction as a predictor of worry.

For the dichotomous PSWQ outcome, we conducted two-level hierarchical generalized linear models to test if the IIP-C indexes moderated the effects of treatment condition on the likelihood of achieving clinically meaningful improvement across the follow-up period. With these models, we analyzed the within-client changes in the probability of achieving such improvement as a function of time in weeks (level-1) and between-client differences (level-2) in the weekly rate of change in the likelihood of achieving meaningful improvement across the follow-up period (i.e., the slope) and the likelihood of achieving meaningful improvement at 12-month follow-up (i.e., the intercept). See the online supplement for the general equation and interpretation of the model parameters for our dichotomous outcome models.

Results

Sample Descriptive Statistics

The two conditions did not differ significantly at baseline in terms of symptom severity, any IIP indices, or any demographic variables other than gender. CBT had more women and fewer men (*n*s = 41 and 2, respectively) than MI-CBT (*n*s = 34 and 8, respectively), χ^2 (1) = 4.24, $p = .04$. As noted in the flagship trial report (Westra et al., 2016), there were two other significant (or near significant) baseline differences between treatment conditions. First, on the change questionnaire (CQ; Miller & Johnson, 2008), a 12-item scale for which clients rate items

[1] As Westra et al. (2016) reported, missing data was minimal, and only due to dropout. Eighty-four percent of the sample completed all 15 sessions and all PSWQ measurements. Thus, only 16% of the total sample had any missing PSWQ data, though even that amount was rather low given that the mean number of sessions attended (and, thus, PSWQs completed) was 13.24 (*SD* = 4.08).

[2] We did not test a quadratic model for piece 2 given that there were only three follow-up time points for which the model could estimate change.

[3] Note that as recommended by Aiken and West (1991), the IIP-C variables were centered at their grand mean prior to the creation of the interaction terms.

from 0 to 10 that assess their motivation for change, CBT clients presented with significantly greater motivation (M = 107.23, SD = 8.76) than MI-CBT clients (M = 101.59, SD = 11.49), $t(83) = 2.55$, $p = .01$. Second, more CBT clients (n = 14) were taking antidepressant medication than MI-CBT clients (n = 6), χ^2 (1) = 3.94, $p = .05$. Additionally, baseline motivation and antidepressant medication status differed by site. Thus, to control for the potential effects of these differences on the outcome variable of worry, we followed Westra et al.'s (2016) procedure of residualizing out the effects of these three variables on PSWQ. For all continuous outcome models, these residualized PSWQ scores were used as the outcome variable. For all binary outcome models, we included medication status and motivation as covariates.

Baseline Interpersonal Problems Profile

Table 1 presents the current sample descriptive statistics for all IIP-C indices, as well as a direct comparison of these descriptives to a general clinical sample of Canadian psychiatric outpatients (Ogrodniczuk, Piper, Joyce, Steinberg, & Duggal, 2009). As there were no missing IIP-C data in the current sample, all 85 clients were included in these baseline analyses. The participants in the Ogrodniczuk, Piper, Joyce, Steinberg, and Duggal (2009) study were 240 clients consecutively admitted to an outpatient clinic at the University of Alberta Hospital in Edmonton, Canada. They had a mean age of 37.4 years (SD = 11.0 years) and presented with various syndromal conditions (e.g., major depressive disorder = 59.9%; dysthymia = 14.2%) and personality disorders (e.g., borderline = 35.8%; avoidant = 32.5%; obsessive–compulsive = 23.3%; narcissistic = 8.8%). Because Ogrodniczuk et al. (2009) did not report descriptives for the agency and communion dimensions, we were unable to make comparisons on them. As expected based on prior research, the current sample of GAD clients had significantly more problems of nonassertiveness and exploitability (i.e., problems of being under agentic and overly communal) than clients in the general psychiatric sample. Conversely, the general psychiatric clients had significantly more problems of vindictiveness and coldness (i.e., problems of being overly agentic and under communal) than clients in the current GAD sample. See supplemental Figure 1 for a graphical depiction of these comparative profiles of the eight IIP-C subscales.

Continuous Outcome Models

Unconditional model. Results indicated that the average client experienced a significant reduction in their worry at Session 15 (i.e., piece 1; $\gamma_{10} = -1.49$, $p < .001$), and a significant weekly reduction in worry across follow-up (i.e., piece 2; $\gamma_{20} = -0.06$, $p = .03$). The average acceleration of worry change during treatment (piece 1) was not significant ($\gamma_{30} = 0.01$, $p = .55$), indicating no average curvilinear pattern to acute treatment worry change. However, random effects indicated that the rate of acceleration in worry change during treatment varied significantly across clients ($u_3 = 0.02$, $p < .001$), indicating significant between-client variability in the quadratic parameter to be explained by the addition of between-client predictor variables.

Nonassertiveness. The interaction between nonassertive problems and treatment condition did not significantly predict the rate of worry reduction at Session 15 (i.e., piece 1) or worry level at Session 15 (i.e., the intercept; see Table 2). However, the interaction of baseline nonassertive problems and treatment approached significance in predicting the rate of acceleration in worry reduction during acute treatment (piece 1), $\gamma_{33} = 0.02$, $SE = 0.01$, 95% CI [−0.0001, 0.0351], $t(81) = 1.932$, $p = .06$, *pseudo* $R^2 = .08$. As nonassertive problems increased, CBT clients' worry trajectories became more positively accelerated, resulting in a slight U-shaped pattern. As nonassertive problems decreased, CBT clients' worry trajectories became more negatively accelerated, resulting in a slight upside-down U-shaped pattern. Nevertheless, it is important to reiterate not only that

Table 1
Current and Comparison Sample IIP-C Descriptive Statistics

	GAD sample baseline IIP (n = 85)		(Ogrodniczuk et al., 2009) (n = 240)			
IIP-C	*M*	*SD*	*M*	*SD*	*t*	*p*
Domineering	.91	.87	1.16	.71	−2.62	.009
Vindictive	.80	.90	1.27	.67	−5.05	< .001*
Cold	1.10	.98	1.57	.76	−4.53	< .001*
Socially avoidant	2.06	.97	2.08	.92	−.17	.87
Nonassertive	2.73	.98	2.27	.90	3.96	< .001*
Exploitable	2.60	.94	2.08	.80	4.91	< .001*
Overly nurturant	2.38	1.06	2.09	.76	2.71	.007
Intrusive	1.37	.95	1.34	.67	.32	.75
D-Agency	−3.59	2.32	—	—	—	—
D-Communion	2.07	2.57	—	—	—	—
Elevation	1.74	.52	1.73	.49	.16	.87

Note. IIP-C = Inventory of Interpersonal Problems- circumplex scales; GAD = generalized anxiety disorder. The statistical comparisons were conducted using t-tests for summary data. Recall that the corrected α for significance was set at .006).
* $p < .006$.

Table 2
Summary of the Unconditional and Conditional Models Analyzing the Main Effects and Moderating Effects of Interpersonal Problems on Treatment Efficacy

	Worry level at posttreatment		Weekly change in worry in Piece 1		Weekly change in worry in Piece 2		Weekly acceleration in worry growth Piece 1	
Fixed model effects	γ	*SE*	γ	*SE*	γ	*SE*	γ	*SE*
Unconditional model								
Intercept	−9.66***	1.92	−1.49***	.29	−.06*	.03	.01	.02
Nonassertive IP								
Main effects model								
Intercept	−9.96***	2.68	−1.37**	.41	−.13**	.04	.02	.02
Treatment	.64	3.77	−.24	.58	.13*	.06	−.02	.04
IP	−.77	.49	−.004	.08	−.003	.01	.003	.004
Interactional model								
Intercept	−9.96***	2.66	−1.38**	.40	−.13**	.04	.02	.02
Treatment	.68	3.76	−.25	.57	.13*	.06	−.02	.03
IP	−.32	.74	−.10	.11	−.02†	.01	−.01	.01
IP × Treatment	−.81	.98	.18	.15	.03*	.01	.02†	.01
Model comparison	$\Delta \chi^2(4) = 7.19, p = .13$							
Exploitable IP								
Main effects model								
Intercept	−9.95***	2.72	−1.38**	.41	−.13**	.04	.02	.02
Treatment	.60	3.83	−.23	.58	.13*	.06	−.02	.04
IP	−.07	.51	.05	.08	−.01	.01	.003	.004
Interactional model								
Intercept	−10.07***	2.69	−1.38**	.41	−.13**	.04	.02	.02
Treatment	.67	3.79	−.23	.58	.13*	.06	−.02	.03
IP	.79	.84	.05	.13	−.02†	.01	−.001	.01
IP × Treatment	−1.35	1.05	.01	.16	.03†	.02	.01	.01
Model comparison	$\Delta \chi^2(4) = 4.03, p = .40$							
Agency IP								
Main effects model								
Intercept	−10.05***	2.71	−10.14**	.41	−.13**	.04	.02	.02
Treatment	.80	3.82	.87	.58	.13*	.06	−.02	.04
IP	−.66	.83	−.07	.13	.01	.01	−.001	.01
Interactional model								
Intercept	−10.14***	2.71	−1.39**	.41	−.12**	.04	.02	.02
Treatment	.87	3.81	−.21	.58	.13*	.06	−.02	.04
IP	−1.35	1.38	−.11	.21	.05*	.02	−.001	.01
IP × Treatment	1.08	1.73	.07	.26	−.06*	.03	−.001	.02
Model comparison	$\Delta \chi^2(4) = 6.34, p = .17$							

Note. IP = interpersonal problems.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

this interactive effect did not reach significance, but also that visual inspection shows little impact on the acute treatment worry trajectories (see Figure 1). Furthermore, the interaction of treatment and nonassertive problems significantly predicted the weekly rate of worry reduction during follow-up (piece 2), $\gamma_{23} = 0.03$, $SE = .01$, 95% CI [0.01, 0.05], $t(81) = 2.110$, $p = .04$, *pseudo* $R^2 = .08$; CBT alone clients who presented with higher interpersonal problems of a nonassertive nature experienced less worry reduction than their MI-CBT counterparts with higher nonassertive problems (see Figure 1, panel A).

To further probe this interactive effect, we generated conditional slopes representing the effect of treatment on follow-up worry change at different levels of baseline nonassertiveness.[4] This analysis revealed that for clients with *low levels* of problematic nonassertivess (i.e., 1 *SD* below the sample mean), the rate of change in follow-up worry did not differ between the two treatments ($\gamma_{21} = 0.01$, $p = .93$). In contrast, for clients with *high levels* of problematic nonassertiveness (i.e., 1 *SD* above the mean), the rate of change in follow-up worry differed significantly between the two treatments ($\gamma_{21} = 0.25$, $p =$

[4] To generate these conditional slopes, we recentered the relevant IIP-C index at ± 1 *SD* and then created new interaction terms using these centered variables. We then ran two additional piecewise HLMs. The result of this centering is that the main effect of treatment represents the relation between treatment group and follow-up worry change for clients with high and low values of the relevant baseline IIP-C index. Note that in these models the coefficient for the interaction remains identical to the original model; that is, recentering only impacts the main effect coefficients. Full results from these models can be obtained upon request.

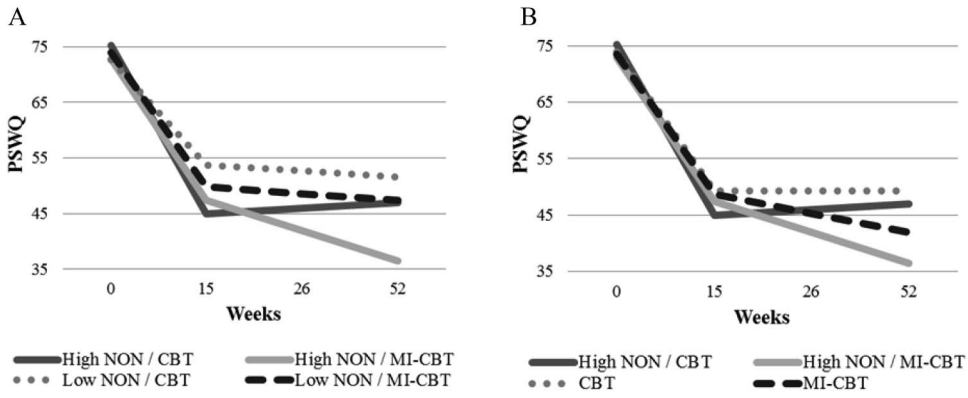

Figure 1. Worry trajectories of clients with low nonassertive interpersonal problems versus high nonassertive interpersonal problems in the two treatments conditions (panel A), and worry trajectories of the clients with high nonassertive interpersonal problems in the two treatment conditions versus the average trajectories of clients in the two treatments (panel B). High and low nonassertive interpersonal problems were defined as ± 1 *SD* (0.98) from the mean (2.73) of nonassertive subscale in the sample. NON = nonassertive interpersonal problems; PSWQ = residualized scores from the *Penn State Worry Questionnaire*; CBT = cognitive–behavioral therapy; MI = motivational interviewing.

.002). Moreover, the difference between the weekly rate of follow-up worry change between the groups was almost two times larger for highly nonassertive clients ($\gamma_{21} = 0.25$, $p = .002$) than for clients with a mean level of nonassertiveness ($\gamma_{21} = .13$, $p = .02$), though it is worth noting that worry change still differed significantly between the groups for clients with the mean level of nonassertiveness. In other words, the treatment effect (i.e., that MI-CBT clients experienced greater follow-up worry reduction than CBT clients) was *more pronounced* for clients with higher nonassertive problems at baseline and *less pronounced* (even to the point of being nonsignificant) for clients with lower nonassertive problems at baseline. See Figure 1, panel B for a visual comparison of the interactive effect for highly nonassertive clients to the main effect of treatment without the interaction in the model.

Exploitability. The interaction between baseline exploitable problems and treatment condition was not significant in predicting worry reduction at Session 15 (piece 1), the level of worry at Session 15 (i.e., the intercept) the rate of acceleration in worry reduction during acute treatment (piece 1), or the weekly rate of worry reduction across follow-up (piece 2; see Table 2).

Agency. The interaction of agency and treatment did not significantly predict worry reduction at Session 15 (piece 1), the rate of acceleration in worry reduction during acute treatment (piece 1), or the level of worry at Session 15 (i.e., the intercept; see Table 2). However, the interaction of treatment and problematic agency significantly predicted the rate of weekly worry reduction during follow-up (piece 2), $\gamma_{23} = -0.06$, $SE = 0.03$, 95% CI [−0.11, −0.01], $t(81) = -2.402$, $p = .02$, *pseudo* $R^2 = .10$; MI-CBT clients that were under agentic had greater worry reduction than under agentic CBT clients. In fact, CBT clients that were under agentic at baseline actually experienced an *increase* in worry across the follow-up period (see Figure 2, panel A).

To further probe this interactive effect, we again generated conditional slopes representing the effect of treatment on follow-up worry change at different levels of agency. This analysis revealed that for clients who were *under agentic* (i.e., 1 *SD* below the mean), the rate of change in follow-up worry differed significantly between the two treatments ($\gamma_{21} = 0.27$, $p = .001$). In fact, the difference between the weekly rate of follow-up worry change between the groups was about two times larger for highly under agentic clients ($\gamma_{21} = 0.27$, $p = .001$) than for clients with a mean level of agency ($\gamma_{21} = 0.13$, $p = .03$), though again, it is worth noting that clients' worry change still differed significantly between the groups for clients at the mean level of agency. In contrast, for clients who were *over agentic* (i.e., 1 *SD* above the mean), the rate of change in follow-up worry did not differ significantly between the two treatments ($\gamma_{21} = -0.01$, $p = .85$). In other words, the treatment effect was *more pronounced* for under agentic clients, and *less pronounced* (even to the point of being nonsignificant) for over agentic clients. See Figure 2, panel B for a visual comparison of the interactive effect for under agentic clients to the main effect of treatment without the interaction in the model.

Clinically Meaningful Change

Nonassertiveness. The interaction of treatment and nonassertiveness was not significantly associated with the likelihood of having achieved a clinically meaningful change at 12-month follow-up, $\gamma_{05} = -0.03$, $SE = 0.18$, 95% CI [−0.38, 0.32], $t(79) = -0.143$, $p = .89$, or the rate of change in the likelihood of achieving a clinically meaningful change during follow-up, $\gamma_{15} = -0.004$, $SE = 0.005$, 95% CI [−0.014, 0.006], $t(79) = -0.861$, $p = .39$.

Exploitability. The interaction of treatment and exploitability did not significantly predict the likelihood of having achieved a clinically meaningful change at 12-month follow-up, $\gamma_{05} = 0.09$, $SE = 0.20$, 95% CI [−0.30, 0.48], $t(79) = 0.458$, $p = .65$, or the rate of change in that probability during follow-up, $\gamma_{15} = -0.003$, $SE = 0.005$, 95% CI [−0.013, 0.007], $t(79) = -0.633$, $p = .53$.

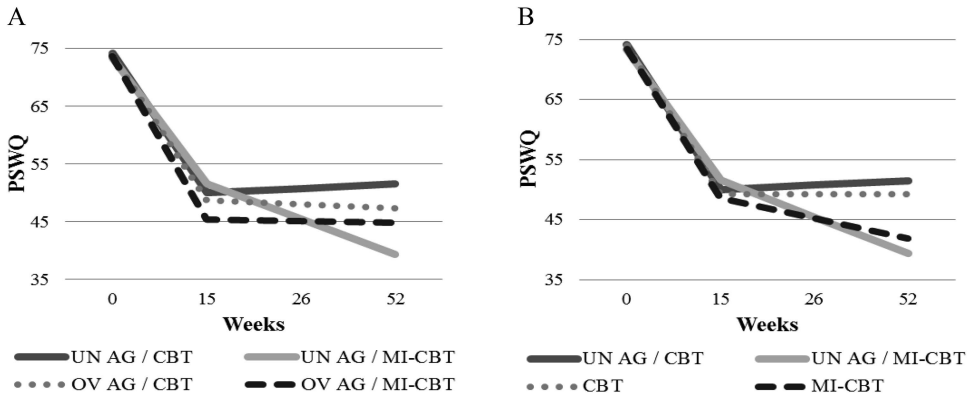

Figure 2. Worry trajectories of under agentic versus overly agentic clients in the two treatments conditions (panel A), and worry trajectories of under agentic clients in the two treatment conditions versus the average trajectories of the clients in the two treatments (panel B). Being under and overly agentic were defined as ± 1 *SD* (2.32) from the mean (−3.59) of agency in the sample. UN AG = under agentic; OV AG = overly agentic; PSWQ = residualized scores from the *Penn State Worry Questionnaire*; CBT = cognitive–behavioral therapy; MI = motivational interviewing.

Agency. The interaction of agency and treatment did not significantly predict the likelihood of having achieved a clinically meaningful change at 12-month follow-up, $\gamma_{05} = 0.23$, $SE = 0.34$, 95% CI [<23.0.44, 0.90], $t(79) = 0.689$, $p = .49$. However, there was a significant interactive effect on the weekly change in the likelihood of achieving a clinically meaningful change during follow-up, $\gamma_{15} = 0.02$, $SE = 0.01$, 95% CI [0.0004, 0.0396], $t(79) = 1.998$, $p = .04$; MI-CBT clients who were under agentic experienced an increase in the likelihood of achieving a clinically meaningful change across follow-up, whereas the likelihood of achieving a clinically meaningful change slightly decreased for under agentic CBT clients. See supplemental Figure 2 for a visual depiction of the interactive effect of treatment and agency on the likelihood of achieving clinically meaningful change across follow-up.

Discussion

This study aimed to (a) characterize the baseline interpersonal problem profile of severe GAD clients, and (b) test whether the most theoretically relevant interpersonal problem indices moderated the comparative treatment effects on worry at posttreatment, and worry change through the acute and follow-up trial phases. Replicating prior research (e.g., Przeworski et al., 2011; Salzer et al., 2008), and now extending those findings to high worry severity GAD, the clients' most substantial interpersonal problems reflected being under agentic and overly communal. Further, these severe GAD clients evidenced significantly more specific problems of being nonassertive and exploitable, and significantly fewer specific problems of being vindictive and cold, compared with a general psychiatric sample. Also, we found hypothesized ATIs. Clients with more problematic nonassertiveness and low overall agency showed continued worry reduction during follow-up only when treated with MI-CBT, but not when treated with CBT.

The current sample's baseline interpersonal profile supports the idea that relational problems of being under agentic and overly communal might be characteristic of GAD. Thus, these problem types may reflect an important client "aptitude" of which clinicians could benefit from being aware. At a minimum, irrespective of treatment approach, this can assist therapists in case formulation and understanding problematic patterns that underlie a client's condition. This could inform intervention (e.g., worry content discussed), and help therapists avoid recapitulating in-session behaviors that might collude with the established problem pattern (e.g., reinforcing a client's submissiveness with excessive dominating behavior).

Perhaps even more pointedly, our results suggest that there may be specific interpersonal conditions under which integrating MI into foundational CBT for GAD may be most beneficial. For severe GAD clients presenting with problematic nonassertiveness and low overall agency, MI may augment CBT by way of the therapist engaging the client in a novel, corrective manner vis-à-vis these maladaptive interpersonal patterns. Consistent with clinical theory, resistance might reflect a GAD client's in-session attempt at being assertive (e.g., disagreeing with the treatment tasks), which could be a positive risk-taking behavior given their characteristic nonassertiveness (Westra, 2012). Were a CBT therapist to respond to this behavior by attempting to maintain his or her own directiveness of the treatment and its aims, the therapist might ultimately and inadvertently undermine the client's novel attempt at an adaptively assertive interaction, serving to reestablish the problematic pattern of other-based dominance and client-based deference. However, if the therapist in these moments of client risk-taking adopted a client-centered, autonomy-granting MI stance, it might support the client's own self-efficacy for change. As noted, such autonomy-granting (therapist) and autonomy-taking (client) sequences may allow clients to choose to let go of the worry about which they were once ambivalent.

Although the present results support the above clinical theory in the form of an ATI, we did not substantiate that these theorized corrective relational exchanges in the MI-CBT condition were the *mechanisms* behind the moderating effect. Future research is required to formally test this mediated moderation notion by assess-

ing in-session interpersonal process. However, there are two additional studies that draw on the Westra et al. (2016) trial data that lend some empirical support to the hypothesis that the MI approach promotes a therapeutic relational experience. In the first, Aviram, Westra, Constantino, and Antony (2016) found that among the CBT alone therapists who were not explicitly trained in MI, those who "naturally" responded to client disagreement with support and empathy (MI-like behavior) had superior outcomes to those who responded with control at these moments (less MI-like behavior). In the second, MI-CBT clients demonstrated greater reductions in interpersonal problems (as per the IIP-C) than clients in the CBT only condition (Constantino, Westra, Antony, & Coyne, 2016). These secondary outcome results suggest that interpersonal patterns can indeed change, and differentially so, as a function of treatment. Again, it will be important for future research to test how such changes relate to mental health outcomes, including as a potential mechanism of the ATI revealed in the present study.

Regarding the clinical meaningfulness of the present findings, we found, as expected, that the likelihood that low agency MI-CBT clients would experience meaningful worry reduction increased significantly across the follow-up period, whereas that likelihood for low agency CBT clients decreased during follow-up. Unexpectedly, though, we did not find a significant interactive effect of treatment and problematic nonassertiveness on the likelihood of achieving clinically meaningful worry reduction. Thus, future research should clarify the clinical significance of the nonassertiveness by treatment ATI.

However, our analyses investigating the effects of treatment at different levels of nonassertiveness suggest that this interactive effect, as well as the agency by treatment interaction, may still have the potential to have a clinically meaningful association with client outcomes. Specifically, the comparative treatment effect (i.e., that MI-CBT clients experienced greater follow-up worry reduction than CBT clients) was about *two times larger* for clients with high problematic nonassertive and low overall agency. In contrast, the treatments *did not differ* in their effects on follow-up worry reduction for clients who had low levels of problematic nonassertiveness and for those who were overly agentic. These findings suggest that a clinician might consider providing MI-CBT when treating GAD clients who (a) present to treatment with moderate to high problems of being too nonassertive on the IIP-C nonassertive scale, and/or who (b) present to treatment as moderately to highly under agentic on the IIP-C agency dimension. In contrast, for GAD clients who present with (a) low levels of problematic nonassertiveness on the IIP-C nonassertive scale, and/or (b) who present as somewhat over agentic on the IIP-C agency dimension, standard CBT may lead to roughly equivalent follow-up worry reduction relative to MI-CBT. Of course, replication is needed to substantiate these ATIs.

We did not find a significant interactive effect of client problems of being too exploitable and treatment condition on either worry reduction or clinically meaningful change. Although unexpected, this finding may make sense in light of our working interpersonal hypothesis that MI promotes novel opportunities and support for client autonomy-taking and self-efficacy that may work toward revising the *specific* problems of being nonassertive and generally under agentic. In other words, the proposed interpersonal mechanism of an MI therapist granting and supporting autonomy, for a type of client who may not typically experience such an exchange, may not extend to problems more specifically related to being overly communal (i.e., friendly enmeshment to the point of being exploited by others). In fact, it is possible that MI behavior is no more or less likely than CBT behavior to create an opportunity for a novel, corrective exchange on the communion dimension. Such an exchange would likely require a scenario where a therapist holds a boundary in a context when another person in the client's life might more typically exploit the scenario. As most therapists, irrespective of approach, are sensitive to maintaining good boundaries (and not exploiting their clients), there may be little variability between conditions to systematically affect treatment response. Nevertheless, the results do not definitively establish that exploitability does not moderate the treatment effect, especially considering the marginal p value of the interactive effect ($p = .09$) and the possibility of a Type II error, both of which suggest caution in over interpreting this null finding. That said, it is plausible that the marginal p value is more a function of the inclusion of nonassertiveness in the exploitable variable (i.e., under agentic, overly communal) than a signal of near significance.

Overall, the current findings, if replicated, may have practical implications for clinical responsiveness (Stiles & Wolfe, 2006) not only at the therapist level (e.g., adapting interventions for GAD clients based on their relevant presenting characteristics), but also at the administrative decision-making level (e.g., using such client characteristics to assign clients to particular treatments or therapists). In fact, the identification of these interpersonal difficulties as empirical baseline markers to implement evidence-based treatment adaptations fits well with an existing model of empirically based responsiveness known as *context-responsive psychotherapy integration* (CRPI; Constantino et al., 2013). More specifically, the CRPI framework promotes an "if, then" approach where adaptations to treatments are based on empirically derived markers or contexts. In the present sense, *if* clients have problems of being too nonassertive or under agentic, *then* incorporating MI techniques into CBT could lead to better long-term outcome. The findings are also consistent with the efforts to promote personalized mental health care (DeRubeis et al., 2014).

The present study had several limitations. First, the rates of anxiety disorders in the Canadian psychiatric outpatient sample were unknown, thereby calling into question the representativeness of this comparison sample when considering the high prevalence of anxiety disorder expected in the population (Kessler, Ruscio, Shear, & Wittchen, 2009). Second, the ATI findings were based on a random assignment of participants to treatment conditions. Thus, it would be useful to have an experimental study where clients are assigned to CBT or MI-CBT based on their interpersonal characteristics in order to be confident that this treatment matching enhances clinical improvement. Third, although we found moderating effects of clients' interpersonal characteristics on comparative treatment efficacy, the mechanisms underlying these effects remain unknown. Fourth, we used only self-reported instruments completed by the client to measure both the moderator and outcome variables. Finally, although a predominance of female clients was expected, given that GAD has a female to male ratio of 2:1, and that treatment seeking is lower in males with GAD (Vesga-López et al., 2008), the percentage of female clients in this study (95%) was higher than in previous GAD trials (e.g., Newman et al., 2011). Furthermore, all therapists in the study were female.

Although client's gender has not been found to moderate the efficacy of treatments for anxiety disorders (Wolitzky-Taylor, Arch, Rosenfield, & Craske, 2012) and therapist gender has not been found to relate to treatment outcome (Beutler et al., 2004), future studies should replicate ours with more gender-balanced participants.

Beyond these limitations, the present results suggest the importance of assessing clients' interpersonal difficulties at initial screening, and then systematically responding to such difficulties in some form. This could be potentially helpful for initial treatment selection, if possible, as well as during-treatment moments when clients either reenact (e.g., repeated submissiveness) or attempt to deviate and revise (e.g., disagreeing with the therapist rather than deferring) their problematic interpersonal patterns in their interactions with the therapist. This responsiveness would represent a theoretically and empirically driven tailoring of treatments based on client characteristics beyond categorical diagnosis.

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