AMBIVALENCE AS A MODERATOR OF TREATMENT OUTCOMES IN

MOTIVATIONAL INTERVIEWING AND COGNITIVE BEHAVIOURAL THERAPY FOR

GENERALIZED ANXIETY DISORDER

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Abstract

Although there is a robust finding documenting the efficacy of Cognitive Behavioural Therapy (CBT) in treating anxiety, a significant proportion of clients fail to respond optimally to treatment. A major focus of psychotherapy research involves "client-treatment matching," which examines client characteristics as potential predictors of treatment response. Client ambivalence has been identified as a key marker in psychotherapy with wide-ranging implications for engagement in therapy. Motivational Interviewing (MI) has strong empirical support for increasing client commitment for change through the resolution of ambivalence. Though it may be speculated that integrating MI into CBT may be more efficacious for clients high in ambivalence than CBT alone, the investigation of these critical client-treatment matching research questions has been hampered by inadequate measures of ambivalence. This study sought to examine this question in the context of CBT alone versus MI-CBT for 85 clients with severe generalized anxiety disorder (GAD). Rather than relying on self-report, the study used an observational measure (client in-session talk against change) to quantify ambivalence. Findings suggest MI-CBT resulted in better long-term worry outcomes than CBT alone for clients who were high in early ambivalence, whereas clients low in early ambivalence did better with CBT alone. In other words, client ambivalence significantly moderated treatment outcomes. In contrast, there was no moderation effect of ambivalence on interpersonal problems. Here, results revealed that regardless of their early ambivalence levels, clients who received MI-CBT reported significantly fewer interpersonal problems at long-term follow-up than clients receiving CBT alone. Client ambivalence seems to represent a key individual difference variable, and tailoring standard CBT protocols to incorporate MI may be particularly efficacious for clients who are highly ambivalent about change. The results also emphasize the potentially broader benefits of

MI, in that, integrating MI into CBT may be an effective way of reducing interpersonal problems for all clients, regardless of their early ambivalence levels. Overall, these findings support the benefit of systematic training in identifying and flexibly responding to in-session markers of client change language, and suggest that treatment outcomes can be improved by training CBT therapists to incorporate the MI spirit during moments of ambivalence.

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Ambivalence about change is considered an important individual difference variable in

psychotherapy. Low levels of ambivalence (i.e., high levels of readiness for change) are

particularly relevant for success in action-oriented approaches, such as Cognitive Behavioural

Therapy (CBT). CBT is consistently regarded as front-line treatment for anxiety; however, issues

of client noncompliance, often attributed to low readiness for change, are considered paramount

to the success of this therapy (Antony, Roth Ledley, & Heimberg, 2005, Randall & McNeil,

2017, Westra & Dozois, 2006, Westra 2014). Despite this, the examination of critical research

questions to investigate ambivalence has been hampered by inadequate measures and the field

has primarily relied on self-report. For example, basic and long-standing treatment-matching

questions remain unanswered, including whether clients high in ambivalence do better with a

modified CBT approach that integrates newer motivational approaches like Motivational

Interviewing (MI; Miller & Rollnick 2002).

Research suggests that resistance to change is amplified when clinicians employ a

directive approach like CBT (Beutler, Harwood, Michelson, Song, & Holman, 2011). In contrast,

approaches such as MI provide a safe and supportive context whereby clients can express and

sort out any conflicting feelings regarding change (Miller & Rollnick, 2013). Thus, it could be

speculated that integrating an intervention like MI into CBT, one that aims to resolve

ambivalence about change and strengthen intrinsic motivation, may be more effective than CBT

alone, which should be the case uniquely for or especially for clients who are less ready for

change at the onset of therapy. To examine this and other important questions, adequate

measurement of readiness for change is necessary.

Self-report measures of readiness have limited validity and demonstrate weak and inconsistent relationships with treatment outcomes in the domain of anxiety (Westra, 2011). Thus, the present study took a different approach by using an observational measure of client verbalizations regarding change in an early therapy session (Motivational Interviewing Skill Code, MISC 1.1; Glynn & Moyers, 2009). Existing research has found client in-session talk regarding change to be a consistent and powerful predictor of important outcome dimensions in anxiety, including alliance ruptures, homework compliance, treatment outcomes, and subsequent resistance in therapy (Button, Westra, Hara, & Aviram, 2015; Hunter, Button, & Westra, 2014; Lombardi, Button, Westra, 2014). As such, this observational measure of client change language is a promising methodological advance for studying questions of treatment matching.

By way of overview, below I first consider individual differences in client ambivalence and its relationship to treatment processes and outcomes. Next, I review existing research on client ambivalence and its role and relevance to therapy outcomes in a CBT context. Following this, I briefly outline features of generalized anxiety disorder (GAD), including ambivalence about worry and interpersonal problems. Then, I examine the predictive capacity of client ambivalence and the empirical research looking at treatment matching and the differential outcomes based on client readiness for change. Finally, I outline the specific aims of the present study.

What Treatment Works for Whom?

A longstanding question in the area of psychotherapy has been "*what* treatment, by *whom*, is most effective for *this* individual with *that* specific problem, and under *which* set of circumstances?" (Paul 1967). Furthermore, many researchers have described the myth of the Uniformity Assumption (Colby, 1964; Gendlin, 1966; Gilbert, 1952; Kiesler, 1966; Rotter, 1960;

Winder, 1957), which refers to the idea that clients are homogenous rather than heterogeneous. However, clients differ significantly in terms of numerous demographics, personality styles, readiness for change, as well as other key features (Stiles, 1988). Furthermore, clients' abilities, needs, and requirements vary in general, as well as on a moment-to-moment basis (Stiles, 1988). In other words, one client may differ from another in terms of their requirements for treatment at the outset of therapy, but these capabilities, needs, and desires may also fluctuate from session-to-session and even moment-to-moment (Stiles, 1988). One example includes, in response to a reflection, clients can differ in terms of the quality and quantity of information contained in their response (e.g., depth, detail, organization, affect; Kramer & Stiles, 2015). Thus, research should take into consideration key client variables relevant to psychotherapy outcomes.

Castonguay and Beutler (2006) refer to client factors as "empirically derived" or "empirically grounded" principles that should be examined systematically and sufficiently investigated as potential moderators and mediators of change. Client factors are deemed to be qualities of the client that reside within the person of the client, and signify characteristics that are evident outside of treatment (Castonguay & Beutler, 2006). Qualities such as gender, ethnic background, attachment style, and religion are viewed as having prognostic implications for treatment, whereas factors such as resistance, readiness for change, expectations, and coping style are considered moderating variables, and potential avenues in which therapy can be customized or adapted (Castonguay & Beutler, 2006). One important way that clients differ is in their degree of ambivalence regarding change and I turn to this next.

Why Focus on Individual Differences in Ambivalence?

Clients commonly hold opposing feelings regarding change, resulting in one voice of the self wanting change, while another voice desires to stay the same (Miller & Rollnick 2013;

Ribeiro et al., 2014; Westra, 2012). Client ambivalence for change is widely regarded as a significant individual difference variable that has implications for psychotherapy, including client engagement in and commitment to therapy (Borkovec & Roemer, 1995; Drieschner, Lammers, & van der Staak, 2004) as well as treatment outcomes (Gonçalves et al., 2011; Lombardi et al., 2014; Magill et al., 2014; Ribeiro et al., 2014) . For example, in a survey of practitioner-identified obstacles to the implementation of empirically supported treatments for panic disorder, client unwillingness to engage in treatment was reported by 61% of therapists, and client ambivalence at the outset of therapy was identified as a problem by 67% of the therapists surveyed (American Psychological Association, 2010).

Research has indicated that ambivalence is related to various aspects of treatment including homework compliance and commitment to therapy (Aviram & Westra, 2011; Helbig & Fehm, 2004; Meier, Donmall, Barrowclough, McElduff, & Heller 2005; Taft, Murphy, Musser, & Remington 2004). Smith and Grawe (2003) found that in terms of client variables, level of ambivalence was especially predictive of engagement in and responsiveness to interventions. More specifically, clients who were higher in readiness for change responded well to treatment, even when their therapist was perceived as less competent. Conversely, clients who were ambivalent about change were less responsive to interventions (Smith & Grawe, 2003). Furthermore, in CBT, homework is viewed as a crucial element of treatment, and homework compliance is considered to be an indicator of client engagement (Blagys & Hilsenroth, 2002; Keijsers, Schaap, & Hoogduin, 2000). Although it is considered necessary for treatment, problems with the assignment or completion of homework are not uncommon in CBT (Fehm & Helbig-Lang, 2009). Research indicates that readiness for change is significantly related to and exerts more influence on homework compliance than the characteristics of the tasks (Helbig &

Fehm, 2004). Furthermore, readiness is related to engagement with between-session activities, in that, those clients who are less ready for change also do less homework (Helbig & Felm, 2004; Sutton & Dixon, 1986).

Ambivalence regarding change is also related to important interpersonal variables, such as resistance to the therapist or therapy. For example, according to the literature, resistance and noncompliance in therapy are commonly viewed as manifestations of ambivalence about change (Engle & Arkowitz, 2006; Miller & Rollnick, 2002; Westra & Arkowitz, 2010). Research has found that clients with high levels of ambivalence are more likely to oppose therapists' demands, particularly in the direction of change (Button et al., 2015). Furthermore, client unwillingness to engage in treatment and minimal readiness for change at the outset of treatment are commonly identified obstacles in the implementation of treatment (American Psychological Association, 2010). Client ambivalence also has a significant influence on treatment attrition, as ambivalent clients may consider the experience of treatment distressing in and of itself (Miller & Rollnick, 1991).

Additionally, Meier, Donmall, Barrowclough, McElduff, and Heller (2005) examined various client characteristics to determine which factors impact the development of early therapeutic alliances in the context of substance use treatment. Clients' self-reported level of treatment readiness was found to be a significant predictor of alliance, in that higher client readiness was associated with more successful client-therapist relationships (Meier et al., 2005). Lower levels of client readiness for treatment have also been associated with less confidence in treatment, lower therapeutic rapport, and poor treatment engagement (Joe, Simpson, & Broome, 1998). Lastly, Taft, Murphy, Musser, and Remington (2004) investigated predictors of the therapeutic alliance for men receiving group CBT for partner violence. Readiness to change was

measured using a self-report measure developed to evaluate the stages of change for individuals

receiving treatment for partner violence (Begun et al., 2003). Here, readiness for change was the

strongest and most consistent predictor of establishing a positive therapeutic alliance, as it was

the only factor that was significantly related to early and late ratings of the alliance made by both

the therapist and client (Taft et al., 2004). Thus, readiness for change is often viewed as an

essential construct for progress in therapy and outcomes, particularly in action-oriented

treatments such as CBT (Antony et al., 2005; Arkowitz, Westra, Miller, & Rollnick, 2008). Yet,

when clients are ambivalent about change, responsiveness to therapeutic interventions is less

than optimal.

Ambivalence in the Context of CBT

CBT has strong evidence supporting its efficacy as a treatment of many mental health

problems (Norton & Price, 2007; Olatunji, Cisler, & Deacon, 2010). CBT involves an active and

directive process with several components that involve approaching anxiety-provoking thoughts

and situations, which can be distressing and challenging for clients, and particularly so, if clients

are ambivalent about change (Randall & McNeil, 2017). Common barriers that interfere with

improvements in therapy include premature termination of therapy and noncompliance with

treatment procedures (Abramowitz, Franklin, Zoellner, & DiBernardo, 2002; Sanderson & Bruce

2007). CBT requires an adequate level of client readiness, which can take the form of

acknowledgement of difficulties, appreciation for the severity of problem, desire to change, and

willingness to work on those difficulties (Tolin, 2016).

As such, client ambivalence about change has been frequently cited as a critical variable

in CBT (Bados, Balaguer, & Saldaña, 2007; Dugas et al., 2003). High levels of readiness are

viewed as vital to action-oriented therapies, such as CBT, in order for clients to actively engage

in treatment and techniques. However, clients who are ambivalent about changing are more likely to oppose therapist demands, particularly demands for change (e.g., advice, suggestions). In fact, interpersonal opposition and limited engagement in therapy have been conceptualized as arising from ambivalence about change (Engle & Arkowitz, 2006).

In cases when clients are uncertain or undecided about change, interpersonal opposition against the therapist or therapy is more likely to occur (Miller & Rollnick, 2002). For example, therapists may be strongly tempted to force or convince the client to change, but this may in fact invoke a strengthening of the client's stuck position, commonly resulting in resistance (Engle & Arkowitz, 2008). Thus, rather than working through client ambivalence, the client and therapist dyad can end up acting out the ambivalence, with the therapist taking the side of changing, while the client refutes this stance by articulating arguments against change (Westra & Norouzian, 2018). Castonguay, Goldfried, Wiser, Raue and Hayes (1996) found that when clients expressed negative feelings regarding CBT, avoided therapeutic tasks, or were noncompliant with interventions, therapists tended to show greater adherence to the CBT model, stressing the effectiveness of its techniques (e.g., trying to fit the client's experience into the CBT model). Similarly, Aspland, Llewelyn, Hardy, Barkham, and Stiles (2008) provided further evidence that negative process results from CBT therapists persisting with their own agenda (i.e., suggesting techniques, re-explaining the rationale), neglecting to explicitly validate the client's viewpoint in the face of client negative reactions or withdrawals (e.g., clients avoiding tasks or becoming disengaged from therapeutic interventions). Moreover, Huppert and colleagues (2006) found that for ambivalent clients receiving CBT treatment for panic disorder, greater therapist adherence to CBT was significantly related to poorer treatment outcomes. On the other hand, for clients high

in readiness for change, therapist adherence to the CBT model was unrelated to outcomes (Huppert et al., 2006).

Therapists also perceive client ambivalence as a critical therapeutic variable. For example, McAleavey, Castonguay and Goldfried, (2014) examined clinicians' experiences with delivering CBT to clients with social anxiety disorder. Here, therapists described that CBT was largely successful in treating social anxiety; however, client ambivalence was noted as a challenge to the effectiveness of CBT. In particular, the majority of therapists noted minimal motivation at the outset of treatment (60.5%) and premature termination (57.2%) as significant barriers to progress in CBT. Additionally, more than half of therapists described client resistance to the directiveness in CBT as an obstacle to efficacious treatment delivery and ambivalent beliefs about social anxiety were also seen as common obstacles to treatment success. This included clients' ambivalent thoughts regarding change, such as beliefs that their anxiety was realistic (51.8%) and part of their personality (45.7%) and a decrease in anxiety would have negative implications in terms of their relationships (15.6%).

Furthermore, Szkodny, Newman, and Goldfried (2014) conducted a similar study exclusively looking at clinicians' experiences in delivering CBT for GAD. In terms of perceived obstacles to treatment progress, clinicians endorsed symptom chronicity (71.6%) and severity (60.8%) as the biggest barriers. Clients' beliefs about GAD were also identified as significant impediments to change, and included perceptions that their worry was realistic (56%), part of their character and unchangeable (54.4%), helpful in preparing for the worst (42.7%), preventing bad things from happening (41.9%), solving problems (28.6%), and motivating (37.1%).

Overall, these findings suggest that client ambivalence regarding change is an important variable to consider when delivering a standardized CBT protocol as it may inform whether

certain modifications should be made to improve efficacy. Furthermore, therapists commonly report confidence in the efficacy of CBT; however, client hesitancy about change and positive beliefs about their difficulties can impede therapists' assurance in the delivery and success of CBT. In fact, research has found that client resistance makes it more challenging for therapists to adhere to a CBT protocol (Zickgraf et al., 2016).

GAD Features and Ambivalence

Individuals with GAD have persistent and uncontrollable worry, commonly seeing themselves as lifelong worriers (Szkodny & Newman, 2014). As such, worrisome cognitions and associated fears can be viewed by clients as personality traits, rather than fluctuating states that can be targeted and changed (Szkodny & Newman, 2014). GAD is conceptualized as excessive and uncontrollable worry about a number of day-to-day activities and/or events. Borkovec and Newman (1998) described worry as cognitive activity that is largely negative in nature. Related symptomology includes muscle tension, restlessness, feeling keyed up or on edge, difficulty concentrating or mind going blank, fatigue, irritability, and sleeping difficulty (American Psychiatric Association, 1994).

GAD is a relatively common and chronic disorder that affects approximately two to four percent of the population at any given time (Wittchen, Zhao, Kessler, & Eaton, 1994) with nearly half of individuals experiencing early onset (Weisberg, 2009). Other mental health disorders are known to co-occur with GAD. Epidemiological findings from the National Comorbidity Survey suggest that approximately 67% of individuals with GAD have a lifetime depressive disorder, 17% have bipolar disorder, whereas only 16% have no lifetime mood disorder (Judd et al., 1998). Similarly, Wittchen and colleagues found that individuals with GAD have a 90% likelihood of at least one additional mental health diagnosis in their lifetime.

Several etiological factors of worry have been suggested including unexpected negative life occurrences, maltreatment, loss, insecure attachment style, negative parenting, such as perceived parental rejection and parental coldness, maternal role-reversal, and enmeshment (Cassidy et al., 2009; Nordahl et al., 2010; Moffit et al., 2007; Muris, Meesters, Merckelbach & Paulette, 2000). Furthermore, individuals with GAD commonly report difficulties with emotion regulation, and thus, have challenges recovering from negative mood states (Newman, Llera, Erickson, Przeworski, & Castonguay, 2013). These individuals also have a greater tendency to associate threat and uncontrollability with their emotions than do non-anxious individuals (Turk, Heimberg, Luterek, Mennin, & Fresco, 2005).

Client ambivalence about change can be conceptualized as an intrapsychic conflict consisting of the benefits of staying the same (i.e., retaining the status quo) and the downsides to changing (Westra, 2012). Furthermore, ambivalence has been thought of as movement between two competing parts or internal voices of the self, where the suppressed voice creates an innovative moment by challenging the dominant (and problematic) voice, yet the client returns to the dominant self-narrative (Gonçalves et al., 2011). With GAD, clients often have conflicting feelings regarding change as they frequently hold positive beliefs about worry, and are therefore, ambivalent about stopping it (Borkovec & Roemer 1995). Common positive beliefs about the function of worry (Borkovec & Roemer, 1996) include that it assists in finding ways to prevent negative events from occurring, prepares one for the worst-case scenario, and motivates task completion (Borkovec & Roemer, 1995). Worry is commonly negatively reinforced through the lack of occurrence of the feared outcome. Individuals also report feeling as though their worrying made the outcome even less likely to happen, while also noting the lack of logic to this association (Borkovec & Roemer, 1995).

Interpersonal Problems in GAD

Interpersonal problems are common for individuals with GAD (Newman & Erickson, 2010). Individuals with GAD view relationships with high levels of hypervigilance and concern (Gasperini, Battaglia, Diaferia, & Bellodi, 1990), display inflexibility in regard to resolving interpersonal problems (Erickson & Newman, 2007), and have incorrect (i.e., over/under) estimations of their negative impact on others (Newman & Erickson, 2010). GAD is also associated with excessive reassurance seeking (Masi et al., 2004), difficulty with and/or increased time for decision-making (Metzger, Miller, Cohen, Sofka, & Borkovec, 1990) and interpreting events in a negative manner (Newman & Erickson, 2010). Furthermore, the physical symptoms of GAD, including restlessness, trouble focusing, feeling "keyed up" or on edge, irritability, muscle tension and difficulty sleeping, likely also contribute to interpersonal problems (Newman & Erickson, 2010).

Theoretically, it has been noted that individuals with GAD share certain interpersonal tendencies such as the reliance on submissive behaviours. This type of behaviour entails appeasing or giving up when confronted with threat instead of self-assertion and/or feelings of competency (Sloman & Gilbert, 2000). Moreover, caring and affiliative behaviours tend to be predominant in individuals with GAD (Newman & Erickson, 2010) with a bias to viewing others' actions as distant (Erickson & Pincus, 2005). In addition, a non-assertive, exploitable, under agentic and overly communal interpersonal profile has been associated with individuals with severe GAD (Gomez Penedo, Constantino, Coyne, Westra, & Antony, 2017).

These interpersonal difficulties have notable treatment implications. Even though there is a robust finding documenting treatment success up to two years posttreatment for those receiving CBT for GAD, it is not effective for all clients (Borkovec & Newman, 1998; Newman &

Erickson, 2010). One potential reason for this decreased response rate may include a lack of focus on and/or improvement in regards to interpersonal problems (e.g., under agentic, overly communal, nonassertive, exploitable, overly nurturing) in treatment. Newman and colleagues (2013) suggested that negative interpersonal dynamics may be a maintaining factor in GAD symptomology. In CBT treatment, interpersonal problems have been found to be related to poor treatment response, increased dropout rates, and lack of remission posttreatment (Newman & Erickson, 2010). Moreover, individuals with GAD who identified more dominance-related interpersonal problems had worse outcomes in CBT (Borkovec, Newman, Pincus, & Lytle, 2002). Additionally, research has found that improvements in interpersonal problems were associated with improvement in GAD symptoms (Crits-Christoph, Gibbons, Narducci, Schamberger, & Gallop, 2005). Overall, this suggests that addressing interpersonal problems may be a key need in GAD treatment.

There is strong theoretical and empirical evidence supporting the interplay between interpersonal problems and CBT outcomes; thus, examining treatments and techniques that address these difficulties are merited. In fact, more recently, it has been suggested that GAD related interpersonal difficulties serve as contextual markers for treatment selection, matching and planning. Specifically, it was found that MI-CBT was more beneficial for individuals with severe GAD who identified having problematic non-assertiveness and low overall agency, suggesting this treatment provided particular corrective interpersonal conditions (Gomez Penedo et al., 2017).

Measuring Ambivalence about Change

Despite the widespread recognition of the significance of readiness for change to therapy outcomes, research has been hampered due to reliance on self-report measures. Several self-

report measures have been developed or adapted from other domains in an attempt to measure readiness in common disorders treated using CBT, such as anxiety. Existing self-report measures in the anxiety domain have been found to reliably predict treatment dropout (e.g., Brogan, Prochaska, & Prochaska, 1999; Dozois, Westra, Collins, Fung, & Garry, 2004; Keijsers, Kampman, & Hoogduin, 2001); however, these measures are inconsistently related to outcome. Some studies have found small but significant associations between self-reported readiness and CBT outcomes for anxiety (e.g., de Haan et al., 1997; Keijsers, Hoogduin, & Schaap, 1994, 1994b), while other studies have found no relationship (e.g., Dozois et al., 2004; Kampman, Keijsers, Hoogduin, & Hendriks, 2008; Vogel, Hansen, Stiles, & Götestam, 2006). Additionally, self-report measures are subject to response bias. In particular, clients may want to present themselves in a more favourable light when starting treatment, and therefore erroneously report high levels of readiness and low levels of ambivalence about change. Thus, self-report measures of treatment readiness are susceptible to desirability biases, which can result in ceiling effects (Westra, 2011). Despite the widespread recognition of the significance of ambivalence to CBT outcomes for anxiety, there is a lack of adequate measures that would prove clinically useful in differentiating treatment response.

One alternative method for assessing client ambivalence about change within therapy sessions involves the evaluation of in-session client language regarding change (Hallgren & Moyers, 2001). While clients may be hesitant to describe themselves on self-report measures as less than ideally motivated, any concerns and fears about or arguments against change may become evident in a therapeutic context as the possibility of change approaches and the pressure to change increases. As such, observational measures of such conversations regarding change

may be more likely to capture client differences in the level of ambivalence, especially when measured early in the context of therapy.

One such observational coding measure is the Motivational Interviewing Skill Code (MISC 1.1; Glynn & Moyers, 2009), which categorizes client motivational language as verbalizations that are in support of changing (i.e., change-talk; CT) or against changing (i.e., counter-change talk; CCT), specific behaviours and thoughts that are the foci of treatment. This coding system captures in-session client statements that have been found to be predictive of subsequent change or lack of change (Glynn & Moyers, 2009). The MISC 1.1 is an adapted version of the MISC 1.0 that offers a straightforward coding method for client language focused on CT and CCT. This version provides more ease and simplicity in terms of training and use (Glynn & Moyers, 2009). Client language eligible for coding using this system can include expressions of emotions or beliefs about changing, commitments to changing or actions taken towards changing (Hallgren & Moyers, 2011). When clients are ambivalent, client language is typically a mixture of both CT and CCT as the client flips back and forth between the advantages and disadvantages of changing or not changing.

The MISC has been developed and is primarily used in the substance abuse domain. Numerous studies support the predictive capacity of in-session client language in this context (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003, Baer et al., 2008, Moyers, Martin, Houck, Christopher, & Tonigan, 2009, Moyers et al., 2007). For example, Amrhein, Miller, Yahne, Palmer, and Fulcher (2003) found a distinct pattern of client language that was predictive of outcome. More specifically, the authors delineated CT using categories and strength ratings and found evidence that supported the idea that increasing the strength ratings of commitment verbalizations was predictive of better outcomes (Amrhein et al., 2003). Additionally, Baer et al.

(2008) found that among adolescents receiving a brief motivational intervention for substance use, client change language was predictive of subsequent substance use. In fact, the strongest predictor of negative outcomes was adolescents' expressions of desire or ability against change, which was found at both the one-month and three-month follow-up, even though the occurrence of this type of language was quite rare (Baer et al., 2008). Moreover, Moyers et al. (2007) examined client language in session one using three different treatment modalities: Motivational Enhancement Therapy (MET), Twelve-Step Facilitation (TSF) and CBT. The results indicated that regardless of treatment type, client language regarding change predicted outcomes up to 15 months following the start of treatment. Moreover, CT and CCT independently predicted outcomes, providing support that the two are different and separate variables (Moyers et al., 2007). Thus, in the domain of substance use, how clients talk about change early in treatment has been found to be a reliable predictor of their subsequent treatment success.

Interestingly, there has been a lack of association found between clients' self-reported levels of readiness for change at the start of therapy and subsequent in-session motivational language (Hallgren & Moyers, 2011). More specifically, in a study by Hallgren and Moyers (2011) pre-treatment self-report measures did not reliably predict clients' change language during early therapy sessions. Thus, clients who scored high on self-report measures of readiness to change may still be providing a significant amount of arguments against change. Similar findings were reported by Poulin et al. (2018) in the context of GAD. These observations further support the relative independence of self-report and observational measures, and further augment the need to examine the predictive utility of observational measures based on client in-session language.

As already briefly noted above, research has found client change language to be a consistent and very powerful predictor of important outcome dimensions in the domain of anxiety. For example, Lombardi, Button, and Westra (2014) examined client change language in the context of CBT for GAD using the adapted MISC and found that higher levels of CCT were associated with higher levels of posttreatment worry severity, accounting for a substantial amount of variance (17%) beyond initial symptom severity and self-report measures of readiness for change. Furthermore, higher levels of CCT strongly differentiated those clients who achieved clinical remission from those who failed to respond to treatment (Lombardi et al., 2014). Additionally, Poulin and colleagues (2018) directly compared self-reported motivation to motivational language in the first session of CBT for GAD. They found that self-reported motivation did not predict outcomes, but indices of client motivational language, especially CCT, strongly and consistently predicted outcomes both posttreatment and up to one-year posttreatment.

Research in the domain of GAD has also shown that early CCT is capable of differentiating client-therapist dyads that went on to experience an alliance rupture from those dyads that do not in context of CBT (Hunter et al., 2014). In particular, clients who experienced an alliance rupture with their therapist articulated more CCT statements at the start of treatment (i.e., session 1) compared to clients who did not experience an alliance rupture. Interestingly, although CT and CCT were found to be positively correlated, it was CCT, and not CT, that was predictive of subsequent drops in client alliance ratings (Hunter et al., 2014). In addition, Norouzian, Westra, Constantino, and Antony (2017) examined the impact of ambivalence on the therapeutic alliance among those receiving CBT alone or MI-CBT for severe GAD. This study found that regardless of the stage of therapy (early, middle, late) and treatment condition, there

was a negative relationship between CCT and therapeutic alliance, in that higher levels of CCT predicted lower alliance ratings. Notably, there was a significant difference based on treatment group. In particular, in the CBT alone group, the negative association between CCT and alliance grew stronger and was more enduring, whereas this relationship was weaker and remained roughly consistent over time in the MI-CBT group. These findings suggest CCT (i.e., ambivalence) may be an especially powerful predictor in CBT.

In-session client language has also been found to be predictive of other important proximal outcomes, including resistance (Button et al., 2015) and homework compliance (Button, 2013). In particular, Button and colleagues (2015) found that higher levels of CCT were consistently related to higher levels of opposition against the therapist and therapy at multiple points in treatment (i.e., early and mid-treatment). In other words, clients who expressed higher early levels of statements against change were more likely to display greater resistance to the CBT therapy and/or therapist throughout treatment. Furthermore, Button (2013) found that higher levels of arguments in favour of change (CT), early in therapy, were related to higher therapist and client-rated subsequent homework compliance. Similarly, higher levels of arguments against change (CCT) were associated with lower levels of therapist and client-rated homework compliance. Overall, these findings provide strong support for the utility and validity of this observational measure of client motivational language regarding change, and suggest that client articulations regarding change are associated with key variables in treatment, such as symptom reduction and receptivity to therapist direction. Thus, this observational coding system provides a foundation for furthering research in this area with a more refined measure of client ambivalence about change.

Responsiveness and Ambivalence

Responsivity is predicated on the idea that what is required depends on the moment-to-moment ever-changing context (Stiles, Honos-Webb, & Surko, 1998). Any particular intervention, statement, or behaviour may be evaluated positively or negatively depending on whether it was used appropriately in relation to the context, treatment goals, and client needs. In other words, responsivity requires different behaviours in different situations, responding to client needs and individualities as they arise in the therapeutic interaction (Stiles et al., 1998). In the context of psychological treatment, responsivity can occur at several points throughout therapy, including at the outset (e.g., the selection and planning of treatment based on clients' presenting issues and styles) and throughout treatment (e.g., timing and wording of statements and techniques taking into account clients' level of functioning and understanding). 'Appropriate responsiveness' is conceptualized as the therapist doing the right thing at the right time. In other words, appropriate responsivity is doing what is necessary to further the goals of the client or achieve some desired outcome (e.g., symptom reduction, improvement in quality of life; Kramer & Stiles, 2015; Stiles et al., 1998). Thus, this requires therapists to monitor the therapeutic context, select a strategy that is justified given the client's issues, and proceed with strategies and techniques that are suitable for the client's current capacity and state (Stiles et al., 1998).

Inherent in the description of 'appropriate responsivity' is an ongoing sensitivity and incorporation of emerging information gained through the therapeutic interaction, and it is embedded in other terms such as accurate empathy and timing (Stiles et al., 1998). Counter to responsivity is the concept of ballistic action or planning in advance; instead, responsiveness involves actively and consistently responding *to* and *with* variables evident in the therapeutic interaction (Stiles et al., 1998). Therapists can be responsive *to* various client characteristics or

the context including clients' personality style, gender, age, and ethnicity. On the other hand, responsiveness *with* describes more what the therapist does in response to a particular client characteristic (Stiles et al., 1998). For example, a therapist might respond *to* client ambivalence *with* a double-sided reflection.

Previous studies have found therapists who are responsive to clients' interpersonal styles and needs have better outcomes in treatment, highlighting the importance of attending to the interpersonal process (Hardy, Shapiro, Stiles, & Barkham, 1998). Furthermore, Safran and Segal (1990) detailed a cognitive model that focuses on the subtleties present in clients' experiences, and suggest that therapists should be flexible and versatile enough to adjust to individual client differences. In other words, this model emphasizes the relational context as the guiding principle in terms of intervention selection and the recognition that clients are part of a complex interpersonal system (Safran & Segal, 1990). In contrast, poorly timed interventions and inflexible application of strategies or techniques have a negative result on therapy process (Castonguay et al., 1996; Henry, Strupp, Butler, Schact, & Binder, 1993).

More recently, efforts have been put forth to develop and encourage increased flexibility and responsiveness when delivering standardized treatment protocols (Bugatti & Boswell, 2016; Kendall & Beidas, 2007). Constantino, Boswell, Bernecker and Castonguay, (2013) proposed a psychotherapy framework entitled, context-responsive psychotherapy integration, that involves an if-then stance that promotes the unification and use of transdiagnostic and transtheoretical strategies that can be utilized in response to common clinical markers in psychotherapy. Within this framework, the selection of evidence-based therapeutic techniques is based on several client factors and treatment processes that are common across different models of psychotherapy that are pivotal in promoting clinical improvement including: 1) low outcome expectations, 2) change

ambivalence, 3) self-strivings, 4) alliance ruptures and repair, and 5) outcome monitoring (Constantino et al., 2013).

In the Constantino et al. (2013) model, change ambivalence is regarded as a client characteristic or intrapsychic process that is intensified by the severity of symptoms. The source of client ambivalence can vary and may reflect low intrinsic motivation or readiness for change. It may also entail clients' doubts that the treatment, therapist, and/or given strategy fit with their needs and perceptions regarding how to change (Constantino et al., 2013). Lastly, client ambivalence can involve an intrapsychic conflict between a client's desire to change and the discomfort of giving up the security and comfort with maintaining the status quo (Constantino et al., 2013). Regardless of the cause, client ambivalence is considered a common factor that can occur across all forms of psychotherapy. Constantino and colleagues (2013) suggest that persisting with a therapeutic approach that does not specifically address client change ambivalence could be a clinical error.

Furthermore, research suggests that the way therapists respond to client ambivalence about change determines whether it progresses into resistance against the therapist or therapy (Miller & Rollnick, 2013). More specifically, client ambivalence about change can be strengthened when therapists employ a directive approach such as CBT, which then leads to increased resistance against the therapist and therapy (Beutler et al., 2011). Stiles et al. (1998) suggested that being responsive does not mean therapists cannot be directive. However, the timing and delivery of the direction needs to be appropriate considering the client's difficulties, characteristics, capacities, and current state. MI has been suggested as a promising strategy to implement in the face of ambivalence markers as it involves theoretically guided techniques to help increase clients' intrinsic motivation (Constantino et al., 2013; Miller & Rollnick, 2002;

Westra, 2012; Westra & Constantino, in press). Thus, client ambivalence about change may represent a key clinical marker that provides indications of clients' moment-to-moment level of readiness. Therapists who are able to tailor treatment based on the current level of readiness and willingness of the client may be able to improve outcomes.

In fact, in a study conducted by Aviram, Westra, Constantino, and Antony (2016) it was found that CBT therapists of GAD clients who were naturally more responsive (i.e., did not receive training) to contextual markers had better outcomes than those therapists who were not responsive. More specifically, in moments of disagreement (i.e., resistance), therapists who were more supportive (MI-consistent behaviours such as empathy, evocation, collaboration, and support of client autonomy) had substantially better therapeutic process (i.e., lower resistance) and outcomes (i.e., lower posttreatment worry). In addition, this study found that the timing of MI-consistent responses was crucial. In particular, MI-like behaviours in the face of resistance were significantly and positively related to treatment outcomes, whereas MI-like behaviours during randomly selected times in therapy were not related to treatment outcomes (Aviram, Westra, Constantino, & Antony, 2016). In other words, doing the "right thing at the right time" appears to be more beneficial than demonstrating those same behaviours at any point in time (Aviram et al., p. 790). This study supports the notion of responsivity and the importance of embodying specific relational skills during moments of resistance, rather than permitting these skills to freely vary.

Responsivity and Treatment Type

Effective responsiveness in psychotherapy can involve identifying and responding to specific characteristics of the client or context, such as client ambivalence. More specifically, clients may respond differentially to treatments based on the appropriateness of the match

between specific client variables and the treatment type (Stiles et al., 1998). In other words, the interaction between client and therapeutic features may predict or explain treatment outcomes (Shoham-Saloman & Hannah, 1991, Waskow, 1984). The aptitude-treatment interaction paradigm suggests that optimal therapeutic outcomes are achieved when treatment (i.e., any situational concept that can be manipulated) and an individual's specific aptitude (i.e., any client characteristic that is measurable) are matched; in that, a treatment has a different effect based on the client aptitude (i.e., interaction; Snow 1991). For example, it has been found that clients with high levels of self-control benefit more from cognitive therapy for depression than pharmacotherapy (Dance & Neufeld, 1988).

CBT is considered a structured and present/problem-focused therapy that is directed towards resolving current issues by modifying inaccurate or unhelpful thinking patterns and behaviours and developing new coping skills (Beck, 1964). Essential to CBT theory is the idea that problem behaviours, thoughts, and emotions have been developed to some extent through experience and learning, and thus, are modifiable through novel experiences (Beck, 1964). New ways of responding are encouraged through repetition, such that they become the primary coping strategies long-term (Beck, 1964). Key elements and strategies within a CBT framework include an individualized case conceptualization, Socratic questioning, psychoeducation, identification and modification of negative automatic thoughts and schemas, behavioural experiments, and rehearsal of skills (Wright, Basco, & Thase, 2006). Therapists assume the expert position, advising and labelling clients' thoughts as irrational or distorted, which lead to problematic behavioural responses (Beck, 1979). Therefore, a major focus of treatment is to challenge and help clients change faulty thinking patterns (Beck, 1979). Another goal of CBT is to develop a repertoire of strategies that clients can use when faced with problematic situations, while

becoming less reliant on and more autonomous from their therapist (Craske, 2010). Studies have found that CBT therapists incorporate significantly more guidance, instruction, psychoeducation, structure, and directiveness than other therapies to which it has been compared (Blagys & Hilsenroth 2002; Watson & McMullen, 2005).

On the other hand, approaches such as MI, which were designed specifically to build and enhance client motivation for change, provide a safe and supportive context whereby clients can express and sort out any conflicting feelings regarding change (Miller & Rollnick, 2013). There is explicit emphasis in MI on seeing the client as the expert and helping clients to regard themselves as experts; therefore, therapists embody a not-knowing attitude regarding clients' difficulties and ways to change. As such, the client is viewed as the active agent of change. Inherent in this stance is a nonjudgmental view of clients' behaviours, thoughts, and reactions, where therapists actively attempt to support clients' self-efficacy and autonomy by understanding the motivations behind their current behaviours (Flynn, 2011). In this approach, therapists avoid the "righting reflex," which is considered therapists' natural inclination towards wanting to resolve clients' current issues by advising and convincing clients on how and why to change (Miller & Rollnick, 2013).

Within MI, change is viewed as a continuum, with clients presenting at different stages of change, such as lacking awareness of symptoms and problematic behaviours to active engagement with change strategies (Slagle & Gray, 2007). Essential to this approach is the MI spirit, which entails a way of being with clients that embodies collaboration with the client, evocation of the client's ideas regarding change, an emphasis on client autonomy, and compassion (Miller & Rollnick, 2002). There are four principles underpinning MI: expressing empathy, developing discrepancy, supporting self-efficacy, and rolling with resistance. When

expressing empathy, the therapist strives to understand and share the feelings from the client's frame of reference, while withholding judgement and criticism. Developing a discrepancy involves understanding and reflecting client's motivations for and against changing, highlighting the divergence between current behaviours and values. Supporting self-efficacy is the belief that clients can implement the necessary actions to achieve change. Therefore, an MI therapist may suggest possible strategies to change; however, the client is perceived as holding the power to decide the best avenue to change. (Miller & Rollnick, 2002). Rolling with resistance involves getting alongside the resistance, seeking to understand it (Westra, 2012).

Furthermore, within the MI framework, resistance to change is regarded as an expected and normal part of the process, and thus is viewed as containing valuable information about the client's experience (instead of a pathological trait or hindrance to overcome; Westra, 2012). Similarly, ambivalence to change is perceived as exemplifying clients' hopes, desires, and apprehensions about change. Thus, an MI therapist seeks to compassionately and empathically understand and explore the client's resistance and ambivalence. For example, a client may express disinterest in a between-session task. In MI, homework noncompliance is not viewed as an obstacle to successful treatment but rather as information that should be understood. In this sense, clients and therapists do not get stuck arguing for or against change with the client's energy towards resisting active efforts to change (Westra, 2012). A major clinical skill within an MI framework is attunement towards client change language, moments of resistance and/or tension in the therapeutic dyad, and indicators of client readiness for change (i.e., key markers of motivation and ambivalence in words and process), and the subsequent ability to responsively navigate these key moments with the indicated strategies (Westra & Norouzian, 2018).

Recent findings suggest that a mechanism of change involves therapist aptitude on both

the relational (e.g., MI spirit) and technical (e.g., conjuring high levels of change talk) aptitudes of MI (Flynn, 2011; Moyers & Martin, 2006; Moyers, Miller, & Hendrickson, 2005). Within an MI framework, therapists are sensitive to recognizing ambivalence and respond to it flexibly in order to build motivation and enhance engagement with the task and/or therapy. In fact, research has found that clients who received MI as a pretreatment to CBT had lower levels of interpersonal resistance and higher levels of engagement (i.e., higher levels of subsequent homework compliance; Westra, Arkowitz, & Dozois, 2009). Additionally, clients who received MI described themselves as more open and active in the therapy process in CBT (Kertes, Westra, Angus, & Marcus, 2011). Additionally, in a meta-analysis review, Burke, Arkowitz, and Menchola (2003) found MI pretreatments were related to better outcomes and attendance in subsequent therapies. Thus, there is strong suggestive evidence that client motivation is an important individual difference variable that can have wide-ranging implications for client engagement and improvement in therapy. Given these findings, integrating an intervention that aims to strengthen client motivation through the resolution of ambivalence about change into CBT may be more effective for clients high in ambivalence than CBT alone.

Treatment Matching on Reactance and Readiness

The fit between client trait-like resistance and therapist directiveness is a consistent finding in the literature (Beutler, Clarkin, & Bongar, 2000; Beutler et al., 2011; Karno, Beutler, & Harwood, 2002; Karno & Longabaugh, 2005; Karno & Longabaugh, 2007; Norcross, 2002). Here, reactance is conceptualized as resulting not only from the client, but also from the therapist and therapeutic setting (i.e., a lack of fit between the therapy and client; interpersonal resistance). In much of the literature the terms reactance and resistance are used interchangeably (Beutler et al., 2011). For example, Beutler and colleagues (2011) conducted a meta-analysis and found a

large effect size for the fit between therapist directiveness and client reactance (the tendency to behave oppositionally when personal freedoms are threatened; Beutler et al., 2011). For clients high in reactance, a greater level of therapist directiveness was related to poorer outcomes. Conversely, for those clients low in reactance, a higher level of therapist directiveness was positively related to outcomes. Similarly, clients low in reactance had better outcomes in directive treatments, whereas clients high in reactance improved more in supportive therapies (Beutler et al., 1991).

Relatedly, there is evidence that MI improves treatment response when added to CBT by reducing resistance. Recall that resistance (an interpersonal process of opposition to the therapy/therapist or noncollaboration) has potent effects on outcomes. For example, higher levels of early resistance have been found to strongly predict poorer proximal (e.g., homework compliance) and distal outcomes (e.g., symptom severity one-year posttreatment) for individuals receiving either CBT alone or CBT with an MI pretreatment for severe GAD (Aviram & Westra 2011). Importantly, early resistance strongly and directly mediated the association between treatment type and worry severity, suggesting that MI improves treatment response when added to CBT by decreasing client resistance to and improving engagement with therapy (Aviram & Westra, 2011). Similarly, in a clinical trial examining the impact of integrating MI with CBT, midtreatment resistance fully mediated the relationship between treatment group and outcomes at one-year follow-up, suggesting that one way in which MI-CBT promotes superior long-term symptom reduction is lower levels of observed resistance (Constantino, Westra, Antony, & Coyne, in press).

Despite these findings suggesting that an adjusted CBT approach may be especially useful for particular individuals, the majority of studies examining client-treatment matching

strategies on ambivalence about change have been conducted in the area of substance use. Here, the therapist's approach is considered essential when clients are ambivalent about changing and/or attending therapy, and it has been suggested that therapists should adjust their strategies and approach based on the degree of client readiness for change (Haaga, 2006). For example, Witkiewitz, Hartzler, and Donovan (2010) examined baseline readiness as a potential moderator of differential responses to treatment of alcohol use disorders. Readiness was measured using the University of Rhode Island Change Assessment Scale (URICA; McConnaughy, Prochaska, & Velicer, 1983), which has been found to have good predictive validity in the context of treatment-seeking individuals with alcohol use disorders (Willoughby & Edens, 1996). Results from this study found that outpatient clients with lower levels of initial readiness had better outcomes when assigned to Motivational Enhancement Therapy (MET) compared to low motivation clients assigned to CBT.

Relatedly, in the context of substance abuse treatment, Conrod and colleagues (2000) investigated whether matching motivation-specific interventions to various motivational and personality profiles impacted outcomes. Factor scores on different dimensions of personality and symptom scales were used to develop motivational profiles. Clients who received matched interventions demonstrated better outcomes (i.e., reduced frequency and severity of alcohol and substance use) than clients who received the control intervention. Similarly, Melnick, De Leon, Thomas, and Kressel (2001) utilized a client-treatment matching protocol that examined several factors at the time of intake, including pattern of drug use, previous abstinence, and social factors. Readiness for change was measured using the Circumstances, Motivation, and Readiness (CMR) Intake Version, which is shorted factored version of the 42-item Circumstances, Motivation, and Readiness Scales (De Leon, Melnick, Kressel, & Jainchill, 1994), which has been found to be a

reliable measure in the context of substance abuse treatment (Melnick et al., 2001). Results indicated that readiness for change and client-treatment match were unique, strong, and significant predictors of positive treatment dispositions (i.e., treatment completion or longer treatment retention; Melnick et al., 2001).

Overall, these findings have significant implications for informing treatment and suggest that the fit between client readiness and the therapy and/or therapist makes a difference. Given the growing importance and emerging evidence of treatment matching to outcomes in psychotherapy, further research is necessary to understand mechanisms underlying the differential outcomes in therapy, such as client ambivalence about change, and analyzing issues of treatment matching on ambivalence beyond substance abuse seems indicated. The examination of such research questions now becomes viable with a valid and reliable measure of client in-session change language.

Aims of the Present Study

Findings in the substance abuse literature support the association between client readiness for change and treatment outcomes. However, research examining client ambivalence as a possible predictor of within treatment variability for anxiety has largely been impeded due to inadequate and unreliable measures of this construct. Thus, long-standing hypotheses postulating ambivalence about change as a basis for treatment matching have gone largely unexplored in the anxiety domain. Given the strong and consistent findings of client in-session language, and in particular CCT (Lombardi et al., 2014, Magill et al., 2014) as a potent predictor of treatment outcomes in MI for addictions as well as CBT for GAD, further examination of this client variable using this observational measure seems warranted.

The present study involves secondary data collection and exploratory analysis of client ambivalence in the Westra, Constantino, and Antony (2016) multi-site randomized controlled trial (RCT). This RCT examined the impact of adding MI to CBT compared to CBT alone in the treatment of severe GAD. Participants received CBT alone or CBT integrated with MI (MI-CBT). The primary aim of the current study was to investigate whether initial levels of client ambivalence (as measured by the adapted MISC; Glynn & Moyers, 2009; observed in-session motivational language and in particular, CCT) moderated the relationship between treatment group and outcomes. Given that MI-CBT was found to be a superior treatment in the parent study in terms of long-term outcomes, this study sought to further examine this finding to identify whether certain clients, based on their level of early ambivalence, had better worry outcomes with MI-CBT versus CBT alone. A second aim was to examine the impact of ambivalence, as a function of treatment group, on other outcomes beyond the primary outcome of self-reported worry, such as interpersonal problems. The impact on interpersonal problems is particularly important to examine in GAD given the research supporting the relevance of addressing interpersonal problems in order to achieve optimal and sustained outcomes (e.g., Crits-Christoph et al., 2005; Newman et al., 2013). Based on previous research, the following hypotheses were developed:

Hypothesis 1: Clients with higher levels of early ambivalence (CCT, as measured by the MISC) will report lower posttreatment worry, as assessed by the Penn State Worry Questionnaire (PSWQ) if they received MI-CBT compared to CBT alone clients. In other words, it is predicted that MI-CBT will be particularly beneficial for clients who are high in ambivalence.

Hypothesis 2: Clients with higher levels of early ambivalence (CCT, as measured by the MISC) compared to those with lower levels of ambivalence, will report less posttreatment

interpersonal problems as measured by the Inventory of Interpersonal Problems (IIP) if they received MI-CBT compared to CBT alone.

Method

Participants

Participants were enrolled in the RCT over an 18-month period (February, 2012 to April, 2013). Potential participants were screened over the telephone using criteria for GAD from the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev; DSM-IV-TR; American Psychiatric Association, 2000). Participants who passed the initial phone screen with a high likelihood of meeting GAD diagnostic criteria and a worry severity score of 68 or higher (out of 80, which would suggest chronic, excessive and uncontrollable worry that is interfering in terms of important life domains) on the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990) were scheduled for a diagnostic interview. For the diagnostic interview, participants were assessed using the Structured Clinical Interview for the DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1996) as well as the provisional criteria for the diagnosis of GAD in the DSM-V to ensure that all participants met both DSM-IV and DSM-5 criteria for a principal diagnosis of GAD (American Psychiatric Association, 1994; American Psychiatric Association, 2013). At this diagnostic interview, the PSWQ was also readministered. Only those participants who scored above the cutoff for high GAD severity were deemed eligible (68 or higher out of 80). High worry severity was used as a cutoff score because previous findings from a RCT (Westra et al., 2009) showed that adding MI to CBT was particularly beneficial for those high in worry severity. Given the high rate of comorbidity between GAD and depression, participants with comorbid depression and/or other anxiety disorders (e.g., Panic Disorder, Specific Phobia) were included to enhance generalizability, as long as GAD was the

primary diagnosis based on the level of impairment. Thus, all eligible participants had a primary diagnosis of severe GAD. Trained clinical psychology graduate students conducted the SCID interviews. Inter-rater reliability, as assessed by kappa coefficients, was based on a random sample of 25% of videotaped SCID interviews for enrolled participants. The overall kappa coefficient for all diagnoses was 0.87, and 0.95 for GAD.

Exclusion criteria included substance dependence within the past six months, cognitive impairment (e.g., neurodegenerative illness or head injury), current or history of a psychotic spectrum disorder or bipolar mood disorder, significant current suicidal ideation, and below criterion proficiency in English. Other study requirements included refraining from receiving concomitant psychotherapy during the acute treatment phase of the study.

Individuals using benzodiazepines were excluded from the study due to the potential of these medications interfering with CBT outcomes (Westra & Stewart, 1998) and exerting amnestic effects (Buffett-Jerrott & Stewart, 2002). Unmedicated participants were required to stay unmedicated for the duration of the study. Similar to other RCTs of CBT for GAD, and for the purposes of external validity, concurrent antidepressant medication was allowed, given the participant was on the same medication and dose for at least three months prior to entering the study. Participants also agreed to remain on that medication and dosage for the duration of treatment. For those participants who recently stopped using an antidepressant medication, a washout period of three months was required before entering the study.

Participants were seen at one of two centers in Toronto: Ryerson University and York University. Of the total sample, 62% of clients were seen at the Ryerson site whereas 38% of clients were seen at the York site. From each treatment group, an equal number of clients were

seen at both sites. Within each condition, clients were randomly assigned given the constraints of therapist availability.

CBT and MI Therapists and Treatment

Both conditions consisted of 15 weekly one-hour individual therapy sessions. In the CBT alone condition, participants received 15 sessions of CBT. In the MI-CBT condition, participants received up to four initial sessions of MI alone, followed by 11 sessions of CBT integrated with MI. Additionally, participants received booster sessions at one and three months following treatment.

CBT condition. The session-by-session treatment manual was developed from several evidence-based protocols (e.g., Coté & Barlow, 1992; Craske & Barlow, 2006; Zinbarg, Craske, & Barlow, 2006), and consisted of psychoeducation about anxiety and worry, self-monitoring, progressive muscle relaxation, cognitive restructuring (with a focus on probability overestimation and catastrophic thinking), and at least one additional behavioural strategy (e.g., behavioural experiments to test worry assumptions, worry behaviour reduction, imaginal and in vivo exposure to feared situations). On an as needed basis, sleep strategies developed from Carney and Edinger (2010) were also discussed. Lastly, starting in session 14, relapse prevention was examined and a relapse prevention plan was created. Therapists were instructed to implement treatment in a particular order; more specifically, progressive muscle relaxation followed by cognitive restructuring followed by behavioural strategies. However, the length of time spent on each component was determined by the therapist based on the needs and responsiveness of the client to each treatment strategy. To ensure consistency across the CBT condition in managing homework noncompliance, strategies for addressing this were developed based on existing research in CBT (e.g., Beck, 2005; Kazantzis & Shinkfield, 2007; Tompkins,

2004; Waters & Craske, 2005). These strategies focused on preventing homework noncompliance (e.g., developing homework in a collaborative fashion, anticipating obstacles, generating solutions) and responding to homework noncompliance (e.g., psychoeducation emphasizing the importance of homework, understanding the reasons for noncompliance, acknowledging and validating the difficulties and struggles in completing homework, problem-solving by developing a plan to overcome obstacles, emphasizing accountability).

MI-CBT condition. In the MI-CBT condition, participants received four initial sessions of MI alone, followed by 11 sessions of MI integrated with CBT. The principles, methods, and techniques of MI as put forth by Miller and Rollnick (2002) were extended to be applicable to the treatment of anxiety. Namely, treatment focused on resolving ambivalence about worry and other commonly related problems. The four core principles of MI consist of expressing empathy, developing discrepancies between intrinsic values and current behaviours, rolling with resistance, and eliciting and supporting self-efficacy. Treatment in the MI-CBT condition followed the manual developed by Westra (2012), which describes MI on its own in the context of anxiety treatment, as well as the integration of MI with other action-oriented therapies such as CBT. The core focus of treatment was on worry and worry related behaviours (e.g., procrastination, overpreparation, avoidance). However, the focus of treatment could also change, depending on the needs and presentation of the client, to ambivalence about changing issues commonly related to worry (e.g., perfectionism, assertiveness, social anxiety). Particular emphasis was given to the recognition, acknowledgement, and management of intra-psychic (ambivalence to change) and interpersonal resistance (discord or opposition to the therapist and/or therapy). That is, ambivalence, resistance, and motivation (CCT, CT, discord in the therapeutic relationship, signs

of readiness for change) were considered process markers, and flexibility and responsiveness across these markers were emphasized in treatment.

In the CBT phase of treatment, therapists provided each CBT component throughout the course of treatment; however, the timing and duration of delivery was controlled by the therapist based on the responsiveness, needs, and feedback of the client to each treatment component. There were two ways in which MI was integrated with CBT. First, throughout treatment, therapists were able to shift back to MI during the CBT phase depending on the ebb and flow of ambivalence about change. More specifically, therapists were prepared to move back to MI if significant ambivalence about change reemerged. Second, as described by Westra (2012), the underlying spirit and attitude of MI was embedded in every therapist action and communication when conducting CBT; thus, serving as a foundational framework. This attitude includes preserving client autonomy, creating a collaborative environment, providing support, and expressing empathy. When delivering CBT, the MI spirit guided therapists in terms of when to introduce CBT strategies, and therapists were encouraged to continually attend to and observe the process of therapy in order to gauge the level of client engagement with and responsiveness to the strategies. The MI spirit also informed monitoring, recognizing, and responding to resistance and ambivalence (including homework noncompliance), adopting a client-as-expert stance (assuming the role as a guide to the client), evoking client expertise, and the attuned use of empathy throughout treatment.

Therapists and Training

In the larger RCT, therapists were nested within treatment groups in order to control for allegiance effects that are common in RCTs (Luborsky et al., 1999; Munder, Brütsch, Leonhart, Gerger, & Barth, 2013). In other words, therapists delivered only one type of treatment, either

CBT alone or MI-CBT. Furthermore, therapists were informed about both treatment groups and self-selected the treatment group they wanted to receive training in and deliver for the duration of the study. This ensured that therapists did not have to deliver treatment components that they did not believe were most effective.

There were 13 female CBT alone therapists (12 doctoral candidates in clinical psychology and 1 post-doctoral psychologist) who saw between 1 and 7 cases each, with a median of 5 clients per therapist. There were 9 female MI-CBT therapists (8 doctoral candidates in clinical psychology and 1 post-doctoral psychologist) who saw between 3 and 14 cases each, with a median of 5 clients per therapist.

Training for each treatment group consisted of numerous readings, 4-day long workshops, which included didactic instruction, discussion, and role-play. Each therapist saw at least one practice case with extensive feedback and videotape review of therapy sessions. For the CBT group, two highly experienced CBT therapists (a psychologist and expert in CBT with 20 years of experience and a post-doctoral fellow specializing in CBT) ran the workshops. The post-doctoral fellow specializing in CBT primarily conducted case supervision for the CBT alone group. For the MI-CBT group, a psychologist who was highly experienced and an expert in MI and CBT led the workshops and oversaw supervision. The case supervisors only monitored therapists in their treatment group assignment (CBT alone and MI-CBT, respectively). If case supervisors deemed that therapists were competent in the delivery of the treatment, therapists moved on to see study clients. All of the CBT therapists saw one practice client each and all were considered competent in the delivery of CBT. Therapists in the MI-CBT group saw between 1 and 3 practice cases each, and of the original 14 MI-CBT therapists who underwent training, 9 went on to see study clients. Weekly supervision meetings included videotape review.

Treatment Integrity

For CBT, treatment adherence was assessed using the Cognitive Therapy Rating Scale (CTRS: Young & Beck, 1980). Ratings were made for 11 different dimensions including interpersonal skills (e.g., collaboration, understanding), and specific cognitive therapy skills (e.g., focus on key cognitions, application of CBT techniques). Additionally, ratings were made for overall session quality. Over a time period of six months, the post-doctoral fellow specializing in CBT trained eight undergraduate psychology students to criterion. Coders made ratings independently. Meetings were held regularly to resolve discrepancies in coding. Interrater reliability was calculated to reduce the possibility of coder drift and was calculated by double-coding a random sample of 25% of tapes. The intraclass correlation coefficient (ICC) for this sample was 0.84.

Therapist adherence for the MI group was evaluated using the Motivational Interviewing Treatment Integrity Code Version 2.0 (MITI; Moyers, Martin, Manuel, Hendrickson, & Miller, 2005). To do so, a random sample of 20 minutes of each selected session was rated for various global dimensions including empathy, evocation, autonomy support, and collaboration. Global ratings ranged from 1 to 7. Higher scores indicated higher levels of the dimension. Over a time period of six months, six undergraduate psychology students were trained to criterion. Coders made ratings independently. Regular meetings were held to resolve discrepancies in coding. Interrater reliability was calculated to reduce the possibility of coder drift and was calculated by double-coding a random sample of 25% of tapes. The ICC for this sample was 0.91, which suggests excellent reliability (Cicchetti, 1994).

Outcome Measures

Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990). The PSWQ is a 16-

item measure and responses are indicated using a 5-point Likert scale (Meyer et al., 1990). Total scores on the questionnaire range from 16 to 80, where high scores reflect higher levels of worry severity. The questionnaire was created to measure trait worry and is considered to be a valid and reliable measure with high internal consistency and temporal stability, as well as good convergent and discriminant validity (Brown, Antony, & Barlow, 1992, Meyer et al., 1990). Previous research has shown that the PSWQ can effectively distinguish individuals with GAD from individuals with other anxiety disorders and healthy controls (Brown et al., 1992). The Cronbach's alpha for the present study (and clinical trial) was 0.62 at baseline assessment. For post-treatment and follow-up assessments, the Cronbach's alpha ranged from 0.96 to 0.97.

Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villaseñor, 1988). The IIP is a self-report measure that identifies and evaluates the difficulties experienced in interpersonal relationships (Horowitz et al., 1988). This measure is used extensively in psychotherapy research. A brief 32-item version of the IIP (IIP-32) was developed to provide a quicker evaluation of interpersonal problems (Barkham, Hardy, & Startup, 1996). Participants complete various items with the stems "It is hard for me to:" (e.g., Say "no" to other people, Feel close to other people) and "These are things I do too much:" (e.g., I try to please other people too much, I argue with other people too much), using a 5-point scale, ranging from 0 (not at all) to 4 (extremely), according to the degree of difficulty/distress they feel regarding the problem. The IIP-32 has demonstrated good psychometric properties, with adequate convergent validity with the full scale IIP (Barkham et al., 1996). Furthermore, high internal consistency (Barkham et al., 1996; Hopwood, Pincus, DeMoor, & Koonce, 2008) and moderate test-retest reliability have been documented for this measure (Barkham et al., 1996). For the current study, Cronbach's alpha ranged from .87 to .92 over the various assessment periods.

Other Study Measures

      Motivational Interviewing Skill Code Version 1.1 (MISC 1.1; Glynn & Moyers, 2009). The MISC 1.1 was used to quantify client motivational language or statements about change. Originally, the MISC was created as a treatment integrity measure for MI but has been used for a variety of different objectives including predicting treatment outcomes from in-session client language (Glynn & Moyers, 2009). Client change language is coded aurally, usually without the use of transcripts and video recordings, as any visual information is not codable. Using this system, only client utterances are eligible for coding and categorizations include CT and CCT; thus, neutral client language and therapist language are disregarded. First, a target behaviour must be determined as client speech is categorized as movement toward or away from this target behaviour. CT is client language in which a client is endorsing or expressing agreement with change, arguing for change, or moving towards change in the target behaviour. CCT is client language that reflects arguments against change, objections to change, or movements away from change in the target behaviour.

      The MISC has been found to have strong predictive validity in the area of substance abuse. For example, Amrhein et al. (2003) found the strength of client commitment language, specifically near the end of MI sessions, was predictive of behavioural outcomes, in that, more positive commitment language was associated with greater drug abstinence attained one-year posttreatment. Additionally, in a MI treatment study, Moyers et al. (2007) found that clients' language arguing for and against change independently predicted substance abuse outcomes, even when taking into consideration clients' baseline measures of symptom severity.

Coding, Training, and Reliability

  MISC coding. The first step of the coding process was to identify the topic of

conversation or the target behaviour. In a substance use setting, the target behaviour is typically

quite clear (e.g., decreasing use or abstinence); however, in the context of treatment for anxiety

and related behaviours, identifying a single target behaviour was not feasible. Rather a broad

range of target behaviours, some behavioural (overprotectiveness, overpreparation, checking,

deference, unassertiveness, etc.) and some cognitive (worry, perfectionism, vigilance, self-

criticism, etc.), was evident in therapy sessions. That is, the landscape of behaviours needing to

be changed in treatment for anxiety is typically quite diffuse and includes multiple, inter-related

and shifting target behaviours. Moreover, the particular nature of the behaviours is idiographic to

each client (e.g., planning and procrastination may be avoidance strategies for some, but not for

others). Thus, a range of target behaviours were allowed, and coders identified CT and CCT in

relation to each behaviour.

  Coders first identified a target behaviour (i.e., topic of discussion); they then coded any

client change statements related to this target. Some common target behaviours included worry,

perfectionism, assertiveness, socializing with others, procrastination, health of self and others,

avoidance, and finances. The target behaviour frequently shifted and changed as the discussion

moved from topic to topic and thus, these topic shifts were tracked (i.e., what is the CT or CCT

in reference to). Client statements were coded as reflecting either CT (talk in the direction of

change) or CCT (talk in the direction of not changing). Each codable statement was parsed into

thought units (i.e., units of meaning or properties reflecting a complete thought or reason to

change/not change). If advocacy for or against change were not clearly apparent from the

statement, it was not coded. Neutral language was also not coded, and thus, needed to be

differentiated from CT or CCT. Examples of neutral language includes conveying factual information (e.g., worry rate for the week), story-telling that is irrelevant to change in the target behaviour, behaviours that happened in the distant past (e.g., "in high school, I used to worry about my exams all night long"), discussing someone else's desire to change or not change (e.g., "my sister really wants to join this study and I think she really needs it"), minimal encouragers signifying that the client is following, but does not necessarily indicate agreement with the therapist (e.g., "uh huh," "OK"), and any other client language that is not considered CT or CCT (e.g., "can we meet on Thursday next week?," Glynn & Moyers, 2009). To note, if a client connects the past to the present context, this statement is codable (e.g., "I've been able to relax in the past – I can do it again"). If a therapist asks a scaling question (e.g., "on a scale from 1 to 100, how much does anxiety bother you?"), client responses are only codable if the response is elaborated (e.g., "A clear 100. It's wrecking my life.") or the tone/affect conveys a clear desire to change or not change. Overall, verbalizations eligible for coding included any statement that expresses an ability, commitment, desire, need, reason, or step toward (or away from) change (Glynn & Moyers, 2009; see Appendix A for examples of inability to change, commitment, desire, need, and reason to not change or stay the same, and step away from change or stay the same statements).

CCT entails client verbalizations that refer to any movement away from change, arguments against change, objections to change (and/or in support of the status quo) in regards to the target behaviour. Although there are different categorizations (e.g., need, desire) of CCT, for the present study, these groups were not separated; however, they did aid in the coding process as they provided rationale for codes. Of note, it is not required that CCT have a resistant quality or emotional charge, rather it is essential that the client statement depicts a preference for not

changing the target behaviour, thus supporting the status quo or movement away from change. If a therapist offers a statement of CCT and the client agrees or endorses this verbalization, this should be coded as CCT (e.g., Therapist: "So perfectionism makes sure you get things done right. Client: "Oh, definitely!"). Here, the vocal tone can be key in distinguishing whether the client verbalization is codable. In other words, in order to be codable the intention of the client's statement needs to communicate endorsement or agreement with the therapist's language, not simply to indicate that the client is following. "I don't know" statements are often codable if the meaning of the client statement is clearly implied. For example, if the therapist asks a client how they would go about changing a problem and the client responds with "I don't know" without hesitation or thought, this would be coded as CCT. Here, the statement reflects a desire to not change (or elaborate the therapist's direction). In these instances, the therapist's question is crucial in deciphering whether the client's response is codable (Glynn & Moyers, 2009). See Appendix B for a summary of coding considerations.

Although not a focus of this study, CT refers to client language in which a client is endorsing or expressing agreement with change, arguing for change, or moving towards change in the target behaviour (Glynn & Moyers, 2009). In other words, the client is articulating the change position or voice expressing a quality of moving in the direction or in support of change in the target behaviour. As with CCT, when there is therapist-provided CT, following statements need to be distinguished from agreeing and endorsing verbalizations. Furthermore, therapist's questions or statements commonly pull for client CT (e.g., goal setting, "What are you hoping to achieve through therapy?") and are almost always followed by client CT statements.

The team of coders for client CT and CCT consisted of two upper level undergraduate students in psychology and a Master's level graduate student in clinical psychology. One of the

coders was involved in adapting the MISC for use with CBT for GAD. The remaining two

coders were trained to criterion over a period of four months. Coders participated in two 3-hour

training workshops and then independently rated test materials to determine coding proficiency.

Only coders who achieved 85% observed agreement against the test materials moved on to code

the therapy sessions in the present study. During this process, coders met weekly to discuss any

coding issues. Coders were kept blind to clients' outcome status throughout the process. Twenty-

five percent of all materials were double coded to determine reliability. Kappa coefficients were

calculated for each pair of coders and ranged from 0.75 to 0.95, with a mean of 0.86, indicating

good to excellent agreement (Fleiss, 1981).

Procedure

Recruitment was conducted in the Greater Toronto Area using community advertisements

seeking adult males and females who worry excessively. Interested participants contacted the

study sites to complete an initial phone screen followed by a diagnostic interview to ensure they

met study eligibility criteria. For all study procedures, informed consent was obtained at the time

of initial study intake. A local institutional ethics review board for research involving human

participants approved all study measures and methods.

The PSWQ was completed by clients at baseline, all treatment sessions, posttreatment,

and at 6 and 12-month follow-up assessments. Clients filled out the IIP at baseline, session 5, 9,

and 13, posttreatment and 6 and 12-months posttreatment. Of note, for the follow-up data, the

return rate among treatment completers was very high (i.e., 97%; Westra et al., 2016).

Ambivalence, as assessed by client CCT statements (which are numeric scores with a range

dependent on the number of client utterances per session), was measured at the beginning of

participants' therapy sessions. For CCT, session 1 videotape was available and coded for 82 of

the participants and when session 1 was not available, session 2 was coded (3 participants). All session videotapes were coded in their entirety.

Role of Candidate

Findings from the larger RCT indicated that clients in the MI-CBT group reported significantly lower posttreatment worry scores at long-term follow-up than clients in the CBT alone group. Moreover, clients in the MI-CBT group showed a continued improvement over time after treatment ended, whereas clients in the CBT alone group showed some loss of gains (Westra et al., 2016). Given these findings, this study sought to identify specific variables that may have impacted the relationship between treatment group and outcomes. In particular, this study examined client ambivalence as a potential moderator (or explanatory variable) of treatment effects in the larger RCT.

In terms of the current study, along with my supervisor, I was responsible for training coders in the use of the MISC, conceptualization of the study, collecting data pertaining to ambivalence (i.e., early client CCT statements) as a moderator, and analyzing the results. I also coded sessions for motivational language (i.e., CT and CCT).

Data Analyses

Multilevel Modeling (MLM) was utilized to analyze the hypotheses. MLM was selected for three reasons. First, the data were hierarchal in nature; more specifically, clients ($N = 85$) were nested within therapists ($N = 22$). Second, the data were longitudinal (i.e., repeated measurements on clients over time). In MLM, time is treated as a continuous variable (rather than a discrete variable); thus, this can increase the statistical power for detecting growth effects (Muthén & Curran, 1997). Third, MLM is flexible in dealing with missing data. In particular, MLM is able to utilize all available data (i.e., not only completed cases) when estimating model

parameters because of its flexible consideration of the time predictor. For instance, a participant who only has baseline data can still be included in analyses and contribute to the model parameter estimates. This is useful in RCTs where missing data is expected and can occur for several reasons (e.g., missing sessions, lost to follow-up, etc.). With other statistical tests, completed data is required. In other words, if participants are missing data for a single time period, all of their data is excluded from analyses, which leads to a significant loss of statistical power and accuracy in longitudinal research (Kwok et al., 2008). Therefore, the use of MLM improves power and precision in longitudinal research designs (Gallop & Tasca, 2009; Muthén & Curran, 1997) and is considered a preferred method for RCTs and intervention studies (Kwok et al., 2008).

In terms of data analyses, several MLM models were tested. First, a two-level longitudinal linear MLM was used to examine the moderating effects of client ambivalence (as measured by client CCT) on the relationship between treatment type (MI-CBT versus CBT alone) and client-rated worry severity scores (i.e., client PSWQ scores). Two sets of analyses were run: one testing for effects in the acute treatment phase (i.e., S1 to S15) and the other testing for effects in the follow-up treatment phase (i.e., posttreatment, 6 months posttreatment, and 12 months posttreatment). The first level in the model was individual PSWQ scores. Clients were the second level in the model. Therapists were not included in the model for two reasons: 1) analyses revealed that therapists did not substantially affect the significance of these relationships and/or the magnitude of the coefficients in the model and 2) a two-level model had better fit statistics. Explanatory variables (i.e., predictors of change) in the model include 1) treatment type (CBT and MI/CBT) and 2) total proportion of early CCT. The interaction term (treatment type x total proportion of early CCT) was examined for potential moderation effects.

Similar models were used to examine the moderating effects of client CCT on the relationship between treatment type and IIP scores.

In further detail, analyses were conducted using a two-piece linear spline longitudinal multilevel (i.e., mixed effects) model (i.e., "broken-stick" model). A mixed effects model was utilized because this type of modeling permits a subset of the regression parameters to vary randomly subject-to-subject, thus allowing the model to account for sources of inherent heterogeneity (i.e., subject-specific effects or random effects that are characteristic of a certain subject) and homogeneity (i.e., fixed effects; features of the population presumed to be common to all subjects) in the sample (Fitzmaurice, 2008b). Utilizing a model with intercepts and slopes that differ randomly amongst its subjects allows for individual variation at baseline, while also incorporating changes in response patterns over time (Fitzmaurice, 2008b). Thus, a longitudinal design was implemented to account for within-individual change over time (i.e., examining whether clients change over time) and inter-individual differences in change (i.e., analyzing whether clients differ in terms of change rates, and if so, examining whether this impacts the relationship between predictors and patterns of change; Fitzmaurice, 2008b).

A linear spline was also included in the model. Linear splines accommodate non-linear trends due to the flexibility inherent in the model. In particular, rather than using one straight line to model the data, linear splines allow for a sequence of joined line segments, yielding a piecewise linear pattern (Fitzmaurice, 2008a). This type of modeling can divide the time points of a longitudinal design into different segments to account for piecewise linear trends in the data; in other words, it permits variations in the slope, while being joined at fixed time points (i.e., "knots;" Fitzmaurice, 2008a). In the present study, a "knot" was introduced at posttreatment (i.e., following session 15) to allow for increased flexibility/change in slope in the model. This was

done for two reasons. Firstly, conceptually, there is a clear difference between time points 1 to 15 (i.e., active sessions of treatment or the acute treatment phase) versus time points 16 to 17 (i.e., 6-month and 12-month assessments; follow-up time period). More specifically, in the acute treatment phase, clients are attending weekly sessions of therapy, whereas in the follow-up phase, clients are completing diagnostic assessments every 6 months and receiving no active treatment. Thus, this change represents a potential critical juncture in clients' trajectories. Secondly, empirical findings from the larger RCT indicate that treatment effects were evident in the follow-up time period, but not the acute treatment phase. In particular, MI-CBT clients exhibited a greater rate of improvement in terms of self-reported worry than clients in the CBT alone group throughout the follow-up time period only (Westra et al., 2016). Given that a delayed or sleeper effect was observed in the parent trial, it seems justified to allow for a linear spline (i.e., hinge) for the two different treatment groups, with a common "knot" at the end of active treatment sessions.

Since clients were nested within therapists, longitudinal MLMs were used to examine the moderating effects of client CCT on the relationship between treatment type (MI-CBT and CBT alone) and outcomes. These models found that therapists did not substantially affect the significance of these relationships and/or the magnitude of the coefficients in the model. Furthermore, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) statistics were examined to compare the model fit of the two-level model (AIC = 10201.17, BIC = 10237.56) and three-level model including therapist (AIC = 10203.17, BIC = 10244.75) on PSWQ variability. The AIC and BIC can be used to compare any two models, where smaller values indicate better model fit. These criteria evaluate both error and parsimony, thus, considering both the magnitude of error and complexity of the parameters of the model

simultaneously. In other words, a model that has a smaller error term may not be deemed a better fit if additional parameters were added to attain that level of fit (Holden, Kelley, & Agarwal, 2008). Here, the AIC and BIC indicated that a two-level model was a better fit. A general suggestion for sample size for MLM is 15 units per cluster as suggested by Bryk and Raudenbush (1992), and although this recommendation was achieved in the current study, these additional adjustments (i.e., "knot," two-level model) were made to further improve power and accuracy of the models/analyses (Kwok et al., 2008).

Results

Sample Characteristics

Demographics of clients included in this study are presented in Table 1. The sample was predominantly female and Caucasian, generally well educated, and had a high rate of diagnostic comorbidity, including other anxiety (e.g., social anxiety, panic) and depressive (e.g., major depression, dysthymia) disorders. The mean age for clients was 33 ($SD = 11.23$) with ages ranging from 21 to 63 years.

Study Measures: CCT For CCT, scores were determined by dividing the raw frequency of CCT by the total number of client utterances in the session. This was done to control for client verbosity, which was quite variable (range of 110 to 800 client utterances per session). The means and standard deviations for all study variables are depicted in Table 2. Overall, CCT was a relatively rare phenomenon with a range from .01 to .42 and a mean of .12 client utterances and a standard deviation of .07. In other words, regardless of the treatment group, on average, CCT was 12% of all client utterances in session 1.

Intercorrelations of Measures

The intercorrelations among measures were analyzed and examined for each treatment group separately (see Tables 3 and 4). For clients receiving MI-CBT, there was a trend toward a positive correlation between CCT and posttreatment PSWQ scores; in other words, higher levels of early CCT were (marginally significantly) related to higher posttreatment PSWQ scores. Moreover, for the MI-CBT group, posttreatment PSWQ scores were positively correlated with PSWQ scores at 6-months and 12-months posttreatment and IIP scores at posttreatment and 6-months posttreatment. That is, higher posttreatment PSWQ ratings were related to higher PSWQ and IIP scores at long-term follow-ups.

For the CBT alone group, early CCT and PSWQ ratings were significantly correlated at all time points, with higher levels of CCT being associated with higher PSWQ scores. Furthermore, for CBT alone clients, posttreatment PSWQ scores were positively correlated with PSWQ scores at 6-months and 12-months posttreatment. That is, higher posttreatment PSWQ ratings were related to higher PSWQ scores at long-term follow-ups.

Assumptions of Multilevel Models

Using normal quantile-quantile plots and histograms, the skewness and kurtosis of the study variables were examined to evaluate whether there were any significant deviations from normality. No substantial violations of normality were revealed that would jeopardize the assumptions underlying the analyses (Meyers, Gamst, & Guarino, 2006). Therefore, data transformations were not required. Furthermore, although there is no set standard for defining an outlier, in the current study, box plots were examined where an outlier was considered to be a data point that was outside the fences or "whiskers" of the box plot (Weinberg & Abramowitz,

2008). An examination of these box plots revealed that no extreme values were present within the dataset. Thus, all 85 cases/clients were included in the subsequent analyses.

Hypothesis 1: Clients with higher levels of CCT (i.e., ambivalence) will report lower post-treatment worry if they received MI-CBT compared to CBT alone. Analyses were conducted using a two-piece linear spline longitudinal multilevel model (see Table 5). The acute treatment phase was tested for moderation effects; however, there was no evidence of moderation. More specifically, early client CCT did not significantly impact the relationship between treatment type and immediate worry severity outcomes. In the follow-up phase, early client CCT had a significant impact on treatment outcomes, such that higher levels of early client ambivalence were significantly associated with higher worry severity scores, regardless of treatment type. However, analyses indicated that the impact of ambivalence on worry severity scores was a function of treatment type. That is, although higher levels of early ambivalence were associated with worse long-term PSWQ outcomes in both groups; the detrimental impact of high levels of early ambivalence was moderated by (or dependent on) treatment type (i.e., MI-CBT or CBT alone). Here, MI-CBT was more beneficial than CBT alone for clients that had higher initial levels of ambivalence (see Figures 1 and 2). As Figure 1 illustrates, as CCT levels increase, the advantage of MI-CBT over CBT alone becomes increasingly apparent. Conversely, at very low levels of CCT, there is a slight advantage of CBT alone over MI-CBT. To provide a different way of illustrating this effect, Figure 2 was created by taking extreme scores on the distribution of CCT (upper and lower 1/3 of CCT scores). Here, clients low in CCT at baseline do well in treatment (have the lowest PSWQ scores at follow-up), regardless of treatment group. For those clients high in CCT, there was continued improvement over time in the MI-CBT group, compared with some regression in worry scores in the CBT alone group.

Hypothesis 2: Clients with higher levels of early CCT (i.e., ambivalence) will report lower IIP scores if they received MI-CBT compared to CBT alone. To examine the impact of early ambivalence on the association between treatment type and IIP scores, a two-piece spline MLM was conducted (see Table 6). The model was also adjusted slightly to achieve convergence. More specifically, when running the original model two errors were encountered. Due to the complexity of the original model, convergence was not attained. Therefore, in an attempt to achieve model convergence, maximum iterations and steps were permitted in the analyses. Although the model converged, the validity of the results could not be ascertained because the Hessian matrix could not be defined. The Hessian matrix is used to calculate the standard errors of the estimated covariance parameters (West, Welch, & Galecki, 2015). This error signified that there were problems with the matrix that was calculated, which prevented the estimation of standard errors. When this error is encountered, it is suggested that the model be simplified or re-specified (West et al., 2015). Therefore, the model was modified; the acute treatment and follow-up treatment variables were not included as random intercepts, meaning that random slopes were permitted for the first and second spline and intercepts were allowed to vary for each client. However, intercepts did not vary for the two splines. Using this simplified model, analyses were conducted.

Analyses revealed that there was no evidence of moderation of CCT in the acute treatment phase or the follow-up time period. However, treatment type alone had a significant impact on outcomes over the follow-up time period. In other words, regardless of their initial level of ambivalence, clients in the MI-CBT group reported fewer interpersonal problems than did clients in the CBT alone group over the follow-up period (see Figure 3).

Discussion

CBT is considered efficacious in the treatment of anxiety (e.g., Cuijpers et al., 2004), yet a significant number of clients do not achieve optimal outcomes, and have a lack of or minimal response to treatment or a relapse of symptomology following treatment. Severity has been found to be a key predictor of treatment response, and notably so in the treatment of GAD and related disorders, such as depression and panic disorder. In particular, clients with higher severity tend to have poorer outcomes in treatment (Bohart & Greaves Wade, 2013; Durham et al., 2004; Haby, Donnelly, Corry, Vos, 2006). It was found that even with modification to established CBT protocols (e.g., extending the number of sessions), clients tended to relapse towards baseline scores with a lack of improvement evident (60% of clients at 6 month follow-up; Durham et al., 2004). Furthermore, it has been stated that achieving good outcomes in GAD treatment can be a challenging feat, even in settings where specialized treatment and training in relevant protocols is offered (Brown, O'Leary, & Barlow, 2001).

More recently, research has examined chronic worry and ways to modify treatment to improve response rates (Durham et al., 2004). This study examined one of those augmentations, which involved the integration of MI into CBT for individuals with severe GAD. More specifically, this study examined the role of client ambivalence (hesitancy, uncertainty regarding change) in treatment outcomes with a focus on determining whether an integrated treatment, MI-CBT, results in better outcomes for clients who are high in ambivalence toward change. Results indicated that client ambivalence was a significant moderator of treatment outcomes in terms of worry. Clients with higher levels of initial ambivalence who received MI-CBT had significantly lower levels of worry than did CBT alone clients at long-term follow-up. This suggests that client ambivalence (as measured by CCT) may represent a key client-treatment matching

variable, and integrating MI into standard CBT protocols may be particularly effective for clients who are highly ambivalent about change at the start of treatment.

Moreover, it has been suggested that GAD response rates may improve with an increased focus on psychological processes and vulnerabilities that maintain GAD (Durham et al., 2004). One such factor that has been identified in the literature is client interpersonal problems (Newman et al., 2011), as this is considered the most prominent worry content for individuals with GAD (Breitholtz, Johansson, & Öst, 1999). Thus, it has been suggested that incorporating a treatment that explicitly focuses on addressing interpersonal difficulties may result in better response rates (Newman, Castonguay, Borkovec, Fisher, & Nordberg, 2008). MI emphasizes a supportive therapeutic context with a specific focus on addressing moments of intrapersonal client ambivalence regarding change and interpersonal tension between the direction of the therapist and/or therapy and client (i.e., interpersonal resistance; Westra, 2012). Thus, this study sought to examine whether MI-CBT resulted in less interpersonal problems for clients who are ambivalent regarding change than the standard CBT protocol for severe GAD. Results revealed that regardless of clients' level of initial ambivalence, MI-CBT resulted in significantly less interpersonal problems than CBT alone at long-term follow-up.

Furthermore, despite the widespread recognition of the importance of client ambivalence in therapy, research in the area of anxiety has been impeded due to inadequate measurement, largely relying on self-report scales, which have been inconsistently related to key therapeutic outcomes, such as treatment termination and therapy outcomes (e.g., Dozois et al., 2004; Kampman et al., 2008; Vogel et al., 2006). The MISC, an observational measure of client in-session language, has demonstrated promising results in terms of its efficacy, mainly in the substance abuse literature (e.g., Magill et al., 2014). However, more recently, the MISC has been

utilized in the context of CBT for GAD and has been found to be a potent predictor of

therapeutic process (Button et al., 2015; Hunter et al., 2014) and outcomes (Lombardi et al,

2014). Therefore, this study aimed to extend these findings and examine the utility of the MISC,

and in particular client statements against change (CCT), as a moderator of treatment outcomes.

The findings of the present study provide strong support for the predictive capacity and

moderating impact of early in-session client CCT statements.

Overall, the results from the present study emphasize the importance of client

ambivalence and are examined further below. First, I discuss the finding that early ambivalence

about change is an important predictor of outcomes in CBT and may represent a key client

variable in terms of treatment matching hypotheses. Second, I focus on the predictive capacity of

in-session client language, as results from the current study fit with the emerging literature

supporting the utility of this measure. Third, I further elaborate the finding that client

ambivalence is a significant moderator of treatment outcomes. That is, I discuss in detail the

interpretations and implications of the finding that, clients with higher levels of early

ambivalence had better long-term worry outcomes when they received MI-CBT, in comparison

to those who received CBT alone. This is followed by a discussion of the broader benefits of MI

found in this study, in that the integration of MI into CBT may be particularly efficacious in

reducing the interpersonal problems commonly endorsed by clients with GAD, regardless of

their early ambivalence levels. Finally, the implications of these findings in terms of clinical

practice and training are outlined, along with the acknowledgment of limitations and strengths of

the current study as well as suggestions for future areas of research.

Client Ambivalence as a Key Marker for Treatment Matching

Previous research has found that higher levels of early ambivalence typically result in negative therapeutic process (i.e., interpersonal resistance and alliance ruptures; Button et al., 2015; Hunter et al., 2014) and poorer CBT outcomes (Lombardi et al., 2014). Results from the present study provide further evidence in support of the importance of client ambivalence to outcomes in CBT. In particular, higher levels of early ambivalence were significantly associated with higher levels of worry severity scores at long term follow-up, regardless of treatment type. This finding supports the notion that ambivalence about change is an important individual difference variable that has significant implications for psychotherapy outcomes, with clients who are more ambivalent regarding change (less ready) demonstrating less benefit from intervention, at least within a CBT context. In line with this result, research has demonstrated that markers of ambivalence occur at a greater frequency in unchanged clients compared to recovered clients (Gonçalves, Ribeiro, Mendes, Matos, & Santos, 2011).

The results of the present study indicated that the impact of early ambivalence on long-term worry severity scores was a function of treatment type. In other words, overall, higher levels of early ambivalence were associated with poorer outcomes in both treatment groups, supporting the importance of ambivalence to outcomes in CBT; however, the detrimental impact of high levels of early ambivalence was moderated by (or dependent on) the type of treatment delivered, MI-CBT or CBT alone. In particular, clients with higher levels of early ambivalence had significantly better long-term worry outcomes if they received MI-CBT compared to CBT alone. Furthermore, the worry outcome data (Figure 1) illustrate that as early ambivalence (CCT) increases, the differential impact of the two treatments (MI-CBT and CBT alone) also increases, such that the maximal difference between the treatments is observed when clients have the

highest levels of ambivalence. In other words, MI-CBT appears to be more beneficial than CBT alone for clients that have the highest levels of ambivalence when they start therapy for GAD. Results of the present study also indicated that CBT alone is also slightly more beneficial for clients with the lowest levels of ambivalence.

Overall, these results support the notion of treatment matching and are very consistent with the work of Beutler and colleagues (Beutler & Clarkin, 1990; Beutler et al., 2000) that involves identifying which client traits or states respond positively to which interventions. Here, it is suggested that although most therapies benefit some clients, no one treatment works for all clients (e.g., Beutler & Consoli, 1993; Beutler, Forrester, Holt & Stein, 2013); therefore, the onus is on the therapist to utilize therapeutic strategies from an approach that aligns with the client's needs. In the current study, clients who received the 'indicated' treatment (i.e., MI-CBT for those clients with high ambivalence and CBT alone for clients high in readiness to change) demonstrated maximal benefit vis-à-vis long-term outcomes. More specifically, approaches such as MI provide a safe and supportive context whereby clients can express and sort out conflicting feelings regarding change (Miller & Rollnick, 2013). One of the theoretical assumptions of MI is that ambivalence is a normal and expected part of the change process; thus, space is created and effort is put forth to acknowledge, hear, explore, and work through ambivalence as it is viewed as containing important information, rather than as a problem or obstacle (Westra, 2012). This should be (in theory) especially relevant and beneficial precisely for those clients who are ambivalent ("stuck") to begin with (Rollnick & Miller, 1995).

The differential effects of therapist directiveness in psychotherapy have been previously examined, and this research has identified client resistance to change as an important process marker, suggesting the utilization of supportive rather than directive methods (for reviews see

Beutler et al., 2011; Beutler, Rocco, Moleiro & Talebi, 2001). It has been noted that when

therapists' interventions exceed a client's "therapeutic zone of proximal development" (i.e.,

consisting of the client's actual and potential capacity that can be attained in collaboration with

the therapist; Ribeiro et al., 2014, p. 348) this can be perceived as threatening and risky to clients,

typically resulting in a rejection of the therapist's direction (Ribeiro et al., 2014; Ribeiro et al.,

2016). Furthermore, a consistent finding in the literature is that change is less likely to occur

when therapy elicits client resistance (Aviram & Westra, 2011; Beutler, Harwood, Bertoni &

Thomann, 2006). Results from the current study are aligned with the idea that having the

opportunity to work through conflicting feelings about change or reluctance to change, allows

one to become more "resolved" and committed to change. It could be the case that this resolution

of ambivalence thereby lowers vulnerability to relapse after therapy ends because former

temptations (good reasons) to resume worrying have been "worked through."

On the other hand, clients with lower levels of early ambivalence had better worry

outcomes if they received CBT alone compared to MI-CBT. MI may be particularly important

for some clients (those high in early ambivalence) and during specific moments (clinical markers

of client ambivalence and resistance). Therefore, in moments of cooperation or when resistance

and ambivalence are not present, utilizing a standard CBT protocol seems to be appropriate. In

other words, clients who are highly motivated are more likely to agree on the tasks and direction

of therapy with a willingness and readiness to actively commit to the prospective risks of action-

based treatment (Westra, 2004).

Of note, however, this finding may be an artifact of the "integrative" treatment in the study

not being "fully responsive." In particular, in the larger trial (Westra et al., 2016), the front end

of the MI-CBT group consisted of four sessions of "pure" MI followed by 11 sessions of MI

integrated with CBT, according to the study design. It is possible that these early sessions of MI alone would have been the most frustrating for clients low in ambivalence (i.e., those clients who were ready for directive and change-oriented strategies). In fact, Morrison and colleagues conducted interpersonal process recall (IPR) interviews on clients' experiences in the Westra et al. clinical trial (2016) with the majority of interviews occurring prior to the integration of MI-CBT (i.e., when clients were receiving MI alone sessions). Here, some clients endorsed frustration with a supportive approach, such as therapist reflections, perhaps desiring a more directive stance (Morrison et al., 2017). In short, in a fully integrated treatment, an appropriately responsive therapist would have noticed markers of high motivation (i.e., lack of ambivalence) and proceeded with a more action-oriented approach that matches the client's readiness level.

Why would MI-CBT be Better for High Ambivalence Clients?

Ambivalence and its link to resistance. Even though clients come to therapy because they want to change, they commonly hold conflicting feelings, with one part of the self-desiring change and another part fearing it. Such feelings can result in disagreements and tension in therapy if they are not attended to and managed appropriately (Ribeiro et al., 2014; Westra & Norouzian, 2018). In particular, resistance has been conceptualized as arising from two interrelated sources: client ambivalence regarding change and the subsequent response of the therapist (Moyers & Rollnick, 2002) with the notion that when therapists are directive in response to ambivalence, this commonly results in client resistance (e.g., withdrawing, disagreeing, interrupting, ignoring; Westra & Norouzian, 2018). For example, in a recent study by Ribeiro and colleagues (2014), these authors looked at a poor outcome case in narrative therapy to examine the impact of the therapist's responses on the therapeutic alliance when the client articulated statements of ambivalence. Here, it was found that the therapist's challenging

interventions (e.g., confrontation, emphasizing evidence in support of change) tended to elicit client ambivalence. In turn, the therapist tended to persist with challenging responses in the face of client ambivalence, which negatively impacted the quality of collaboration and alliance between the therapist and client (Ribeiro et al., 2014). Other studies have also found that in the presence of resistance, CBT therapists tend to persist with treatment techniques, exhibit a greater adherence to the CBT model, and attempt to persuade clients to comply with tasks (Castonguay et al., 1996).

On the other hand, a major focus of MI is "rolling with resistance" in an autonomy granting and supportive manner, by actively acknowledging, elaborating, and deferring to client assertions (Westra et al., 2016). Thus, the major reason why those higher in ambivalence experience better outcomes when MI is integrated with CBT is likely that it lowers the risk of resistance in CBT (i.e., alliance tensions, arguments, battles over homework compliance, etc.). Supporting this notion is the finding from the larger RCT that lower midtreatment resistance mediated the long-term effect of the MI-CBT group, which resulted in better outcomes. More specifically, clients in the MI-CBT group had reduced levels of observer-rated client resistance that accounted for 76% of the MI-CBT treatment effect of superior worry outcomes (Constantino, Westra, & Antony, 2015). Of note, decreased resistance was predictive of superior long-term outcomes beyond treatment group differences in perceived therapist empathy, which emphasizes the potent explanatory power of resistance in terms of favourable long-term outcomes for MI-CBT (Constantino et al., 2015). Similarly, Aviram and Westra (2011) found that treatment outcomes were more favourable when MI was added to CBT for GAD because it was associated with lower levels of client resistance and increased engagement in treatment. Thus, it could be speculated that in the current study, integrating MI into CBT may have resulted

in a more harmonious collaboration, which would be arguably especially beneficial for highly

ambivalent clients, those who are most likely to resist a directive approach.

Additionally, a study by Aviram and colleagues (2016) on data drawn from the Westra et

al., (2016) trial further supports that within the CBT alone treatment, those therapists (even

though untrained in MI) who 'roll with resistance' generate better outcomes. In particular,

embodying the MI spirit during times of interpersonal tension between the therapist and therapy

was 10 times more effective than exhibiting this MI-consistent behaviour during other times in

treatment, suggesting that doing the "right thing at the right time" is significantly more effective

than doing these same behaviours at random points in therapy (Aviram et al., 2016, p. 790).

These findings are also consistent with previous research by Beutler et al. (2011) indicating that

clients high in 'reactance'/resistance benefit more from a supportive approach. In contrast,

clients with low levels of ambivalence are much less likely to oppose the directiveness of CBT

and more likely to agree about the goals and tasks of treatment. Overall, there is converging

evidence suggesting that client resistance is responsive to therapist behaviour with the

embodiment of a more supportive and less directive interpersonal stance being particularly

effective in the management of resistance (Aviram et al, 2016; Beutler et al., 2011).

Furthermore, Poulin and colleagues (2018) took into account the interpersonal context in

which client in-session language regarding change was articulated by examining the influence of

two different treatment conditions on these change language indices. Here, CCT was further

divided into two types: 1) articulation of hesitancies regarding change and 2) statements to

impede the direction, advice, or suggestion of the therapist (Miller & Rollnick, 2013). This study

found that although CCT ambivalence rates were similar in both treatment groups, CCT

statements that resisted the direction of the therapist were much less common among MI-CBT

clients when compared to CBT clients. This finding suggests that MI-CBT therapists may be particularly adept at preventing client ambivalence from developing into toxic resistance (Poulin et al., 2018).

Findings from the current study provide support for the association between employing a MI relational style with clients who are highly ambivalent and successful therapy outcomes in CBT. These results are also consistent with the recent aims of researchers to identify empirically supported therapy markers, common to all therapeutic models, that necessitate the therapist to shift the intervention, with one such marker being client change ambivalence (Constantino et al., 2013). For instance, Morrison et al., (2017) qualitatively explored highly ambivalent clients' experience of resistance from both treatment groups (i.e., MI-CBT and CBT alone) in the Westra et al. (2016) RCT using IPR interviews. A notable difference was found in clients' accounts where CBT clients emphasized a need to comply with treatment demands and MI-CBT clients highlighted connection as a key part of therapy. For instance, CBT clients described feeling as though they needed to provide the "right answer," perceiving the therapist having an agenda, a concern and discomfort with interjecting with the agenda, and desire to fulfill therapist expectations (to avoid perceptions of being a "bad" client). CBT clients seemed concerned about adhering to treatment as it was expected and delivered by the therapist (Morrison et al., 2017). In contrast, MI-CBT clients highlighted a sense of interpersonal connection. Here, a key finding was that clients felt they were permitted to share and openly explore their beliefs even, and potentially most importantly, when these beliefs did not align with the direction of the therapist and the therapy (Morrison et al., 2017). Thus, in the present study, CBT alone may have been superior to MI-CBT in terms of worry reduction for clients with low ambivalence (i.e., those

who are highly motivated) precisely because they may be less likely to resist direction from the therapist.

Client agency. Another potential reason for the finding that client ambivalence was a significant moderator of treatment outcomes (i.e., clients with higher levels of initial ambivalence who received MI-CBT had lower levels of long-term worry than clients who received CBT alone) is that the client-centered nature and alliance protective qualities of MI result in a more harmonious and corrective relational experience. Additionally, this interpersonal milieu might facilitate improvements in agency, which translate into broader benefits over time.

Consistent with this contention, superior empathy and support for autonomy were found in the MI-CBT group compared to CBT alone in the larger parent trial from which the present data set was drawn (Westra et al., 2016). Moreover, looking at the same clinical trial (Westra et al., 2016), Button and colleagues (2018) conducted a qualitative analysis examining clients' immediate posttreatment accounts of their experiences in treatment. These authors found unique categories related to agency that predominately emerged for MI-CBT clients and were rarely endorsed for clients within the CBT alone group. In particular, MI-CBT clients described a sense of inner confidence that developed from treatment, for example:

> "This was the first therapy where I felt during and afterwards that I could handle things on my own rather than needing a therapist…but before, when I was in therapy…I needed a therapist to be able to keep things going in life, like stressors, I couldn't deal with them completely on my own. So it [therapy] enabled me to be more self-sufficient and self-soothing, and managing the worry in a way that was great. I mean I guess that was surprising', Client 9, MI-CBT group."

Furthermore, MI-CBT clients in the Button et al. (2018) study more commonly reported being "in charge," emphasizing their ability to navigate and direct the therapy process:

"I thought maybe the therapist would be more controlling…as in where we go, what we do, what we address and things like that, and that wasn't the case, which was great…. I should probably say, 'I kind of ran the show,'" Client 8, MI-CBT group.

Moreover, in the Button et al. (2018) study, all MI-CBT clients described having a pivotal and active role in therapy, highlighting their efforts and responsibility in facilitating change. Additionally, they described an increased sense of self-agency and trust, recounting that they felt more in control of their worry and behaviours. Furthermore, MI-CBT clients more frequently described confidence and optimism in their abilities to maintain their changes, emphasizing a well-developed sense of self-efficacy, whereas CBT alone clients commonly described a need and desire for additional sessions and/or a longer duration of therapy, even though they were considered 'recovered' (Button et al., 2018).

These findings are consistent with other research suggesting that the MI spirit and its associated stance of viewing the "client-as-expert" encourages increased client self-trust and reliance on their own inner resources. For example, Khattra and colleagues (2017) qualitatively examined clients' posttreatment accounts of corrective experiences in the Westra et al. (2016) RCT and found that although clients from both treatment groups described increased optimism about sustaining progress following therapy, the MI-CBT clients attributed this shift to an increase in self-efficacy (e.g., working hard to find solutions and gain self-insight), whereas the CBT alone clients noted confidence in the CBT strategies; that is, they largely ascribed the changes in therapy to the therapist. In line with these findings, Macaulay and colleagues (2017) also examined MI-CBT clients' retrospective accounts of corrective experiences in the Westra et

al. (2016) trial and found that MI-CBT clients reported increased self-efficacy, a sense of control over anxiety, and new affective experiences of the self in relationships.

The MI spirit is based on core qualities like collaboration, evocation, empathy, and emphasizing client autonomy (Westra & Aviram, 2013). Within this frame, clients are viewed as the experts on themselves with the inherent knowledge and abilities to make the choices that align with their values and interests, where therapists serve as evocative guides, providing the space and freedom to explore aspects of their experiences (Westra & Aviram, 2013). Thus, it could be postulated that MI-CBT therapists' focus on eliciting clients' views, thoughts, reactions, and ideas for change, which stems from a belief in the clients' abilities, may foster a greater sense of agency (Bohart & Tallman, 1999; Rogers, 1956; Westra et al., 2016). Overall, evidence is building linking the MI spirit to client agency and may help explain the findings of the current study, as well as the larger trial, which found that the MI-CBT group demonstrated continued improvement after treatment ended (Westra et al., 2016).

CCT and negative process. Research has found that higher levels of early ambivalence are related to negative therapeutic process, such as higher rates of subsequent interpersonal resistance (e.g., Button et al., 2015, Hunter et al., 2014). Furthermore, a notable finding in the literature is clients who have higher levels of early CCT are more prone to alliance ruptures (Hunter et al., 2014; Norouzian, Westra, Constantino, Antony, & Button, 2018). Alliance ruptures, in turn, have a negative impact on clients' outlook on treatment and have been hypothesized to be demoralizing for clients (Mamedova, Westra, Constantino, & Antony, 2015). In other words, it has been found that the experience of alliance ruptures in treatment are followed by a significant drop in client expectations for recovery from treatment, and this drop actually mediated treatment outcomes, providing a potential explanation as to why resistance is

toxic to therapy process and outcomes (Mamedova et al., 2015). Thus, in the current study, it could be speculated that highly ambivalent clients are particularly susceptible to experience interpersonal resistance/alliance ruptures in treatment (given their reservations about treatment and hesitancies regarding change, high levels of CCT), which subsequently, negatively impacts their optimism regarding treatment (i.e., these experiences are demoralizing). That is, when resistance is not managed well, this is more likely to result in disruptive therapy process that goes on to impact client self-efficacy, optimism and agency. These findings suggest a possible explanation as to why CBT is not an ideal match for clients high in CCT, whereas MI-CBT may preserve important client beliefs (a sense of agency, efficacy) in those most prone to become demoralized through bad therapy process (i.e., resistance and alliance ruptures).

The Importance of the MI Spirit in the Context of Interpersonal Problems

Interestingly, regardless of clients' initial ambivalence levels, MI resulted in long-term improvements in interpersonal relationships. Such benefits are particularly important, in that, interpersonal problems are highly prevalent in GAD (Roemer, Molina & Borkovec, 1997) and a major predictor of relapse in CBT for GAD (Borkovec et al., 2002; Newman et al., 2013). The MI spirit may be an especially useful stance to operate from when working with clients with high worry severity given their interpersonal profile, which commonly includes high levels of hypervigilance and concern regarding relationships (Gasperini et al., 1990), excessive reassurance seeking (Masi et al., 2004), appeasing or giving up in the face of threat, and difficulties with self-assertion (Sloman & Gilbert, 2000). The findings from the current study may be a function of MI privileging and respecting client autonomy-taking and agency during moments of doubt in the treatment or therapist, which fits with the notion that when impasses in

therapy are managed well, client agency and self-efficacy are enhanced (Westra & Constantino, in press).

In the management of resistance, problematic interpersonal dynamics can be recapitulated when therapists persist with directive and change-oriented treatments like CBT, resulting in the therapist articulating the change position and the client resisting or arguing against change. In fact, supporting clients' autonomy during moments of disagreement or resistance against the therapist's direction may provide a corrective experience for clients. In terms of the management of resistance in MI, Westra and Constantino (in press) indicated the following:

> "When given space to explore feelings about change and autonomy to change in one's own way and at one's own pace, people ultimately internalize a greater sense of self-efficacy regarding change, and decide to let go of their worry (perhaps paradoxically because nobody is telling them that they should!). In this sense, resolution of resistance is not just a process means to a process end (greater treatment engagement), but perhaps more of a corrective experience in itself that ultimately results in reduced worry for people with GAD. The corrective aspect may be a novel experience, such as trusting and supporting one's own assertiveness, preferences, and autonomy at times when they oppose the therapist's direction or instruction. (p.22)"

Furthermore, Gomez and colleagues (2017) examined data from the Westra et al. (2016) trial and found that MI-CBT was most beneficial for clients with more problematic nonassertiveness and low overall agency. Here, it was also suggested that MI-CBT provided a corrective and unique experience for these clients, in that, during moments of resistance (i.e., assertiveness) clients were supported and provided autonomy and space to explore their opinions and beliefs regarding change (rather than the therapist directing the situation), potentially

facilitating greater self-trust. Overall, these findings, in combination with results of the current study, suggest that incorporating MI into directive treatments such as CBT may result in significant additional benefits for clients with GAD, even those who may not have needed it from an ambivalence standpoint. In other words, irrespective of their level of early ambivalence, clients who received MI-CBT showed greater long-term reductions in interpersonal problems than those who received CBT alone. Thus, even though CBT alone is superior for worry outcomes for highly motivated clients, there are still benefits to the integration of MI on other important dimensions of outcomes. This finding is especially important in GAD where interpersonal problems are central to the disorder.

Measurement of Ambivalence

In the context of anxiety, there is a lack of adequate measures of ambivalence that would prove clinically useful in differentiating treatment response. In addition, substantive definitional problems exist and there are a multitude of constructs that have been invoked as constituting ambivalence, with no agreed upon definition (e.g., Drieschner, Lammers, & van der Staak, 2004; Keijsers, Schaap, Hoogduin, Hoogsteyns, & de Kemp, 1999; Rosenbaum & Horowitz, 1983). Even if investigators could agree on the definition of ambivalence, self-report measures of this construct may be subject to response bias and ceiling effects (e.g., Miller & Johnson, 2008), and therefore, may not accurately reflect client ambivalence and sufficient variability to predict outcomes. Recently, Poulin and colleagues (2018) compared the predictive capacity of self-report measures of ambivalence (the Change Questionnaire, CQ; Miller & Johnson, 2008 and the Client Motivation for Therapy Scale, CMOTS; Pelletier, Tuson, & Haddad, 1997) to observational methods (MISC 1.1; Glynn & Moyers, 2009). Here, it was found that only in-session observed client language regarding change was significantly related to outcomes.

Moreover, the Poulin et al. study (2018) found significant associations between self-report measures of ambivalence; however, these self-report indices were not related to observed client change language. Interestingly, this suggests that self-report scales may be assessing a different construct than in-session client language observation.

The empirical evidence for the utility of observed client language regarding change is emerging, and findings from the present study further highlight the relevance of incorporating these measures into CBT. For instance, in the context of anxiety, several studies have found that how clients talk about change early in treatment, and in particular talk against change or CCT, bears important relationships to their proximal (engagement in therapy; Button, 2013) and distal (worry reduction; Lombardi et al., 2014) outcomes in CBT. Furthermore, in-session client language has been found to be related to key treatment and process variables, such as homework compliance (Button, Westra, & Hara, 2014), interpersonal resistance (Button et al., 2015), and alliance ruptures (Hunter et al., 2014). Such results are also consistent with research from the addictions domain that demonstrate that client in-session language, captured early in treatment, is consistently predictive of outcomes (Baer et al., 2008; Miller, Benefield, & Tonigan, 1993; Moyers et al., 2007; Vader, Walters, Prabhu, Houck, & Field, 2010).

The present study further supports the utility of this novel measure of ambivalence and extends previous research through the finding of client in-session language being a significant moderator of treatment outcomes. Namely, as theoretically specified, MI-CBT was more effective than CBT alone for those clients high in arguments against change. This finding is quite remarkable given that it was rare for clients to articulate in-session statements against change, with only 12% of client utterances in session 1 being classified as CCT statements. In other words, on average, almost 90% of the time, clients are not making arguments against change.

However, when these statements are made, they convey very important information to which the therapist should be attuned. This finding suggests that not all moments are equally important in therapy, with CCT representing a key in-session marker capable of indicating which type of treatment is required. Overall, the results of the present study, combined with those of previous research, provide strong evidence for efficacy of this observational measure of client ambivalence.

Clinical and Training Implications

Findings from this study highlight the need for therapists to be responsive and flexible to client in-session markers of ambivalence, especially since ambivalence is a fluctuating state. Responsivity is predicated on the idea that what is required depends on the moment-to-moment ever-changing context. Stiles et al. (1998) suggested that being responsive does not mean therapists cannot be directive. However, the timing and delivery needs to be appropriate considering the client's difficulties, capacity, characteristics, and current state, which are constantly evolving. Research suggests that therapists who respond more appropriately to the context (e.g., specific characteristics of the client) may have better outcomes (Stiles et al., 1998).

Client ambivalence about change may represent a key clinical marker, providing indications of a client's moment-to-moment level of readiness and a signal to therapists that they should responsively shift into MI to explore the emergent ambivalence, regardless of the therapeutic approach being utilized (Arkowitz & Westra, 2004). MI's fundamental goal is to promote behaviour change through the exploration and resolution of ambivalence (Miller & Rollnick, 2002). Although therapists may rely on articulations of client change talk as an indicator of clients' readiness to change, results from the current study highlight the importance of counter-change talk (i.e., CCT or ambivalence). In fact, emergent findings in the area of CBT

for GAD suggest that it is early CCT, and not early CT, that is a more accurate reflection of

client ambivalence regarding therapy and change (e.g., Lombardi et al., 2014). This makes sense

given there are several interpersonal demands that may promote the articulation of statements in

favour of changing (i.e., coming to therapy, therapist asking about goals). In contrast, clients may

be more hesitant to verbalize arguments against change.

These findings suggest utilizing systematic training to learn ways to detect these in-

session ambivalence markers, as they may be easy to overlook because of their rarity, especially

when clients also articulate early CT and seem "motivated." Systematic process observation

involves moment-to-moment attunement to the therapeutic process to identify key clinical

markers (e.g., ambivalence, resistance) as they emerge in-session. Once identified, therapists also

need to be adept at responding effectively and with flexibility to manage these moments. Miller

and Rollnick (2013) suggest it is how the therapist responds to CCT that determines whether it

progresses into resistance against the therapist or therapy. For example, MI encourages the

development of a safe and supportive context whereby clients can express and sort out

conflicting feelings regarding change (Miller & Rollnick, 2002; Westra, 2012). Here,

ambivalence is regarded as a normal part of therapy and change, and therefore is not

pathologized (Miller & Rollnick, 2002). Moreover, within MI, when a client is ambivalent about

change or expresses resistance to the therapist and/or therapy, clinicians are encouraged to "roll

with resistance," instead of confronting or arguing against it (Miller & Rollnick, 2002). Therapist

responses are highly influential in increasing or diminishing the level of client resistance (e.g.,

Miller et al., 1993). Previous research also suggests that resistance can be amplified when

therapists employ a directive approach in the context of client opposition (e.g., Beutler et al.,

2011; Miller & Rollnick, 2002; Patterson & Forgatch, 1985).

Findings from the current study suggest that when clients express statements of CCT, such as a need, desire, commitment, or reason against change, inability to change, or step away from change, therapists should embody the MI spirit and utilize MI skills. At these times, it is important for CBT therapists to put the current direction, task, or suggestion on hold to pay attention to the emergent ambivalence. From an MI perspective/spirit, exploration of the ambivalence would involve being curious, open, and evocative about the articulated hesitancy, in an attempt to understand and empathize with clients' internal experience (Westra & Aviram, 2013). In this sense, therapists "get alongside" the ambivalence, actively seeking to explore it by providing the space for clients to examine and potentially reevaluate their concerns (Westra & Norouzian, 2018). This may involve discussing the positive aspects of worry, the core needs being met from engaging in worry and the associated behavioural manifestations (e.g., reassurance seeking, checking), and fears associated with change (e.g., what would be lost if the client stopped worrying?). It may also entail reflecting and/or amplifying the possible benefits of staying the same, permitting clients to hear statements and reasons for the status quo and potentially reconsidering, re-evaluating or even protesting them.

Throughout this process, clients are regarded as experts on their experience and as having the capabilities and knowledge to know and choose what is best for them based on their interests, values and valued directions (Westra & Aviram, 2013). Thus, continual invitations to disagree or modify therapists' statements are aligned with the MI spirit. Therapists should also pay attention to any shifts in the clients' position or "voice" (e.g., supporting change or against change) they are speaking from. More specifically, emergent verbalizations of CT are important to elicit, explore, elaborate, and strengthen, using core MI skills such as empathic listening, evocation, and reflections. Of note, ambivalence typically fluctuates as clients' progress through therapy.

Thus, continual attunement to the reemergence of ambivalence markers is crucial (Westra &

Aviram, 2013; Westra & Constantino, in press). In sum, findings from the current study suggest

that CBT therapists who are able to adopt strategies that fit with clients' readiness for change,

like MI and related motivational approaches, may be able to improve treatment outcome.

Therefore, training in identifying and flexibility responding to these ambivalence markers is

warranted.

Strengths, Limitations and Future Directions

The current study had several significant strengths. This study used a rigorous measure

for coding in-session client language regarding change (MISC 1.1; Glynn & Moyers, 2009). This

coding system has been carefully and thoroughly adapted for use in the context of anxiety, by

anticipating and accounting for the diverse range of target behaviours present with GAD,

including both behavioural (e.g., overprotectiveness, overpreparation, checking, deference,

unassertiveness) and cognitive (e.g., worry, perfectionism, vigilance, self-criticism)

manifestations of anxiety. Although this adaptation introduced additional intricacies in terms of

coding (when comparing to the substance use literature), extensive training was provided, and

good to excellent agreement between coders was achieved. Not only does this study further

support the notion that in-session client language regarding change can be reliably measured as

early as session 1 of CBT (Button, 2013; Button et al., 2014; Button et al., 2015; Lombardi et al.,

2014), but it provides empirical evidence to the theoretical assertion that client ambivalence is a

key clinical marker that has important implications for treatment matching (Constantino et al.,

2013).

Furthermore, the Westra et al. (2016) RCT found greater long-term treatment gains when

clients with severe GAD received MI-CBT compared to CBT alone. This study provides

significant insight into that finding, in that, MI-CBT is particularly beneficial for clients who are high in early ambivalence, and suggests that MI may be an efficacious stance to take in response to these ambivalence markers. Stated differently, one might expect then that if the Westra et al. (2016) trial had involved *only* those high in ambivalence, that the outcome differences between groups would have been more magnified.

In terms of limitations, CCT was not differentiated into the different theoretical (i.e., ambivalent CCT and resistance CCT; Miller & Rollnick, 2002) or MISC coding subtypes (e.g., inability, reasons, desire, commitment against change and steps away from change), nor were strength ratings made. Subtypes and strength ratings were collapsed into one measure to reduce the complexity of coding and maximize interrater reliability. However, future studies could examine the differential impact of these types of CCT on psychotherapy process and outcomes. For example, given the speculation that MI-CBT enhances client agency and self-trust, client statements of inability (a specific subtype of CCT statements) may be particularly important to examine as these verbalizations may represent clients' internal attributions regarding their beliefs in achieving change, rather than internal/external incentives (e.g., reasons to change). Furthermore, research has found that increases in the strength ratings of change language are related to positive outcomes in the substance abuse literature (Baer et al., 2008; Amrhein et al., 2003). Thus, it may be speculated that decreasing the strength ratings of CCT statements (and increasing the strength of CT statements) over the course of anxiety treatment would be predictive of positive treatment outcomes.

Additionally, although moderating effects of early client ambivalence on treatment efficacy were found and potential mechanisms underlying these effects can be hypothesized (e.g., increased client agency, decreased levels of resistance), these mechanisms were not studied in

the current project. Mediators of the larger RCT are being actively examined by other researchers (Westra & Constantino, in press). It would be interesting to examine the moderating impact of early ambivalence on important process markers, such as homework compliance where it may be postulated that effectively dealing with ambivalence at the start of treatment could improve subsequent engagement with homework, ultimately resulting in better outcomes.

Also, ambivalence (i.e., CCT) was only measured at the start of treatment; thus, only having one time point of data prevents the examination of change in ambivalence over time and the impact on outcomes. Furthermore, responsivity was studied in the sense that MI is predicated on the attunement, exploration, and resolution of ambivalence; however, responsivity was not studied on a moment-to-moment or sequential basis. Therefore, future studies could examine therapists' behaviour during moments of client ambivalence to examine how these responses impact subsequent client behaviour as well as therapeutic process and outcomes. Additionally, although implied as a potential change mechanism, resolution of ambivalence was not directly measured in this study. Other coding systems have been developed (e.g., The Ambivalence Resolution Coding System; Braga, Oliveira, Ribeiro, & Gonçalves, 2016) that measure the language processes inherent in ambivalence resolution by examining target statements successively, whereas the coding system used in the current study only looked at the occurrence of target statements (and did not take into account the statements that followed). Thus, it would be interesting to examine these negotiations in ambivalence over time and their relation to outcomes.

Furthermore, the interplay between CCT and CT was not taken into account in the present study. This may be an important phenomenon to consider given other research findings measuring similar concepts (e.g., "return-to-the-problem" markers; RPM; Gonçalves et al., 2011,

pp.32) with notable associations to outcomes. Thus, further examining these concepts may provide insight into the change process (e.g., whether CT statements followed by articulations of CCT are indicative of unresolved ambivalence).

Finally, the present study only included those individuals with severe GAD presenting for CBT and all therapists were female. Moreover, given the limited number of males in the current study (i.e., two males in the CBT condition and eight males in the MI-CBT condition), gender analyses were not conducted. Thus, there is limited generalizability of these findings beyond this population and context. However, a meta-analysis by Hettema, Steele, and Miller (2005) found that MI had larger effect sizes for minority when compared to non-minority samples and gender composition had no relationship to outcome (neither a correlate nor a moderator). Given the mounting evidence of the predictive capacity of in-session client language against change in CBT, future studies should examine robustness of these findings in other populations and theoretical approaches.

Also, the therapists in this study were in training and thus, somewhat inexperienced, either being at the doctoral or post-doctoral level. Although this could have impacted the results, it is important to note that expert psychologists in the field supervised these therapists. Furthermore, the literature suggests that therapist experience does not have a significant impact on outcomes (Leon, Martinovich, Lutz, & Lyons, 2005). Moreover, the use of less experienced therapists could also be considered a strength for greater uniformity of approach.

Conclusions

In conclusion, the findings from the present study support the notion of treatment-matching and reveal the importance of client ambivalence as one such moderator of treatment outcomes. The results align with emerging research in the field that emphasizes flexibility,

responsivity, and attunement to key transdiagnostic clinical markers inherent across therapeutic approaches as a way to enable therapists to make decisions based on the emergent context and needs of the client (Constantino et al., 2013). In terms of the current study, findings suggest that actively attending to and providing space for client ambivalence may be a very valuable clinical process for clients who are highly ambivalent, while also resulting in longstanding change for clients with interpersonal problems. The embodiment of the MI spirit within the context of CBT may be a key feature in the prevention of negative therapeutic process and improved long-term outcomes.

Table 1

Client Demographics by Treatment Condition

	CBT (*n* = 43)	MI-CBT (*n* = 42)
Age	M = 34.19 SD = 11.92	M = 32.45 SD = 10.54
Gender	41 Female 2 Male	34 Female 8 Male
Ethnicity	33 Caucasian 5 Asian 2 Hispanic 0 African Canadian 3 Multiracial	31 Caucasian 6 Asian 1 Hispanic 2 African Canadian 2 Multiracial
Marital Status	23 Cohabitating/Married 16 Single 3 Divorced/Widowed/Separated	24 Cohabitating/Married 17 Single 1 Divorced/Widowed/Separated
Employment Status	13 Unemployed/Not in school 30 Employed/In school	9 Unemployed/Not in school 33 Employed/In school
Highest Level of Education	1 Elementary 16 High school 18 Postsecondary 8 Graduate school	0 Elementary 11 High school 19 Postsecondary 12 Graduate school
Worry Chronicity	M = 13.42 years Range 1 - 45	M = 10.98 years Range 1 – 45
Concurrent Psychotropic Use	14 Yes 29 No	6 Yes 36 No
Previous Counseling	32 Yes 11 No	31 Yes 11 No
Comorbidity	31 Anxiety disorder 17 Depression/Dysthymia	29 Anxiety disorder 13 Depression/Dysthymia

Table 2

Means and Standard Deviations for Study Variables

	M (*SD*)	
Measure	CBT	MI-CBT
S1 CCT	.12 (.07)	.11 (.08)
Baseline PSWQ	75.05 (3.43)	74.69 (3.44)
Posttreatment PSWQ	41.24 (17.79)	46.18 (16.21)
6 Month PSWQ	42.20 (18.12)	43.73 (13.48)
12 Month PSWQ	43.84 (18.55)	37.91 (13.79)
Baseline IIP	55.62 (18.47)	55.96 (14.77)
Posttreatment IIP	42.42 (18.36)	42.11 (17.61)
6 Month IIP	41.65 (18.83)	33.42 (15.07)
12 Month IIP	40.08 (18.48)	29.06 (14.78)

Note. CCT = counter-change talk (total CCT/total utterances); PSWQ = Penn State Worry
Questionnaire; IIP = Inventory of Interpersonal Problems.

Table 3

Intercorrelations Among Variables for the MI-CBT Group

Variable	Baseline PSWQ	Post PSWQ	6M PSWQ	12M PSWQ	Baseline IIP	Post IIP	6M IIP	12M IIP
CCT	-.03 (.854)	.32 (.053)	.21 (.220)	.24 (.158)	-.12 (.459)	-.08 (.645)	.15 (.375)	.02 (.909)
Baseline PSWQ		-.01 (.962)	.02 (.910)	-.10 (.552)	.07 (.659)	-.16 (.343)	-.07 (.681)	-.11 (.516)
Post PSWQ			.64** (.001)	.52** (.001)	.06 (.730)	.43** (.008)	.38* (.023)	.26 (.129)
6M PSWQ				.66** (.001)	-.08 (.638)	.14 (.427)	.38* (.023)	.019 (.914)
12M PSWQ					-.11 (.52)	.20 (.234)	.43** (.010)	.26 (.134)
Baseline IIP						.33* (.041)	.10 (.561)	.43** (.010)
Post IIP							.49** (.002)	.49** (.002)
6M IIP								.57** (.001)

Note. CT = change talk; CCT = counter-change talk;
PSWQ = Penn State Worry Questionnaire; IIP = Inventory of Interpersonal Problems;
6M = 6 month follow-up; 12M = 12 month follow-up.
*$p < .05$, two-tailed, **$p < .01$, two-tailed; p values appear underneath each correlation.

Table 4

Intercorrelations Among Variables for the CBT Alone Group

Variable	Baseline PSWQ	Post PSWQ	6M PSWQ	12M PSWQ	Baseline IIP	Post IIP	6M IIP	12M IIP
CCT	.15 (.325)	.55** (.001)	.55** (.001)	.56** (.001)	-.25 (.101)	-.13 (.468)	-.12 (.512)	-.27 (.135)
Baseline PSWQ		.02 (.917)	.10 (.568)	.20 (.256)	.31* (.047)	.07 (.694)	-.01 (.938)	.06 (.754)
Post PSWQ			.80** (.001)	.77** (.001)	-.28 (.118)	.03 (.865)	.23 (.214)	.06 (.739)
6M PSWQ				.86** (.001)	-.27 (.136)	.05 (.772)	.30 (.101)	.20 (.265)
12M PSWQ					-.27 (.124)	.07 (.695)	.28 (.120)	.26 (.145)
Baseline IIP						.62** (.001)	.51** (.003)	.61** (.001)
Post IIP							.72** (.001)	.65** (.001)
6M IIP								.82** (.001)

Note. CT = change talk; CCT = counter-change talk;
PSWQ = Penn State Worry Questionnaire; IIP = Inventory of Interpersonal Problems;
6M = 6 month follow-up; 12M = 12 month follow-up.
*p < .05, two-tailed, **p < .01, two-tailed; p values appear underneath each correlation.

Table 5

Two-Piece Linear Spline Longitudinal Multilevel Model Examining Ambivalence (CCT) as a Moderator of Worry (PSWQ)
Outcomes

	Fixed Effects					
	Unstandardized	Std.			95% Confidence Interval	
Parameter	Coefficient (*b*)	Error	*t*	Sig.	Lower Bound	Upper Bound
Intercept	70.08	1.53	45.75	.001**	67.03	73.12
Acute treatment	-2.10	.40	-5.30	.001**	-2.89	-1.31
Follow-up	-.85	.09	-9.19	.001**	-1.03	-.66
CCT session 1	4.95	9.53	.52	.61	-14.00	23.91
Treatment type	-.05	1.38	-.03	.97	-2.80	2.71
Acute treatment * CCT Session 1	5.00	2.74	1.82	.07	-.47	10.47
Acute treatment * Treatment type	.15	.50	.31	.76	-.84	1.14
Follow-up * CCT Session 1	2.50	.63	3.98	.001**	1.24	3.75
Follow-up * Treatment type	.20	.11	1.74	.08	-.03	.42
Acute treatment * CCT Session 1* Treatment type	-.45	3.54	-.13	.90	-7.51	6.61
Follow-up * CCT Session 1* Treatment type	-1.66	.80	-2.08	.04*	-3.25	-.07

Note. CCT = Counter-change talk; Treatment type coded as 0 = CBT alone, 1 = MI-CBT.
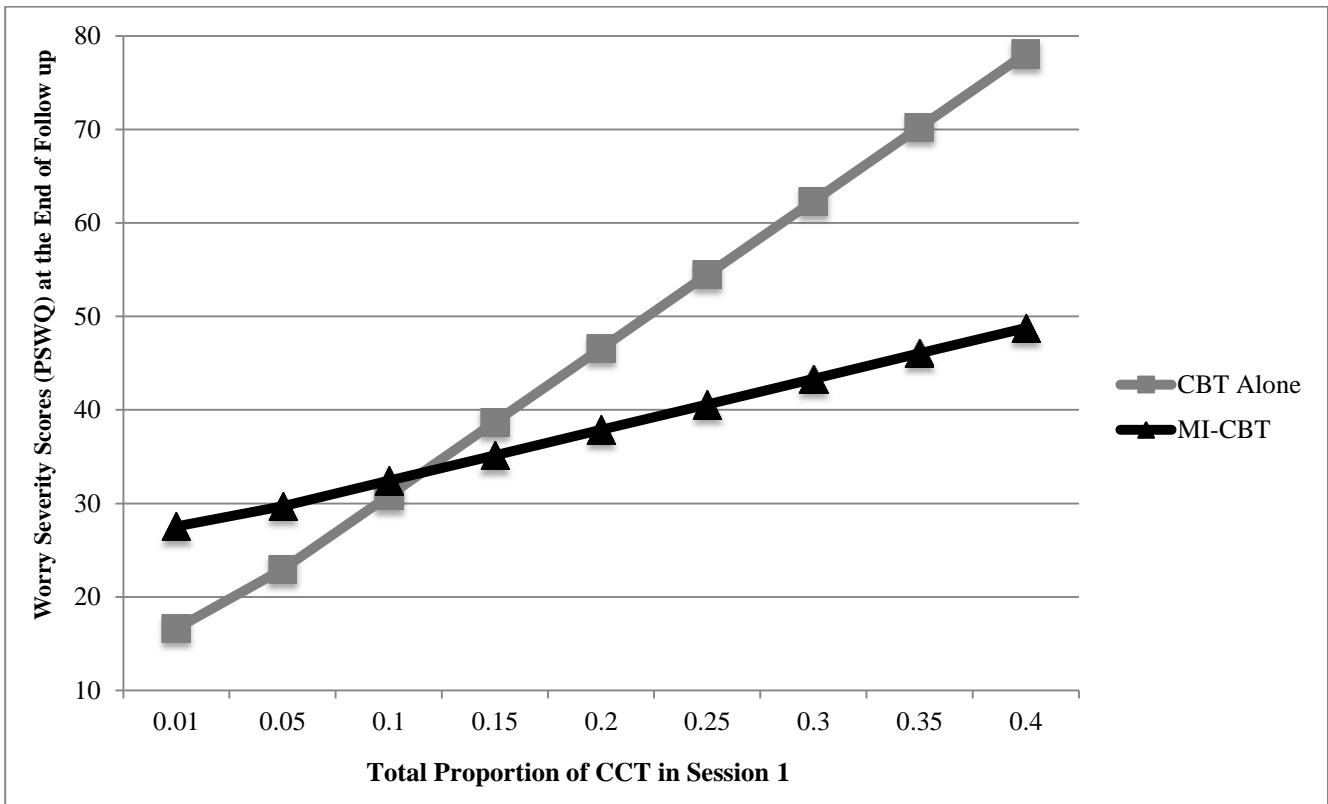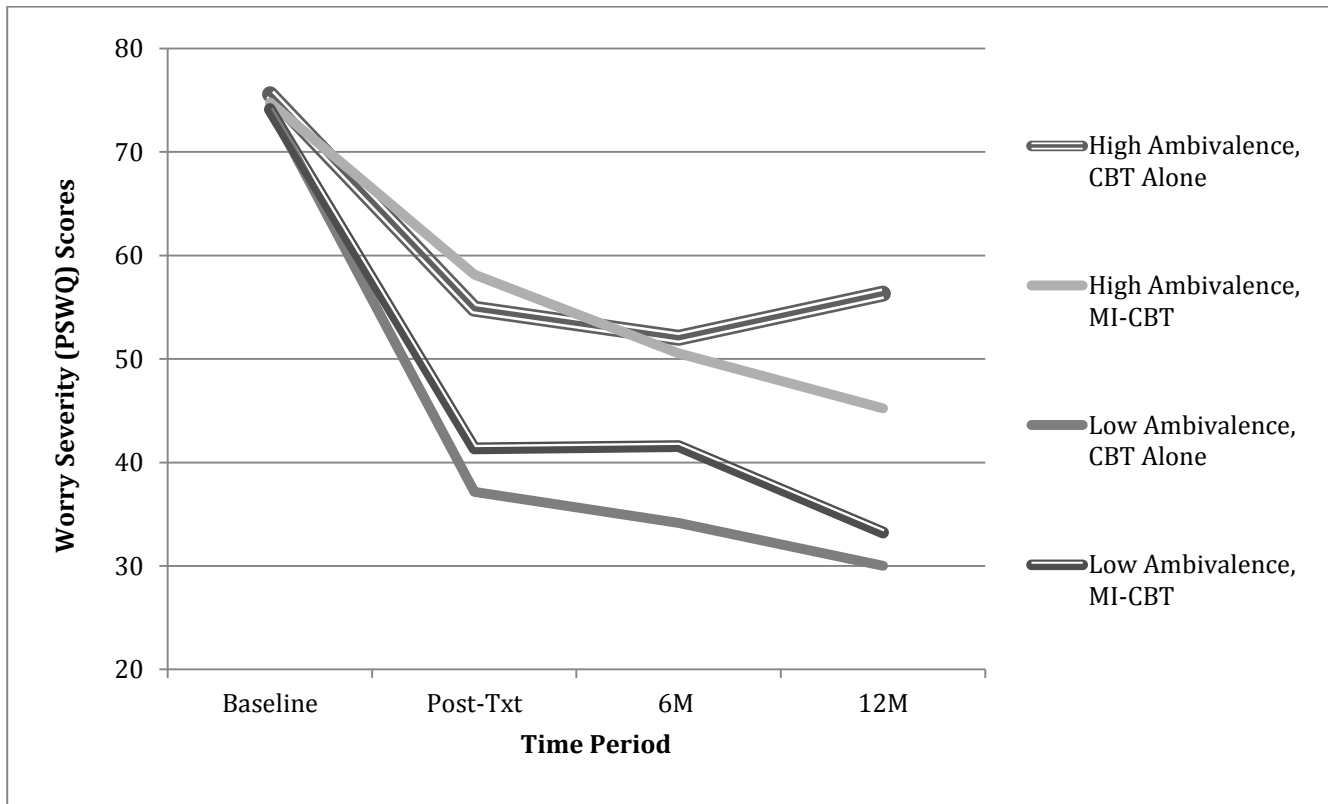
Figure 1. Rate of change data from MLM analyses to model/predict worry severity scores (PSWQ)

at the end of follow-up for each treatment group. CCT = counter-change talk.

Figure 2. Change in worry severity scores (PSWQ) over time as a function of treatment group and early ambivalence level. Groups created by taking the upper third and bottom third CCT scores.

Table 6

Two-Piece Linear Spline Longitudinal Multilevel Model Examining Ambivalence (CCT) as a Moderator of IIP Outcomes

	Fixed Effects					
	Unstandardized	Std.			95% Confidence Interval	
Parameter	Coefficient (*b*)	Error	*t*	Sig.	Lower Bound	Upper Bound
Intercept	56.86	3.65	15.58	.001**	49.63	64.09
Acute treatment	-.76	.37	-2.06	.04*	-1.48	-.04
Follow-up	-.28	.07	-3.80	.001**	-.43	-.14
CCT session 1	-38.81	22.80	-1.70	.09	-83.97	6.35
Treatment type	.55	3.30	.17	.87	-5.99	7.09
Acute treatment * CCT Session 1	1.22	2.48	.49	.62	-3.65	6.10
Acute treatment * Treatment type	-.44	.45	-.99	.32	-1.32	.43
Follow-up * CCT Session 1	.33	.50	.65	.51	-.66	1.31
Follow-up * Treatment type	-.22	.09	-2.44	.02*	-.40	-.04
Acute treatment * CCT Session 1* Treatment type	2.92	3.07	.95	.34	-3.12	8.96
Follow-up * CCT Session 1* Treatment type	.54	.62	.86	.39	-.68	1.76

Note. CCT = Counter-change talk; Treatment type coded as 0 = CBT alone, 1 = MI-CBT.
* *p* < .05. ** *p* < .01.
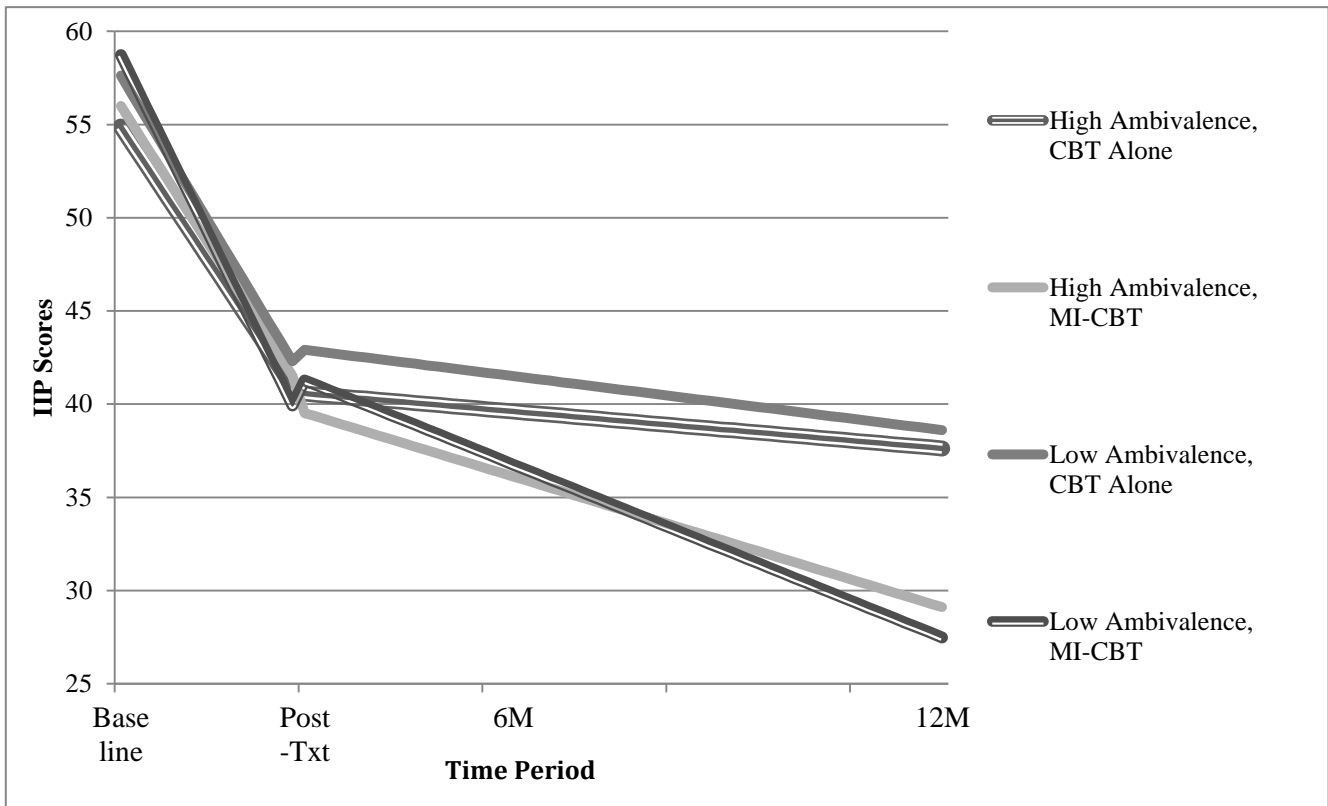
Figure 3. Change in IIP scores over time as a function of treatment group and early ambivalence

level. Groups created by taking the upper third and bottom third CCT scores.

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Appendix A: Examples of CCT Codes

Example 1: Inability to change, Target behaviour: Worry

Client: [I can't help it, something always comes in to replace it] [so this party is over,

something else will come]

Example 2: Need to not change, Target behaviour: Worry

Client: [I feel that I have to make myself worry.]

Example 3: Desire to not change, Target behaviour: Worry

Client: [No, I don't buy this thing that you just sort of just turn it off and nothing is any

problem anymore.][I don't think that's, I don't think that's realistic.][I think a certain

amount of stress is motivating.]

Example 4: Reason not to change, Target behaviour: Anxiety behaviours

Therapist: Sometimes people do those behaviours –

Client: [For comfort, yeah.]

Example 5: Commitment to not change, *Target behaviour: Perfectionism*

Therapist: What about making mistakes on purpose like we talked about?

Client: [Well, I kind of just decided I would try to make it, so I didn't do any mistakes on

purpose.]

Example 6: Step towards not changing, *Target behaviour: Therapy*

Therapist: I was thinking we could go over the homework from last week.

Client: I left my sheets at home.

Appendix B: Summary of Coding Considerations

1. **HOW TO CODE:**

- Code from audio (not video) as this is a *LANGUAGE BASED* system and hence statements and their context matter (e.g., how they are said)
    - This aids in removing all visual information (e.g. non-verbals)

- For each coded statement, please specify the **target behaviour** that is being discussed
    - A target behaviour refers to the content area being discussed
    - Client speech is categorized as movement toward or away from this target behaviour.
    - The landscape of behaviours needing to be changed in treatment for anxiety is broad and diffuse and includes multiple, inter-related and shifting target behaviours
    - The particular nature of the behaviours is idiographic to each client depending on the unique expression of his/her anxiety and worry (e.g., planning and procrastination may be avoidance strategies for some but not for others). Thus, a range of target behaviours is allowed.
    - Typically, the target behaviour will frequently shift and change as the discussion moves from topic to topic.
        - Examples include anxiety, drinking, a relationship with a friend, perfectionism, panic, eating, etc.
    - These topic shifts need to be tracked
        - i.e., What is the change talk (CT) or counter-change talk (CCT) in reference to.

- For each codable statement, parse into thought units (i.e., units of meaning or properties reflecting a complete thought). For example, a client will often articulate several codable statements one after the other in rapid succession. Ask yourself if each statement represents a complete thought (i.e., can stand on its own or is not dependent on the last thought). Each complete thought or independent separate statement is codable.
    - Note: The only exception is when a client lists reasons to change. Although these reasons may not represent a complete thought, they do represent a reason to change and should be coded as such.

2. **WHAT TO CODE:**

In this system, you are listening for client statements that clearly reflect either:

- COUNTER-CHANGE TALK: Client language that reflects arguments against change, objections to change, or movements away from change in the target behaviour (or staying the same). Verbalizations eligible for coding include any statement that expresses:
  - Inability to change
  - Commitment to not change or stay the same
  - Desire to not change or stay the same
  - Need to not change or stay the same
  - Reason to not change or stay the same
  - Step away from change or step to stay the same: Behavioural expressions of not changing are potentially codable
- Examples of each type of CCT are included in Appendix A.
- Note: Only CCT is coded – you do not need to separate the statements into these groupings (ability, need, etc.), but it sometimes helps to keep these common forms of CCT in mind. These forms of CCT can be used to describe your rationale for codes.

3. **KEY QUESTIONS TO ASK WHEN CODING:**

- **Ask yourself, "in this statement, is the client objecting to or opposing change (CCT)."**
  - One easy way to do this is to ask yourself, which side of the person is making this statement i.e., the part of the person that insists that they cannot change or that it is not a good idea to change or objects to change or is defending not changing.
  - In other words, ask yourself "Is this something the status quo or counter-change voice would say"

- **Another key question to ask yourself is "Is it *stated or implied* that this is a bad thing"**
  - This will really help in differentiating simple descriptions of problems from codable statements that reflect CCT.
  - In general, all problem descriptions do not get coded (e.g., I'm depressed a lot). Here, it is not clear whether such statements imply that this is a reason to change or not. In other words, statements that are ambiguous with respect to whether the person is clearly advocating for the status quo do not get coded
  - A client's vocal tone can assist in determining whether the statement is codable (i.e., "I cannot stop worrying" [in a hopeless or pessimistic tone] – this statement would be codable)
  - Descriptive statements can be used to justify or rationalize a position. It is helpful to think what is the client's intention by providing the description.

▪ Is the purpose to provide the therapist with more detail or is the client using the description to convince the therapist of a position against change? Descriptive statements can sometimes be reasons against change.

For example:

Uncodable Statement	Reason not codable	What the statement would have to look like in order to be codable	New code
I don't like being told that what I'm doing is wrong	Not clear whether client is advocating for status quo (defending SQ)	I don't like being told that what I'm doing is wrong. That's just me.	CCT
T: And if there is clutter, what will happen? C: Sometimes I get very upset or snappy	Needs to be more explicit, answering therapist's question unclear of whether this is meant as an argument against change	Sometimes I get very upset or snap so I need to clean it up	CCT

- **Another key question to ask yourself is "if you were the therapist, what would you hear or how would you interpret the statement"** in other words, does it feel like an argument against change or is the person articulating a position. Sometimes you need to take into account the context (i.e., what is being talked about) to get a feel for whether a statement is codable.

For example:
Client: My anxiety is what makes me such a successful businesswoman
Client: Homework every week seems like a bit much to me

- Note: Before coding a statement, always ask yourself "can I talk myself out of this code" or "are there competing interpretations that make this not codable (e.g., could this be merely descriptive?). If you cannot rule out that the person is just describing, the default is no code.

4. OTHER CODING TIPS

- **Pay careful attention to how clients describe their anxiety.** The adjectives that they use can imply CCT.

For example:
Client: That's a *legitimate* worry.
  o This statement would be coded as CCT. If one's worry is *legitimate*, that's a Reason Not To Change (or said more clearly, a reason to worry).

- **"I don't know" statements are often codable** IF the meaning of the client statement is clearly implied.

For example:

Therapist: How do you think you might live without anxiety?

Client: *[Without hesitation or thought]* I don't know.

- o Here, the client is clearly not reflecting on the therapist's statement. We might instead paraphrase I don't know as "I don't want to go there" (CCT – Desire Not To Change). As this example also shows, the content of the therapist's question is crucial in deciphering whether or not the client's response is CCT. When clients respond too quickly with "I don't know" to a therapist question, this may be CCT.

For example:

Therapist: So how would you begin to change this problem?

Client: I don't know *[end of response]*.

- o Here, a paraphrase is "I'm not sure I could change or want to change" (CCT)

Therapist: So how would you begin to change this problem?

Client: I don't know. I suppose I could.... *[client elaborates]*

- o Not codable as CCT. Here the paraphrase above no longer holds since the client is suggesting a possible solution.

- **CCT statements have to do with the client's identified targets for change.** If a client has not identified a topic as a target for change, yet is arguing against change in this area, these statements are not codable.

For example:

Client: I don't know whether to switch my cell phone over to Telus from Rogers. Rogers is more expensive, but I've heard that Telus's customer service representatives are bad.

- o Although this "sounds" on the surface like CCT, it is not codable since it has nothing to do with the client's identified change target (the client in this example has not identified switching cell phone providers as target behaviour)

- **Watch for use of the word "but" during discussion of a change target.** This word often marks where the client switches to CCT.

For example:

Client: My anxiety is so stupid– ugh, I know I don't need to be actually worried, 1) but no matter how many times I tell myself that, I just can't get rid of that anxious feeling. 2) There's no escaping it."

- o Here the ***"but"*** transitions from CT to CCT.

5. **PARAPHRASING.** Although all statements should be taken at face value (codable in and of themselves), at times you can easily paraphrase to get the meaning i.e., it is clearly implied that this is CCT. Paraphrases should be easily recognizable to anyone. In other words, don't stray too far from the meaning to imply things that are not easily implied.

For example:

Client: I know you're right but...

- o Here, it is clearly implied that the client means to object to change with the "but…" (CCT). *Paraphrase*: I know you're right but I'm not sure about it – don't know if I can do it etc.

Therapist: Is it getting easier to do the exposures?

Client: Actually, it's getting harder.

- o Here, an easy and accurate paraphrase (that stays close to the content) is "I'm not sure that changing is going to go well or produce desirable results" (CCT)

Therapist: So if you continued to feel anxious during the exposures-

Client: Oh geez.

- o Here, a paraphrase is "I'm not sure I would continue with this if it kept being hard" (CCT).

6. MINIMAL ENCOURAGERS. Client brief statements (typically one word) that serve as minimal encouragers should not be coded (e.g., when a client says "right," "mhm" - after a therapist statement). Here, tone is crucial.

Therapist: So perfectionism makes sure you get things done right.

Client: 1) Oh definitely! 2) And that's important to me (Codable)