VALIDATING THE SIMPLIFIED THERAPIST DEMAND AND SUPPORT CODE

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A THESIS SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF ARTS

GRADUATE PROGRAM IN PSYCHOLOGY

YORK UNIVERSITY,

TORONTO, ONTARIO

August 2021

Abstract

The didactic nature of current postgraduate training may be limited in its effectiveness for improving therapist performance. Specifically, this lecture-based training format typically focuses more on knowledge than skill and does not provide therapists with opportunities to collect accurate feedback that could enhance skill development. A promising training alternative may be deliberate practice focused on process coding, or training in the recognition and appropriate responsiveness to empirically supported psychotherapy process markers. Using disagreement episodes from Westra et al.'s (2016) randomized controlled trial of cognitive behavioural therapy (CBT) with and without integrated motivational interviewing (MI) for 60 individuals with severe generalized anxiety disorder, this study tested the validity of a novel coding system that could be potentially incorporated into training, the Therapist Demand and Support Code (TDSC). Results indicated that all TDSC indices were highly correlated with the current gold standard process coding measure of assessing therapist behaviour in the context of resistance, the Motivational Interviewing Treatment Integrity scale (MITI). Additionally, all TDSC indices were able to differentiate therapist behaviour in the more directive CBT-alone treatment group from the more supportive MI-CBT treatment group. Only therapist demand in the context of client disagreement (i.e., responsivity errors) significantly predicted outcome at one-year posttreatment. These findings provide preliminary support for the validity of the TDSC. Further, this study lends support to the case for training therapists in process detection and responsivity to evaluate and manage the health of the therapeutic interaction in real time.

Acknowledgements

I gratefully acknowledge financial support for this project from the Frederick Banting and Charles Best Canada Graduate Scholarship from the Canadian Institute of Health Research, as well as the financial support of York University. This work was also made possible through the Canadian Institute of Health Research Operating Grant (11909) awarded to my supervisor, Dr. Henny A. Westra, and her colleagues, Dr. Michael J. Constantino and Dr. Martin M. Antony.

I would like to thank my graduate supervisor, Dr. Henny Westra, for the incredible guidance and support she provided over the course of this project. I also extend my appreciation to Dr. David Flora for his assistance in the statistical analysis of this project. Finally, I wish to thank my colleagues Alyssa Di Bartolomeo, Serena Shukla, Nikoo Norouzian, Lauren Poulin, and Nazanin Shekarak Ghashghaei for their support and contributions throughout this entire process.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Validating the Simplified Therapist Demand and Support Code

Therapists may not improve with experience; instead, there is evidence that their skills may decline over time (Goldberg et al., 2016; Tracey et al., 2015). One potential contributing factor to this decline is the current state of postgraduate therapist training. Research on the dominant training model, the continuing education (CE) workshop, suggests that the didactic nature of this paradigm is limited in its effectiveness for improving therapist performance (Davis et al., 1999; Forsetlund et al., 2012; Westra et al., 2020). One of the primary reasons for this is that existing CE workshops typically focus more on knowledge rather than skill (Taylor & Neimeyer, 2017; Westra et al., 2020). Furthermore, the current training model does not address one of the key barriers to achieving expertise in psychotherapy: a lack of accurate and immediate feedback that affects learning (Tracey et al., 2015). A promising training alternative with the potential to address these limitations is deliberate practice focused on process coding (Pascual-Leone & Andreescu, 2013; Shukla et al., 2020; Wu & Levitt, 2020). Deliberate practice (DP) involves improving specific aspects of an individual's performance through repetition, immediate expert feedback, and successive refinement (Ericsson, 2006; Miller et al., 2017). With regard to the process-focused content of the proposed DP training alternative, certain psychotherapy process markers, such as client resistance, have been demonstrated to be robust predictors of treatment outcomes (Beutler et al., 2011; Jungbluth & Shirk, 2009; Piper et al., 1999; Strupp, 1980). Thus, DP in the recognition and appropriate responsiveness to these process markers could conceivably improve therapist performance. However, focusing training on the current coding systems used in psychotherapy research would likely be overly complex, requiring a great deal of time and training to acquire proficiency (Caperton et al., 2018). Such systems are arguably not practical for clinical training and practice given their complexity.

The purpose of the present study is to test the validity of a recently developed, simplified coding system for gauging therapist ability to manage resistance, the Therapist Demand and Support Code (TDSC). This new system was then examined in the context of a randomized controlled trial (RCT) in which outcome data was available and a more complex process coding system for gauging therapist resistance management (the Motivational Interviewing Treatment Code or MITI; Moyers et al., 2010) was used. In this introduction, I will first review the existing literature on the process marker of client resistance and its importance to treatment outcome. Next, I will discuss research concerning therapist responsiveness, specifically in the context of client resistance and ambivalence. I will then discuss current training practices for postgraduate psychotherapists, and the potential benefits of process coding for clinical training. Following the discussion on training practices, I will discuss the existing strengths and weaknesses of current process coding measures, as well as the recent development of the TDSC and how it might address these limitations. Finally, I will outline the specific aims of this study.

Resistance

Resistance can be defined as any client behaviour that opposes, blocks, diverts, or impedes the direction set by the therapist (Chamberlain et al., 1984). Common examples of client resistance include disagreeing, interrupting, sidetracking, and ignoring the direction of therapy or the therapist (Newman, 2002; Westra et al., 2009). In essence, client resistance reflects a lack of collaboration between the therapist and the client. It is an interpersonal, interactive process, comprised of the direction set by the therapist (e.g., making a suggestion, offering a reflection of the client's experience) and the client's opposition to that direction. Thus, both parties contribute to resistance, and the presence and intensity of resistance can vary on a moment-by-moment basis. Client resistance can also be conceptualized as therapeutic alliance strains or ruptures

(Safran & Muran, 2000; Watson & McMullan, 2005). In their work, Safran and Muran (2000) differentiate two types of alliance ruptures: confrontation ruptures and withdrawal ruptures. Confrontation ruptures are characterized as instances when the client moves against the therapist by overtly expressing discontent with the therapist or treatment. Withdrawal ruptures refer to more subtle moments in which the client moves away from the therapist or the work therapy. Examples of withdrawal ruptures include avoiding the therapist's questions, disengaging with emotional experience, being passive, or being overly appeasing (Eubanks et al., 2019).

In psychotherapy research, client resistance is consistently identified as a key moment that can significantly and negatively impact therapy process and outcome (Beutler et al., 1999; Beutler et al., 2011; Constantino et al., 2019; Miller & Rollnick, 2002; Westra, 2012; Westra et al., 2009; Westra & Norouzian, 2018). Further, resistance has been described in the literature as one of the most challenging aspects of therapy for clinicians to manage and navigate (Binder & Strupp, 1997; Chamberlain et al., 1984; Hara, 2020; Hara et al., 2015; Westra et al., 2009; Zickgraf et al., 2016). The presence of resistance, even as early as the first session, is correlated with a decline in subsequent therapy engagement (e.g., homework compliance), poorer treatment outcomes (both proximal and distal measures of outcome), and increased likelihood of premature therapy termination (Aviram & Westra, 2011; Beutler et al., 2001; Jungbluth & Shirk, 2009; Miller & Rollnick, 1991; Piper et al., 1999; Westra, 2012).

Another significant consequence of client resistance can be its deleterious impact on client outcome expectations. Outcome expectations refer to the individual's belief or prognostic expectations about the outcome of participating in psychotherapy (Constantino et al., 2018). Patient expectations are widely considered to be an essential ingredient and common factor of successful therapy (Constantino & Westra, 2012; Frank, 1961; Goldfried, 1980; Greenberg &

Watson, 2006). Mamedova et al. (2019) found that higher levels of resistance are associated with a reduction in client optimism about treatment. The results of this study suggest that resistance is demoralizing for both the client and the therapist. Only the reduction in client outcome expectations negatively impacted treatment outcomes in this study. In other words, experiencing alliance ruptures, such as arguing or withdrawing, with the therapist negatively impacts the client's hope and positive outlook that therapy will work for them, both of which are key components for treatment success (Constantino et al., 2011). In a qualitative, interview-based study of therapists' and clients' experiences of alliance ruptures, Coutinho and colleagues (2011) also found an association between alliance tensions and demoralization. Clients in this study reported feeling abandoned and criticized by their therapists during moments of alliance rupture. Furthermore, these clients also attributed a loss of confidence in the therapist and the usefulness of therapy to these ruptures. Thus, resistance can have a strong negative impact on clients' beliefs about their ability to recover through therapy.

Instances of client resistance can also have negative consequences for therapists. The literature suggests that positive therapist feelings toward a client are associated with a host of benefits, including increased client engagement, lower resistance, and an increased likelihood of completing treatment (Hoffart & Friis, 2000; Westra et al., 2012; Wolff & Hayes, 2009). Additionally, therapist outcome expectations for their clients have been associated with better client outcomes, even after controlling for client outcome expectations (Constantino et al., 2019; Martin et al., 1977). In light of these findings, research linking client resistance to negative therapist attitudes is particularly concerning as the experience of client resistance might dissuade therapists from believing in the client's ability to benefit from treatment. Following ruptures, the therapists from Coutinho et al.'s study (2011) often reported negative emotions, such as guilt or

confusion, concerning their ability to help their client. Further, some therapists in the study reported feeling anger toward their clients. In a separate study, cognitive behavioural therapists reported feeling negative emotional reactions, like anger, toward highly resistant clients (Westra et al., 2012). These findings are supported by other research indicating that therapists are increasingly likely to blame clients after moments of resistance or hostility (Binder & Strupp, 1997). In their study of the association between therapist behaviour and client noncompliance, Patterson and Forgatch (1984) posit that one of the consequences of prolonged resistance is the therapist evaluating the client in a negative manner. Not only can resistance damage therapist attitudes toward clients, but it can also hinder therapist performance. Boswell et al. (2013) found that overt, in-session client hostility was linked to lower therapist adherence and competence. Similarly, Zickgraf et al. (2016) observed that increased levels of resistance predicted decreased therapist adherence, as well as greater reliance on techniques outside of the CBT model. Given the detrimental impact on both the client and the therapist, resistance can be viewed as a critical psychotherapy process marker.

In addition to reviewing the negative consequences of resistance to both therapy process and outcome, it is important to note how resistance arises. Miller and Rollnick (2002) describe resistance as the product of two interactive forces. One of these forces is a client's ambivalence about enacting personal change through therapy. While some clients enter therapy ready to modify their behaviour to overcome their problems (the preparation or action stage of change), other clients simultaneously wrestle with positive and negative evaluations of their dysfunctional behaviour (the contemplation stage of change; Norcross et al., 2011). The other force at work is how the therapist responds to the client's expression of ambivalence; these interacting forces are discussed next.

Therapist Responsivity

Psychotherapy process research emphasizes the importance of therapist responsivity in psychotherapy (Constantino et al., 2013; Westra & Norouzian, 2018). Therapist responsivity involves "if-then" thinking. In other words, the prudent intervention (the *then* activity) is the one indicated by the moment or immediate process (the *if* context) (Constantino et al., 2013; Stiles, et al., 1998; Westra, 2012). The detection and appropriate responsiveness to key events or moments is important to effective treatment. Furthermore, process research suggests that not all moments in psychotherapy are equally significant or clinically meaningful (Aviram et al., 2016; Greenberg, 1986). As described above, two especially meaningful moments in therapy are instances of client ambivalence and resistance.

When a client expresses ambivalence about change, the therapist's response plays a critical role in whether resistance develops out of that ambivalence. Therapist directiveness in response to client ambivalence predictably elicits client resistance (Miller & Rollnick, 2002; Westra & Norouzian, 2018), whereas more supportive therapist approaches attenuate client resistance and promote a greater sense of collaboration with the client (Bischoff & Tracey, 1995; Moyers & Martin, 2006; Patterson & Chamberlain, 1994). More generally, directive therapeutic models tend to generate greater client resistance than treatment approaches that are more supportive in nature (Aspland et al., 2008; Aviram et al., 2011; Leahy, 2001; Sanderson & Bruce, 2007; Westra, 2012). Patterson and Forgatch (1985) investigated this idea of therapist approach as a determinant for client resistance. In this study, the researchers instructed therapists to alternate between "confront and teach" behaviours and "facilitate and support" behaviours during a session of parent training. The results showed that therapist "confront and teach" behaviours produced significant increases in the likelihood of immediate client resistance, while

therapist “facilitate and support” behaviours were accompanied by the opposite effect: reduced likelihood of resistance. Similarly, Miller et al. (1993) demonstrated that problem drinking clients were more defensive and participated in greater post-intervention drinking when feedback on alcohol use was provided in a directive way, compared to clients who received the same feedback, but delivered in a more supportive way. Clearly, the directive or supportive approach of a therapist plays an important role in successfully navigating ambivalence and resistance.

The differing resistance outcomes that arise from directive versus supportive approaches can be understood in the context of how therapists of each style perceive and respond to client ambivalence and resistance. One of the most common and typically more directive therapy approaches is cognitive behavioural therapy (CBT; Blagys & Hilsenroth, 2002; Hilsenroth et al., 2005). Relative to other therapies, CBT can be considered to be an action-oriented treatment. From a CBT perspective, client resistance or noncompliance with the tasks of therapy is typically considered to be a problem and a barrier to treatment efficacy that must be overcome (Antony et al., 2005; Kazantzis et al., 2005; Schmidt & Woolaway-Bickel, 2000; Szkodny et al., 2014; Wolf & Goldfried, 2014). In the presence of ambivalence or resistance, CBT practitioners often increase adherence to cognitive rationales and techniques in an effort to persuade or convince the client to comply with the direction of therapy (Castonguay et al., 1996; Westra & Norouzian, 2018). Castonguay et al. (1996) observed CBT therapists challenging or persuading (i.e., increasing adherence to theoretical rationale and techniques) during moments of resistance from their depressed clients. In sessions in which clients rated the therapeutic alliance as low, therapists rigidly focused on their own agenda (e.g., emphasizing their own thoughts about the client’s problems), instead of empathically exploring the client’s experiences. During moments of client hostility toward the therapist or the direction of therapy, this rigid adherence was most

apparent, and it served to accentuate tensions in the alliance and lessen therapeutic change. Interestingly, among the sessions in which the client rated the therapeutic alliance more positively, therapists focused more on client beliefs and the impact of those beliefs on client emotion. In these sessions, moments of disagreement that were navigated in a more empathic, supportive manner did not result in lower alliance ratings from the client. In their study of alliance ruptures in CBT, Aspland et al (2008) found that ruptures typically occurred when therapists perseverated with a technique despite the client raising a concern. Further, during moments of resistance (e.g., increased client withdrawal or disagreement), therapists were more likely to become increasingly persuasive, defensive, and controlling, as well as less likely to be overtly validating. Thus, directive therapy modalities typically understand client ambivalence and resistance as a problem that must be solved by rigidly adhering to the therapeutic model.

In contrast, supportive therapy models approach client ambivalence and resistance differently. An example of a supportive approach is motivational interviewing (MI), which is firmly rooted in Roger's client-centred therapy and emphasizes therapist empathy, collaboration, evocation, and preservation of client autonomy (Miller & Rollnick, 2002; Westra et al., 2016). Rather than classifying the phenomenon as a client problem, resistance is viewed as a natural, expected part of the change process (Westra, 2012). Furthermore, MI considers sustained client resistance to be a clinician skill error, not evidence of an obstinate client (Westra & Norouzian, 2018). Thus, resistance is viewed as a valuable source of feedback for the therapist that he or she is working ahead of the client's level of readiness instead of an obstacle that must be overcome. When confronted with client ambivalence, a therapist practicing MI avoids statements or behaviours intended to exhort the client toward change. Conversely, the therapist employs strategies, such as nonjudgmentally exploring the client's ambivalence, that empower the client

to become his or her own advocate for change (Westra et al., 2016). In MI, the presence of resistance serves as a 'stop sign' for the therapist, indicating that they are placing demands on a client who is not ready for those demands. In response, the therapist works to re-establish collaboration in the therapeutic relationship by 'rolling with resistance' (Miller & Rollnick, 2002; Westra, 2012). In other words, the therapist pivots from a directive to a supportive stance, in which he or she empathically explores and accepts the client's feelings. These strategies for managing ambivalence and resistance have been found to reduce further client opposition and increase intrinsic motivation (Aviram & Westra, 2011; Miller et al., 1993).

Support for Responsivity to Resistance

A number of studies support the value of therapist appropriate responsivity to resistance. Westra and colleagues (2016) compared the efficacy of CBT alone versus MI integrated with CBT in the treatment of severe generalized anxiety disorder (GAD). Clients in the CBT group showed no immediate posttreatment outcome differences in measures of worry compared to clients in the MI-CBT group. However, while CBT clients maintained their gains, MI-CBT clients continued to improve after treatment ended, as evidenced by the six-month and one-year follow ups. Utilizing Westra et al.'s (2016) data set, Aviram and colleagues (2016) provide support for the importance of therapist context-responsivity. The researchers explored how therapist style (supportive vs directive) during moments of client disagreement or resistance related to the level of resistance in the following session and in posttreatment worry outcome. The study only examined the CBT therapists from the Westra et al. (2016) study. Corroborating previous findings, the results of this study support the relationship between cultivating a supportive relational stance to resistance and improved client outcome. More specifically, higher levels of MI-like behaviour (i.e., empathy, supporting client autonomy) in response to early

client disagreement were associated with substantially lower subsequent resistance and posttreatment worry. Notably, variation in ratings of therapists' MI adherence related to outcomes *only* within the context of disagreement when compared to neutral therapy segments. This underscores the importance of "doing the right thing at the right time."

Hara (2020) analyzed sixty episodes of client resistance in the Westra et al. (2016) RCT (thirty within the CBT group, thirty within the MI-CBT group) to examine the differences in how therapists in each treatment group managed resistance, as well as the impact of specific therapist behaviours differentiating therapy groups on client worry outcomes. This study found that the MI-CBT trained therapists exhibited more affiliative behaviours and fewer hostile behaviours during disagreement episodes. Moreover, being in the CBT-alone group was associated with over ten times greater risk of demonstrating *any* hostile behaviour toward a client during disagreement. Increased therapist affiliation as facilitated by MI-CBT versus CBT-alone was associated with improved client outcomes. Therapist hostility was also found to mediate the relationship between treatment group and client outcomes, suggesting that increased therapist hostility was associated with significantly worse client outcomes at one-year posttreatment. In addition to demonstrating that resistance represents an important clinical phenomenon, the results of this study suggest that the therapist's response to resistance is critical to the client's outcome.

Ribeiro et al. (2014) also investigated the relationship between client resistance and therapist responsiveness. Using the Therapeutic Collaboration Coding System, the researchers examined how therapists responded to client ambivalence in the context of a poor outcome case of narrative therapy. As described above, directive management of client ambivalence about change can often lead to client resistance. This study provides further support for this notion as

therapist challenging was the most prevalent response before and after client ambivalence in a case of narrative therapy. Further, when the therapist responded to the client's ambivalence by challenging the client, it was more likely that the client would invalidate the therapist's intervention by rejecting or ignoring it, which in turn damaged the quality of the therapeutic alliance. When the therapist responded with a more supportive approach to client ambivalence, however, the client typically accepted the therapist's intervention. The researchers viewed this as the client being willing to work at the level proposed by the therapist. In sum, the researchers posited that when therapists challenge during moments of client ambivalence, the therapist is working beyond the client's readiness to change (the therapeutic zone of proximal development; Leiman & Stiles, 2001). In response, the client experience of safety in therapy deteriorates and is replaced by the experience of intolerable risk, leading them to invalidate the therapist's intervention. Thus, a therapist responding to client ambivalence with increasing direction or challenge might unintentionally maintain or contribute to that ambivalence as the client may feel misunderstood.

Given how critical appropriate responsivity to resistance seems to be to therapy process and outcome, it would seem obvious to incorporate resistance recognition and response skill development in the foundation of clinical training. However, this notion is not yet reflected in the current training paradigm. This will be discussed in the next section.

Therapist Training

While there is a wealth of psychotherapy research examining the efficacy of various treatment models and methods, there is a notable lack of scientific investigation pertaining to the improvement of therapist training (Binder, 1993, 1999; Chow et al., 2015; Rousmaniere et al., 2017). The prevailing training model for postgraduate therapists is continuing education

workshops that typically revolve around a didactic, lecture-based format, that emphasize therapist knowledge acquisition rather than skill development and rarely provide opportunities for feedback that affects learning (Rousmaniere et al., 2017; Tracey et al., 2015; Westra et al., 2020). While this format of continuing education workshops has been shown to produce large effects on self-reported knowledge, research from various domains demonstrates that there is little empirical evidence that supports the efficacy of this model in terms of lasting skill development (Davis et al., 1999; Madson et al., 2019; Taylor & Neimeyer, 2017; Westra et al., 2020). In a review of 49 studies on continuing education workshops for physicians, Forsetlund et al. (2009) found only small effects on physician performance and even less of an impact on patient outcome. Javadi et al. (2015) provide evidence that continuing education for pharmacists does not improve trainee outcomes or physician practice behaviour. In sum, the existing continuing education paradigm does not contribute to lasting practitioner skill improvement or competency (Bloom, 2005; Jameson et al., 2007). Additionally, research does not support the notion that therapists improve with experience (Tracey et al., 2015). In a longitudinal study of 170 therapists and over 6,500 patients, Goldberg et al. (2015) found that, on average, therapist effectiveness (measured by patient-level outcomes) declines as experience (measured in both chronological time and the number of patients seen) increases. Finally, despite a wide array of available treatment opportunities, patient outcomes have been stagnant for the past 30 years (Lambert, 2013; Ost, 2008). Thus, there may be a potential link between stagnant training and stagnant outcomes.

One contributing factor to these problems of therapist skill development and expertise is a lack of feedback. On one hand, the field has introduced and implemented routine outcome monitoring, which provides therapists with feedback about likely patient outcome trajectories

and has demonstrated the ability to reduce the number of failed cases (Lambert et al., 2018). On the other hand, this system is likely too distal and too aggregate to aid in skill development, which demands more immediate, real-time feedback (Tracey et al., 2015).

Addressing the skill gap in the current CE model, deliberate practice (DP) has emerged as a paradigm for psychotherapy training because of its focus on skill development (Clements-Hickman & Reese, 2020; Rousmaniere et al., 2017). However, although DP specifies the method of training, it does not stipulate that the content of training be focused on empirically supported variables or processes. For example, DP focused on adherence to a therapeutic model is unlikely to be related to improvement in client outcome (Wampold & Imel, 2015; Webb et al., 2010). Instead, deliberate practice focused on process acuity and responsiveness may likely improve outcomes because it addresses the need for immediate feedback on variables that have been empirically linked to outcome (Pascual-Leone & Andreescu, 2013; Shukla et al., 2020; Wu & Levitt, 2020). Within a process-oriented model, therapists could potentially be trained to monitor and respond moment-by-moment to empirically supported process markers, such as client resistance, empathy, and the degree of collaboration. By learning and practicing viewing therapy through a ‘process’ lens, immediate outcome information could be extracted and utilized by therapists in-session. Various process markers, including resistance, have been verified through psychotherapy process research as predictive of ultimate client outcomes (Constantino et al., 2013; Pos et al., 2007; Stiles, 2009; Westra and Norouzian, 2018), and predictive validity is the missing link in skill development (Tracey et al., 2015; Ericsson & Pool, 2016). However, problematic processes are often invisible to both the therapist and the client (Rennie, 1994; Westra, 2012). Binder and Strupp (1997) noted that therapists struggle to identify negative processes, such as resistance, in which they are recipients or participants. In a study comparing

therapist awareness of client resistance to trained observers, Hara et al. (2015) found that while therapists were often able to identify more obvious and overt signals of client resistance, such as arguing or disagreeing, they were less likely to detect more subtle, nuanced forms of resistance, like client withdrawal or passivity. Thus, in addition to the current training focus on theoretical approaches and case formulation, therapists could be trained to develop a parallel process sensitivity.

A recent study highlights the value of using DP to train clinicians to recognize and respond appropriately to empirically validated process markers. Westra et al. (2020) compared an adapted motivational interviewing workshop that utilized DP to a more traditional motivational interviewing workshop. In contrast to the traditional workshop, the DP workshop emphasized learning and practicing skills used to detect empirically supported process markers of client ambivalence and resistance. Additionally, these trainees practiced empirically supported responses to instances of client resistance (i.e., 'rolling with resistance) that are associated with better client outcome. The researchers found that the therapists randomly assigned to the DP workshop outperformed those in the traditional workshop group on a variety of measures. The DP group demonstrated better observer-rated skill on all performance measures at post-testing and at the 4-month retest. At the 4-month follow up, the DP trainees were also rated as more empathetic than the control trainees by community interviewee volunteers. As demonstrated by this study, training in process recognition using deliberate practice (i.e., moment-by-moment process diagnosis using empirically supported markers of productive and unproductive therapy processes) may enhance both therapist skill development and client outcome. In essence, there is a compelling case for training therapists in process detection to diagnose the health of the

therapeutic interaction, a topic I turn to next after first considering existing process coding systems.

Coding Therapist Behaviour

One system that is relevant to identifying appropriate and inappropriate therapist behaviours in managing the important processes of ambivalence and resistance is the Motivational Interviewing Treatment Integrity scale (MITI version 3.1.1; Moyers et al., 2010). The MITI is a commonly used measure in psychotherapy process research to assess clinician competence and adherence to the MI principles (Jensen et al., 2011; Moyers et al., 2005; Westra et al., 2016; Westra et al., 2020). The MITI utilizes global scores, in which coders characterize the entire therapy interaction using a 5-point Likert scale. These ratings assess therapist empathy and fidelity to the client-centred relational stance of MI 'Spirit,' which includes respecting and supporting client autonomy, collaboration with the client, and evocation of the client's ideas about change. A second facet of this scale assesses specific therapist behaviours (e.g., use of questions and reflections).

Research shows that the MITI possesses sound reliability and sensitivity. Using role-playing therapy sessions, Pierson et al. (2007) found the MITI to be a reliable and valid adherence and competence measure for MI. In their study of 189 therapists across 826 sessions, Imel et al. (2014) demonstrated that the MITI successfully captures variability in therapist adherence to MI. Forsberg et al. (2008) tested both the construct validity and the discriminant validity of the MITI. The results of this study showed that the MITI was able to differentiate practitioners with varying degrees of MI training, as well as between MI practitioners and advice-giving therapists. Importantly, this system has been demonstrated to predict treatment outcome across many behavioural domains (Moyers et al., 2009). Utilizing the MITI, Woodin et

al. (2012) were able to predict significantly greater reductions in physical aggression perpetration for a sample of physically aggressive, college student dating couples. During episodes of disagreement between the client and the therapist in cognitive behavioural therapy for generalized anxiety disorder, Aviram et al. (2016) found that the MITI was capable of predicting client posttreatment worry outcomes. As noted earlier, predictive validity is the missing link in skill development. Thus, the ability to predict treatment outcome would be a key benefit for clinical training in process detection instruments, such as the MITI.

While the MITI is a valuable coding system for measuring MI skill adherence and predicting outcome, it possesses several important limitations (Forsberg et al., 2007; Moyers et al., 2016). The first is that the MITI is a time-consuming, rigorous system. Caperton and colleagues (2018) point out that MI process coding is often a "tremendous resource burden" (p. 435). Building upon this notion, Moyers et al. (2003) found that one minute of an MI session can require up to six minutes of coding time. Given the complexity of the system, it is difficult and time consuming to train others to utilize the MITI and other MI process coding systems in a reliable manner (Caperton et al., 2018; Forsberg et al., 2007). Various studies have estimated that approximately 40 hours of initial training is necessary to establish reliability, without accounting for further training needed to mitigate coder drift (Can et al., 2016; Miller et al., 2008; Moyers et al., 2003) Additionally, its complex nature renders this system impractical for therapist training or to use in-session in real time. Thus, while the MITI is a valuable tool for researchers, this system may serve as a barrier to the overarching goal of improving therapist performance in managing ambivalence because it is too complicated for clinicians to use in real time to monitor their own behaviour, and the MITI has not been validated for this purpose. A second limitation is that the MITI neglects to account for the context of the session (e.g., the complexity of the

client's presentation in the session). As a result, valuable information pertaining to therapist responsiveness is unconsidered (Moyers et al., 2005; Waltz et al., 1993). A third limitation is that the global ratings of the MITI only broadly capture the therapeutic interaction. In light of process research that suggest that certain moments in psychotherapy are of greater importance than others (Aviram et al., 2016), key moment-to-moment, micro-level behavioural data may be lost in macro-level assessment using global ratings. Finally, and perhaps most significantly, this coding system does not sufficiently assess directive therapist behaviour (Moyers et al., 2016). As highlighted in previous sections, therapist directiveness (e.g., advice, 'fixing') in the presence of client ambivalence or resistance is a key variable in predicting outcome, as is a more supportive therapeutic approach (Westra & Norouzian, 2018). Ideally, a coding system that could be utilized in therapist training in practice would simultaneously measure important therapist behaviour (i.e., directive and supportive) in the context of resistance. In sum, the cumbersome nature of the MITI makes it impractical as a training instrument. As Caperton et al. (2018) note, streamlining process coding would confer numerous advantages for both researchers and practitioners. For practitioners, a simplified coding option would allow for easier access to feedback for improving their skills, possibly in real time.

Recently, Westra et al. (2020) developed a simplified coding system, the Therapist Demand and Support Code (TDSC), that categorizes important therapist responses in the context of client ambivalence. In this initial pilot study, there were three codes in this system: Support, Demand, and Other. Support is defined as utterances with the intent to empathize and understand the client; the therapist is looking to understand who the client is as an individual and connect with them. Demand is defined as utterances that are understood as being directive with the intent to fix the client's presenting problem. It is important to distinguish a therapist who is being

directive or leading with the intent to explore the issue versus a therapist whose intent is to solve or fix the problem. Finally, any therapist utterance that does not clearly fall into the categories above would be considered 'Other'. Often, this includes exploratory questions and statements, as well as one-word responses (e.g., "right" or "ok"). The TDSC received some preliminary validation in another study (Shukla et al., 2020) comparing a DP workshop to traditional workshop training for navigating resistance (Westra et al., 2020). Using this simplified system, this study found that training groups could be differentiated in their behaviour when interviewing volunteers and simulators who were ambivalent about change. The DP group was found to exhibit significantly fewer demand behaviours than the traditional group, with the latter being significantly quicker to resort to demand behaviours in the interviews. Further evaluation of such a simplified system is needed, however, before advocating its use in training. Critically, instruments like the MITI are capable of predicting outcomes. Thus, examining the correlation of the TDSC with the MITI and examining the predictive validity of this system in relation to client treatment outcome is needed. These are among the aims of the present study.

Present Study

The overarching goal of this study is to validate the TDSC in the context of a parent trial RCT of CBT with or without MI integrated to treat severe GAD. GAD is an ideal mental health condition to investigate therapist responsivity to ambivalence and resistance because individuals with GAD often hold positive and negative beliefs about changing chronic patterns of worry (Borkovec & Roemer, 1995; Westra & Arkowitz, 2010). In an effort to validate the TDSC, this present study has three aims. The first is to examine correlations of the TDSC with the gold standard MITI for gauging therapist behaviour in the context of resistance. The second aim is to examine treatment group differences in the TDSC. In other words, does the TDSC discriminate

between the CBT-alone treatment group and the MI-CBT group? The final aim is to examine the ability of the TDSC in predicting treatment outcome. It is vital that these aims are investigated in the context of resistance given that this is the context in which the MITI reliably predicted outcome in this data set compared to more general MI adherence outside of resistance episodes (Aviram et al., 2016). The same episodes of disagreement (i.e., a major form of resistance) extracted in the Aviram study will be utilized given the established relationship of therapist behaviour at those times to outcome and the pre-existing MITI coding available for these episodes.

Two sets of indices within the TDSC will be defined: aggregate codes (Demand and Support, as percentages of all therapist utterances within the episode) and responsivity to specific moments of client Counter-Change Talk (CCT) within disagreement episodes. The latter will necessitate the use of the Motivational Interviewing Skills Code (MISC) to identify specific moments of client CCT. The TDSC can then be used to gauge immediate therapist behaviour following these important utterances. In this manner, errors in responsivity (CCT-Demand) and appropriate responsivity (CCT-Support) can be quantified, both as a function of all transactions (client utterance followed by therapist response) within the disagreement episode.

It is hypothesized that lower Demand and higher Support will be associated with higher MITI scores during resistance episodes. Further, fewer responsivity errors and greater appropriate responsivity should also be associated with higher MITI scores during resistance. It is hypothesized that both the aggregate indices and the responsivity indices will be able to differentiate the CBT-alone group from the MI-CBT group during resistance episodes. If the simplified system is valid, like the MITI, it should be able to distinguish between the more directive approach of CBT and the more supportive approach of MI. Thus, the degree of

Demand, Support, CCT-Demand, and CCT-Support should be significantly different in one group compared to the other. Finally, it is expected that the occurrence of therapist Demand, especially the inappropriate timing of Demand, will be central to accounts of resistance (Aspland et al., 2008; Beutler et al., 2011; Westra, 2012). Therefore, it is hypothesized that greater Demand and higher number of responsivity errors in response to specific client CCT statements will predict outcomes at one-year posttreatment.[1]

Method

Data for the present study was derived from the parent RCT, which compared an integrated treatment of MI and CBT with CBT-alone for severe GAD (Westra et al., 2016). In the present study, 60 therapist dyads were selected from the larger parent RCT, following Hara's (2020) extracted disagreement episodes across the two treatments (*N* of 30 in each treatment group).

Participants

Clients

The clients in this study were comprised of 60 adults seeking treatment for GAD at one of two locations (York University or Ryerson University) in Toronto, Canada. They were recruited over a 15-month period. Individuals who responded to the recruitment advertisements completed the Penn State Worry Questionnaire during an initial phone screen (PSWQ; Meyer et al., 1990). Only individuals who scored above the cut-off score for high GAD severity (at least 68 out of a possible score of 80) were invited to complete an in-person Structured Clinical

[1] The one-year post treatment outcomes were chosen for examination as previous analysis of this data set have found this to be the point at which group differences in outcome are most apparent (Hara et al., 2015; Westra et al., 2016). Moreover, resistance was found to mediate outcomes at one-year posttreatment (Constantino et al., 2019). Six clients in the current study did not complete the PSWQ at the one-year posttreatment follow up. For these individuals, their PSWQ scores at six months posttreatment were used for outcome data instead.

Interview for Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) Axis I Disorders (SCID-IV; First et al., 1996). All participants in the RCT were required to meet both *DSM-IV-TR* and *DSM-5* criteria for a principal diagnosis of GAD (American Psychiatric Association, 2000; American Psychiatric Association, 2013). The PSWQ was readministered and only those with both a principal diagnosis of GAD and a score above the cut-off for high severity GAD were invited to participate in the study.

Therapists

There were 13 therapists in the CBT-alone treatment group in the present study (12 doctoral graduate students in clinical psychology and one postdoctoral fellow). In the MI-CBT group, there were 8 therapists (7 doctoral graduate students and 1 postdoctoral psychologist). Across both groups, all of the therapists were female. All of the therapists involved in the study delivered either MI-CBT or CBT-alone; that is, they were nested in treatment groups. Furthermore, the therapists self-selected into the condition they preferred to deliver, in order to control for allegiance effects, which have been shown to have a strong impact on psychotherapy treatment trials (Munder et al., 2013). In order to participate, therapists in the CBT-alone group were required to have no formal training in MI.

Therapist Training

Prior to seeing clients in the study, all therapists received training in the form of a 4-day workshop that incorporated discussion and role play. Dr. Henny Westra, an expert in MI and CBT, provided training for the MI-CBT therapists, while Dr. Martin Antony and a postdoctoral fellow specializing in CBT conducted training and supervision for the CBT-alone therapists. All therapists saw at least one practice case with feedback until they were deemed proficient by their supervisor who assessed competence through video review and completion of relevant

competence measures during therapist practice cases. Over the course of the trial, each therapist received ongoing case supervision, which included videotaped session review and weekly individual supervision meetings.

Treatment Conditions

Clients in the present study were randomly assigned to one of the two treatment conditions: MI-CBT (n = 30) or CBT-alone (n = 30). All clients received 15 weekly, one-hour sessions of individual therapy. Clients in the MI-CBT group received up to four initial sessions of MI, followed by 11 sessions of CBT integrated with MI. Participants in the CBT-alone group received 15 sessions of CBT.

CBT

In this study, the CBT treatment condition consisted of various evidence-based protocols (Craske & Barlow, 2006; Zinbarg et al., 2006). This treatment protocol included cognitive restructuring, behavioural strategies, and progressive muscle relaxation. During their training, CBT-alone therapists were instructed to apply treatments in a certain order. However, the length of time spent on each treatment component was left to the clinical judgement of each therapist, based upon their assessment of the needs and responsiveness of the client. Homework was an important aspect of the CBT treatment condition. In an effort to establish consistency in managing homework noncompliance in this treatment condition, evidence-based strategies from the CBT literature for preventing and responding to noncompliance (e.g., psychoeducation about the importance of homework) were provided to the CBT-alone therapists in their manual.

MI-CBT

This treatment condition relied upon MI theory and practice (e.g., the importance of expressing empathy, rolling with resistance) that was formulated by Miller and Rollnick (2002)

and adapted to the treatment of GAD by Westra (2012). Westra's (2012) adaptation provided guidance for delivering MI on its own, as well as MI integrated with CBT. In the initial four sessions of this treatment condition, therapists collaboratively explored feelings about change and ambivalence with the client. During this MI-alone phase of treatment, therapists were instructed to avoid utilizing change-focused strategies. Instead, therapists in this condition used MI principles (e.g., rolling with resistance) and qualities embodying the MI spirit (e.g., collaboration, empathy, autonomy support, and evocation) in the initial four sessions to help clients process and resolve ambivalence about reducing worry through therapy. A more action-oriented CBT approach was incorporated in the fifth week of treatment. However, MI-CBT therapists continued to utilize MI principles and spirit over the entire duration of treatment. More specifically, when therapists noted markers of client ambivalence or resistance in the final 11 sessions, they were instructed to temporarily halt the more action-oriented CBT in favour of the more exploratory and supportive methods of MI.

Treatment Outcome Measure

Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990)

The PSWQ, a widely used, 16-item measure of trait worry, was the primary outcome measure for the original RCT. Questions are rated on a 5-point Likert scale. Total scores range from 16 to 80, with greater scores reflecting higher levels of trait worry. Clients in the original RCT completed the PSWQ at baseline, immediately following every CBT session, posttreatment, and at 6 months and one-year post-treatment. This measure possesses high temporal stability and internal consistency. This is demonstrated by a Cronbach's alpha of .93 for all anxiety disorders and .86 for GAD, in addition to good convergent and discriminant validity (Brown et al., 1992; Meyer et al., 1990). Furthermore, the PSWQ differentiates individuals with GAD from

individuals with other anxiety disorders (Brown el al., 1992). In the RCT, the average Cronbach's alpha was .68 at baseline and .96 at posttreatment.

Process Coding Measures

The Therapist Demand and Support Coding System (TDSC)

The TDSC, as well as the Manual for Identifying Demand and Support Therapist Behaviours, was created by Westra et al. (2020) This simplified coding system was developed and refined using psychotherapy session video from Westra et al.'s (2020) deliberate practice study. This review demonstrated that it was feasible to classify moment-to-moment therapist behaviours into one of three categories: Demand, Support, or Other. The associated manual was created to standardize each of the three codes to assist coder reliability and achieve consensus in identifying therapist behaviours.

According to the Manual for Identifying Demand and Support Therapist Behaviours, Demand behaviours are classified as therapist utterances that are intended to fix the client's presenting problem. Such statements are directive and solution-oriented with the intent to move the client toward change. These include behaviours that are coercive, educating, praising, or advice-giving in nature. An example of a "Demand" utterance would be a therapist who states, "*Have you considered changing your nighttime routine to help you sleep better?*" Support behaviours are conceptualized as utterances that are intended to understand and support clients. This includes therapist behaviours that are empathic, normalizing, affirming, validating, or supportive. Some therapist utterances that would be coded as "Support" are: "*That is really tough." "You are very insightful." "It sounds like you are saying ...."* Finally, any therapist behaviour that does not clearly fit within the Demand or Support category is classified as Other.

This category includes utterances such as small talk, questions with the intent to gather information, and minimal encouragers.

This novel system was tested in a recent study by Shukla et al. (2020) to gauge therapist responses to specific moments of client resistance. The study demonstrated that this system could be used to differentiate therapists trained in a deliberate practice workshop from therapists receiving a traditional workshop by analyzing their behaviours when interviewing volunteers and simulators who were ambivalent about change. Using the same dataset, Westra et al. (2020) compared the Demand and Support codes of the TDSC to the MITI coding for ambivalent volunteer interviews. Demand was negatively correlated with MITI global scores for Empathy and MI Spirit, while Support was positively correlated with the same two MITI global scores. These findings provide support for the validity of the simplified system by showing convergence with the global scores of the MITI

Motivational Interviewing Skills Code (MISC) Version 1.1.

The Motivational Interviewing Skills Code (MISC) Version 1.1. (Glynn & Moyers, 2009) was also used for this study. The MISC is an observational measure of client motivational language. A target behaviour must be identified because client language is categorized as movement toward the target behaviour (Change Talk; CT) or movement away from the target behaviour (Counter-Change Talk; CCT). Neutral client language is coded as Other. An example of CT in the context of GAD might be "*I want to be able to worry less so I can enjoy my life more,*" while a statement like "*If I did not worry, I am afraid I would become lazy, and my life would fall apart*" would be coded as CCT.

This coding system has been demonstrated to possess strong predictive validity and good reliability in substance abuse research (Campbell et al., 2010; Magill et al., 2010; Moyers et al.,

2009; Vader et al., 2010). Using the MISC, Amrhein et al. (2003) found that client commitment language during MI predicted greater drug abstinence at one year posttreatment. While the MISC was initially created to assess client motivation in the context of MI for substance abuse, this measure has since been adapted for other disorders. Lombardi et al. (2014) developed an adapted version of the MISC in order to assess motivation to change for individuals with GAD. This study found that client CCT was a robust predictor of posttreatment worry scores and differentiated treatment responders from non-responders. Similarly, another recent study showed that while self-reported motivation from GAD clients failed to predict outcome, motivational language assessed with the MISC explained up to 38% of the outcome variance in client worry scores, even at one-year posttreatment (Poulin et al., 2018). Client motivational language has also been independently linked to outcomes above and beyond baseline symptom severity (Button, 2019; Moyers et al., 2007).

Motivational Interviewing Treatment Integrity Scale (MITI) Version 3.1.1.

The Motivational Interviewing Treatment Integrity scale (MITI version 3.1.1; Moyers et al., 2010) is a commonly used measure in psychotherapy process research to assess clinician competence and adherence to the MI principles (Jensen et al., 2011; Moyers et al., 2005; Westra et al., 2016; Westra et al., 2020). The MITI utilizes global scores in which coders characterize the entire therapy interaction (usually 20 randomly selected minutes) using a 5-point Likert scale. These ratings assess therapist empathy and fidelity to the client-centred relational stance of MI 'Spirit,' which includes respecting and supporting client autonomy, collaboration with the client, and evocation of the client's ideas about change.

Considered the gold standard measure for examining MI adherence, the MITI has been widely utilized to measure clinician competence and fidelity to principles and spirit of MI (Imel

et al., 2014; Jensen et al., 2011; Moyers et al., 2005; Tollison et al., 2008; Turrisi et al., 2009; Westra et al., 2016; Westra et al., 2020). This instrument possesses sound reliability and sensitivity (Madson & Campbell, 2006; Moyers et al., 2005; Pierson et al., 2007). Forsberg et al. (2008) found that the MITI demonstrated sound discriminant and construct validity. Critically, the MITI has also been demonstrated to predict treatment outcome across many behavioural domains (Moyers et al., 2009). For example, the MITI has been found to predict reductions in binge drinking, decreases in physical aggression perpetration, cannabis cessation, and changes in client worry outcomes up to one-year posttreatment (Aviram et al., 2016; Feldstein & Forcehimes, 2007; McCambridge et al., 2011; Woodin et al., 2012).

Procedure

Disagreement Sample Selection

By way of reminder, specific disagreement episodes were sampled and utilized in this study because the MITI scores are predictive of outcome in this context, as established by previous research (Aviram et al., 2016). The sampling procedure for the current study utilized Hara's (2020) selection of disagreement episodes from the Westra et al. (2016) RCT. In that study, each CBT and MI-CBT therapist was represented, among 60 client-therapist dyads, 30 from each of the two treatment groups. Hara screened both CBT and MI-CBT sessions for the presence of resistant disagreement using a combination of therapist ratings of client defensiveness and observer coding measures of resistance. Disagreement episodes were defined as a period in the therapy session which begins with the client clearly disagreeing with the therapist's direction or suggestions and which concludes once the client and therapist have changed to a different topic. The number of disagreement episodes per session varied from one to five episodes. To ensure that there were an equal number of disagreement episodes sampled in

each treatment condition, only one disagreement episode was randomly selected per therapist-client session in the sample. Furthermore, to limit variability between the two treatment conditions, the researchers matched the two treatment groups for disagreement episode length. Thus, an equal number of disagreement episodes (25%) fit into each of the following four categories: 1 to 3 minutes, 4 to 8 minutes, 9 to 13 minutes, and 15 minutes and longer. The final sample for Hara's study, as well as for the present study, was comprised of 30 disagreement episodes from the CBT-alone group and 30 from the MI-CBT group (N = 60 disagreement episodes). Only sessions 2 through 6 (the early working phase) were examined to standardize the selected sessions across all participants to the same portion of therapy.

Therapist Behaviour (TDSC) Coding Training and Reliability

Transcripts of the disagreement episodes in the present study were parsed by two graduate student coders with at least 8 months of parsing and coding experience. Both therapist and client utterances were parsed into thought units, which were defined as any utterance that expressed a complete thought. Parsed disagreement episodes were placed into a coding template used by two recent studies (Di Bartolomeo et al., 2020; Shukla et al., 2020), which separated individual thought units into bins. Once parsed, a master's level psychology student and a bachelor's level psychology student coded each therapist utterance using the Therapist Demand and Support Code Manual (Westra et al., 2020). Both individuals received at least 8 months of training from a PhD level psychologist, who was also one of the co-creators of the TDSC. The coding team met on a regular basis to discuss difficult codes and discrepancies until an acceptable degree of interrater reliability was obtained. Sessions were deidentified of treatment group information and assigned to coders at random to ensure blindness to treatment group. The coders used parsed transcripts and the corresponding video recording to code each session within

the sample. Approximately 50% of the disagreement episodes were coded together and 50% were coded independently. To assess inter-rater reliability, 20% of the independently coded disagreement episodes were double coded by the other individual. The average unweighted kappa coefficients of the TDSC codes are as follows: Demand = .91; Support = .88. These values reflect excellent agreement (Fleiss, 1981).

Each of the therapist codes (i.e., Demand/DM and Support/SP) were totalled and then divided by the total number of thought units for the therapist to control for verbosity (e.g., total number of DM utterances divided by the total number of therapist codes within the disagreement episode).

Therapist Responsivity

As the first step in identifying responsivity, MISC coding was conducted. The same two individuals who assessed therapist behaviours also separately coded each client utterance in the parsed transcripts using the MISC. Both individuals received at least 8 months of training from a PhD level psychologist. The target of client motivational language was identified by the coding team before each session was coded. The coding team met regularly to discuss difficult codes and discrepancies until an adequate level of interrater reliability was achieved. Again, sessions were deidentified and randomly assigned to coders to ensure blindness to treatment group. The coding team used parsed transcripts and the corresponding video recording to code each session. Approximately 50% of the disagreement episodes were coded together and 50% were coded independently. To assess inter-rater reliability, 20% of the independently coded disagreement episodes were double coded by the other individual. The average unweighted kappa coefficient for the variable of interest, client CCT, was .76, which reflects good agreement (Fleiss, 1981).

To assess therapist responsivity to resistance, the researchers examined therapists' utterances immediately following each client CCT statement within disagreement episodes. Responsivity was defined as what was 'most alive' in the immediate therapist volley following client CCT. In cases where there were multiple therapist thought units following client CCT (e.g., one Support utterance and three Demand utterances), the most prominent code was identified as the therapist response (e.g., Demand classified as the 'most alive' code). Each utterance of the code that was deemed 'most alive' was counted until the client clearly changed direction and was no longer opposing. A PhD-level psychologist and one graduate student completed this coding and discussed difficult codes or discrepancies (see Appendix A for examples of responsivity errors).

The frequency of possible response sequences was tabulated: client CCT followed by therapist Support (CCT-Support), client CCT followed by therapist Demand (CCT-Demand), or client CCT followed by therapist Other (CCT-X). In line with the therapist responsivity research discussed above, CCT-Demand was considered a therapist responsivity error and CCT-Support was classified as appropriate therapist responsivity. The frequency of appropriate therapist responsivity and therapist responsivity errors was divided by the total number of client-therapist transactions to control for verbosity. A transaction was considered a client volley or talk-turn followed by a therapist volley/talk turn.

MITI Global Scores

The MITI scores for the sample in the present study (i.e., the 60 disagreement episodes) were derived from Aviram et al. (2016) and Hara's (2020) research of the same dataset. Given that the MI Spirit and Empathy global scores in the Hara study were highly correlated, the present study averaged these two scores in one MITI global score.

To summarize, resistant disagreement episodes were derived from the Westra et al. (2016) parent RCT comparing the efficacy of CBT versus MI integrated with CBT in the treatment of severe GAD. The MITI scores for these disagreement episodes were also available from previous studies (Aviram et al., 2016; Hara, 2020). In the current study, we used the new TDSC to quantify Demand and Support and the MISC to code CCT for the calculation of responsivity. Finally, the outcome data (i.e., PSWQ scores one-year posttreatment) from the parent RCT was used to test the predictive validity of the TDSC.

Results

Sample Characteristics

In the present study, there were 21 therapists (CBT-alone n = 13; MI-CBT n = 8). All therapists in the study were female. The age of therapists participating in the study ranged from 26 to 34 (CBT-alone: M = 29.00, SD = 5.06; MI-CBT: M = 28.50, SD = 2.07). To control for allegiance effects, therapists self-selected into treatment group and only delivered treatment in one treatment arm. Thus, most therapists in the CBT-alone group identified their primary orientation as Cognitive Behavioural, while the majority of the MI-CBT group identified their orientation as Client-Centred and Integrative.

Client characteristics (N = 60) are presented in Table 1. Across both groups, the majority of clients were Caucasian and well-educated. Client age ranged from 18 to 63-years-old. Eighty percent of the clients in this sample had at least one comorbid diagnosis beyond GAD, typically another anxiety disorder or depressive disorder. Clients did not differ significantly on any demographic variables between treatment conditions, nor were there any significant group differences in anxiety, depression, or concurrent antidepressant medication use at baseline.

Intercorrelations of Measures

Correlations between all of the measures used in the present study are presented in Table 2. Notably, Support was significantly negatively correlated with Demand. The strength of this correlation provides support for including both of these aggregate codes in the same model (later) to predict outcome. Conversely, the low concordance of appropriate responsivity (i.e., CCT-Support) and responsivity errors (i.e., CCT-Demand) suggests that these two variables are independent constructs. Thus, the responsivity variables were separated into their own models to predict outcome.

Analytical Approach

Multilevel Modeling (MLM) was conducted using the R Statistical Environment. MLM was selected as the appropriate parametrical procedure for this analysis because of the hierarchical nature of the data. More specifically, clients in the parent RCT were nested within therapists and therapists were nested within treatment group. For Hypothesis 2, MLM was used to examine any significant differences of the TDSC variables between the two treatment groups, with random intercept models accounting for nested data. Specifically, treatment group was regressed onto each TDSC measure (Demand, Support, responsivity errors, and appropriate responsivity). MLM was also utilized to determine the relation between TDSC variables and outcomes for Hypothesis 3. For each of the models in Hypothesis 3, the first step involved regressing baseline PSWQ onto outcome (i.e., PSWQ one-year posttreatment) to control for baseline worry. Next, TDSC variables were included in to examine how they added to the predictive capacity of their respective model, over and above baseline worry scores. The change in R^2 between these two steps was calculated for each model and tested for significance. Finally, the MITI global scores were added to the baseline PSWQ model to examine how they added to

the predictive capacity of the model, over and above baseline worry scores. The change in R^2 was calculated and tested for significance. As noted earlier, the MITI global scores during disagreement episodes have been shown to predict outcome (Aviram et al., 2016). Thus, this MITI model functioned as a standard for comparison for the predictive capacity of the other models in Hypothesis 3. Regression diagnostics were conducted for all of the random-intercept models used for both Hypothesis 2 and 3. There was no evidence to suggest significant deviations from model assumptions.

Hypothesis 1: Lower Demand and higher Support will be associated with higher MITI scores. Fewer responsivity errors and greater appropriate responsivity should also be associated with higher MITI scores.

The correlational analysis yielded results that supported the hypothesis. All four TDSC indices were significantly and substantially correlated with the MITI global score and in the expected directions. The Demand and MITI global scores were found to be moderately negatively correlated, $r(58) = -.50$, $p < .001$ (for proposed empirical classifications of interpreting correlational strength, see Evans, 1996). The Support and MITI global scores were found to be strongly positively correlated, $r(58) = .61$, $p < .001$. For responsivity errors and MITI global scores, there was a moderate negative correlation, $r(58) = -.53$, $p < .001$. Finally, appropriate responsivity and MITI global scores were found to be moderately positively correlated, $r(58) = .58$, $p < .001$. In other words, higher MITI scores (reflecting higher empathy and MI spirit) were significantly and at least moderately associated with lower Demand, greater Support, fewer responsivity errors, and higher levels of appropriate responsivity.

Hypothesis 2: Both TDSC aggregate indices and the responsivity indices will be able to differentiate the CBT-alone group from the MI-CBT group. Thus, the degree of Demand,

Support, responsivity errors, and appropriate responsivity will be significantly different in one group compared to the other.

The results of the models are presented in Table 3. Due to the small sample size, the Kenward-Roger approximation was used for all models in Hypothesis 2 to provide a more robust significance test. All four variables were found to be significantly different across the two treatment groups in the anticipated directions. Compared to the MI-CBT therapists, CBT-alone therapists exhibited a significantly higher proportion of both Demand and responsivity errors. Conversely, MI-CBT therapists utilized a significantly higher proportion of both Support and appropriate responsivity than their CBT-alone counterparts (see Figures 1 and 2).

Hypothesis 3: Demand and responsivity errors would predict outcomes at one-year posttreatment, over and above baseline PSWQ.

The results of the models are presented in Table 4. Though these analyses were run across both treatment groups (not accounting for differences between the treatment groups), there were no significant interaction effects between treatment group and baseline PSWQ, TDSC indices, or MITI global scores (all $p > .05$). Thus, the effects of these variables were similar in both groups. The intraclass correlation (ICC) for therapist effects on PSWQ score was less than .01, indicating that therapist effects accounted for less than 1% of the variance in PSWQ scores at one-year posttreatment. This is comparable to the finding in the larger RCT that there were no significant therapist effects on the outcome variables (i.e., the ICC was 0.0016; Westra et al., 2016).

Baseline PSWQ did not significantly predict one-year posttreatment worry scores. When the aggregate indices (i.e., Demand and Support variables) were each added to the baseline PSWQ model, there was not a significant effect on one-year posttreatment PSWQ for either

index. Even when combined into the same model, Demand and Support did not predict outcome. Further, when appropriate responsivity (i.e., CCT-Support) was added to the baseline PSWQ model, there was not a significant effect on one-year posttreatment PSWQ. The only models that significantly predicted outcome were the responsivity error (CCT-Demand) model and the MITI global score model. The CCT-Demand model accounted for 20.1% of the outcome variance. The change in R^2 revealed that CCT-Demand explained 17.8% more variance than baseline worry scores alone. For every 1% increase in CCT-Demand, worry increased at one-year follow-up by 0.47 points. The MITI model accounted for 17.5% of the one-year posttreatment PSWQ variance. The change in R^2 demonstrated that the MITI global scores explained 15.2% more outcome variance than baseline PSWQ alone. For every one-point increase in MITI scores, worry at one-year follow-up decreased by 5.42 points.

Discussion

The present study assessed a novel coding system, the TDSC, in the context of disagreement episodes within a parent trial RCT of CBT with or without MI to treat severe GAD. The context of disagreement episodes was selected in order to gauge the ability of the TDSC relative to the MITI in predicting outcomes. The results provide preliminary support for the validity of the TDSC. Both the aggregate indices and the responsivity indices were found to be significantly correlated with the current gold standard measure for assessing therapist behaviour in the context of resistance, the MITI. More specifically, Demand and responsivity errors were both found to have a moderate negative correlation with the MITI during disagreement episodes. Appropriate responsivity and the MITI were moderately positively correlated, while Support and the MITI were found to have a strong positive correlation during resistance episodes. Considering that MITI global scores assess therapist empathy and fidelity to

the client-centred relational stance of MI 'spirit' (e.g., supporting client autonomy, collaboration with the client), these correlational findings were expected, particularly the strong positive correlation between the MITI and the proportion of supportive therapist utterances.

As anticipated, all four TDSC indices were able to differentiate the more directive approach of CBT-alone therapists from the more supportive approach of the MI-CBT therapists. Tests of the TDSC aggregate indices and the responsivity indices yielded significant results. In particular, the differences between the two groups on percentage of Support and appropriate responsivity were highly significant ($p < .001$), as was the difference in the proportion of Demand utterances ($p = .002$); all in the expected direction. Additionally, the CBT-alone group committed significantly more responsivity errors than the MI-CBT group ($p = .04$). These findings lend additional support to the validity of the TDSC. Furthermore, these findings are also consistent with the notion that CBT and MI-CBT look markedly different from the perspective of therapist behaviours. During disagreement, MI-CBT therapists devoted substantially more of their time to supportive behaviours than the CBT-alone therapists. Thus, this study contributes to the body of research highlighting the differences 'on the ground' in therapists of these two approaches, and how distinctly they respond to client resistance (Aspland et al., 2008; Castonguay et al., 1996; Hara, 2020; Westra & Norouzian, 2018; Westra et al., 2016).

One of the aims of the present study was to examine the predictive ability of the TDSC. Interestingly, of all the aggregate and responsivity indices, the only variable that significantly predicted worry outcomes at one-year posttreatment was responsivity errors during disagreement episodes. Further, the proportion of therapist Demand in response to client statements against change (i.e., CCT-DM) predicted outcome at levels at or above the predictive capacity of the MITI, at 20.1% and 17.5%, respectively. Contrary to the hypothesis, Demand, on its own, was

not a significant predictor of outcome. In other words, the sheer volume of therapists' directive statements during these disagreement episodes did not meaningfully predict outcome. This was surprising in light of research that suggests that therapist directiveness in the presence of client ambivalence predictably elicits client resistance (Aspland et al, 2008; Miller & Rollnick, 2002; Westra & Norouzian, 2018). Client resistance, in turn, is correlated with poorer treatment outcomes (Aviram & Westra, 2011; Beutler et al., 2001; Jungbluth & Shirk, 2009; Miller & Rollnick, 1991; Piper et al., 1999). Additionally, this finding was unexpected because of previous research that posits that only therapist responses within the specific context of disagreement, as opposed to a randomly selected time, predicted outcome (Aviram et al., 2016). Thus, it would seem logical that increased therapist Demand during highly important moments of disagreement would significantly predict outcome, but this was not the case.

One potential explanation for why responsivity errors significantly predicted outcome while aggregate Demand did not may lie in the fundamental differences between the MITI and the TDSC. In their examination of the disagreement episodes from the CBT group of the parent RCT, Aviram et al. (2016) utilized the MITI to assess therapist level of supportive behaviour. One of the main conclusions of the study was that higher levels of MI-consistent behaviours in the context of client disagreement was associated with significantly less subsequent resistance and posttreatment worry, while general variations in MI-consistent behaviour over the course of the session were not. Drawing upon these findings, the authors suggest that client disagreement with the therapist could represent a key moment in the therapy process, and the therapist's response at this critical juncture is particularly important: "doing the 'right thing at the right time' seems to be much more impactful than doing the same thing at any time (or at a randomly selected time)" (Aviram et al., 2016, p. 790). While the authors were able to identify

disagreement episodes as the "right time" to do "the right thing," their use of the MITI did not allow them to pinpoint the most critical moments within the disagreement as it pertains to outcome. As highlighted previously, the global ratings of the MITI only broadly capture the therapeutic interaction but lack the precision to assess key moment-to-moment, micro-level behavioural data. Further, the behavioural counts of the MITI (open question, closed question, simple reflection, etc.) do not capture key therapist behaviours related to resistance management. Thus, the global scores of the MITI are capable of quantifying and capturing process more broadly during a therapy session, but it cannot specifically determine what is most important and impactful to outcome on a micro level within the session. In other words, the MITI is not precise enough to capture the importance of the "right thing" or the "right time" during disagreement, or conversely, the significance of the "wrong thing" or the "wrong time" within these episodes.

The TDSC addresses the MITI's lack of precision by capturing and coding each therapist utterance for relevant therapist behaviours related to resistance. When used alongside the MISC, this system also captures each interaction between the client and therapist. In essence, the MITI's global score serves as a birds-eye perspective of the therapist's overall adherence to MI principles, while the TDSC functions as a microscope that captures individual, moment-to-moment therapist utterances and client-therapist interactions. From the magnified perspective of the TDSC, the precise context of therapist Demand appears to be a critical factor for predicting outcome. The results of this study suggest that it is not the *volume*, but the *timing* of therapist Demand (i.e., immediately following client resistance) that may be most detrimental to outcome. In other words, therapist Demand, devoid of context, might be considered an innocuous therapist behaviour. However, in the immediate context of client opposition, Demand appears to be a more damaging response ("the wrong thing at the wrong time"). In sum, the type of precision

offered by coding systems like the TDSC and the MISC seems key to improving outcomes as errors of timing appear to be very consequential.

In addition to the timing of Demand, the sequence of these exchanges between the therapist and the client might also help to explain why responsivity errors during disagreement episodes significantly predict outcome. When therapists responded to client CCT with Demand, the client would often be silent or offer an argument against change. The therapist did not reply with a single demanding utterance, but instead typically offered a stream of multiple arguments for change (see Appendix A for session transcript examples of responsivity errors). This finding is consistent with Aspland et al.'s (2008) research that demonstrated that alliance ruptures typically occurred when therapists *perseverated* in directive behaviour (e.g., becoming increasingly persuasive and controlling) despite the client's objections and concerns. Thus, one possible explanation for the deleterious impact of responsivity errors on outcome might be that clients experience this perseveration of Demand as a form of nagging. Nagging is described as irritant through persistent scolding or urging, constant harassing, and repetitious persuasion (Merriam-Webster's Collegiate Dictionary, 2016; Oxford Learner's Dictionary, 2021). Research has found that this toxic form of interpersonal communication is associated with a host of negative relational and physical health outcomes (Lund et al., 2014; Markman et al., 2010). In the context of this study, the persistent, irritating nature of therapist Demand in response to client objections may have contributed to a deterioration of the therapeutic relationship, which accounts for approximately 15% of variance in psychotherapy outcome (Norcross & Lambert, 2019). As the examples in Appendix A illustrate, the therapists continue with Demand despite client protestations or silence. That is, the client's objection (persistent CCT or continued withdrawal) appears to fuel the therapists' persistence. Thus, a vicious cycle may be created out

of this lack of attunement. Finally, in line with Mamedova et al.'s (2019) research, client outcome expectation may have been negatively impacted by therapist responsivity errors. When their objections were met with a stream of counterarguments, clients in the present study may have lost confidence in the therapist's ability to hear and understand them. This potential consequence of demoralization might help to partially explain poorer subsequent treatment outcomes.

Another interesting finding to consider is the relationship between appropriate responsivity and responsivity errors. The preliminary analysis of all study variables demonstrated that there was only a weak correlation between appropriate responsivity and responsivity errors. Providing further support for their relative independence, these two indices varied considerably in the prediction of outcome. In the current study, responsivity errors predicted one-year posttreatment worry scores as accurately or even more accurately than the MITI global scores, while the proportion of appropriate responsivity did not significantly relate to outcome. Consequently, the results of the present study suggest that these two variables are not simply the inverse of the other, but may be independent, albeit somewhat related, skills. Stated differently, appropriate responsivity and responsivity errors may not simply be opposite sides of the same coin. Therapists who are more appropriately responsive likely make fewer errors in responsivity to resistance, but greater supportive responsivity does not guarantee committing fewer errors.

Though further testing is needed to support these preliminary results, the differential outcome prediction of responsivity errors and appropriate responsivity could have important research implications. More specifically, the findings of this study strongly support the notion that responding to client CCT with Demand exerts a much greater influence on outcome than responding with Support. In other words, these results are suggestive that avoiding errors ("not

doing the wrong thing") may be more important during moments of disagreement than "doing the right thing" with regard to its effect on outcome. If this finding is replicated by future studies, psychotherapy process research should devote significant attention to understanding and addressing responsivity errors, both specifically and differentially.

The findings of the current study also provide strong support for a process-oriented clinical training model. As previously discussed, the aggregate indices did not significantly predict outcome. As such, simply learning the TDSC and altering the overall frequency Demand or Support is unlikely to improve client outcome. Instead, the results of this study suggest that therapists might benefit from learning to identify consequential therapy process sequences (i.e., client CCT followed by therapist Demand) and apply the TDSC *at precise, key moments* (i.e., in response to client disagreement). Thus, clinicians first need to be trained to identify these critical process markers. Specifically, clinicians could benefit from explicit training that involves detecting client opposition or withdrawal through DP. Once they gain sufficient acuity to recognize key markers from clients (i.e., CCT), therapists might benefit from training that emphasizes attunement to their own key internal markers (e.g., nagging). In other words, clinicians learn to go inwards and identify internal signals that they are being 'pulled' into a vicious cycle of Demand. This could involve recognizing thoughts and feelings, like "I am trying to persuade right now, "I feel like I am working too hard," or "I feel like a nagging parent." Training clinicians to develop sensitivity to these internal process markers may help clinicians to escape these vicious cycles of Demand more quickly. Finally, because the results of this study suggest that responsivity errors during disagreement can have negative consequences on outcomes, even a year after treatment concludes, it would seem logical that training should pay special attention to helping clinicians avoid "doing the wrong thing at the wrong time." In light

of research that demonstrates that the presence of resistance in therapy can significantly derail therapists (Aspland et al., 2008; Castonguay et al., 1996; Zickgraff et al., 2015), this is likely to be a challenging, but important training goal. DP focused on responsivity might be a promising option to reach this goal.

Strengths, Limitations, & Future Directions

The present study has several strengths. First, this is the first study to test the validity of the novel TDSC. While the TDSC received some preliminary validation in Shukla et al.'s (2020) research, this is the first study to assess the predictive capacity of the TDSC in the context of a dataset with outcome measures included. Second, the study design of the parent RCT provided an ideal context to assess the validity of the TDSC. More specifically, Westra et al., (2016) utilized two therapeutic modalities, CBT and MI-CBT, with divergent views and prescribed responses to client resistance. Thus, by coding and successfully differentiating two groups of therapists using distinct styles of treatment, the present study provides preliminary support for the construct validity of the TDSC. Third, by analyzing correlations with the existing gold-standard measure for gauging therapist behaviour in the context of resistance (i.e., MITI), the current study was also able to demonstrate that the TDSC possesses good criterion validity. Lastly, a strength of the current study was its analytical approach which controlled for the nesting of clients within certain therapists using MLM.

There were also noteworthy limitations in the current study. The sample size of both therapists and clients in this study was relatively small and only included clients with severe GAD. Furthermore, the sample of therapists and clients lacked diversity. All 21 therapists in the current study were female, as were all but 7 of the clients in the sample. Both the therapists and clients in the study were predominantly Caucasian. It would be beneficial for future research to

investigate whether the predictive capacity of the responsivity errors index extends to a more diverse range of clinical and demographic populations. Another limitation of the present study was that only one disagreement episode per client-therapist dyad was examined. Process coding is a labour-intensive, time-consuming endeavour. As a result, the sample of disagreement episodes in this study was relatively small. If feasible, future studies should include multiple disagreement episodes from each dyad to assess how consistently each therapist responds to client resistance with either Demand or Support across sessions.

In light of these findings, there are several directions for future research. First, future studies should attempt to replicate these findings, ideally with a larger sample size and other populations in order to provide a more rigorous examination of the validity of the TDSC. Another potential direction for future research would be to examine disagreement episodes with the TDSC at other stages of therapy. It would be interesting to investigate whether responsivity errors are as impactful to client outcome during disagreement episodes at other points in time during therapy. Similarly, it would be worthwhile to examine whether other TDSC variables, such as appropriate responsivity, become more important to outcome at other stages of therapy. Finally, if the findings of this study can be replicated and the TDSC receives further empirical support, it would be fruitful for future research to examine the use of this measure in therapist training. While the TDSC is simpler than existing coding systems, like the MITI, it is still difficult and requires substantial effort to learn and master. One major direction for future research would be examining whether therapists trained in the TDSC, especially during disagreement, have improved clinical performance and patient outcomes. For example, a study could explore the impact of an error detection workshop, in which clinicians are trained to use

the TDSC and the MISC to identify responsivity errors, on subsequent therapist skill development and patient outcome.

Conclusion

The aim of the current study was to validate a novel coding system of therapist behaviour, the TDSC, in the context of client disagreement. All four indices of the TDSC (i.e., Demand, Support, responsivity errors, and appropriate responsivity) were found to be significantly correlated with the current gold standard measure of assessing therapist behaviour in the context of resistance, the MITI. Further, all of these indices were able to differentiate the directive approach of the CBT-alone treatment group from the supportive approach of the MI-CBT treatment group. Finally, only responsivity errors, which required the use of both the TDSC and the MISC, was able to significantly predict PSWQ scores at one-year posttreatment. Specifically, responsivity errors explained at least as much outcome variance than the gold standard MITI (20.1% and 17.5%, respectively). This study provides preliminary support for the validity of the TDSC. While further research is needed, the TDSC appears to complement the global, holistic perspective of the MITI with its precision to assess moment-to-moment, micro-level behavioural data. Finally, this study underscores the importance of therapist acuity and responsivity to key process markers, such as client resistance. As these findings demonstrate, it is not the therapist behaviour itself, but the *timing* and *context* of that behaviour that is most consequential to outcome. In sum, this study lends support to the case for training therapists in process acuity and responsivity to evaluate and maintain the health of the therapeutic interaction in real time (Binder & Strupp, 1997).

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Tables and Figures

Table 1. *Sample Characteristics*

	Participants (*N* = 60)	
Measure	**CBT-alone (*N* = 30)**	**MI-CBT (*N* = 30)**
Gender	28 Female 2 Male	25 Female 5 Male
Age (years)	*M* = 34.80, *SD* = 12.72 Range = 10 to 63	*M* = 32.93, *SD* = 11.46 Range = 18 to 58
Ethnicity	23 Caucasian 3 Asian (e.g., South Asian, East Asian, Southeast Asian) 2 Hispanic/Latin American 1 Biracial/Multiracial 1 Other	21 Caucasian 2 Asian (e.g., South Asian, East Asian, Southeast Asian) 1 Hispanic/Latin American 2 Afro-Caribbean, African American, African 1 Biracial/Multiracial 3 Other
Marital status	15 Single 2 Cohabitating 10 Married 1 Divorced/Separated 2 No Data	14 Single 6 Cohabitating 10 Married
Highest level of education	1 Some high school 1 Completed high school 7 Some post-secondary education 15 Completed post-secondary degree or diploma 6 Completed Masters Degree	2 Completed high school 7 Some post-secondary education 14 Completed post-secondary education 6 Completed Masters Degree 1 Completed PhD
Employment/Education status	11 Unemployed/Temporarily unable to go to work/school 15 Employed currently 4 In school currently	5 Unemployed/Temporarily unable to go to work/school 18 Employed currently 7 In school currently
Concurrent antidepressant medication use	6 Yes 24 No	11 Yes 19 No
PSWQ at baseline	*M* = 75.62	*M* = 74.07 *p* = .24
Baseline Depression	*M* = 9.25	*M* = 7.77

(DASS-D)		*p* = .24
Previous Psychotherapy Treatment	21 Yes 7 No 2 No data	19 Yes 7 No 4 No data

Table 2. *Interclass Correlations*

Variable	1	2	3	4	5	6	7
1. Demand%	--	-.701** $p < .000$	.641** $p < .000$	-.369** $p = .004$	-.498** $p < .000$	.114 $p = .386$	.145 $p = .296$
2. Support%		--	-.512** $p < .000$	.653** $p < .000$	.607** $p < .000$	-.235 $p = .071$	-.219 $p = .112$
3. CCT-DM%			--	-.315* $p = .014$	-.526** $p < .000$	.186 $p = .156$	.455** $p = .001$
4. CCT-SP%				--	.583** $p < .000$	-.381** $p = .003$	-.240 $p = .081$
5. MITI Global Scores					--	-.183 $p = .161$	-.473** $p < .000$
6. Baseline PSWQ						--	.222 $p = .107$
7. PSWQ 1-year Posttx							--

Note. *$p < .05$, two-tailed; **$p < .01$, two-tailed. MITI Global Scores = Average of MITI Spirit and Empathy global scores; PSWQ = *Penn State Worry Questionnaire*; Posttx = Posttreatment.

Table 3. *TDSC differences by treatment groups*

TDSC	CBT (n = 30)	MI-CBT (n=30)			
Variable	*M* (*SD*)	*M* (*SD*)	β	*t*	*p*
DM%	47.91 (14.81)	26.91 (23.72)	-20.96	-3.66	.002**
SP%	7.04 (3.52)	28.95 (18.49)	21.88	5.78	<.001***
CCT-DM%	22.35 (13.79)	12.51 (17.05)	-10.16	-2.21	.044*
CCT-SP%	4.39 (5.24)	17.38 (12.05)	12.57	4.50	<.001***

Note. CBT = Cognitive-Behavioural Therapy; MI-CBT = Motivational Interviewing integrated with Cognitive-Behavioural Therapy; DM = demand; SP = support; CCT-DM = client counter-change talk followed immediately by therapist demand (responsivity errors); CCT-SP = client counter-change talk followed immediately by therapist support (appropriate responsivity). Multilevel modelling controlling for therapist effects. *p < .05; **p < .01; ***p < .001.

Table 4. *Multilevel modelling analyses of TDSC measures on 1-year worry outcomes*

	β	*t*	*p*	R^2
PSWQ Baseline (*n* = 60)	.74	1.17	.25	.02
Aggregate Indices				
DM%	.116	1.12	.27	.04
				ΔR^2 =.02
SP%	-.20	-1.48	.15	.06
				ΔR^2 = .04
Responsivity Indices				
CCT-SP%	-.31	-1.44	.16	.06
				ΔR^2 = .03
CCT-DM%	.47	3.57	.001**	.20
				ΔR^2 = .18***
MITI	-5.42	-3.24	.003**	.17
				ΔR^2 = .15**

Note. PSWQ = Penn State Worry Questionnaire; CBT = Cognitive-Behavioural Therapy; MI-CBT = Motivational Interviewing integrated with Cognitive-Behavioural Therapy; DM = demand; SP = support; CCT-DM = client counter-change talk followed immediately by therapist demand (responsivity errors); CCT-SP = client counter-change talk followed immediately by therapist support (appropriate responsivity). *p < .05; **p < .01; ***p < .001.

Figure 1. *Mean differences of TDSC aggregate indices by treatment group (reported as a percentage of total therapist utterances).*

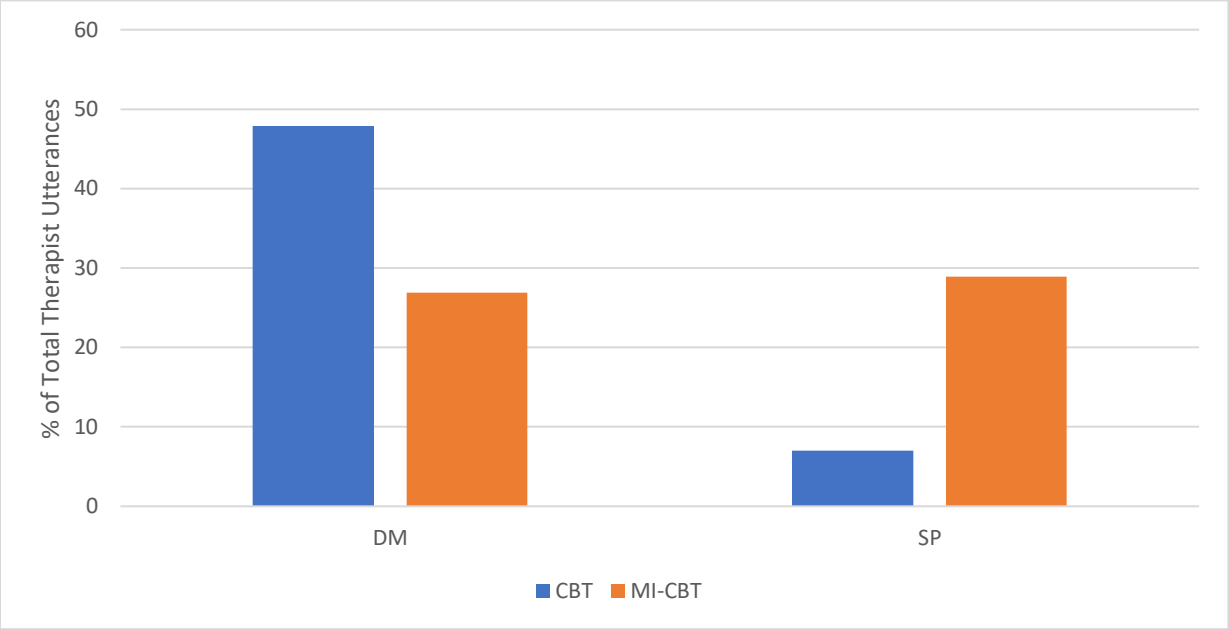
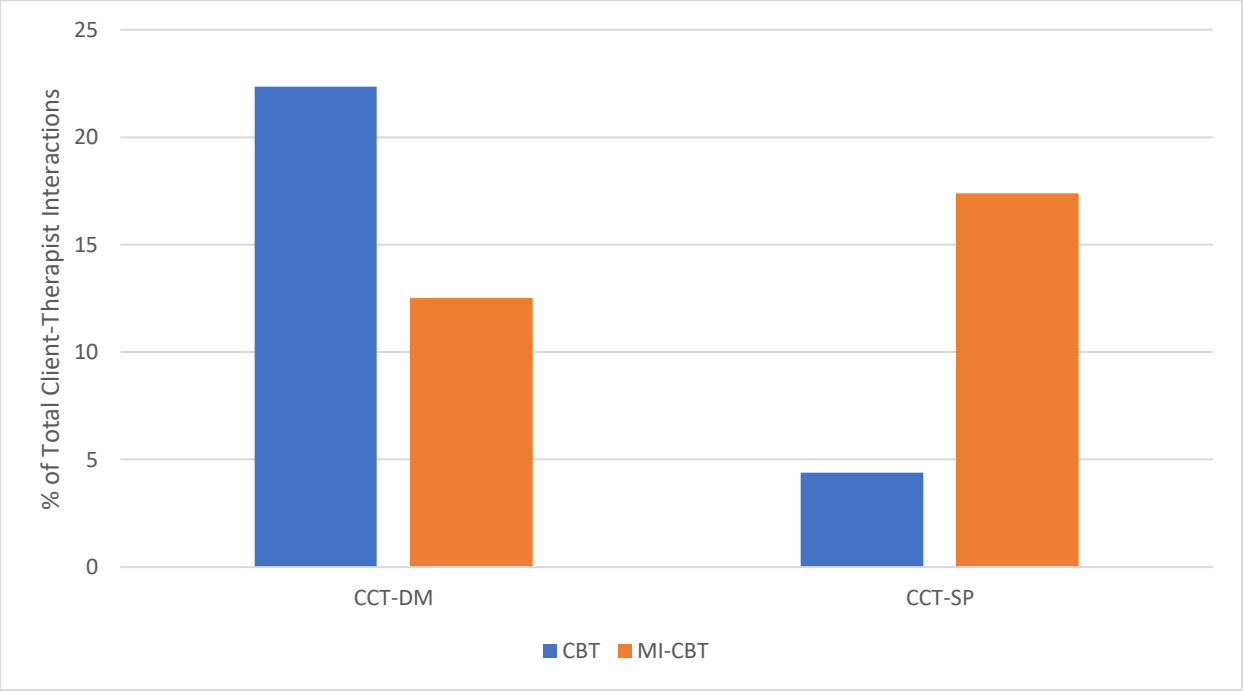


Figure 2. *Mean differences of TSDC responsivity indices by treatment group (reported as a percentage of total therapist-client transactions).*



Appendix A – Responsivity Error Examples

Example 1

C: I find it hard to take all of my supplements too because of a rush. (CCT)
I don't always take things like that in time. (CCT)
And that's like one minute. (CCT)
And so I'm having real time issues. (CCT)
Something is wrong with my perception of time or managing time. (CCT)

T: Right, well time is a really relative thing too (CCT-Demand)
I mean, sometimes something as fast as taking vitamins in the morning, which takes one minute, seems like it's going to take up a ton of time, but really, when you actually bring it down to basics, that takes one minute to do. (CCT-Demand)

C: Yeah

T: It usually takes about twenty to twenty-five minutes. (CCT - Demand)
So that seems like a really long time. (CCT-Demand)
How am I going to fit that in? (CCT-Demand)
But if you think about it over, you have how many minutes in a day? *laughs* (CCT-Demand)

C: Yeah.

T: Twenty…twenty-five minutes ends up not seeming as long. (CCT-Demand)

C: This has been an issue in my life… (CCT)

Example 2

T: Um, if you get up in the middle of the night, so, if you're having trouble staying asleep, the same thing. (Demand)
If you don't find that you're able to fall asleep quickly again, get up and leave the bedroom…(Demand)

C: Mhm.

T: …and don't go back until you're ready to fall asleep again. (Demand)

C: But if I leave the bedroom, I'll become even more awake and my chances of sleeping are... (CCT)

T: Yeah. Do you have trouble getting back to sleep after you've done that?

C: It depends on how long I've been outside of bed, actually.

C: The longer I'm outside the bed, the longer it is to fall asleep again (CCT)

T: Mhm.

C: I just, uh…And the more lights I turn on, the, the more awake I become. (CCT)

T: Yeah, because it feels like it's already daylight.
So this is not, like, if you get up to go to the washroom, not that you should stay up and walk around. (CCT-Demand)
Try to go back to bed. (CCT-Demand)
But if you find that you start to ruminate, or you start to worry, or you start...don't do that in bed… (CCT-Demand)

C: Mhm.

T: …do that somewhere else. 'cause otherwise, you're making that association stronger (CCT-Demand)

C: Mhm.

T: Does that make sense? (CCT-Demand)

C: Mhm.

T: Um, getting up at the same time every morning, which, I said, you probably already do to some extent because of work. (CCT-Demand)
And, then, don't nap during the day. (CCT-Demand)
So, don't nap, if, if you have a night... Let's say you do try to do this (CCT-Demand) and you have a night when you didn't get as many hours of sleep. (CCT-Demand)
Don't nap when you get home from work. (CCT-Demand)
Go to bed at the same time that you would normally go to bed (CCT-Demand)

Example 3

C: But because I'm so sensitive to like yeah like criticism… (CCT)

T: Yeah.

C: …or rejection and all of that (CCT)
And I think…I think that I'm not strong enough to be an artist or something. (CCT)
Something, sometimes I think that.

T: Right.
Cause here there's a lot of evidence that you are a wonderful artist. (CCT-Demand)

T: I mean I've just seen it with my own eyes. (CCT-Demand)

C: Oh.

T: And you have had that validation from others (CCT-Demand)
But I think what's even more important is that…it's that feeling that it's okay if other people don't love my art. (CCT-Demand)
Or if I do something in my heart and people don't love it, that might be hurtful and that ah you're human right? (CCT-Demand)

C: Mhmm.

T: Everybody cares what other people think, right? (CCT-Demand)
Like we all do. (CCT-Demand)

C: Yeah.

T: But that doesn't mean anything about me as…as an artist. (CCT-Demand)
I'm still an artist, (CCT-Demand)
But art is subjective. (CCT-Demand)

C: Mhmm.

T: Right and…and that could just be that person's opinion. (CCT-Demand)
I know I'm still an artist (CCT-Demand)
And these are my visions. (CCT-Demand)
And this is what's unique and creative. (CCT-Demand)
And this is when I feel my best when I'm letting myself be who I am. (CCT-Demand)

C: Yeah.

T: Right and I think you're saying all these things. (CCT-Demand)
So I want to read these again. (CCT-Demand)
So I've learned from previous experiences that it's better to plan in advance and pretend or feel very excited to get everyone else involved excited about it, even myself. (CCT-Demand)

C: Yeah.

T: I've learned that if I visualize the piece a lot it helps me to get excited. (CCT-Demand)
When I've done my photo shoots as planned they usually turn out really awesome. *C laughs* (CCT-Demand)

C: Yeah.

T: This is great X(client name). (CCT-Demand)
In five years I would feel really proud looking back. (CCT-Demand)
I would focus on the age of my girls and mine. (CCT-Demand)
The way I was impacting their lives as a role model. (CCT-Demand)
I've already started the project and it's looking really good. (CCT-Demand)
I'm jumping to conclusions that I won't finish it and hate myself for it, but maybe I will, right? (CCT-Demand)
And I'm blaming myself for losing the photo contest and losing the Mexican audience but I had no control over that. (CCT-Demand)
Ami what would happen I mean so we're talking about this finishing a project okay. (CCT-Demand)
Umm and it's either you know I finish it or I don't finish it. (CCT-Demand)

C: It's if I finish it means that I have improved.

T: If…if I finish it, it means I'm an artist. (CCT-Demand)
If I don't finish it, it means I'm not an artist. (CCT-Demand)

C: Yeah.

T: But what are we missing in between? (CCT-Demand)
Like what…this is a little black and white right? (CCT-Demand)
Because we've already talked about finishing it is a very strict definition. (CCT-Demand)
It means being able to showcase it. To have a show. (CCT-Demand)