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Client Motivation and Engagement in Transdiagnostic Group Cognitive Behavioral Therapy for Anxiety Disorders: Predictors and Outcomes

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Abstract

Client motivation is regarded as a key factor in cognitive behavioral therapy (CBT) for anxiety disorders. To date, client motivation has only been measured during individual-CBT, with little known about the predictive capacity of motivation in group settings. The current study aimed to explore the role of client motivation in group-CBT. Measuring motivation during individual-CBT has proven somewhat difficult with many self-report measures providing weak and inconsistent results. For this reason observational measures of motivation, such as rating client change (CT) language during CBT, have been trialled with some success. The current study aimed to measure motivation using an observational coding system of CT and counter change talk (CCT) during two components of group CBT: cognitive restructuring and exposure sessions. The study explored the predictive capacity of CT and CCT in determining treatment outcomes, and baseline characteristics that predicted in session CT and CCT. Results indicated that CT and CCT predicted different treatment outcomes depending on the stage of therapy. CT and CCT predicted symptom severity at post-treatment and slope of improvement in cognitive restructuring sessions. During exposure sessions only CCT was predictive of poorer treatment outcomes but CT determined client attendance and treatment drop out. Furthermore, baseline characteristics including symptom severity, education, and age were predictive of CT and CCT throughout treatment. These findings are discussed and comparisons are drawn to the role of motivation in individual-CBT. Limitations and implications of this research are explored, specifically the utility of coding motivational language using observational methods in group settings.

Keywords Anxiety · Cognitive behavioural therapy · Group therapy · Motivation · Change talk

Cognitive behavioral therapy (CBT) is widely acknowledged as a first-line psychological treatment for anxiety disorders (Hofmann et al. 2012), with meta-analytic findings supporting its efficacy in both group and individual formats (Norton and Price 2007). Despite the evidence for the effectiveness of CBT, a substantial proportion of clients fail to respond to treatment (Otto et al. 2008), and treatment drop out is common (Swift and Greenberg 2012). For group-CBT formats particularly, this trend likely magnifies, as although the majority of literature contends that group and individual formats provide similar to equivocal results, (Sharp et al. 2004; Jónsson et al. 2010; Anderson and Rees 2007), there is some evidence to suggest that drop-out rates are higher in group formats (Jaurrieta et al. 2008; Dugas et al. 2003) and that treatment response is slower (Jónsson et al. 2010).

To date, research has focussed on examining factors contributing to non-response rates in individual-CBT, and less attention has been paid to group-CBT (Oei and Browne 2006). This is problematic, as group formats are often found in clinical settings and pose several advantages, especially in regards to the dissemination of evidence-based treatments (Tucker and Oei 2007). From a practical standpoint, group formats may allow for a greater number of patients to be seen at once, reduce waitlists, and are more cost effective than individual formats (Norton 2012a). They furthermore provide other advantages, such as normalisation of symptoms, encouragement and behavioral modelling from group members, and social learning (Bieling et al. 2009; Satterfield 1994).

Interestingly, the research examining non-response rates in group-CBT has found similar patterns to individual-CBT.

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For example, several studies have found that comorbid depression and symptom severity predict treatment response and attrition in group-CBT (Arch and Ayers 2013; McEvoy et al. 2014; Issakidis and Andrews 2004). This phenomenon is also found in individual-CBT (Taylor et al. 2012). Furthermore, Norton and Kazantzis (2016) found that therapeutic alliance consistently predicted next session symptom severity ratings, a key predictor of outcomes in individual-CBT (Weck et al. 2015). Homework compliance has also been found to predict post-treatment outcomes in both group (Westra et al. 2007) and individual CBT (Simpson et al. 2011). This suggests that other factors known to influence outcomes in individual-CBT may also predict outcomes in group-CBT.

The Role of Motivation in CBT

Among the many factors known to influence individual-CBT, initial client motivation is widely considered fundamental to subsequent treatment outcomes (Vogel et al. 2006; Huppert et al. 2006; Keeley et al. 2008). In the realm of anxiety disorders, research indicates that motivation plays a role in symptom reduction (Lombardi et al. 2014; Keijsers et al. 2001; Dugas et al. 2003) and further improves other therapeutic processes such as therapeutic alliance (Hunter et al. 2014) and treatment adherence (Simpson and Zuckoff 2011). Lack of motivation has also been identified as the primary reason clients prematurely discontinue treatment (Ryan et al. 1995).

Although low treatment motivation may appear illogical, particularly for anxiety disorders characterised by significant levels of psychological distress, research suggests that up to 80% of individuals entering treatment are not ready to engage in treatment goals (Prochaska et al. 2013). Despite the many impairments resulting from anxiety disorders, ambivalence about change is common (Westra 2012; Barlow et al. 2010). Furthermore, CBT for anxiety disorders requires clients to directly confront strongly-held fears, which can be a demanding and anxiety provoking process for many clients (Westra 2012). For example, in a qualitative investigation of treatment concerns among 95 individuals with a primary anxiety disorder awaiting CBT, 94% of participants communicated one or more treatment related fears. Expressed fears included concerns that participating in treatment activities could increase anxiety symptoms, doubts about ability to change, and fears of being negatively judged by the therapist or others (Purdon et al. 2004). Ambivalence about change, apprehensions about therapy components, and a fear of judgements and failure also likely contribute to trepidations about group-CBT. Though less is known about the role of motivation in group setting, several guidelines stress the importance of assessing motivation prior to the

commencement of group-CBT for anxiety (e.g., Erickson et al. 2009) and several studies have included motivational enhancement strategies as preludes to group CBT (Marker and Norton 2018). The purpose of the current study is therefore to examine the role of motivation in group-CBT and its impact on therapeutic outcomes.

Definitions of Motivation and the Problem of Measurement

Current conceptualisations of motivation reference the internal *drive* that precedes behavioral change, referring to the initiation as well as ongoing engagement in treatment (Vallerand and Thill 1993). Earlier definitions conceptualized motivation as a client trait, stable over time, which allowed blame for disengagement to be directed towards the client (Drieschner et al. 2004). Miller (1985) review shaped our current understanding of motivation as a fluctuating construct, susceptible to change over time, and influenced by therapist factors and motivational enhancement interventions. Though motivation for treatment is considered essential to CBT, current methods of measuring motivation have shown inadequate validity, weak or non-significant predictive capacity (Lombardi et al. 2014), and often do not adequately reflect present conceptualizations of motivation. What is cited as motivation in research is often a measurement of other relevant concepts such as homework compliance, treatment adherence and dropout rate (Drieschner et al. 2004).

Direct measures of motivation are largely based on self-report questionnaires. Higher self-reported levels of motivation to change have been shown to variably predict aspects of treatment engagement in CBT for anxiety. For example, among individuals with obsessive–compulsive disorder (OCD), higher self-reported change-readiness was found to be significantly associated with greater CBT treatment adherence (Maher et al. 2012). For clients participating in CBT for generalised anxiety disorder, higher baseline self-reported motivation to reduce anxiety symptoms predicted higher homework compliance ratings, although the authors reported observed in-session client resistance was a comparatively stronger predictor of homework compliance than self-report measures (Westra 2011). Additionally, low self-reported motivation significantly predicted lower help-seeking to manage anxiety symptoms, and treatment dropouts among clients participating in a mixed-anxiety group CBT program (Dozois et al. 2004). However, in contrast to these findings, other research has reported weak or non-significant associations between baseline motivation and subsequent treatment engagement variables (e.g. DiClemente et al. 2004; Hallgren and Moyers 2011). Thus, despite the theoretical relationship between behavioral intentions and

subsequent action, the inconsistent findings reported in the research literature suggest the predictive utility of self-report measures of motivation is equivocal. One possible explanation for the lack of consistency between clients' reported level of treatment motivation and subsequent treatment engagement is that self-report responses are susceptible to social desirability bias, leading to ceiling effects (Westra 2011). Specifically, clients may be unwilling to disclose their reluctance to engage in CBT treatment. Another possible reason for this discrepancy is that clients with high initial motivation may become less willing to engage when directly confronted with challenging CBT tasks, such as exposures to feared stimuli.

Client Change (CT)-Talk and Counter-Change Talk

The limitations of self-report motivation measures reviewed above signify the need to consider an alternative approach to measure client motivation in CBT. Evidence from recent process-outcome research suggests CT language uttered during the course of therapy holds promise as a reliable measure of treatment motivation and engagement, and is also predictive of treatment outcomes (Sijercic et al. 2016; Lombardi et al. 2014). Change language refers to client statements reflecting support or opposition to change. CT refers to statements supporting change or indicating movement towards treatment goals. Conversely, client utterances communicating ambivalence and resistance to change, or movement away from treatment goals, are regarded as counter-change talk (CTT; Glynn and Moyers 2012).

One frequently utilised observational measure of CT language is the Client Language Easy Rating system (CLEAR [formerly MISC 1.1]; Glynn and Moyers 2012). The CLEAR has been used in substance abuse and anxiety research to quantify and classify CT and counter change talk (CCT) in relation to therapy-specific target behaviors. The CLEAR is based on the Motivational Interviewing Skill Code (MISC 1.0; Miller 2000); an observational coding system designed to measure both client and therapist behavior. The MISC 1.0 codes both CT related language and therapist adherence to MI strategies. The CLEAR differs from the MISC by focussing only on CT language. It also provides several sub-categories of client statements reflective of motivation and engagement including reasons, commitment and desire to change (or not), and taking steps towards or away from changing (Glynn and Moyers 2012). For example, in the context of CBT for anxiety, client statements such as "I want to stop feeling so tense all the time," and "I'm avoiding things that are important to me," would be considered CT. In contrast, statements such as "worrying helps me stay on top of things," and "doing the homework is a waste of time," would be deemed CCT.

The CLEAR was originally designed as a means of assessing client motivation and engagement in the context of receiving motivational enhancement strategies for substance abuse treatment (e.g. Amrhein et al. 2003). However, several studies have examined in-session CT language in treatment contexts where CT/CCT regularly occurs, although the therapist does not deliberately elicit it, such as in CBT. Moyers et al. (2007) investigated relationships between in-session CT language and subsequent drinking outcomes for three distinct treatment modalities—motivational enhancement therapy, twelve-step facilitation, and CBT. For all three treatment approaches, early in-session CT significantly predicted lower alcohol consumption, whilst higher CCT was predictive of poorer drinking outcomes. These findings provide support for the significant impact of in-session CT language on outcomes across diverse therapeutic approaches, including treatments not exclusively focused on increasing client motivation to change. In subsequent research investigating the influence of CT language observed in early CBT for anxiety, higher CCT frequency in sessions 1 and 2 was significantly associated with greater post-treatment worry, and also differentiated treatment non-responders from participants who met criteria for treatment response (Lombardi et al. 2014).

CT language has also been significantly associated with key components of treatment engagement in CBT for anxiety. For example, Hunter et al. (2014) reported significantly higher frequency of CCT in sessions 1 and 2 among clients that later experienced a rupture in the therapeutic alliance compared to those that did not experience alliance ruptures. Additionally, higher levels of client resistance language observed in an early session of CBT treatment for GAD was associated with significantly lower therapist rated homework compliance and lower client rated working alliance (Hara et al. 2015). Consistent with findings by Hara et al. (2015), a recent study assessing the impact of CCT within CBT for GAD reported higher levels of resistant CCT was significantly predictive of lower therapist-rated and client-rated homework compliance (Sijercic et al. 2016). It is worth noting that these studies (e.g. Hara et al. 2015; Hunter et al. 2014; Lombardi et al. 2014; Sijercic et al. 2016) utilized the same data set (Westra et al. 2009) and only coded sessions 1 and 2 of CBT for GAD. The only other known study to examine change language in the context of anxiety treatment found no relationship between CT/CCT and therapy outcomes (Romano 2016). However, this study did not examine CT/CCT during CBT treatment, but rather during three sessions of either *treatment expectation and engagement* (TEE; treatment based on Motivational Interviewing principles to enhance motivation, engagement and treatment

expectations), or a corresponding supportive counselling control group, which participants completed prior to group CBT for social anxiety disorder.

Taken together, these findings demonstrate CT language may be a promising indicator of in-session treatment motivation and overall engagement in CBT for anxiety disorders. However, even this observational measure of client motivation has thus far only been measured at the beginning of therapy, failing to reflect the fluctuating nature of motivation, and its predictive capacity is inconclusive.

Purpose of the Current Study

The primary purpose of the study was to assess motivation as a predictor of outcomes in group-CBT for anxiety disorders. Outcomes were operationalized as symptom severity at post-treatment and slope of change. Two other factors, session attendance and participant drop out, were also included in analyses. Previous studies have only measured CT/CCT in individual formats and only at the beginning of therapy. The current study aimed to examine motivation beyond initial sessions and chose to focus on the role of motivation during psychoeducation/cognitive restructuring sessions and exposure sessions. As client language (CT/CCT) had not been measured in a group setting before, and thus its potential utility was unknown, a self-report measure of motivation, provided prior to commencing treatment, was also included.

As explorations of change language as a measure of treatment motivation and engagement is a relatively new area of research, a further aim of this study was to examine associations between baseline client characteristics and CT/CCT. Knowledge of baseline factors, which may help to identify clients at risk of low motivation and engagement, is particularly needed in order to appropriately target motivational enhancement strategies prior to CBT treatment. This study focussed on clinical, demographic and self-report motivational baselines characteristics of participants.

Methods

This study utilised participant data and video-recordings of group sessions of transdiagnostic-CBT (tCBT) for anxiety collected during three prior clinical trials undertaken at the University of Houston Anxiety Disorder Clinic (UHADC studies; Norton 2008, 2012b; Norton and Barrera 2012). The UHADC trials from which data was obtained all followed the same methodologies and treatment protocol (e.g. Norton 2012b). All participants provided informed written consent for data to be used in subsequent research.

Participants

The sample comprised 58 individuals, from 11 therapy groups, with a primary anxiety disorder diagnosis who participated in weekly group sessions of tCBT at the UHADC. Prior to tCBT treatment, all participants were screened for study suitability and received a structured diagnostic evaluation. Inclusion criteria were (a) age 18 or older, (b) principal DSM-IV diagnosis of any anxiety disorder, (c) adequate English proficiency, (d) no evidence of dementia or other neurocognitive condition, and (e) absence of serious suicidality, substance abuse, or other conditions requiring immediate intervention. Individuals taking anxiolytic or antidepressant medications were included in the sample, however they were instructed to remain on a consistent medication regime for the duration of tCBT treatment. Participants were selected from the combined samples of the three UHADC trials based upon availability of video-recordings of group tCBT sessions; groups for which an insufficient number of recorded sessions were available were excluded.

The sample comprised 23 individuals with social anxiety disorder, 15 individuals with GAD, 12 participants with panic disorder with/without agoraphobia, four individuals with OCD, two individuals with specific phobia, one participant with post-traumatic stress disorder, and one with anxiety disorder not otherwise specified. Participants ranged in age from 19 to 58 years ($M = 32.46$, $SD = 10.47$), and of the 58 participants, 51.7% were male. The sample was highly educated with 12 having completed graduate school, 23 having completed a bachelor, 19 having completed high school, and 2 not having completed high school. The majority were engaged in full-time work (55.2%), a large proportion were students (22.4%), some were unemployed (12.1%) and a minority reported part-time (3.4%), other work (3.4%), or did not provide responses (3.4%).

Treatment and Therapists

Treatment followed a structured 12 session group tCBT for anxiety protocol (Norton 2012a). The tCBT group protocol encompasses psychoeducation on the nature and treatment of anxiety (session 1), self-monitoring (sessions 1–2), cognitive restructuring of automatic thoughts (sessions 2–9), exposure to feared stimuli and response prevention (sessions 4–9), schema-based cognitive restructuring (sessions 10–11), and termination issues and relapse prevention (session 12). Several homework activities designed to reinforce in-session components are included throughout treatment. Sessions were of two-hour duration and were held weekly, with groups consisting of 4–6 participants.

Therapists were 12 doctoral-level graduate students of a clinical psychology program at the University of Houston. Therapists received weekly supervision and were trained in

administering tCBT protocols through observation and analysis of previously recorded therapy sessions. Two therapists co-facilitated each tCBT session and each therapist pairing included a senior graduate student with previous experience delivering the treatment. All sessions were videotaped and observed to ensure therapist adherence to treatment protocols. Therapists' treatment delivery was highly consistent with tCBT protocol, as indicated by previously reported independent fidelity ratings of the UHADC studies from which the current study data was drawn ($M = 4.77/5.00$, $SD = 0.24$, range $= 4.17–5.00$; Norton and Kazantzis 2016).

Measures

At baseline and post-treatment, participants completed a battery of self-report measures and received the anxiety disorders interview schedule for DSM-IV ADIS-IV; (Brown et al. 1994). The current study used participant baseline (age, education level, anxiety severity, and depression comorbidity), self-reported treatment motivation, and outcome data (symptom severity at post treatment, slope of change, treatment drop out, and number of group sessions attended) from the UHADC trials.

Anxiety Disorders Interview Schedule for DSM-IV

The ADIS-IV (Adult Version) was used to determine participant diagnoses, including principal anxiety and comorbid depression. The ADIS-IV is a semi-structured diagnostic interview used to assess the presence and severity of DSM-IV anxiety, mood disorders, and other psychological conditions (Brown et al. 1994). In an extensive reliability analysis, the ADIS-IV demonstrated good to excellent inter-rater reliability across most DSM-IV diagnoses (Brown et al. 2001). All ADIS-IV interviewers for the UHADC studies were doctoral-level graduate students. ADIS-IV reliability was achieved through observation of experienced ADIS-IV diagnosticians, and subsequent supervision and observation of student diagnostic interviews. Independent reliability assessments of a random subset of ADIS-IV interviews conducted by student therapists indicated excellent diagnostic agreement (86%; $\kappa = .76$, $p < .001$) for primary and comorbid disorders (Norton and Barrera 2012).

State-Trait Anxiety Inventory—State Version

Participants' self-reported anxiety was assessed at baseline, before commencing each session, and post-treatment, with the state version of the state-trait anxiety inventory (STAI-S; Spielberger et al. 1993). This was used in the current study to measure slope of improvement and post-treatment symptom severity. The STAI is widely used to assess state anxiety in clinical and research settings, and demonstrates strong

psychometric properties in community, military, medical, and psychiatric populations (Spielberger et al. 1993). In the current study, STAI-S scores were highly internally consistent, with $\alpha = .83$.

University of Rhode Island Change Assessment Scale

The University of Rhode Island Change Assessment Scale (URICA; McConnaughy et al. 1983) was used to assess participants' self-reported readiness to change at baseline. The URICA is a 32-item measure that asks about an individual's motivational readiness to change a specified problem in the context of receiving treatment. Internal consistency of the four subscales is acceptable, with coefficient alphas ranging from .79 to .89 in clinical and non-clinical samples (McConnaughy et al. 1989, 1983). Previous research indicates mixed findings for the convergent and discriminant validity of the URICA when compared with other motivational measures (e.g. Amodei and Lamb 2004; Napper et al. 2008). The predictive validity of the URICA is supported by findings indicating the measure has successfully predicted aspects of treatment engagement, and treatment retention/ drop-out among diverse psychotherapy client samples (Brogan et al. 1999; Dozois et al. 2004; Maher et al. 2012). Internal consistency for the current study was acceptable to very good, with subscale coefficients of pre-contemplation $\alpha = .73$, contemplation $\alpha = .75$, action $\alpha = .83$, and maintenance $\alpha = .84$.

Attendance and Drop-out

In the current study, a client was considered to have prematurely discontinued treatment if they did not attend any of sessions 10, 11, or 12. The drop-out rate in this study was 29.3%. Treatment attendance was defined as the number of sessions attended.

Client Language Easy Rating coding system

Motivation was measured using the client language easy Rating coding system (CLEAR; Glynn and Moyers 2012), previously MISC 1.1. The CLEAR classifies and quantifies third-party observations of client CT and CCT articulated during entire therapy sessions. CT and CCT are coded in relation to predetermined target behavior(s), with each separate utterance recorded as one count of CT or CCT. Observations of clients' neutral statements (e.g. not CT or CCT), non-verbal behaviors, and therapist utterances are not coded. The CLEAR recognises six sub-categories of CT/CCT including reason, desire, need, ability, commitment (to change or not to change), and taking steps (towards or away from the target behavior).

In this study CT and CCT were split into two components: engagement and motivation. Engagement or,

disengagement, was rated as participant utterances that indicated steps taken toward or away from change. This may be participating in in-session exercises (e.g. "I'm doing the exposure task"), or reporting completed homework (e.g. "I completed my thought diary"). Motivation, on the other hand, were participant utterances that indicated a reason, desire, need, ability or commitment to move toward or away from change e.g. "My anxiety has ruined my relationships" (reason); "I want to be able to ask someone out" (desire); "I need to get my anxiety under control" (need); "I can do this exposure exercise" (ability); "I will do my cognitive restructuring homework" (commitment). The rationale for separation CT/CCT into engagement and motivation subcategories is that it offers a more accurate representation of predictors of treatment outcome. Participant engagement of in-sessions and between-session tasks has for the most part only been assessed via client or therapist ratings. CT/CCT-engagement, verbal accounts of participation in CBT exercises and completions of homework tasks, provides an observational measure, and thus a "behavioral" index of participants' engagement in therapy. We were interested in the unique impact of participant engagement and participant motivation on treatment outcomes.

The CLEAR has demonstrated strong predictive validity in treatment process and outcome research in the areas of substance abuse (e.g. Campbell et al. 2010; Glynn and Moyers 2010; Moyers et al. 2007) and anxiety disorders (e.g. Hunter et al. 2014; Lombardi et al. 2014; Sijercic et al. 2016). The CLEAR manual recommends the calculation of intraclass correlation coefficients (ICCs) to determine inter-rater reliability between coders. Previous research using the CLEAR/MISC indicates good inter-rater reliability (e.g. Percentage Change Talk ICC = .74 in Glynn and Moyers 2010). In this study, ICCs for CT/CCT ratings made by independent raters ranged between .80 and .99, deemed 'excellent' by Cicchetti (1994).

Client Verbosity

Due to the nature of the group design, with some participants more verbose than others, a measure of client verbosity was also obtained and used as a covariate in all analyses. To measure verbosity a frequency count of participant speaking turns was recorded for each session.

Procedure

Baseline and outcome data were available from the UHADC trials. Eleven tCBT treatment groups, comprising 58 participants, were included in this study, based upon availability and quality of session recordings. From the 11 groups, video recordings were available for 90 of 132 sessions. The authors completed coding after having undertaken extensive training

of the CLEAR coding system. Training involved reading the CLEAR coding manual and twice weekly participation in 2-h training sessions for 8 weeks, under the supervision of a senior clinical psychologist. Training consisted of viewing videotapes of group tCBT, and coding CT/CCT from verbatim transcriptions of all client dialogue observed within each videotaped session. After every training session, coders reviewed coding discrepancies together and in consultation with the supervisor. Inter-rater reliability was calculated throughout the training process. In accordance with the CLEAR manual, coders achieved ICCs above .8 for 5 consecutive training coding sessions before proceeding to coding and collection of CT/CCT data for the current study.

To assess CT and CCT, coders watched video recordings of therapy sessions and concurrently referenced verbatim session transcripts. The CLEAR requires a defined target behavior, which in alcohol and substance abuse, is reduction of use. As the tCBT program included individuals with several different anxiety disorders, target behavior was broadly defined as *engagement with treatment* and *reduction of anxiety symptoms*. CT and CCT indicative of target behavior were coded throughout the two-hour duration of the sessions, based on guidelines outlined in the CLEAR manual (Glynn and Moyers 2012). Coders were unaware of participants' treatment outcome status throughout the coding process. As per CLEAR manual recommendation, 20% of sessions were double coded and intraclass correlation coefficients (ICCs) were calculated to ascertain inter-rater reliability. In addition to calculating inter-rater reliability, this study controlled for potential unreliability by conducting weekly coder meetings throughout the data collection process, to identify and discuss unusual coding sessions, resolve any coding discrepancies, and minimize the possibility of coder drift.

Results

Outcome Predictors

For each participant, a frequency count of CT/CCT during psychoeducation/cognitive restructuring sessions (CR: sessions 1–3) and exposure sessions (EX: sessions 4–9) was used for outcome predictor analyses. Due to participant retention, as well as availability of video recordings, only 27 participants had complete data for all three CR sessions (M = 2.28, SD = .77) and only one participant had complete data for all six EX sessions (M = 3.15, SD = 1.52). It was therefore decided to use an average score of participant CT/CCT during CR sessions and EX sessions.

As clients were part of larger treatment groups, and thus their change-related talk might have been influenced by other group members (i.e., potential non-independence of

observations), multi-level approaches to estimate nested group-level effects were conducted. To test the group-level effects, the design effects—a function of treatment group ICCs and average cluster size—were calculated using Mplus (version 7.1; Muthén & Muthén 2014). As treatment group ICCs for average change language were small (CT = .26, CCT < .01), the design effects were below the threshold reported by Muthén and Satorra (1995) as indicative of needing to be modeled to account for nested group-level effects. Thus, ordinary least squares methods were deemed suitable to test the study hypotheses.

Motivational Language During Psychoeducation and Cognitive Restructuring Sessions

Scores for average CT/CCT per session were available for all 58 participants in this study. CT was more common across CR sessions than CCT (CT: $M = 4.20$, $SD = 2.24$; CCT: $M = .71$, $SD = 1.02$), $t(57) = 14.20$, $p < .001$. CT- motivation ($M = 2.16$, $SD = 2.10$) and CT-engagement ($M = 2.03$, $SD = 1.11$) equally contributed to CT scores, $t(57) = -.38$, $p < .70$, whereas CCT-motivation ($M = .50$, $SD = 1.00$) contributed more to overall CCT scores than CCT-engagement ($M = .21$, $SD = .29$), $t(57) = -2.08$, $p = .04$. After controlling for verbosity, a small, yet significant relationship was found between CT-engagement and CT-motivation $r_{partial}(55) = -.36$, $p = .005$. No relationship was found between CCT-engagement and CCT-motivation $r_{partial}(55) = -.21$, $p = .13$. To assess the relationship between CT/CCT and outcome variables (symptom severity at post-treatment, slope of improvement, and participant attendance and drop out) a series of partial correlations were conducted, controlling for participant verbosity.

Change Talk Results for the relationship between CT and outcome variables, during CR sessions, can be found in Table 1. Overall CT (including CT-engagement and CT-motivation) did not significantly predict participant drop out or attendance. However, after controlling for verbosity, a small significant relationship was found between CT and symptom severity, $r_{partial}(55) = .34$, $p = .011$, and slope of improvement $r_{partial}(55) = .32$, $p = .015$. Further investigation found that this relationship was evident for motivational utterances (CT-motivation), but not engagement utterances (CT-engagement). This indicated that participants expressing more CT-motivation during CR sessions (but not CT-engagement) had greater symptom severity at post treatment and a flatter slope of improvement. Furthermore, although overall CT did not predict attendance, a significant relationship was found between CT-engagement and attendance, after controlling for verbosity $r_{partial}(55) = .34$, $p = .011$.

Counter-Change Talk Results for the relationship between CCT and outcome variables, during CR sessions, can be found in Table 1. Overall CCT did not significantly predict participant drop out or attendance. Conversely, a moderate significant relationship was found between CCT and symptom severity, $r_{partial}(55) = .41$, $p = .002$, and slope of improvement $r_{partial}(55) = .41$, $p = .002$, after controlling for participant verbosity. Subsequent analyses uncovered that this relationship remained significant for CCT-motivation only. This indicated that as CCT-motivation increased post-treatment symptom severity increased and slope of improvement flattened.

Table 1 Partial correlation coefficients between change and counter-change talk and outcome variables, controlling for verbosity

Component of Therapy	Variable	Partial correlation coefficients ($r_{partial}$)			
		Symptom severity	Slope of change	Session attendance	Drop out
CR sessions Session 1–3	CT-total	0.34**	0.32*	0.22	−0.10
	CT-engagement	−0.05	−0.10	0.34**	−0.18
	CT-motivation	0.35**	0.36**	−0.009	0.012
N = 58	CCT-total	0.41**	0.41**	0.6	0.02
	CCT-engagement	0.16	0.14	0.20	−0.18
	CCT-motivation	.35**	0.35**	−0.007	0.08
EX sessions Sessions 4–9	CT-total	−0.04	−0.03	0.21	0.24
	CT-engagement	−0.13	−0.13	0.06	0.41**
	CT-motivation	0.08	0.09	0.30*	−0.07
N = 48	CCT-total	0.22	0.28	−0.05	0.08
	CCT-engagement	0.31*	0.36**	0.07	0.006
	CCT-motivation	0.13	0.16	−0.10	0.10

CR cognitive restructuring, *EX* exposure

*Significant at α = .05; **significant at α = .01

Motivational Language during exposure sessions

Of the 58 participants in the initial study, only 48 attended at least one exposure session, therefore the sample size was reduced to 48 participants for the following analyses. Again participants had greater CT scores ($M = 10.25$, $SD = 5.01$) than CCT ($M = 2.23$, $SD = 2.77$) scores during EX sessions, $t(47) = 11.24$, $p < .001$. CT-motivation ($M = 4.78$, $SD = 3.61$) and CT-engagement ($M = 5.47$, $SD = 2.28$) equally contributed to total CT scores, $t(47) = 1.41$, $p = .17$, as did CCT-motivation ($M = 1.34$, $SD = 2.02$) and CCT-engagement ($M = .90$, $SD = 1.13$) towards total CCT scores, $t(47) = -1.73$, $p = .09$. Interestingly both CT and CCT were significantly higher during EX sessions than during CR sessions, CT mean difference $= 5.51$, 95% CI [4.62, 6.40], $t(47) = 12.41$, $p < .001$, CCT mean difference $= 1.45$, 95% CI [.85, 2.04], $t(47) = 4.89$, $p < .001$. After controlling for verbosity, a small partial correlation was found between CT-engagement and CT-motivation, $r_{partial}(45) = .28$, $p = .055$, bordering on significance, and a small significant relationship between CCT-motivation and CCT-engagement, $r_{partial}(45) = .35$, $p = .016$. As for CR sessions, a series of partial correlations were conducted, to assess the relationship between CT/CCT and outcomes variables during exposure sessions, whilst controlling for participant verbosity.

Change Talk Results for the relationship between CT and outcome variables, during exposure sessions, can be found in Table 1. Total CT did not significantly predict any outcome variables, after controlling for verbosity. However, it was found that CT-engagement predicted participant drop out, $r_{partial}(45) = .41$, $p = .005$, and CT-motivation predicted attendance, $r_{partial}(45) = .30$, $p = .043$. These results suggest that as CT-engagement increased drop-out rate decreased and as CT-engagement increased number of sessions attended increased.

Counter-Change Talk Results for the relationship between CCT and outcome variables, during exposure sessions, can be found in Table 1. Total CCT and CCT-motivation did not predict outcome measures, however CCT-engagement predicted symptom severity $r_{partial}(45) = .31$, $p = .037$ and slope of improvement $r_{partial}(45) = .36$, $p = .014$. This suggests that resistance and/or disengagement during exposure sessions leads to a flatter slope of improvement and greater symptom severity ratings at post-treatment.

Self-Reported Motivation at Baseline

To explore the relationship between self-report motivation and outcomes a series of correlations were conducted using participants URICA scores and outcome measures. No significant relationship was found between participant's

URICA scores and outcome measures; slope of improvement ($r = .15$, $p = .25$), symptom severity post-treatment ($r = .14$, $p = .30$), attendance ($r = -.02$, $p = .90$), and dropout ($r = .06$, $p = .68$).

Baseline Predictors of Change and Counter-Change Talk

To analyze baseline predictors of CT/CCT, observed frequencies of CT/CCT were aggregated and divided by the total number of sessions attended (CR + EX sessions) to yield an average CT/CCT score.

Change Talk To assess whether client baseline characteristics predicted change talk, two stage hierarchical regressions were conducted, with speaking turns entered at stage one, and baseline variables entered a stage two. Baseline variables consisted of demographic factors (age and education), clinical factors (anxiety severity and comorbid depression), and self-reported motivation at baseline (URICA). Results indicated that after controlling for speaking turns, demographic factors ($R^2 = .003$, $F(2,54) = .14$, $p = .87$), clinical factors ($R^2 = .011$, $F(2,54) = .56$, $p = .57$), and self-reported motivation at baseline ($R^2 = .004$, $F(1,55) = .39$, $p = .53$) did not significantly predict total CT.

These analyses were repeated for both CT-engagement and CT-motivation. After controlling for speaking turns, demographic factors lead to a statistically significant increase in $R^2 = .083$, $F(2,54) = 4.38$, $p = .02$, accounting for 8.33% of the variance in CT-engagement. Participant age was a significant univariate predictor ($B = -0.04$, $t = -2.63$, $p = .011$), indicating that younger participants uttered more statements of CT-engagement. Although combined clinical factors of anxiety severity and comorbid depression did not predict CT-engagement at $\alpha = .05$, $R^2 = .059$, $F(2,50) = 2.98$, $p = .059$, anxiety severity was a significant univariate predictor ($B = -0.42$, $t = -2.41$, $p = .02$) of CT-engagement. This indicated that lower anxiety severity predicted more engagement utterances. Baseline self-report motivation did not significantly predict CT-engagement after controlling for verbosity, $R^2 = .004$, $F(1,55) = .36$, $p = .55$. No baseline variables significantly predicted CT-motivation after controlling for speaking turns: demographic factors ($R^2 = .01$, $F(2,54) = .43$, $p = .65$), clinical factors ($R^2 = .004$, $F(2,54) = .17$, $p = .84$), and self-reported motivation at baseline ($R^2 = .014$, $F(1,55) = .1.17$, $p = .28$).

Counter-Change Talk As for CT, two stage hierarchical regressions were completed, with speaking turns entered at stage one, and baseline variables entered a stage two, to assess whether baseline characteristic predict CCT. Results indicated that after controlling for speaking turns, demographic factors ($R^2 = .157$, $F(2,54) = .8.53$, $p = .001$), clinical factors ($R^2 = .106$, $F(2,54) = .5.26$, $p = .008$), and self-

reported motivation at baseline ($R^2 = .049$, $F(1,55) = .4.48$, $p = .04$) all significantly predicted total CCT at $\alpha = .05$. Anxiety severity ($B = .52$, $t = 2.88$, $p = .006$), education level ($B = -.50$, $t = -3.80$, $p < .001$), comorbid depression ($B = -.83$, $t = -2.21$, $p = .032$), and age ($B = .03$, $t = 2.13$, $p = .038$) were identified as significant univariate predictors.

Analyses were again repeated for CCT-engagement and CCT-motivation. No baseline variables significantly predicted CCT-engagement after controlling for speaking turns: demographic factors ($R^2 = .033$, $F(2,54) = 1.36$, $p = .27$), clinical factors ($R^2 = .041$, $F(2,54) = 1.74$, $p = .19$), and self-reported motivation at baseline ($R^2 = .036$, $F(1,55) = 3.05$, $p = .09$). However clinical factors ($R^2 = .117$, $F(2,54) = .5.20$, $p = .009$) and demographic factors ($R^2 = .202$, $F(2,54) = 10.44$, $p < .001$) significantly predicted CCT-motivation. Education ($B = -.43$, $t = -4.29$, $p < .001$), anxiety severity ($B = .41$, $t = 2.89$, $p = .006$), age ($B = .03$, $t = 2.17$, $p = .035$), and depressive comorbidity ($B = -.63$, $t = -2.15$, $p = .036$) were again identified as significant univariate predictors.

Discussion

The primary purpose of the current study was to ascertain the predictive capacity of observed change language in the context of group CBT for anxiety disorders, and to explore its utility as a measure of motivation in group formats. Past research has not examined the role of motivation in group-CBT for anxiety using either self-report or observational methods. The current study found that, as is the case with individual-CBT, observed measurements of client CT/CCT appear to better predict outcomes than baseline self-report measures (Poulin 2018). The current study found that self-reported motivation at baseline did not significantly predict any outcome variables (symptom severity at post-treatment, slope of improvement, participant attendance, or participant drop out). On the contrary, client utterances of CT/CCT at different stages of therapy predicted several outcome variables. Interestingly patterns of CT/CCT observed during group-CBT in the current study, performed similarly to those found in individual-CBT, with expressions of CT significantly higher than CCT. Furthermore, as with individual-CBT, CCT appears to be a stronger predictor of outcome variables than CT (Lombardi et al. 2014). Additionally, incidents of CT/CCT were lower in initial sessions, compared to later exposure sessions. This follows the pattern one would expect to observe in group settings, as prior research has indicated that engagement during group-CBT for anxiety shows a linear increase with progression of therapy (Bonsaksen et al. 2011). In sum, this suggests that observational measurements of CT/CCT, using the CLEAR, are feasible in a group setting.

As current conceptualisations of motivation describe motivation as a fluctuating construct, this study aimed to examine motivation during two phases of therapy: early psychoeducation and cognitive restructuring sessions (CR: sessions 1–3), and exposure sessions (EX: sessions 4–9). During sessions 1–3, clients are introduced and oriented to therapy, receive CBT and anxiety psychoeducation, and engage in cognitive restructuring exercises. Sessions 4–9 primarily focus on in-session and between-session exposure exercises. Unique to this study, client utterances of CT/CCT were split into two categories of motivational language: engagement and motivation. CT/CCT-engagement was operationalized as utterances indicating "taking steps" towards change e.g. completing in session tasks, or reported completion of homework. CT/CCT-motivation were statements indicating a reason, need, desire, ability, and commitment to change. Results signified that engagement and motivation utterances predicted different aspects of therapy outcomes; furthermore, relationships between the two variables were inconsistent. For example during exposure sessions CCT-motivation and CCT-engagement showed a small significant relationship, and this continued as a trend for CT variables ($p = .055$). These findings fall in line with the theory of planned behavior (TPB), which asserts that the best-known predictor of behavioral change (e.g. CT-engagement) is intention to change (CT-motivation) (Montaño and Kasprzyk 2008). However, during CR sessions no relationship was found between CCT-motivation and CCT-engagement, and an inverse relationship was found between CT-motivation and CT-engagement. This directly opposes the assumptions of TPB, as participants with higher motivational utterances participated less in treatment during early sessions of group CBT. These finding suggests that motivational utterances and engagement utterances, grouped together in the CLEAR manual, may be measuring related, yet distinct concepts. Thus, future research may wish to separate subcategories of CT/CCT.

Motivation and Engagement During Early Sessions

Results of this study indicated that during early sessions, CCT-motivation significantly predicted symptom severity and slope of improvement, meaning that the more participants expressed reasons, needs, desires, abilities, and/or commitments to disengage from treatment or maintain anxiety symptoms, the higher their symptom severity post-treatment and the flatter their slope of improvement. This coincides with past research using individual-CBT formats, which found that CCT during sessions 1 and 2 of therapy predicted poorer treatment outcomes. Interestingly resistance (CCT-engagement) had no relationship to therapy outcomes in these early sessions. However, this may be because instances of resistance were very low during early sessions

($M = .21$, $SD = .29$), as less engagement is required from participants than in later sessions.

Unexpectedly, and diverging from past research, higher instances of CT-motivation increased symptom severity and flattened the slope of improvement during early sessions. Of the two known studies to measure motivational language within CBT for anxiety, neither found CT to be predictive of treatment outcome (Lombardi et al. 2014; Romano 2016). CT-motivation is classified as statements indicating a reason, need, desire, ability, and commitment to change. A limitation of this study is that these five subcategories were grouped together, rather than separated, thus it is difficult to ascertain the type of CT predicting poorer treatment outcomes. Furthermore, this study identified the behavioral change target criterion, which in substance use research equates to abstinence, as "engagement in treatment" and "reduction in anxiety symptoms." The later, according to TPB, would be identified as participant attitude towards an object, rather than attitude towards behavior (engagement in treatment). Hill et al. (1977) argue that attitude towards behavior is a far better predictor of behavioral change than attitude towards object. For example, a person stating, "my anxiety is awful" (attitude towards object), and a person stating, "I think I can handle CBT" (attitude towards behavior) would both be considered accounts of CT-motivation. As early sessions typically allow for clients to introduce themselves and discuss their anxiety problems, it may be that attitudes towards anxiety are reflected in CT-motivation during CR sessions, rather than attitudes towards CBT. Thus, statements of CT-motivation may for the most part be reflections of a person's perception of their anxiety severity (e.g. "my anxiety is awful," "my anxiety makes my life difficult"). Perceptions of anxiety severity (i.e. self-reported anxiety) have previously shown to predict poorer treatment outcomes (Krishnamurthy et al. 2015). It is noted that during EX sessions, where the focus of sessions is exposure, rather than discussion of symptoms, CT-motivation no longer predicts poorer symptoms outcomes, but rather predicts positive treatment outcomes. Therefore, it is suggested that future research, aiming to examine predictors of change using the CLEAR, make the target criteria a reflection of attitudes towards behavior change, rather than attitude towards an object.

Motivation and Engagement During Exposure Sessions

During EX sessions different patterns of predictors were observed. Rather than CCT-motivation, predicting poorer treatment outcomes, CCT-engagement predicted poorer treatment outcomes. This suggests that CCT-motivation, or ambivalence about change, (e.g. "I don't know if I can do the homework") voiced during exposure sessions is not necessarily a cause of concern. Ambivalence is assumed to

be a natural characteristic of change, and may be more present during difficult components of therapy. Results of this study indicate that therapists should instead be mindful of language indicating resistance, or lack of engagement, during exposure sessions (e.g. "I am not doing the exposure," or "I didn't complete my homework"). Prior research measuring CCT has found similar trends. For example, one study found that CCT during individual-CBT for anxiety, was only predictive of poorer treatment outcomes, when CCT was in the form of opposition to the therapist or therapy (Sijercic et al. 2016). Sijercic separated CCT into CCT that indicated ambivalence (e.g. "I don't know if I can do the exposure"), and CCT that indicated opposition to the therapist or specific components of treatment (e.g. "I don't think CBT will work"). Results indicated that only oppositional CCT was significantly related to post treatment outcomes (Sijercic et al. 2016). These results also appear to reflect clinical practice. For example, in one survey of CBT practitioners, client "noncompliance" and "lack of engagement in behavioral experiments" were the most frequently cited reasons for poor response to treatment for panic disorder (Sanderson and Bruce 2007).

Although CT did not predict post-treatment outcomes, CT predicted both session attendance and drop out. It was found that participants who reported more motivational statements (CT-motivation) also had higher attendance rates. This finding coincides with a previous study by Maher and colleagues (2012), which found that among OCD clients, higher self-reported change-readiness was found to be significantly associated with greater CBT treatment adherence. The current study also found that participants who verbally engaged more during treatment (CT-engagement) had lower drop-out rates. Higher baseline self-report measures of change and action readiness, which more closely relate to the variable of CT-engagement, have previously found to predict drop-out rates in a mixed-anxiety group CBT program (Dozois et al. 2004). Surprisingly this study did not find that engagement during exposure sessions predicted treatment outcome, a trend found in previous literature (Glenn et al. 2013).

Baseline Predictors of Motivation and Engagement in Group CBT

A further objective of this study was to explore baseline client characteristics as predictors of CT/CCT in CBT. Due the strong impact of motivation and engagement on treatment progress and outcomes, being able to reliably predict clients at risk of low motivation and engagement has been a long-standing goal of research (Swift and Greenberg 2014). Our results indicated that no baseline characteristics were predictive of CT-motivation but that both demographic and clinical factors were predictive of how much a participant was likely to engage in therapy (CT-engagement). While

education level and comorbid depression did not predict overall engagement, both participant age and anxiety severity predicted participant engagement. It was found that younger participants and those with lower anxiety severity engaged more in treatment. No baseline client characteristics were predictive of resistance (CCT-engagement) in therapy. However higher anxiety severity and lower education levels appeared to predict CCT-motivation. Taken together it appears that higher anxiety severity at baseline is predictive of lower engagement and more ambivalence about treatment. This finding aligns with prior research reporting evidence that clients with greater initial anxiety severity are more likely to drop out of treatment compared to less anxious clients (Krishnamurthy et al. 2015). To extend upon these inferences, our finding that participants with greater anxiety severity expressed significantly higher in-treatment CCT, implies more anxious clients may experience the conflicts associated with therapeutic change more acutely than less anxious clients. Perhaps more so than other psychotherapies for anxiety, CBT involves considerable challenges for clients—engaging in cognitive restructuring requires clients to dispute their strongly held beliefs regarding feared stimuli, while exposures involve confronting behavioral motivations to avoid threat. Thus, given these challenges, it makes sense that clients with stronger anxiety-perpetuating thoughts and avoidance motivations might have more difficulty engaging in CBT. Taken together, these findings indicate clients with greater initial anxiety disorder severity should be closely monitored throughout CBT treatment for signs of disengagement, to mitigate risk of premature treatment discontinuation and poor treatment response.

This study also found that lower education levels predicted higher CCT-motivation. It may be that lower levels of education make a person more ambivalent about change, treatment, and his or her ability to succeed in treatment. CBT challenges clients to take on the role of "scientist," identifying unhelpful thoughts and behaviors and engaging in hypothesis testing, through the use of thought challenging and behavioral experiments, to dispel unhelpful beliefs. Participants with lower levels of education may be deterred by this or experience more self-doubt than those with higher levels of education. Lower levels of education have previously been identified as a significant risk factor for premature treatment discontinuation in a meta-analytic review of 669 studies examining predictors of drop out from adult psychotherapy (Swift and Greenberg 2012). As in this study, CCT-motivation only predicted poorer treatment outcomes during early sessions, it may be particularly useful to employ MI strategies, used to overcome ambivalence, during early sessions of CBT, particularly for clients with lower levels of education.

This study also found that younger individuals were more likely to verbally engage in treatment (CT-engagement)

during sessions and less likely to exhibit ambivalence (CCT-motivation). This contradicts previous meta-analytic findings by Swift and Greenberg (2012) reporting that younger clients were more likely to drop out of treatment. However, the study by Swift and Greenberg examined psychotherapy as a whole, rather than focussing uniquely on CBT for anxiety, and their review was restricted to individual psychotherapy as opposed to groups. Interestingly, participants with comorbid depressive diagnoses demonstrated lower CCT-motivation after controlling for overall verbosity. It is unclear why depressed participants would report less ambivalence, but it is possible that treatment-seekers experiencing a comorbid depressive diagnosis may feel greater determination to improve their emotional health.

The problem of measuring and ascertaining client motivation for therapy is emphasized in our findings that participants' self-reported treatment motivation, as assessed by their baseline URICA change-readiness score, was not significantly associated with CT/CCT. Though almost all participants reported high levels of motivation to change prior to commencing CBT, subsequent observation of change language revealed considerably greater variability. Although a few prior studies have reported significant associations between higher baseline URICA change-readiness and subsequent treatment engagement and response (e.g. Dozois et al. 2004; Maher et al. 2012), results of several other studies suggest the predictive capacity of the URICA and other self-report motivational measures is limited (e.g. DiClemente et al. 2004; Hallgren and Moyers 2011). Hence, our findings of restricted variability and weak predictive relationships for the URICA corroborate with the larger body of prior research evidence.

Limitations, Implications, and Future Research

A key limitation of this study is that subcategories of CT/CCT beyond that of CT-engagement and CT-motivation were not discriminated. Explorations of subcategories of CT/CCT have thus far only been completed in substance use disorder (SUD) research, and not in CBT. From the current study it is evident that while categories are related, weak or non-significant relationships indicate distinct concepts. This is further highlighted by findings indicating that only some types of CCT (oppositional) are predictive of outcomes in CBT for anxiety (Sijercic et al. 2016) and that only some types of CT (commitment) are predictive of outcomes in treatment for substance use disorder (Amrhein et al. 2003). It is important for future research to further distinguish between types of motivational and ambivalent language, and their impact on outcomes. This is of particular need in clinical settings to help therapists identify clients at risk of low engagement, drop out, and suboptimal clinical response. Past research has found that clinicians often struggle with

identifying resistance and non- collaboration in therapy (Hara et al. 2015). A greater understanding of subcategories of CT/CCT and their impact would help therapists both recognize and treat signs of ambivalence and disengagement.

Although this study indicates that the CLEAR has some predictive capacity when used in a group setting, it is still important to consider the effect other group members may have on individual clients' change language. For example research has indicated that individuals may be less likely to express their true values or beliefs in a group setting for fear of negative judgement (Deutsch and Gerard 1955). In favour of group cohesion, participants may agree with other participants' views or beliefs, and therefore CT/CCT uttered during sessions may be to appease other members. Research has found that group experiences are more enjoyable and more rewarding with high levels of group cohesion (Hornsey et al. 2009) and thus observations of CT/CCT in groups may have similar social desirability biases found in self-report measures. However, the fact that the current study found that CT/CCT better predicted outcomes than the URICA self-report measure, indicates that despite these potential shortcomings it holds use as a measure of motivation in groups.

A further limitation of our study is that pre-treatment data was collected in prior clinical trials, and therefore clients' pre-treatment motivation had been assessed only with the URICA. The current study was unable to investigate the predictive utility of a broader range of baseline motivational measures. As previously discussed, the URICA has shown limited ability to predict treatment engagement, and may not be an appropriate motivational measure within a CBT for anxiety context. Accordingly, a more thorough investigation of the extent to which client motivation at baseline was predictive of treatment engagement could have been achieved with the inclusion of additional self-report motivational measures. For example, the change questionnaire (CQ; Miller and Johnson 2008), which was developed from psycholinguistic analyses of client motivational speech, has demonstrated promise as a measure of client motivation to change in CBT for anxiety (Westra 2011). Likewise, the recently developed treatment ambivalence questionnaire (TAQ; Rowa et al. 2014), may prove to be a viable alternative to the URICA. The TAQ assesses clients' concerns regarding commencing psychological treatment for anxiety, and thus falls more in line with TPB as it assesses attitudes towards behavior (treatment) rather than attitude towards object. Taken in combination, these findings suggest it would be worthwhile for future research to examine the utility of motivational measures other than the URICA to predict CT-related language during the course of CBT treatment for anxiety.

In extension to this, findings of the current study imply that the future development of a self-report measure that assesses client motivations to avoid, rather than embrace change, may be warranted. Specifically, since positive statements about change indicated by clients' CT and URICA change-readiness score demonstrate poorer predictive utility compared to CCT, a pre-treatment self-report motivational measure which assesses clients' statements opposing change may be better able to identify clients at risk of subsequent poor treatment engagement. Although the TAQ does fulfil this purpose to an extent, TAQ items predominantly evaluate clients' distress about participating in treatment, rather than assessing client perceptions of the benefits of maintaining anxiety symptoms, or analogously, the perceived disadvantages of therapeutic change.

In conclusion, this study highlights that CT/CCT holds utility as a measure of motivation in groups. It was able to find that patterns of CT/CCT differ over the course of group therapy and that depending on group stage CT/CCT was predictive of different outcome variables. This study also further highlighted the value of separating CT/CCT into different subcategories as our findings indicated that language indicative of motivation, and language indicative of engagement, held different predictive capacities. Future research therefore should aim to distinguish between subcategories, as this may aid clinicians in identifying and treating signs of ambivalence and resistance in therapy.

Compliance with Ethical Standards

Conflict of interest Isabella Marker, Chloe A. Salvaris, Emma M. Thompson, Thomas Tolliday and Peter J. Norton declare no potential conflicts of interest pertaining to this submission to *Cognitive Therapy and Research*.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Animal Rights This article does not contain any studies with animals performed by any of the authors.

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