

**Assessing Panic Disorder-Specific Competencies: Evaluation of the Cognitive Therapy
Competence Scale for Panic Disorder**

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Abstract

Background: Evidence-based treatment for panic disorder comprises disorder-specific CBT protocols. However, most measures of CBT competence are generic and there is a clear need for disorder-specific assessment measures.

Aims: To fill this gap, we evaluated the psychometric properties of the Cognitive Therapy Competence Scale for Panic Disorder (CTCP).

Method: CBT trainees ($n=60$) submitted audio recordings of CBT for panic disorder that were scored on a generic competence measure, the Cognitive Therapy Scale – Revised (CTS-R), and the CTCP by markers with experience in CBT practice and evaluation. Trainees also provided pre- to post-treatment clinical outcomes on disorder-specific patient-report measures for cases corresponding to their therapy recordings.

Results: The CTCP exhibited strong internal consistency ($\alpha=.79-.91$) and interrater reliability ($ICC=.70-.88$). The measure demonstrated convergent validity with the CTS-R ($r=.40-.54$), though investigation into competence classification indicated that the CTCP may be more sensitive at detecting competence for panic disorder-specific CBT skills. Notably, the CTCP demonstrated the first indication of a relationship between therapist competence and clinical outcome for panic disorder ($r=.29-.35$); no relationship was found for the CTS-R.

Conclusions: These findings provide initial support for the reliability and validity of the CTCP for assessing therapist competence in CBT for panic disorder and support the use of anxiety disorder-specific competence measures. Further investigation into the psychometric properties of the measure in other therapist cohorts and its relationship with clinical outcomes is recommended.

Keywords: panic disorder, CBT, competence, disorder-specific measures, training

Background

National Institute for Health and Care Excellence (NICE) guidelines recommend disorder-specific rather than generic cognitive behaviour therapy (CBT) interventions for depression and anxiety disorders (NICE, 2011). Relevant assessment methods are required to evaluate therapists' delivery of these interventions. The Cognitive Therapy Scale (CTS; Young & Beck, 1980) and Cognitive Therapy Scale – Revised (CTS-R; Blackburn et al., 2001), originally developed for evaluating cognitive therapy for depression, are commonly used to assess therapist competence across disorders. These scales have been successfully adapted with the addition of specialised items to assess CBT for a range of populations, including children and young people (Stallard, Myles, & Branson, 2014), psychosis (Haddock et al., 2001), and palliative care (Mannix et al., 2006). However, there are currently few scales that have been evaluated to assess therapist competencies in disorder-specific interventions for anxiety presentations. The Competence in Cognitive Therapy for Social Phobia (CTCS-SP) scale (Clark et al., 2007; Von Consbruch, Clark, & Stangier, 2012), adapted from the CTS, assesses therapist competence in cognitive therapy for social anxiety disorder and demonstrates high interrater reliability, test-retest reliability and internal consistency. Treatment-specific competency measured on the CTCS-SP predicted a large proportion of the variance in clinical outcome for social anxiety ($\beta = .59-.79$; Ginzburg et al., 2012). Generic competency measures tend to predict clinical outcome more strongly for depression than anxiety disorders (Liness et al., 2019; Webb et al., 2010; Zarafonitis-Müller et al., 2014), thus disorder-specific competence measures may present an effective method not only for evaluating specific treatment competencies but also how they relate to patient recovery.

Panic disorder is a common and often disabling mental health condition, with an estimated prevalence of 1.70% in UK adults (Skapinakis et al., 2011). While panic-focused

CBT is the NICE (2011) recommended treatment, no relevant disorder-specific competency scale is yet available. Secondary analyses of panic disorder treatment trials have uncovered no relationship between general therapist competence, rated using global impression indices, and patient outcome (Boswell et al., 2013; Huppert et al., 2001). However, these studies used unvalidated measures of therapist competence and were based on relatively small and highly-trained samples of trial therapists ($n=14-21$), possibly precluding necessary variance in competence required to identify a relationship with patient outcome. One further study evaluating exposure-based CBT for panic disorder with agoraphobia (Weck et al., 2016) also found no relationship between therapist competence and patient outcome when rated on a German version of the CTS to assess generic CBT (Weck, Grikscheit, Höfling, & Stangier, 2014) and a competence measure for conducting exposure (Grikscheit et al., 2015).

Based on promising evidence from other anxiety disorders (Ginzburg et al., 2012), the relationship between therapist competence and patient outcome should be assessed using a disorder-specific measure that evaluates the full range of competencies required to deliver CBT for panic disorder. Furthermore, therapists trained in panic-focused CBT achieve good clinical outcomes (Liness et al., 2019) that are stronger than those attained using psychological treatment-as-usual (Grey et al., 2008). A disorder-specific competence measure may further enhance training and clinical practice and supervision by providing guidance for therapists and detailed protocol-specific feedback. The evaluation of a disorder-specific therapist competence measure for panic disorder, The Cognitive Therapy Competence Scale for Panic Disorder (CTCP; Clark, Salkovskis, Hackman, & Grey, 2002), was the focus of this study.

The CTCP draws on the CTS and CTS-R and panic disorder-specific skills to assess CBT therapist competence for treating clients with panic disorder. The scale was developed to assess the delivery of Clark et al.'s (1994) treatment protocol (see Clark & Salkovskis,

2009 for current manual); this is one of several evidence-based CBT protocols for panic disorder (e.g. Barlow, Craske, Cerny, & Klosko, 1989) and is widely used in the UK. The scale items, descriptors for each item, and scoring anchors were developed by consensus of a team of experts in panic disorder.

As on the CTS and CTS-R, CTCP items (see Table 1) were divided into two theoretical subscales: general competency at delivering psychological therapy (Items 1-5) and specific CBT for panic disorder skills (Items 6-17). While the CTS-R has the same item range for the general subscale (Items 1-5: respectively Agenda Setting, Feedback, Collaboration, Pacing and Efficient Use of Time, and Interpersonal Effectiveness), CTCP general competency items were adjusted considerably to reflect the general skills required to deliver the Clark et al. (1994) protocol. Three items were retained (Agenda, Pacing and Efficient Use of Time, and Interpersonal Effectiveness), though scoring anchors were adjusted, and the remaining two items from the generic CTS-R were replaced with more treatment-relevant general skills. The specific subscale of the CTCP, unlike the CTS and CTS-R, was tailored for all items to focus specifically on elements of panic-focused CBT (see Clark & Salkovskis, 2009). Items are scored between 0 (poor) and 6 (excellent), following the same scale as the CTS with descriptions to anchor scores for each item with ratings of 0, 2, 4, and 6. Table 1 gives the CTCP items by subscale.

INSERT TABLE 1 HERE

The primary aim of this project was to evaluate the reliability and validity of the CTCP to assess panic disorder competence and clinical outcome for a sample of CBT trainees who attended a UK Improving Access to Psychological Therapies (IAPT) training programme. We hypothesized that the CTCP would demonstrate:

- 1) good interrater reliability and internal consistency
- 2) convergent validity with the CTS-R

- 3) a stronger association with panic disorder clinical outcomes than the CTS-R.

Method

Ethics Statement

This study was approved by the King's College London Psychiatry, Nursing, and Midwifery Research Ethics Committee as part of a larger programme of research on CBT training and clinical outcome: reference number PNM/12/13-50.

Participants

Participants comprised 60 trainees from the High-Intensity IAPT (HI IAPT) CBT Training Course at the Institute of Psychiatry, Psychology, and Neuroscience, King's College London, who had submitted a recording of a CBT session for panic disorder. Of the trainees, 78 % ($n=47$) were female and 22% ($n=13$) were male; 80 % ($n =48$) were White and 20% ($n =12$) were of Black, Asian, or minority ethnicity (BAME). Mean age was 35.36 ($SD = 7.60$) years. Trainees' professions were: psychological wellbeing practitioner (40%, $n =24$), clinical psychologist (22%, $n=13$), counselling psychologist (17%, $n =10$), mental health nurse (10%, $n =6$), occupational therapist (3%, $n=2$), counsellor (3%, $n=2$), and other mental-health profession (5%, $n =3$). Final grade distribution for trainees was: merit (37%, $n= 22$), pass (60%, $n=36$), and failed/withdrawn (3%, $n=2$).

Measures

Therapy Competence. The Cognitive Therapy Competence Scale for Panic Disorder (CTCP; Clark et al., 2002) assessed disorder-specific competence for treating panic-focused CBT. The scale (see Table 1) comprises 17-items (competence threshold, mean item score ≥ 3), which are rated from 0-6 (0= poor, 6= excellent). Items 1-5 assess general therapeutic skills, while Items 6-17 assess panic disorder-specific CBT skills. The reliability and validity of this measure were investigated in the current study.

The Cognitive Therapy Scale - Revised (CTS-R; Blackburn et al., 2001) assessed overall therapist competence in CBT, and was used to assess convergent validity with the CTCP and compare predictive validity for clinical outcomes in the present study. The scale comprises 12-items (competence threshold, mean item score ≥ 3), which are rated from 0-6 (0= incompetent, 6= expert). Items 1-5 (respectively Agenda Setting, Feedback, Collaboration, Pacing and Efficient Use of Time, and Interpersonal Effectiveness) assess general therapeutic skills, while Items 6-12 (respectively Eliciting Appropriate Emotional Expression, Eliciting Key Cognitions, Eliciting Behaviours, Guided Discovery, Conceptual Integration, Application of Change Methods, and Homework Setting) assess CBT-specialized therapeutic skills. The CTS-R consistently demonstrates high internal consistency (α range=.75-.97; Blackburn et al., 2001; Kazantzis et al., 2018; Reichelt et al., 2003). Estimates of inter-rater reliability range considerably across studies (ICC=.57, James et al., 2001; ICC=.63, Blackburn et al., 2001; Finn's r =.88, Kazantzis et al., 2018; ICC=.95, Liness et al., 2019), with better agreement following rater training (ICC=.38 untrained to .76 trained, Gordon, 2006; r = .44 to .67, Reichelt et al., 2003).

Raters in the current study were course staff with extensive experience practicing, supervising and evaluating CBT, and had previously received training in scoring the CTS-R during staff induction as well as ongoing reliability monitoring as part of course procedures. Additional training on the CTCP was provided. Scoring of individual items and item applicability across sessions was discussed in detail during training with inter-rater reliability and on-going monitoring conducted across the study. Assessors were asked to rate all items. Some items on the CTCP do not apply to all sessions (eg in-session behavioural experiments when working on an initial panic formulation and should be rated not applicable (n/a). The submission of mid treatment active therapy sessions in this study resulted in very few n/a item ratings. All n/a item scores were accounted for appropriately in data analysis. We

recommend that, in routine use, where such items are present, the total score be pro-rated to allow comparability across assessments

Clinical Outcome. The self-report Panic Rating Scale (PRS; adapted from Clark et al., 1994) was used to assess the frequency and distress associated with panic attacks. Based on the previous two weeks, patients rated panic frequency on a 5-point scale (0= no panic attacks, 4= one or more panic attacks per day), panic-related disability on an 9-point scale (0 = not at all disturbing and/or disabling, 8 = very disturbing and/or disabling), and panic-related agoraphobic avoidance on a 9-point scale (0= never avoid, 8= always avoid). Scores for the three scales were added together to generate a total PRS score out of 20. This approach was consistent with Grey et al. (2008), with the addition of the avoidance rating. The PRS, which is recommended in the relevant treatment manual (Clark & Salkovskis, 2009), has been previously used as a primary outcome measure to assess symptom change in major trials of the Clark et al. (1994) protocol for panic disorder for CBT clinical trials (Clark et al., 1994, 1999; Öst & Westling, 1995) and in research of therapist training (Grey et al., 2008), and was routinely used to assess treatment outcome for panic disorder on the training course from which the present data were drawn. The PRS demonstrated good internal consistency pre-treatment ($\omega=.81$) and posttreatment ($\omega=.86$) in the current sample.

Panic-related cognitions were assessed with a modified version of the self-report Agoraphobic Cognitions Questionnaire (ACQ; Chambless, Caputo, Bright, & Gallagher, 1984). Patients were presented with 18 panic-related cognitions and rated the frequency of this cognition on a 5-point scale (1=never, 5=always) and also the modified degree to which they believed the cognition while anxious from 0 (do not believe) to 100 (completely convinced this is true). Items from each subscale were added to give a total score ranging from 18-90 for frequency and 0-1800 for belief. Therapists are encouraged to focus particularly on belief ratings to guide the course of therapy (Clark & Salkovskis, 2009). The

ACQ demonstrates good internal consistency ($\alpha=.80$) and acceptable test-retest reliability ($r=0.86$) in adults with panic/agoraphobia (Chambless et al., 1984). It was not possible to calculate internal consistency for the present sample as case report data only included frequency and belief total scores and not individual items.

General anxiety symptoms were assessed using the Generalised Anxiety Disorder-7 (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006), a seven-item generic anxiety measure with a score range between 0-21 and a caseness threshold ≥ 8 . The GAD-7 is recommended to assess anxiety symptoms for all patients in IAPT services, and demonstrates good internal consistency ($\alpha=.88$) and sensitivity to treatment-related change in anxiety symptoms in adults with panic disorder (Beard & Björgvinsson, 2014). As above, we could not calculate internal consistency for the present sample as only total scores were provided.

Symptoms of depression were assessed using the nine-item Patient Health Questionnaire – 9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001), which yields a total score between 0-27 and a caseness threshold ≥ 10 . The PHQ-9 is recommended to assess symptoms of low mood for all patients in IAPT services, and demonstrates good internal consistency ($\alpha=.79-.89$) in primary care settings (Kroenke et al., 2001; Richardson, Wrightman, Yeebo & Lisicka, 2017). It is well established in primary care settings, including IAPT services, to assess change in depression symptoms.

Procedure

Tapes were selected from a database of 224 former trainees of the HI-IAPT CBT course at the Institute of Psychiatry, Psychology, and Neuroscience, King's College London. As part of coursework, trainees submitted five therapy tapes rated on the CTS-R by a course member and eight reports of clinical cases. Selected panic disorder cases required a recording of a corresponding mid-therapy active treatment session and clinical case outcomes rated on a disorder-specific measure (PRS and/or ACQ). A total of 60 applicable tapes were available

and were second-rated with the CTCP by a course member. Each trainee supplied one tape and corresponding case. Trainees were required to use at least one panic disorder-specific measure (PRS and/or ACQ) in their therapy; however, several trainees used only the clinically significant belief subscale for the ACQ. Consequently, reported *ns* vary across measures.

Results¹

Descriptive statistics were generated for the total, general, and specific subscales of the CTS-R and CTCP and are presented in Table 2. Mean item scores (0-6) were used in all analyses rather than total scores, due to differing scale lengths.

INSERT TABLE 2 HERE

Reliability

Internal Consistency. Cronbach's alpha coefficients were calculated to assess internal consistency for the total CTCP and for the general and specific subscales. Internal consistency was high for the total measure (17 items; $\alpha=.91$), general subscale (5 items; $\alpha=.79$), and specific subscale (12 items; $\alpha=.88$) of the CTCP. Removal of any item was found to result in a decreased alpha.

Inter-Rater Reliability. A one-way random effects single-measures intra-class correlation coefficient was calculated to assess inter-rater reliability between pairs randomly selected from five course markers for the CTCP. Interrater reliability was good for the total

¹ The Benjamini-Hochberg Procedure (Benjamini & Hochberg, 1995) was applied to all hypothesis tests to correct for multiplicity, with false discovery rate $Q=.10$.

scale (ICC= .84, $p < .001$, 95% CI= .54 - .95), and for the general (ICC= .70, $p = .006$, 95% CI= .20 - .91) and specific subscales (ICC= .88, $p < .001$, 95% CI= .62 - .97).

Validity

Face Validity. Twelve course supervisors with extensive experience in CBT practice, training, and competence assessment provided unanimously positive view of the measure, reporting that the CTCP more effectively captured the competencies required for delivering evidence-based CBT for panic disorder than the CTS-R.

Convergent Validity. Pearson's correlations were calculated between the CTS-R and CTCP for the total measures and for the general and specific subscales. Table 3 presents these correlations. Strong positive associations were found between the CTS-R and CTCP for the total measures and specific subscale, and a moderate positive association was found for the general subscale.

INSERT TABLE 3 HERE

Clinical Outcomes

Pearson's correlations were generated between clients' percentage change for the PRS, ACQ, GAD-7, and PHQ-9 and both therapist competence measures. PRS, GAD-7, and PHQ-9 correlations were generated on the subset of patients who scored above caseness criteria at baseline (severity ≥ 4) based on pre-treatment severity in previous studies and expert clinical judgment (Clark et al., 1994; Grey et al., 2008). Table 4 reports these correlations. Positive associations were found between the CTCP and percentage change in the PRS disability and ACQ belief subscales. No other significant association was found between either therapist competence measure and the clinical outcome measures.

INSERT TABLE 4 HERE

Classification of Competence. Chi-square tests were conducted to assess whether classifications of competence attainment (mean score ≥ 3) were equivalent for the CTS-R and CTCP. There was a significant difference in competence classification for overall scores $X^2(1)=4.85, p=.03$; this appeared to be driven by trainees that were classified as competent on the CTS-R but non-competent on the CTCP (30% of trainees classified competent on the CTS-R but not the CTCP vs 8% vice versa). There was no significant difference for the general subscale [Exact $X^2(1)=.003, p=1.00$]. However, a significant difference emerged for the specific subscale [$X^2(1)=8.28, p=.004$] with 25% of trainees classified as competent on the CTS-R but not the CTCP versus 8% vice versa.

Discussion

This study aimed to evaluate the reliability and validity of the Cognitive Therapy Competence Scale for Panic Disorder (CTCP) – panic disorder-specific competency rating scale. As predicted, the measure demonstrated good internal consistency ($\alpha=.79-.91$) and interrater reliability (ICC=.70-.88) for total and subscale scores. Feedback from markers indicated good face validity. The CTCP mean total and subscale scores demonstrated convergent validity with the CTS-R ($r=.40-.54$) as expected.

The validity of the CTCP was further supported by its relationship to patient clinical outcomes for panic disorder-specific outcomes. Associations emerged between the CTCP and percentage decrease in panic-related disability ($r=.35$) and percentage decrease in belief in panic-related cognitions ($r=.29$). No associations emerged for the CTS-R, supporting the hypothesis that the CTCP would demonstrate greater predictive validity in clinical outcome. Neither scale demonstrated a significant association with change in generic anxiety or depression symptoms. The relatively small sample size ($n=47-53$) may have lacked power to detect a small but significant relationship for some outcomes measures, as the relationship

between competence and clinical outcome is often small since it comprises one of many relevant predictors (Webb et al., 2010). These findings support previous assertions that generic competency measures demonstrate limited predictive validity for outcomes in anxiety disorders (Liness et al., 2019; Webb et al., 2010; Zarafonitis-Müller et al., 2018), and that using disorder-specific competency measures is important (Ginzburg et al., 2012).

Some differences emerged between the CTS-R and CTCP in relation to classification of competence, with 30% of trainees classed as competent on the CTS-R but non-competent on the CTCP. This disagreement appeared to be driven by specific subscale competence. This finding may simply reflect trainees' uneven acquisition of different skills while developing clinical experience, or might indicate that trainees may have been applying techniques specific to CBT but not within the recommended protocol for the treatment of panic disorder. Given that NICE evidence-based treatment (NICE, 2011) comprises specific interventions detailed in the CTCP, these findings may indicate that the disorder-specific competency rating scale may be more sensitive to true competency in delivering appropriate treatment for this disorder – particularly in light of the clinical predictive validity of the CTCP. Further investigation into the relationship between disorder-specific treatment competencies and general CBT competencies and how these skills may interact to influence clinical outcomes is warranted in larger future studies.

While initial findings around the psychometric properties of the CTCP are promising, this study has several limitations. The sample size was relatively small, particularly for clinical outcomes, and drawn from a single CBT training course. Therapy recordings and clinical cases were self-selected by trainees; however, both were requested to be representative of trainees' practice and clinical cases were selected with supervisors prior to therapy completion. Further testing in other training cohorts and in experienced therapists is indicated. It was not feasible to assess the measures' responsiveness to training as cases were

drawn from varied time points across the course due to limited numbers. Further investigation using randomisation is recommended to assess whether trainees who use the CTCP to inform therapy and receive feedback on the disorder-specific measure gain greater skill in delivering panic-specific interventions and stronger clinical outcomes than those who use generic measures. Finally, all markers were experienced in delivering and assessing CBT for panic disorder, and therefore the face validity and ease-of-use for inexperienced markers is unknown. Given the promising preliminary findings, further investigation with varied therapist and marker cohorts is recommended.

Overall, preliminary evidence indicates that the CTCP is a reliable and valid measure for assessing therapist competence in CBT for panic disorder. Additionally, this study is the first to our knowledge to find a relationship between therapist competence and clinical outcome for panic disorder; consequently, it supports the use of disorder-specific competence measures for anxiety. Further investigation into the psychometric properties of the CTCP – particularly clinical predictive validity and responsiveness to training – is indicated. If these positive results are generalisable, the CTCP may be used to assess and guide trainee therapists, evaluate treatment of panic disorder in routine care, and monitor fidelity and competence in clinical trials.

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Conflict of Interest

Sheena Liness, Sarah Beale, David M Clark, Paul M Salkovskis, Anke Ehlers, and Jennifer Wild have no conflict of interest with respect to this publication.

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Tables

Table 1.

Cognitive Therapy Competence Scale for Panic Disorder (CTCP; Clark et al., 2002) Items by Subscale

General Therapeutic Skills	Specific Panic-Focused CBT Skills
<p>Item 1: Agenda</p> <p>Item 2: Dealing with Questions/Objections/Problems</p> <p>Item 3: Clarity of Communications</p> <p>Item 4: Pacing and Efficient Use of Time</p> <p>Item 5: Interpersonal Effectiveness</p>	<p>Item 6. Review of Panic Diary</p> <p>Item 7. Reviewing Previously Set Homework</p> <p>Item 8. Use of Questionnaires</p> <p>Item 9. Use of Feedback and Summaries</p> <p>Item 10. Guided Discovery</p> <p>Item 11. Focus on Panic-Related Cognitions/Conceptualisation</p> <p>Item 12. Rationale</p> <p>Item 13. Selection of Appropriate Strategies for Cognitive Change</p> <p>Item 14. Appropriate Implementation of Techniques for Cognitive Change</p> <p>Item 15. Selection of Behavioural Experiments</p> <p>Item 16. Implementation of Behavioural Experiments</p> <p>Item 17. Homework</p>

Table 2

Mean CTS-R and CTCP Scores for Total Measure and Subscales

Measure	<i>n</i>	Mean	<i>SD</i>
CTS-R Total Measure (Items 1-12)	60	3.05	.51
CTS-R General Subscale (Items 1-5)	60	3.20	.48
CTS-R Specific Subscale (Items 6-12)	60	2.96	.58
CTCP Total Measure (Items 1-17)	60	3.05	.73
CTCP General Subscale (Items 1-5)	60	3.45	.56
CTCP Specific Subscale (Items 6-17)	60	2.91	.87

Note: CTS-R = Cognitive Therapy Scale – Revised; CTCP = Cognitive Therapy Competence

Scale for Panic Disorder

Table 3.

Correlations between CTS-R and CTCP Totals and Subscales

Measure	<i>n</i>	<i>r</i>	<i>p</i>
CTS-R (total) with CTCP (total)	60	.50	<.001**
CTS-R (Items 1-5) with CTCP (Items 1-5)	60	.40	.002*
CTS-R (Items 6-12) with CTCP (Items 6-17)	60	.54	<.001**

Note: CTS-R = Cognitive Therapy Scale – Revised; CTCP = Cognitive Therapy Competence

Scale for Panic Disorder

* sig. at $p \leq .002$ ** sig. at $p \leq .001$

Table 4

CTCP and CTS-R Predictive Validity for Clinical Change Scores

Measures		<i>n</i>	<i>r</i>	<i>p</i>
CTCP	PRS (total)	37	.27	.11
	PRS (disability)	37	.35	.03*
	ACQ (frequency)	50	.13	.36
	ACQ (belief)	53	.29	.04*
CTS-R	PRS (total)	37	.05	.77
	PRS (disability)	37	.08	.63
	ACQ (frequency)	50	.07	.65
	ACQ (belief)	53	.17	.23

* sig. at $p < .05$

Abbreviations: PRS = Panic Rating Scale (Clark et al., 1994); ACQ = Agoraphobic Cognitions Questionnaire (Chambless et al., 1984); CTS-R = Cognitive Therapy Scale – Revised (Blackburn et al., 2001); CTCP = Cognitive Therapy Competence Scale for Panic Disorder