

## **DEVELOPMENT OF THE COGNITIVE THERAPY ADHERENCE AND COMPETENCE SCALE**

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The authors present basic psychometric data for a new 21-item Cognitive Therapy Adherence and Competence Scale (CTACS; Liese, Barber, & Beck, 1995), which is based on the widely used Cognitive Therapy Scale (CTS; Young & Beck, 1980). The CTACS attempts to provide a wider coverage of cognitive therapists' activities than the CTS. Two expert cognitive therapists rated randomly chosen audiotaped therapy sessions from cocaine-dependent patients randomized to receive cognitive therapy, supportive-expressive dynamic therapy, or individual counseling as part of the training phase and the clinical phase ( $n = 60$  and  $n = 69$ , respectively) of the National Institute on Drug Abuse Cocaine Collaborative Treatment Study. Results indicate that the CTACS has acceptable levels of interjudge reliability and criterion validity.

Cognitive therapy (CT) has become one of the most popular approaches to psychotherapy, probably as a result of its demonstrated efficacy (e.g., DeRubeis, Tang & Beck, 2001), its empirical basis, its wide adoption by academic psychology, and the availability of multiple published treatment manuals by A. T. Beck and colleagues (A. T. Beck & Emery, 1985; A. T. Beck et al., 1990; A. T. Beck, Rush, Shaw, & Emery, 1979; A. T. Beck, Wright, Newman, & Liese, 1993). To study the efficacy of psychotherapy in general and CT in particular, researchers have developed different methods to increase the internal validity of such studies. To reduce the amount of therapist variance, researchers and clinicians have written detailed and concrete treatment manuals in which the principles and techniques of the therapy are spelled out with varying degrees of specificity. Reading the manuals is, however, not sufficient to ensure that therapists do indeed conduct therapy that conforms to the written manuals (Moncher & Prinz, 1991). Thus, therapists are given rigorous training, and their performance is assessed by supervisors or independent judges using adherence and competence scales (Waltz, Addis, Koerner, & Jacobson, 1993). Adherence is the degree

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to which a particular treatment has been delivered, whereas competence involves the quality of the particular treatment provided. Effective delivery of the treatment in question requires both adherence and competence, but it is not possible to have competent delivery of a specific treatment without adherence to that treatment. Thus, although adherence does not guarantee competence, it is a necessary condition for competence.

Various scales have been used to assess adherence and competence in CT. Luborsky, Woody, McLellan, O'Brien, and Rosenzweig (1982) developed one of the first adherence scales and showed that independent judges could distinguish among CT, supportive-expressive (SE) therapy, and drug counseling. Around the same time, DeRubeis, Hollon, Evans, and Bemis (1982) developed the Minnesota Therapy Rating Scale and demonstrated that two manualized treatments for depression (CT and interpersonal therapy) could be discriminated from one another. Out of the Minnesota Therapy Rating Scale, Hollon et al. (1988) developed the Collaborative Study Psychotherapy Rating Scale (CSPRS) for the National Institute of Mental Health Treatment of Depression Collaborative Research Program (TDCRP). The 96-item CSPRS includes a 28-item Cognitive-Behavioral Rating Scale that consists of six subscales: Cognitive Rationale, Assessing Cognitive Processes, Evaluating and Changing Beliefs, Behavioral Focus, Homework, and Collaborative Structure. Using the CSPRS, Hill, O'Grady, and Elkin (1992) successfully discriminated the three TDCRP treatments of depression: CT (A. T. Beck et al., 1979), interpersonal therapy (Klerman, Rounsaville, Chevron, Neu, & Weissman, 1979), and clinical management of pharmacotherapy (Fawcett, Epstein, Fiesten, Elkin, & Autry, 1987).

DeRubeis and Feeley (1990) used two rating scales (Cognitive-Behavioral and Facilitative Conditions) from the CSPRS to examine the process of change in CT for depression. Their factor analysis of the CSPRS Cognitive-Behavioral Rating Scale revealed two distinguishable aspects: concrete, symptom-focused CT procedures (e.g., agenda, homework, labeling cognitive errors) and abstract CT processes (e.g., relating thoughts and feelings, negotiating content of session, explaining direction of session). Interrater reliability coefficients were .63 for concrete CT procedures, .86 for abstract CT processes, and .67 for the Facilitative Conditions scale of the CSPRS. Concrete CT procedures assessed early in treatment predicted further symptomatic improvement, whereas abstract CT techniques and facilitative conditions did not predict further improvement. Baranackie, Crits-Christoph, and Kurcias (1992) also used the CSPRS Cognitive-Behavioral scale and showed that this scale discriminated between opiate patients who had received CT and those who had received dynamic therapy. In summary, there are data indicating that the Cognitive-Behavioral scale of the CSPRS can be rated reliably even by students trained in its use, and that it can discriminate CT from other interventions. Furthermore, there is also indication that the scale has predictive validity as shown by DeRubeis and Feeley.

In contrast to the results obtained with CT adherence measures, the psychometric data regarding the Cognitive Therapy Scale (CTS; Young & Beck, 1980), the most widely used instrument to assess the competence of cognitive therapists, are mixed. The CTS was initially developed to evaluate therapists treating depression (A. T. Beck et al., 1979). The CTS consists of 11 items divided into two rationally defined subscales. The General Therapeutic Skills subscale contains six items: Agenda, Feedback, Understanding, Interpersonal Effectiveness, Collaboration, and Pacing. The Specific Cognitive Therapy Skills subscale contains five items: Guided

Discovery, Focus on Key Cognitions or Behaviors, Strategy for Change, Application of Cognitive–Behavioral Techniques, and Homework.

Although the CTS has been used extensively for more than 25 years, there have been few published reports on its psychometric properties. Dobson, Shaw, and Vallis (1985) conducted one of the first such studies. To evaluate the CTS reliability for use in the National Institute of Mental Health TDCRP, four well-known CT experts rated tapes of 21 psychotherapist applicants for the study. Internal consistency was very high ( $\alpha = .95$ ;  $n = 42$ ). Interjudge reliability of the items as assessed via Pearson correlations ranged from .54 to .87; interjudge reliability for the CTS total score as assessed by intraclass correlations (ICCs) was relatively high at .96. This reliability estimate, however, appeared to have been based on the ratings from all four judges. Vallis, Shaw, and Dobson (1986) conducted perhaps the most ambitious published research on the psychometric properties of the CTS. Seven CT experts rated tapes of nine cognitive therapists from the training phase of the TDCRP. On the basis of five experts' ratings of 10 audiotapes, they found the single-rater reliability to be .59 for the CTS total score, assessed using the ICC coefficient, whereas reliabilities of individual items ranged from .27 to .59. Both internal consistency and the high correlation ( $r = .85$ ) between the two rationally derived scales indicated that the CTS is a very homogeneous measure. Vallis et al. also reported that the CTS scores discriminated between CT sessions that had been deemed either unacceptable or acceptable by independent judges. In summary, the CTS is user friendly and widely used with good internal consistency.

There is some evidence, however, that the interjudge reliability for the CTS is not as strong as desired (Vallis et al., 1986). Jacobson et al. (1996) conducted a dismantling study of the active ingredients of CT for depression. In this study, 151 depressed patients, diagnosed on the basis of *Diagnostic and Statistical Manual of Mental Disorders* (third edition, revised) criteria, were randomly assigned to either up to 20 sessions of behavioral activation, behavioral activation plus work on automatic thoughts, or complete CT, which included the latter treatment and work on underlying core beliefs or schema. Investigators monitored competence in this study by means of the CTS. There were no significant treatment effects among the three treatment conditions. To better understand his findings, Jacobson (1998) sent copies of audiotaped sessions to three well-known CT experts, and he was very surprised to obtain low interrater reliability coefficients for these experts (range =  $-.03$  to  $.23$ ). A more recent study (Shaw et al., 1999) that used the CTS to examine the relation between competence and outcome in the TDCRP did not report the reliability of this instrument, citing instead the fact that its judges were the same as those used in Vallis et al.'s report; Vallis et al. reported a reliability of .59. Crits-Christoph et al. (1998) used the CTS to evaluate training in CT versus SE therapy and individual drug counseling as part of the pilot phase of the National Institute on Drug Abuse (NIDA) Collaborative Cocaine Treatment Study (CCTS). Preliminary analyses determined that 4 of 11 CTS items could not be used because of poor reliability. The resulting seven-item scale had an interjudge reliability of .69. It could be that Jacobson's results indicate that the CTS reliability is low when CT experts are not trained together. Despite this possibility, it is quite clear that, even with training, interjudge reliability is not high. The complete lack of agreement among experts not trained together raises the issue of the validity of these CTS judges' ratings.

Whisman (1993) pointed out additional limitations of the CTS such as multiple concepts addressed by one item and different levels of inference required to rate the

different items. In light of the mixed psychometric findings reported for the CTS and the criticisms that Whisman raised, we decided to assess the psychometric properties of a new measure of competence for CT—the Cognitive Therapy Adherence and Competence Scale (CTACS; Liese et al., 1995)—in a sample of cocaine-dependent patients.

## **Methods**

### ***Patients***

Participants were 60 randomly selected patients from the pilot phase and 69 randomly selected patients from the clinical phase of NIDA CCTS (Crits-Christoph et al., 1997, 1999). All patients were diagnosed with primary cocaine dependence and randomly assigned to one of four treatment conditions: CT in conjunction with group drug counseling (GDC), individual drug counseling (IDC) with GDC, SE therapy with GDC, or GDC only. In each of the three individual plus GDC treatment conditions, patients had twice-weekly individual sessions for 3 months followed by weekly individual sessions for 3 months. Additionally, all patients attended GDC sessions twice a week for the first 2 months of treatment followed by once-weekly sessions for the next 4 months. After the 6-month active treatment phase, all patients received booster sessions with their individual therapist or counselor once a month for 3 months.

### ***Materials and Therapists***

Sixty-four audiotaped sessions (of 60 different patients) from the training phase and 70 audiotaped sessions (of 69 different patients) from the clinical phase of the NIDA CCTS were randomly selected from a larger pool of patients, therapists, and sessions for each modality. Ninety-two tapes were of CT sessions involving 18 therapists and 88 patients. Twenty tapes were of SE sessions with 12 therapists and 19 patients. The remaining 22 tapes were of IDC sessions with 10 therapists and 22 patients. Initial sessions were excluded, 95% of sessions were between Sessions 2 and 10, and the remaining data were collected between Sessions 11 and 23.

### ***Treatments***

Each treatment was manualized. CT was based on A. T. Beck et al. (1993), whereas IDC followed a 12-step drug counseling model detailed in Mercer and Woody's (1992) unpublished manual for addiction counseling. SE dynamic therapy followed Mark and Faude's (1995) adaptation of Luborsky's (1984) SE psychodynamic psychotherapy for cocaine abuse. Finally, group drug counseling was a psychoeducational and problem-solving intervention based on a 12-step model, following guidelines by Mercer, Carpenter, and Daley (1994).

### ***Therapists/Counselors***

Therapists and drug counselors were selected by each training unit based on education, letters of reference, and two audiotaped samples of their psychothera-

peutic work. CT and SE therapists were required to possess a doctoral degree (PhD), master of social work (MSW) degree, or medical degree (MD), but there were different criteria for levels of experience. CT therapists needed 6 months to 1 year of postgraduate experience (for MSWs and PhDs, respectively) or 1 year of supervised individual CT experience during residency (for MDs), whereas SE therapists were required to have 3 to 4 years of postgraduate clinical experience. SE and CT therapists had an average of 9.9 and 10.6 years of postgraduate experience, respectively.

Drug counselors could not exceed certain levels of education. The highest allowed terminal degree was a master's degree in a mental health-related field. Professional certification in addiction counseling was desirable but not mandatory. All counselors were required to have at least 3 years of experience in the field of addiction counseling and to have substantial experience with cocaine addicts in particular. Additionally, counselors in recovery themselves must have been in recovery for at least 5 years.

Of the IDC counselors, 30% were African Americans, 60% were women, and they had degrees in varied fields, such as master of arts (MA) in counseling ( $n = 1$ ), MA in addiction ( $n = 1$ ), bachelor of arts ( $n = 3$ ), associate of arts ( $n = 1$ ), MA in human services ( $n = 2$ ), registered nursing ( $n = 1$ ), or master of science in nursing ( $n = 1$ ). Of the 18 CT therapists, 1 (6%) was African American. Of the CT therapists, 22% were women; 66% had a PhD or a doctorate in psychology (PsyD), 11% had a doctorate in education, and 22% had an MSW. Of the 12 SE therapists, 1 (8%) was African American; 4 (33%) were women; and 1 (8%) had an MD, 8 (67%) had a PhD or PsyD, and 3 (25%) had an MA in counseling or public health.

### ***Adherence/Competence Judges***

A doctoral-level clinical psychologist and a master's-level psychiatric nurse served as judges for this study. Both were cognitive therapists who had received approximately 5 years of training and supervision after completion of their terminal degrees. Both had full-time clinical and supervision responsibilities and were published in their areas of interest. After agreeing to participate in this study, these expert cognitive therapists received approximately 20 hr of instruction in the use of the CTACS, followed by monthly telephone conferences in which they reviewed rating procedures and calibrated their ratings on a practice case.

### ***Measure***

The CTACS (Liese et al., 1995) was developed for the NIDA CCTS (Crits-Christoph et al., 1997). The process of constructing the CTACS was parallel to that of the CSPRS (Hollon et al., 1988). The CTACS followed the format of Barber and Crits-Christoph's (1996) adherence/competence scale for SE dynamic therapy. The CSPRS and CTS, as well as current CT treatment manuals, were reviewed to generate a pool of items. Items from the CTS that were multifactorial (e.g., agenda, homework, interpersonal effectiveness) or nonspecific (e.g., collaboration) were rewritten for the CTACS as multiple items reflecting the essential components embedded in those items. For example, Collaborative Structure and Interpersonal Effectiveness (from the CTS) are now reflected in separate items. Although the measure was developed for assessing treatment sessions with cocaine-dependent patients, the CTACS can be easily used for sessions with non-drug-dependent patients.

The first version of the CTACS, which contained 30 items, was sent to 27 therapists and supervisors involved in the NIDA CCTS who were either “experts” (i.e., published or taught CT extensively) or trained CT therapists in other funded psychotherapy research protocols. All had studied the manual by A. T. Beck et al. (1993) for the NIDA CCTS and received some training directly from Dr. Beck. Two supervisors and 5 therapists were trained and currently employed as therapists and supervisors at the Center for Cognitive Therapy, University of Pennsylvania (then directed by Dr. Beck). As a result of feedback from these individuals, some items were added to the CTACS, some were deleted, and others were modified. It was decided that the 7-point rating scale of the CTS would be adopted for the CTACS. However, instead of including only a competence rating, it was decided to follow Barber, Krakauer, Calvo, Badgio, and Faude’s (1997) scale and to include ratings on adherence, appropriateness, and quality. The quality rating addresses the skill with which an intervention is delivered, and the appropriateness rating reflects the appropriateness of choosing to use that intervention in the context of the session. For example, a therapist could elicit an underlying assumption in a high-quality manner and, therefore, receive a high-quality score, but appropriateness could be scored low if the judge thought that the therapist should have spent more or less time with this intervention during the course of the session. By exploring the extent to which appropriateness and quality are different from one another, and assessing interjudge reliability for these two sets of ratings, the current study examines whether this distinction within therapist competence is worth maintaining.

In the next phase of scale development, a group of 5 graduate psychology students using a preliminary 25-item version of the CTACS rated five videotaped CT sessions. They were instructed to note item difficulties and ambiguities and review anchors of each item for equal interval distance between all even-numbered ratings. As a result of their feedback, additional modifications were made to individual items and their anchors. In the last phase of development, the 27 therapists and supervisors of the NIDA CCTS reviewed the scale, and final modifications were made.

The version of the CTACS used in the current study contains 25 items in five sections (Table 1): CT structure (Items 1–9), development of a collaborative therapeutic relationship (Items 10–15), development and application of the case conceptualization (Items 16–21), cognitive and behavioral techniques (Items 22–24), and overall performance (Item 25).

Ratings on therapist adherence and appropriateness ranged from 0 (*none*) to 6 (*thorough*). If an item reflected an intervention or process that did not necessarily occur in all CT sessions, the option of “not applicable” was provided. Anchors for the competence rating varied for each item, but the underlying continuum for all items ranged from 0 (*poor*) to 6 (*excellent*). Descriptions of the anchor points for receiving an excellent rating for each of the 25 CTACS items have been published in Liese and J. S. Beck (1997). These items have also been modified for rating the interviewing skills of primary care physicians (Liese, Shepherd, Cameron, & Ojeleye, 1995).

Because we had introduced a new distinction between two components of competence—appropriateness and quality—in the development of the CTACS and because Barber et al. (1997) found a very high correlation between these constructs in their adherence scale for dynamic therapy, we examined the correlations between these two scores. Preliminary data analysis indicated that appropriateness and quality were very highly correlated ( $r_s > .90$ ); therefore, these two scores were averaged to create a score, labeled competence, for each item.

**TABLE 1. Items of the Cognitive Therapy Adherence and Competence Scale**

Item no.	Item
Cognitive therapy structure	
1	Agenda: identified important target problems; prioritized and followed agenda
2	Mood check: asked about mood; followed up with clarification; put important mood-related concerns on agenda and addressed these
3	Bridge from previous visit: discussed previous session with patient; emphasized important issues; related previous session to current agenda items; added unresolved issues to current agenda
4	Inquired about ongoing problem (e.g., urges, cravings, drug use): inquired about ongoing difficulties and followed up with appropriate responses and interventions
5	Reviewing previous homework: reviewed previous homework or discussed incomplete homework
6	Assigning new homework: collaboratively assigned homework; discussed and began to plan and practice homework in the session
7	Capsule summaries: provided meaningful capsule summaries; checked for accuracy and revised when appropriate
8	Patient summary and feedback: asked for summary and feedback throughout the session; responded in a positive, supportive manner; appropriately adjusted behaviors based on the patient's feedback
9	Focus/structure: used time effectively by directing flow of conversation and redirecting when necessary; session well paced, focused, and structured
Development of a collaborative therapeutic relationship	
10	Socialization to cognitive therapy model, concepts, process, or structure: described relevant model, concepts, process, structure; applied these in a timely manner; checked the patient's understanding and elicited feedback
11	Warmth/genuineness/congruence: appeared optimally warm, genuine, caring, and congruent
12 <sup>a</sup>	Acceptance/respect: appeared fully accepting, respectful, nonjudgmental
13 <sup>a</sup>	Attentiveness: was attentive to important obvious and subtle cues
14 <sup>a</sup>	Accurate empathy: demonstrated empathy skills and insight; shared with patient
15	Collaboration: shared responsibility for defining patient's problems and potential solutions; functioned as a team
Development and application of the case conceptualization	
16	Eliciting automatic thoughts: elicited ATs; related these to patient's problems
17	Eliciting core beliefs and schemas: elicited core beliefs/schemas; effectively related these to patient's problems
18	Eliciting meaning/understanding/attributions: asked for meaning of salient events and beliefs; followed up
19	Addressing key issues: raised salient key issues; related these to schemas, core beliefs, conditional beliefs, automatic thoughts, emotions, and behaviors
20	Case conceptualization: linking past to present: inquired about developmental processes when appropriate; linked accurately to current beliefs, thoughts, emotions, behaviors; elicited feedback from the patient regarding accuracy and usefulness
21 <sup>a</sup>	Sharing the conceptualization with the patient: provided the patient with a conceptualization of problems; elicited feedback from the patient regarding accuracy and usefulness
Cognitive and behavioral techniques	
22	Guided discovery: used open-ended questions, reflective, confrontive, and interpretive responses to guide patient's understanding of important issues

*(continued)*

**TABLE 1. (continued)**

Item no.	Item
23	Asking for evidence/alternative views: asked for patient's evidence for maladaptive beliefs; where appropriate, asked for alternative views; appropriately followed up
24	Use of alternative cognitive and behavioral techniques (please specify: _____): effectively selected and applied standardized cognitive and behavioral methods
Overall performance	
25	Overall performance as a cognitive therapist: performance in this session is excellent; cognitive therapy is practiced at a level equal to or superior to supervisor's own level of proficiency; therapist apparently knows the relevant treatment manual extremely well; applies the cognitive case formulation with ease and flexibility; this represents state-of-the-art cognitive therapy

Note. ATs = automatic thoughts.

<sup>a</sup>Items eliminated from final version of the scale because of poor interjudge reliabilities.

## Results

### Reliability

*Interjudge reliability.* Interjudge reliability coefficients were determined by calculating ICC (2,  $n$ ; Shrout & Fleiss, 1979), where rater was considered a random effect and  $n$  was the number of raters. The ICCs were computed after conducting a component of variance analysis where terms for therapist, patient (nested within therapist), session (nested within therapist and patient), rater, and error were specified as random effects using a restricted maximum likelihood estimation method. Thus, in the current study, ICC (2, 2) is an estimate of how two randomly selected judges will perform. This model was computed for both item and scale ratings. The reliability of the judges' ratings of the scales/items was computed in two ways: using only patients who received CT and using patients from all three treatment groups. For the analyses that included patients from all three groups, ICCs were computed using the component of variance analysis described previously with the addition of treatment as a random term.

ICCs for several of the items were very poor ( $< .40$ ): acceptance/respect (Item 12), attentiveness (Item 13), accurate empathy (Item 14), and sharing the case conceptualization with the patient (Item 21). As a result, these items were not included in the final scale. The remaining ICCs, item means, and standard deviations are presented (for 21 items) in Table 2.

ICCs for the adherence items for CT cases only ( $n = 92$ ) ranged from .33 to .91, whereas those for adherence items for all cases (including other forms of therapy,  $n = 134$ ) ranged from .37 to .93. ICCs for competence items for CT cases ranged from .36 to .92, and those for competence items for all cases ( $n = 134$ ) ranged from .22 to .94. The items with the highest ICCs were typically related to therapeutic structure (e.g., agenda setting, mood check, and homework). Those items with the lowest ICCs related to collaboration and case conceptualization (e.g., acceptance, warmth, sharing the case conceptualization). The ICCs for the 21-item total CTACS (i.e., excluding the four low-reliability items) were .67 and .73 for adherence and competence, respectively, among the CT cases, and .80 and .80 for adherence and competence, respectively, among the entire sample of patients.

**TABLE 2. Intraclass Correlations, Means, and Standard Deviations of Cognitive Therapy Adherence and Competence Scale Items and Total Scale<sup>a</sup>**

Item	Adherence			Appropriateness			Quality			Competence		
	ICC	<i>M</i>	<i>SD</i>	ICC	<i>M</i>	<i>SD</i>	ICC	<i>M</i>	<i>SD</i>	ICC	<i>M</i>	<i>SD</i>
CT cases only ( <i>n</i> = 92)												
1	0.82	4.5	1.6	0.81	4.7	1.5	0.78	4.2	1.5	0.83	4.4	1.5
2	0.91	3.0	2.1	0.91	3.3	2.1	0.90	3.0	1.9	0.92	3.2	2.0
3	0.61	3.3	1.5	0.48	3.7	1.4	0.64	3.5	1.6	0.55	3.6	1.4
4	0.66	4.8	1.2	0.68	5.0	1.2	0.73	4.7	1.2	0.72	4.8	1.2
5	0.86	2.6	2.2	0.78	3.3	1.9	0.87	2.7	2.1	0.76	3.1	1.9
6	0.77	3.6	1.9	0.82	3.8	1.8	0.88	3.6	1.9	0.85	3.7	1.8
7	0.48	4.7	1.1	0.50	4.9	1.0	0.47	4.6	1.0	0.51	4.8	1.0
8	0.79	3.7	1.9	0.81	3.9	1.9	0.79	3.6	1.8	0.82	3.7	1.8
9	0.56	4.0	1.1	0.59	4.2	1.1	0.64	4.0	1.1	0.63	4.1	1.1
10	0.80	3.9	1.8	0.72	4.2	1.4	0.73	3.8	1.5	0.73	4.0	1.4
11	0.45	4.6	0.9	0.50	4.6	1.0	0.50	4.6	0.9	0.51	4.6	0.9
15	0.43	4.3	1.0	0.47	4.4	1.0	0.47	4.3	1.1	0.48	4.4	1.1
16	0.75	3.6	1.6	0.63	4.0	1.3	0.73	3.8	1.5	0.69	3.9	1.3
17	0.59	2.1	1.6	0.47	3.1	1.3	0.54	2.7	1.7	0.45	3.0	1.3
18	0.33	2.7	1.5	0.47	3.6	1.3	0.58	3.3	1.6	0.45	3.5	1.3
19	0.59	0.9	1.3	0.34	2.8	1.2	0.34	1.6	1.5	0.34	1.6	1.5
20	0.80	1.3	1.8	0.41	3.1	1.3	0.66	2.1	2.0	0.36	3.0	1.4
22	0.44	4.6	1.0	0.50	4.7	1.0	0.45	4.6	0.9	0.49	4.7	0.9
23	0.55	1.8	1.7	0.57	3.0	1.6	0.70	2.6	1.9	0.53	2.9	1.5
24	0.66	3.0	1.7	0.51	3.4	1.5	0.64	3.3	1.6	0.56	3.4	1.5
25	0.70	4.0	0.8	0.68	4.1	0.8	0.70	4.0	0.9	0.72	4.0	0.9
All cases ( <i>n</i> = 134)												
1	0.93	3.3	2.3	0.93	3.5	2.2	0.93	3.0	2.1	0.94	3.2	2.2
2	0.93	2.2	2.2	0.92	2.5	2.2	0.93	2.2	2.0	0.94	2.3	2.1
3	0.74	2.7	1.6	0.63	3.1	1.5	0.77	2.9	1.7	0.70	3.0	1.6
4	0.85	4.5	1.6	0.85	4.6	1.6	0.86	4.3	1.6	0.86	4.5	1.6
5	0.83	2.0	2.1	0.76	2.8	1.9	0.89	2.2	2.1	0.74	2.7	1.9
6	0.85	2.7	2.1	0.81	3.1	1.9	0.92	2.7	2.1	0.83	3.0	1.9
7	0.45	4.5	1.2	0.48	4.7	1.0	0.52	4.4	1.1	0.51	4.5	1.0
8	0.88	2.8	2.1	0.86	3.1	2.1	0.88	2.7	2.0	0.88	2.9	2.0
9	0.73	3.5	1.3	0.74	3.7	1.3	0.76	3.5	1.3	0.77	3.6	1.3
10	0.92	2.8	2.3	0.79	3.4	1.9	0.91	2.7	2.1	0.80	3.2	1.8
11	0.54	4.5	1.0	0.57	4.5	1.0	0.60	4.5	1.0	0.59	4.5	1.0
15	0.66	3.8	1.3	0.69	3.9	1.3	0.70	3.8	1.3	0.71	3.8	1.3
16	0.88	2.7	2.0	0.62	3.4	1.5	0.89	2.9	1.9	0.67	3.2	1.5
17	0.67	1.6	1.6	0.28	2.9	1.3	0.71	2.1	1.8	0.29	2.8	1.3
18	0.37	2.2	1.5	0.37	3.5	1.2	0.63	3.0	1.8	0.37	3.4	1.2
19	0.53	0.7	1.2	0.19	2.7	1.1	0.33	1.3	1.5	0.33	1.3	1.5
20	0.72	1.1	1.6	0.25	2.9	1.2	0.64	1.7	1.9	0.22	2.8	1.2
22	0.54	4.4	1.1	0.58	4.5	1.1	0.55	4.3	1.0	0.58	4.4	1.0
23	0.64	1.3	1.6	0.31	2.8	1.4	0.78	1.9	1.9	0.29	2.7	1.4
24	0.85	2.1	2.0	0.41	2.9	1.5	0.85	2.3	2.0	0.42	2.9	1.5
25	0.88	3.4	1.1	0.85	3.6	1.1	0.88	3.3	1.2	0.88	3.5	1.2

*Note.* For means and standard deviations, items were averaged over the two raters. CT = cognitive therapy.  
<sup>a</sup>ICC (2, 2).

*Internal consistency.* Cronbach alpha coefficients were computed to determine the full scale's internal consistency. These Cronbach alphas were found to be very high (.92 for adherence and .93 for competence), indicating that the total CTACS scores were good representations of the scale items.

*Relation between adherence and competence.* We assessed the relation between adherence and competence by calculating Pearson correlation coefficients. For CT cases only, the resulting correlation was .96, and for all cases Pearson  $r = .97$ .

### **Criterion Validity**

To evaluate the criterion validity of the CTACS, that is, its ability to distinguish between different therapeutic modalities, separate contrast analyses were performed comparing CT to SE and IDC conditions (Table 3). Every comparison demonstrated highly significant differences between CT and the other two treatment conditions.

## **Discussion**

The results of this study indicate that the psychometric properties of the CTACS make it potentially useful for assessing therapist's adherence to CT for cocaine abuse and its competent delivery. We showed that the scale can be rated reliably by independent judges, and that it has good internal consistency. Interjudge reliability from the current study compares favorably with the results from widely used measures of adherence and competence (the CSPRS and the CTS, respectively; DeRubeis & Feeley, 1990; Hill et al., 1992; Hollon et al., 1988; Vallis et al., 1986). Like other measures of adherence (Hill et al.; Hollon et al.; Vallis et al.), the CTACS demonstrates good criterion-related validity because it clearly distinguishes CT sessions from those of other psychosocial interventions.

Despite our efforts to delineate the differences between adherence and competence and to emphasize these differences during the training of the judges, it is noteworthy that these two components were highly correlated. Conceptually, the CTACS was supposed to capture the distinction between conducting an intervention at a suitable frequency and skillfully delivering the intervention, given the context of the session and the characteristics of the patient. The CTACS, like the Adherence/

**TABLE 3. Criterion Validity: Contrasting ratings of SE, CT, and IDC**

	CT ( <i>N</i> = 92)	SE ( <i>N</i> = 20)	IDC ( <i>N</i> = 22)	T Probabilities		
				CT vs. SE & IDC	CT vs. SE	CT vs. IDC
Adherence Scale Score				<.0005	<.0005	<.0005
<i>M</i>	3.38	1.40	1.71			
<i>SD</i>	.75	.25	.44			
Competence Scale Score				<.0005	<.0005	<.0005
<i>M</i>	3.80	2.07	2.38			
<i>SD</i>	.82	.32	.41			

*Note.* CT= Cognitive Therapy, SE = Supportive-Expressive psychodynamic therapy  
IDC = Individual Drug Counseling

Competence Scale for SE Cocaine Dependence (Barber et al., 1997), is unique among existing measures because it enables ratings of adherence and competence using the same items and the same judges. Barber and Crits-Christoph (1996), using an approach similar to that in the current study, found that adherence and competence correlated .58 for total scale score in dynamic therapy. Thus, some existing findings suggest that adherence and competence are associated when the same judges and the same items are used to rate both adherence and competence, but not to the extent found for the CTACS in the current report. Shaw et al. (1999) similarly reported that the correlations between the CTS and the CSPRS Cognitive-Behavioral Rating Scale were quite high despite the fact that these two instruments have different items and were rated by different judges. Shaw et al.'s finding suggests an inherent covariation between these two concepts. Nevertheless, the degree of covariation obtained in the current study suggests that we should also develop ways to address judges' potential biases toward confounding adherence and competence. That is, judges tend to rate an intervention as more skillfully delivered when it is done repeatedly or an intervention as more adherent when it is delivered competently. It remains to be seen whether the problem was with the scale or with the judges who took part in the current study. One reviewer suggested that the high correlation between adherence and competence scores might be due to the high level of specification of CT. That is, the more developed and specified a treatment is, the more unclear is the distinction between adherence and competence. In our view, however, there is still room for much variance in the competent delivery of specified techniques by adherent therapists. Our data indicated that the judges disagreed with us.

Before discarding the distinction between adherence and competence for the current scale, its predictive validity should be examined. Barber, Crits-Christoph, and Luborsky (1996) have shown in dynamic therapy that, although adherence did not predict outcome, competent delivery of interpretive techniques did. In that study, the correlation between adherence and competence for interpretive techniques was .60. Similarly, Shaw et al. (1999) showed in the TDCRP some evidence that competent delivery of CT did predict outcome. In light of the high correlation between adherence and competence in the current sample and with the current measure, it is doubtful, however, that one could find divergent predictive validity for adherence and competence using these judges ratings.

Since publication of the original treatment manual for substance abuse (A. T. Beck et al., 1993), CT for these disorders has been further developed, refined, and expanded to include treatment of chemical and behavioral addictive disorders in both individual and group modalities (Liese, Beck, & Seaton, 2002). Important lessons have been learned (Liese & Franz, 1996), essential principles of effective treatment have been identified (J. S. Beck & Liese, 1998), and emphasis has shifted from the delivery of cognitive and behavioral techniques to collaboration, case conceptualization, and structure (Liese & A. T. Beck, 1997).

During the recruitment process, the CT therapists chosen for this study were considered among the best at their respective training sites. Several therapists had been involved in prior clinical trials, and all had treated a variety of psychological problems (e.g., depression, anxiety, marital problems, or personality disorders). Some had been supervisors or had functioned in major training or educational capacities. As the pilot phase of the study got underway, most of these seasoned therapists were surprised and challenged by difficulties they encountered when attempting to provide standard CT to addicted patients. Among the most common problems was difficulty gaining rapport and trust with patients. Therapists were accustomed to highly

motivated patients eager to rid themselves of symptoms (e.g., sadness, worry). Therapists quickly learned that cocaine addicts were far more complicated and sophisticated than expected. Although some were highly motivated to change from pathological use to abstinence, most were ambivalent about changing. Many addicts in the study struggled with chronic relapsing or denial of any drug-related problems. During the pilot phase of the CTACS and in response to this variable degree of motivation, some therapists became frustrated, and others became more technique focused (in an effort to “fix” patients’ problems). Some patients perceived therapists’ struggles, which diminished their trust in them.

Early in the treatment/training process, most therapists made similar mistakes. They overemphasized socialization to the CT model, concepts, process, or structure (Item 10 on the CTACS). For example, they tended to lecture patients about cognitive distortions, the effects of thoughts and beliefs on feelings and behaviors, the importance of changing maladaptive beliefs, and so forth. In the most severe case, one therapist talked for 31 min of the 46-min session! As time went on, therapists became less and less “preachy” and much more collaborative.

Therapists early in treatment also tended to overemphasize the importance of structuring sessions. When patients did not clearly articulate agenda items (Item 1), some therapists lectured on the importance of coming to sessions prepared with these rather than extracting potential items from patients’ (informal) opening comments (e.g., “It was a real drag driving over here today.”) When such overemphasis occurred, warmth (Item 11) and collaboration (Item 15) were potentially compromised.

Early on, therapists also had difficulty assigning (Item 6) and reviewing (Item 5) homework. Some therapists assigned homework without fully collaborating with patients (e.g., “I’d like you to keep a daily thought record each day until I see you next”). When they first began in the study, these therapists underestimated the difficulties and chaos experienced by cocaine-dependent patients outside of therapy. Some therapists also neglected to review homework after assigning it. Later in the study, they realized that reviewing homework increased their credibility. When they did so, patients began to realize that therapists were serious about completing their assignments. Reviewing homework also enabled therapists to check for difficulties with homework.

Because problems were realized early in the pilot phase of the study, supervisors placed relatively greater emphasis on relationship-building techniques than on change-oriented methods. Therapists were strongly advised to place rapport and trust building above all else. They were advised to pay attention to the patient’s agenda at the beginning of the session and allow this agenda to guide the session, while paying careful attention to drug-related problems. This emphasis was reflected in individual item scores on the CTACS. In the current study (see Table 2), the highest mean adherence ratings (> 4 of 6) were on Items 1 (agenda), 4 (inquired about drug-related problems), 7 (capsule summaries), 11 (warmth/genuineness/congruence), 15 (collaboration), and 22 (guided discovery).

These findings (emphasis on collaboration, warmth, genuineness, guided discovery) also reflect developments in the CT of addictive behaviors (J. S. Beck & Liese, 1998; Liese & A. T. Beck, 1997; Liese & Franz, 1996). For example, CT therapists treating addicted individuals are primarily encouraged to collaborate with patients in a warm, genuine, congruent manner by guiding discovery and sharing their observations along the way (by means of capsule summaries). They are also encouraged to maintain structure within and across sessions by collaboratively developing and following agendas that include patients’ current problems. It is likely that rating early in treatment sessions when therapists attempt to create a good therapeutic al-

liance with their patients also contributed to the increased salience of items describing an emphasis on the therapeutic collaboration observed in the current study.

The challenges of treating this addicted population become apparent when lower ratings on the CTACS are scrutinized. For example, the lowest ratings (< 2 of 6) were on Items 19 (addressing key issues), 20 (case conceptualization: linking past to present), and 23 (asking for evidence/alternative views). Some of the CT therapists in this study sometimes found it difficult to balance the problems and needs of this difficult group of patients. Although most, if not all, cocaine addicts have problems (i.e., impairment) in key issue areas (e.g., relationships, career, mood regulation), some therapists had difficulty knowing when and how to balance attention to these problems with attention to drug-related problems. Some therapists seemed to underestimate the importance of discussing the development of drug-related and other problems, and at times they tended to neglect the most basic of CT techniques: asking for evidence and alternative views.

As a brief case example, “Dr. Smith” was working with “Mary” who was cocaine dependent, depressed, single with three children at home, working as a stripper in a nightclub, and had a long history of physical and sexual abuse. It was obviously important for Dr. Smith to develop rapport with her while learning about Mary’s numerous psychosocial problems and their development (including drug-related problems). At a critical point in time (when rapport was established and Dr. Smith had conceptualized Mary well), he needed to begin challenging her maladaptive beliefs, especially about drug-related behaviors (by asking for evidence and alternative views). However, he needed to do so in a way that did not drive Mary to drop out of treatment. Early in treatment, Dr. Smith had a tendency to overemphasize the importance of session structure and patient education. He assigned homework without sensitivity to patients’ abilities and motivation to complete such homework. He talked too much, did not collaborate enough, and was not sufficiently warm; patients were turned off by his style, and most of his patients dropped out of therapy. However, later in training, Dr. Smith learned that he needed to carefully check patients’ moods (Item 2) at the beginning of sessions, summarize and give feedback (Item 8), convey warmth (Item 11), collaborate (Item 15), address key issues (Item 19), and effectively use guided discovery to define and solve problems (Item 22). When Dr. Smith was able to perform these functions, patients were more likely to stay in and benefit from therapy. This is obviously a complex, delicate process, and therapists in this study found mastery to be challenging!

In addition, key issues may have been less frequently addressed because they typically involve abstract concepts, whereas cocaine addicts typically present more practical concrete problems. Perhaps therapists did not link past to present problems because CT has traditionally been more present oriented (with urgent, here-and-now problems). Finally, asking for evidence is a standard cognitive technique designed to test the validity of patients’ beliefs. As previously mentioned, techniques are less emphasized in treating addicts, whereas guided discovery and collaboration are more emphasized. Because of all of these issues, there is reason to believe that the relatively low mean ratings on technical items found in the current sample are specific to the sample of cocaine-dependent patients and possibly to scoring early sessions in therapy rather than indicating a problem with the scale. Nevertheless, it would be very helpful to have some data using the CTACS with, for example, depressed patients.

Historically, CT has evolved from dealing with depression to being applied to perhaps more complex psychological problems involving comorbidity with different

personality disorders. As a result of this and other developments, more emphasis has been placed on development of the therapeutic relationship, case conceptualization, and the evaluation of “deeper” cognitive structures. Some of these new emphases have received more thorough coverage in the CTACS than in the CTS. The CSPRS was originally developed to evaluate the treatment of acute depressive disorders; therefore, it is primarily technique focused and does not cover these additional dimensions of modern CT.

In summary, the two most widely used scales to measure CT adherence and competence are the CSPRS and CTS. These scales each have unique strengths and weaknesses. The CSPRS measures only adherence, whereas the CTS measures only competence; neither scale assesses both. Neither instrument has been widely validated, both fail to reflect some modern developments in CT, and psychometric studies have suggested that the CTS has marginal reliability. The results of the current study indicate that the CTACS may represent an improvement over the CTS while also providing adherence ratings.

The process of assessing the validity of the CTACS has just begun. On the one hand, Jacobson’s (1998) finding that the CTS yields low reliability when scored by experts without shared training raises concerns about the scale. On the other hand, should we expect competence scales to be reliable without appropriate training? Ideally, we would like to see expert cognitive therapists agree on what is competently delivered CT using scales like the CTS or the CTACS without much training at all. Thus, as part of the validation of the CTACS, we should try to assess how expert CT practitioners would fare using the CTACS. Future studies will also be needed to assess the reliability and validity of the CTACS in nonsubstance abuse populations to determine whether our current reliability figures are specific to the patient population used in the study. Additional aspects of validity remain to be examined. Does the CTACS show predictive validity; that is, does the CTACS predict outcome of CT? Do therapist variables such as experience or personality predict levels of adherence and competence? Do patient variables such as comorbidity of personality disorders, severity, or plain “difficulty” predict levels of adherence and competence? Additional studies of concurrent validity will examine whether the CTACS shares commonalities with the CSPRS. These future studies will be further steps in the process of validating the CTACS.

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### Zusammenfassung

Die Autoren stellen psychometrische Basisdaten für einen neuen Fragebogen vor mit 21 Items zur Durchführungskonformität und -kompetenz kognitiver Therapien (Cognitive Therapy Adherence and Competence Scale; CTACS, Liese, Barber, & Beck 1995). Dieser Fragebogen ist angelehnt an die häufig benutzte Kognitive Therapieskala (Cognitive Therapy Scale; CTS, Young & Beck, 1980). Der CTACS strebt im Vergleich zum CTS eine breitere Abdeckung von Therapeutenaktivitäten an. Zwei kognitive Therapieexperten schätzten dem Zufall nach ausgewählte Tonbandaufzeichnungen ein von Therapiesitzungen Kokain-abhängiger Patienten, die sich in der Trainingsphase ( $n = 60$ ) und in der klinischen Phase ( $n = 69$ ) des Behandlungsprogramms der 'National Institute on Drug Abuse Cocaine Collaborative Treatment Study' befanden. Die Patienten waren in randomisierter Form verschiedenen Behandlungsarten (kognitive Therapie, unterstützend-expressive dynamische Therapie, individuelle Beratung) zugeteilt worden. Die vorliegenden Ergebnisse sprechen dafür, dass der CTACS eine akzeptable Interraterzuverlässigkeit und Kriteriumsvalidität aufweist.

### Résumé

Les auteurs présentent les données psychométriques essentielles d'une nouvelle Echelle d'Adhérence et de Compétence en Thérapie Cognitive (CTACS ; Liese, Barber, & Beck, 1995) à 21 items, qui s'appuie sur l'Echelle de Thérapie Cognitive (CTS ; Young & Beck, 1980), déjà largement utilisée. La CTACS essaie de procurer une couverture plus large des activités des thérapeutes cognitivistes que le fait la CTS. Deux thérapeutes cognitivistes experts ont coté des séances audio choisies au hasard de patients dépendants à la cocaïne ayant reçu de manière randomisée soit une thérapie cognitive, soit une thérapie de soutien/découvrante (psychodynamique), soit du conseil individuel, faisant partie de la phase de formation et de la phase clinique ( $n = 60$  resp.  $69$ ) de la National Institute on Drug Abuse Cocaine Collaborative Treatment Study. Les résultats indiquent que la CTACS a des niveaux acceptables de fidélité inter-juges et de validité critère.

### Resumen

Los autores presentan datos psicométricos básicos para una nueva Escala de 21-item de Adhesión y competencia en terapia cognitiva (CTACS, Liese, Barber y Bedk, 1995), basada en la Escala ampliamente usada de Terapia Cognitiva (CTS, Young & Beck, 1980). La CTACS intenta suministrar un cubrimiento mayor de las actividades de los terapeutas cognitivos que la CTS. Dos terapeutas cognitivos expertos clasificados al azar eligieron sesiones terapéuticas audiograbadas de pacientes dependientes a la cocaína elegidos al azar para recibir terapia cognitiva, terapia dinámica, de apoyo-expresiva o counseling individual como parte de las fases de entrenamiento y clínica ( $n = 60$  y  $n = 69$  respectivamente) del Estudio colaborativo del tratamiento del abuso de cocaína del Instituto Nacional (National Institute on Drug Abuse Cocaine Collaborative Treatment Study). Los resultados indican que el CTACS muestra niveles aceptables de confiabilidad interjueces y de validez de criterio.

**Resumo**

Os autores apresentam dados psicométricos básicos para uma nova versão da Escala de 21 itens de Aderência e Competência na Terapia Cognitiva (Cognitive Therapy Adherence and Competence Scale, CTACS, Liese, Barber, & Beck, 1995), a qual é baseada na, amplamente utilizada, Escala de Terapia Cognitiva (Cognitive Therapy Scale, CTS; Young & Beck, 1980). A CTACS procura fornecer uma mais ampla cobertura das actividades dos terapeutas cognitivos. Dois especialistas em terapia cognitiva cotaram sessões terapêuticas, gravadas em áudio, aleatoriamente seleccionadas de pacientes cocaína-dependentes que foram distribuídos aleatoriamente para receberem terapia cognitiva, terapia dinâmica expressivo-suportativa, ou aconselhamento individual como parte da fase de treino e da fase clínica (respectivamente,  $n = 60$  and  $n = 69$ ) do Estudo Colaborativo do Tratamento do Abuso de Cocaína do Instituto Nacional de Abuso de Droga dos Estados Unidos. Os resultados indicaram que a CTACS tem níveis aceitáveis de fidelidade interjuízes e validade de critério.

**Sommario**

Gli autori presentano i dati psicometrici di una nuova scala a 21-item la Cognitive Therapy Adherence and Competence Scale (CTACS, Liese, Barber, & Beck, 1995) sviluppata a partire dalla già nota Cognitive Therapy scale (CTS; Young & Beck, 1980). La CTACS è stata costruita per ampliare e comprendere al suo interno un numero maggiore d'interventi, utilizzati da terapeuti cognitivi, rispetto alla CTS. Due terapeuti cognitivi esperti hanno valutato delle sedute audioregistrate di pazienti con problemi di dipendenza da cocaina trattati con terapie ad orientamento cognitivo, dinamico supportivo-espressivo o di counseling individuale (sia l'assegnazione dei pazienti al tipo di terapia sia l'assegnazione ai due siglatori delle sedute da valutare sono state fatte in modo random). I soggetti della ricerca erano stati scelti, all'interno del progetto di ricerca del National Institute on Drug Abuse Cocaine, alcuni soggetti erano stati reclutati durante la fase pilota dello studio ( $n = 60$ ) altri durante la fase clinica ( $n = 69$ ). I risultati indicano che la CTACS ha mostrato livelli accettabili di interrater reliability e di validità discriminativa.

**摘要**

研究者呈現新版 21 題「認知治療運用與專業能力量表 (CTACS, Liese, Barber, & Beck, 1995)」的基本心理計量資料。此量表係依據被廣泛運用的「認知治療量表 (CTS; Young & Beck, 1980)」加以編製。「認知治療運用與專業能力量表」嘗試涵蓋比「認知治療量表」更廣的認知治療者的活動內容。由兩位認知治療者隨機評定兩組毒品依賴病患治療過程的錄音帶。這兩組病患被隨機分派接受認知治療或是支持-表達性的動力治療的個別諮商/治療處遇 (二組人數分別是 60 與 69 人)。這整個過程是全國藥物濫用古柯鹼合作處遇計畫的訓練與臨床階段的一部份。研究結果發現「認知治療運用與專業能力量表」的評分者間信度與效標效度均是可接受的。

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