COGNITIVE THERAPY RATING SCALE (CTRS)

Therapist: _____ Client: _____ Date: _____

Tape ID#: _____ Rater: _____ Date: _____

Session#: _____ ☐ Videotape ☐ Audiotape ☐ Transcript ☐ Live Observation

Directions: For each time, assess the therapist on a scale from 0 to 6, and record the rating on the line next to the item number. Descriptions are provided for even-numbered scale points. If you believe the therapist falls between two of the descriptors, select the intervening odd number (1, 3, 5). For example, if the therapist set a very good agenda but did not establish priorities, assign a rating of a 5 rather than a 4 or 6.

If the descriptions for a given item occasionally do not seem to apply to the session you are rating, feel free to disregard them and use the more general scale below:

0	1	2	3	4	5	6
Poor	Barely Adequate	Mediocre	Satisfactory	Good	Very Good	Excellent

Please do not leave any item blank. For all items, focus on the skill of the therapist, taking into account how difficult the patient seems to be.

Part I. GENERAL THERAPEUTIC SKILLS

___1. AGENDA

0 Therapist did not set agenda.

2 Therapist set agenda that was vague or incomplete.

4 Therapist worked with patient to set a mutually satisfactory agenda that included specific target problems (e.g., anxiety at work, dissatisfaction with marriage.)

6 Therapist worked with patient to set an appropriate agenda with target problems, suitable for the available time. Established priorities and then followed agenda.

___2. FEEDBACK

0 Therapist did not ask for feedback to determine patient's understanding of, or response to, the session.

2 Therapist elicited some feedback from the patient, but did not ask enough questions to be sure the patient understood the therapist's line of reasoning during the session or to ascertain whether the patient was satisfied with the session.

4 Therapist asked enough questions to be sure that the patient understood the therapist's line of reasoning throughout the session and to determine the patient's reactions to the session. The therapist adjusted his/her behavior in response to the feedback, when appropriate.

6 Therapist was especially adept at eliciting and responding to verbal and non-verbal feedback throughout the session (e.g., elicited reactions to session, regularly checked for understanding, helped summarize main points at end of session.

___3. UNDERSTANDING

0 Therapist repeatedly failed to understand what the patient explicitly said and thus consistently missed the point. Poor empathic skills.

2 Therapist was usually able to reflect or rephrase what the patient explicitly said, but repeatedly failed to respond to more subtle communication. Limited ability to listen and empathize.

4 Therapist generally seemed to grasp the patient's "internal reality" as reflected by both what the patient explicitly said and what the patient communicated in more subtle ways. Good ability to listen and empathize.

6 Therapist seemed to understand the patient's "internal reality" thoroughly and was adept at communicating this understanding through appropriate verbal and non-verbal responses to the patient (e.g., the tone of the therapist's response conveyed a sympathetic understanding of the client's "message"). Excellent listening and empathic skills.

___4. INTERPERSONAL EFFECTIVENESS

0 Therapist had poor interpersonal skills. Seemed hostile, demeaning, or in some other way destructive to the patient.

2 Therapist did not seem destructive, but had significant interpersonal problems. At times, therapist appeared unnecessarily impatient, aloof, insincere or had difficulty conveying confidence and competence.

4 Therapist displayed a satisfactory degree of warmth, concern, confidence, genuineness, and professionalism. No significant interpersonal problems.

6 Therapist displayed optimal levels of warmth, concern, confidence, genuineness, and professionalism, appropriate for this particular patient in this session.

___5. COLLABORATION

0 Therapist did not attempt to set up a collaboration with patient.

2 Therapist attempted to collaborate with patient, but had difficulty either defining a problem that the patient considered important or establishing rapport.

4 Therapist was able to collaborate with patient, focus on a problem that both patient and therapist considered important, and establish rapport.

6 Collaboration seemed excellent; therapist encouraged patient as much as possible to take an active role during the session (e.g., by offering choices) so they could function as a "team".

___6. PACING AND EFFICIENT USE OF TIME

0 Therapist made no attempt to structure therapy time. Session seemed aimless.

2 Session had some direction, but the therapist had significant problems with structuring or pacing (e.g., too little structure, inflexible about structure, too slowly paced, too rapidly paced).

4 Therapist was reasonably successful at using time efficiently. Therapist maintained appropriate control over flow of discussion and pacing.

6 Therapist used time efficiently by tactfully limiting peripheral and unproductive discussion and by pacing the session as rapidly as was appropriate for the patient.

Part II. CONCEPTUALIZATION, STRATEGY, AND TECHNIQUE

___7. GUIDED DISCOVERY

0 Therapist relied primarily on debate, persuasion, or "lecturing." Therapist seemed to be "cross-examining" patient, putting the patient on the defensive, or forcing his/her point of view on the patient.

2 Therapist relied too heavily on persuasion and debate, rather than guided discovery. However, therapist's style was supportive enough that patient did not seem to feel attacked or defensive.

4 Therapist, for the most part, helped patient see new perspectives through guided discovery (e.g., examining evidence, considering alternatives, weighing advantages and disadvantages) rather than through debate. Used questioning appropriately.

6 Therapist was especially adept at using guided discovery during the session to explore problems and help patient draw his/her own conclusions. Achieved an excellent balance between skillful questioning and other modes of intervention.

___8. FOCUSING ON KEY COGNITIONS OR BEHAVIORS

0 Therapist did not attempt to elicit specific thoughts, assumptions, images, meanings, or behaviors.

2 Therapist used appropriate techniques to elicit cognitions or behaviors; however, therapist had difficulty finding a focus or focused on cognitions/behaviors that were irrelevant to the patient's key problems.

4 Therapist focused on specific cognitions or behaviors relevant to the target problem. However, therapist could have focused on more central cognitions or behaviors that offered greater promise for progress.

6 Therapist very skillfully focused on key thoughts, assumptions, behaviors, etc. that were most relevant to the problem area and offered considerable promise for progress.

___9. STRATEGY FOR CHANGE

(Note: For this item, focus on the quality of the therapist's strategy for change, not on how effectively the strategy was implemented or whether change actually occurred.)

0 Therapist did not select cognitive-behavioral techniques.

2 Therapist selected cognitive-behavioral techniques; however, either the overall strategy for bringing about change seemed vague or did not seem promising in helping the patient

4 Therapist seemed to have a generally coherent strategy for change that showed reasonable promise and incorporated cognitive-behavioral techniques.

6 Therapist followed a consistent strategy for change that seemed very promising and incorporated the most appropriate cognitive-behavioral techniques.

___10. APPLICATION OF COGNITIVE-BEHAVIORAL TECHNIQUES

(Note: For this item, focus on how skillfully the techniques were applied, not on how appropriate they were for the target problem or whether change actually occurred.)

0 Therapist did not apply any cognitive-behavioral techniques.

2 Therapist used cognitive-behavioral techniques, but there were significant flaws in the way they were applied.

4 Therapist applied cognitive-behavioral techniques with moderate skill.

6 Therapist very skillfully and resourcefully employed cognitive-behavioral techniques.

___11. HOMEWORK

0 Therapist did not attempt to incorporate homework relevant to cognitive therapy.

2 Therapist had significant difficulties incorporating homework (e.g., did not review previous homework, did not explain homework in sufficient detail, assigned inappropriate homework).

4 Therapist reviewed previous homework and assigned “standard” cognitive therapy homework generally relevant to issues dealt with in session. Homework was explained in sufficient detail.

6 Therapist reviewed previous homework and carefully assigned homework drawn from cognitive therapy for the coming week. Assignment seemed “custom tailored” to help patient incorporate new perspectives, test hypotheses, experiment with new behaviors discussed during session, etc.

CTRS DETAILED SCORE REPORT

Tape ID# or Therapist: _____ Date of Rating: _____

Total Score: _____

Part I. GENERAL THERAPEUTIC SKILLS

_____ 1. Agenda

_____ 2. Feedback

_____ 3. Understanding

_____ 4. Interpersonal Effectiveness

_____ 5. Collaboration

_____ 6. Pacing and Efficient Use of Time

Part II. CONCEPTUALIZATION, STRATEGY, AND TECHNIQUE

_____ 7. Guided Discovery

_____ 8. Focusing on Key Cognitions or Behaviors

_____ 9. Strategy for Change

_____ 10. Application of Cognitive-Behavioral Techniques

_____ 11. Homework

_____ TOTAL SCORE

BECK INSTITUTE | COGNITIVE BEHAVIOR THERAPY

COGNITIVE THERAPY SCALE

RATING MANUAL

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Revised Draft

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GENERAL INSTRUCTIONS TO RATERS

1. The most serious problem we have observed in raters is a "*halo effect*". When the rater thinks the therapist is good, he/she tends to rate the therapist high on all categories. The reverse is true when the rater believes the session is bad.

   One of the most important functions of the Cognitive Therapy Scale is to identify the therapist's specific strengths and weaknesses. It is rare to find a therapist who is uniformly good or bad. It may be helpful, therefore, for raters to list positive and negative observations as they listen to a session, rather than concentrate on forming one global impression.

2. A second problem is the tendency of some raters to rely solely on their own notions of what a particular scale point means (e.g., 4 is average) and to disregard the descriptions provided on the form. The problem with this is that we each attach idiosyncratic meanings to particular numbers on the 6-point scale. The most critical raters assign a 1 whenever the therapist is "unsatisfactory", while the most generous raters assign a 5 when the therapist has merely "done a good job" or "tried hard".

   The descriptions on the scale should help to insure more uniformity across raters. Therefore, we urge you to base your numerical ratings on the descriptions provided whenever possible. Do not be concerned if the resulting numerical score does not match your overall "gut feeling" about the therapist. (After all, you are free to express your "gut feeling" in the overall rating on the first page.)

   The only exception should be in sessions where the descriptions do not seem to describe the specific therapist problems and behaviors you observed. When this is the case, disregard the specific descriptions and rely on the more general scale descriptions supplied in the directions. With these exceptions, it would be helpful if raters noted why the descriptions did not seem to apply, so the scale can be refined in the future.

1. AGENDA

Objective:

Because cognitive therapy is a relatively short-term, problem-solving therapy, the limited time available for each interview must be used judiciously. At the beginning of each session, the therapist and patient together establish an agenda with specific target problems to focus on during each session. The agenda helps insure that the most pertinent issues are addressed in an efficient manner.

Background Material:

Cognitive Therapy of Depression, pp. 77-78, 93-98, 167-208; *Cognitive Therapy and the Emotional Disorders,* pp. 224-300.

Desirable Therapist Strategies:

The agenda usually begins with a brief resume of the patient's experiences since last session. This resume includes relevant events of the past week, discussion and feedback regarding homework, and the patient's current emotional status (as indicated by the BDI score, Anxiety Checklist score, and patient's verbal report of progress).

Because cognitive therapy is relatively short-term, it relies heavily on the pinpointing of specific target problems. Without target problems, therapy is much less focused, much less efficient, and therefore much slower. If the target problem is not chosen properly, the therapist may find it very difficult to make headway, either because a more central problem is interfering with progress or because the patient is not sufficiently concerned about the problem to cooperate fully. In some cases, a target problem may be central, yet not be amenable to treatment at a given point in therapy.

At the beginning of a session, therefore, the patient and therapist together develop a list of problems that they would like to work on during the hour. These might include specific depressive symptoms, such as apathy and lack of motivation, crying, or difficulty concentrating; to external problems in the patient's life, such as marital problems, career issues, child-rearing concerns, or financial difficulties.

After the list of possible topics has been completed, the patient and therapist discuss and reach conclusions about which topics to include, the order to cover them, and, if necessary, how much time should be allotted to each topic. Some of the considerations in setting priorities are: the stage of therapy, the severity of the depression, the presence of suicidal wishes, the degree of distress associated with each problem area, the likelihood of making progress in solving, the problem, and the number of different life areas affected by a particular theme or topic.

Some of the most common mistakes we observe in novice cognitive therapists are:

1) failure to agree on specific problems to focus on;

2) selection of a peripheral problem to attack rather than a central concern;

3) a tendency to skip from problem to problem across sessions rather than persistently seek a satisfactory solution to one or two problems at a time.

Generally, in the earlier phases of treatment and in working with more severely depressed patients, behavioral goals are likely to be more useful than strictly cognitive ones. As therapy progresses, the emphasis often switches from relieving specific depressive symptoms (such as inactivity, excessive self-criticism, hopelessness, crying, and difficulty concentrating) to broader problems (such as anxiety about work, life goals, and interpersonal conflicts).

The process of selecting a target problem usually involves a certain degree of "trial and error." The therapist should attempt to follow the agenda throughout the session. However, the therapist and patient should be willing to switch to a different problem occasionally if it becomes apparent that the one they have selected is less important or not yet amenable to change. However, a switch in target problem should be a collaborative decision and should follow a discussion of the rationale for changing topics. If the therapist switches without explanation, it may be perceived by the patient as evidence that the problem cannot be solved and is hopeless.

The therapist must also be sensitive to patients' occasional desires to discuss or "ventilate" regarding issues that are important to the patient at the particular moment, even though such discussions may not seem to offer much relief in the long run or may seem irrelevant to the therapist. Such flexibility epitomizes the collaborative relationship in cognitive therapy.

Agenda-setting should be done quickly and efficiently. The therapist should avoid discussing the content of specific agenda items with the patient prior to completing the agenda. Furthermore, the agenda should not be overly ambitious; it is usually impossible to cover more than one or two target problems in a given session. When done properly, the agenda can usually be set within five minutes.

2. FEEDBACK

Objective:

The therapist should work to carefully elicit the patient's positive and negative reactions to all aspects of therapy. Feedback also includes checking to be sure that the patient understands the therapist's interventions, formulations and line of reasoning, and the therapist has accurately understood the patient's main points.

Background Material:

Cognitive Therapy of Depression, pp. 81-84.

Desirable Therapist Strategies:

The cognitive therapist strives throughout each session to be certain that the patient is responding positively to the therapeutic process. Beginning with the first session, the therapist carefully elicits the patient's thoughts and feelings about all aspects of therapy. He/she routinely asks for the patient's **evaluation of each session**, and encourages the patient to express any **negative reactions to the therapist**, to the way a particular problem is handled, to homework assignments, etc. The therapist must also be sensitive to negative covert reactions to the interviews expressed verbally or nonverbally by the patient, and should ask for the patient's thoughts when such clues are noticed. Whenever possible, the therapist should ask the patient for suggestions about how to proceed, or to choose among alternative courses of action.

A final feature of the feedback process is for the therapist to **check continually to be certain that the patient understands the therapist's formulations**. Depressed patients often indicate understanding simply out of compliance. Thus, the therapist should regularly provide **capsule summaries** of what has happened during the session and ask the patient to abstract the main points from the therapy session. In fact, it is often helpful to have the patient write down these conclusions to review during the week. Similarly, it is important for the therapist to summarize regularly what he/she believes the patient is saying and to ask the patient to modify, correct, or "fine tune" the therapist's summary.

3. UNDERSTANDING

Objective:

The therapist accurately communicates an understanding of the patient's thoughts and feelings. "Understanding" refers to how well the therapist can step into the patient's world, see and experience life the way the patient does, and convey this understanding to the patient. Understanding incorporates what other authors have referred to as listening and empathic skills.

Background Material:

Cognitive Therapy of Depression, pp. 47-49.

Rationale:

The ineffective therapist often misinterprets or ignores the patient's view and incorrectly projects his/her own attitudes, conventional attitudes, or attitudes derived from a particular theoretical system onto the patient. When this happens, the interventions will probably fail since they will be directed at cognitions or behaviors that are not really central to the patient's view of reality.

Desirable Therapist Strategies:

The therapist should be sensitive both to what the patient explicitly says and to what the patient conveys through tone of voice and non-verbal responses. Sometimes, for example, a patient may not recognize or verbalize a particular feeling (such as anger) and yet may communicate the emotion to the therapist through his/her tone of voice in describing a particular event or person.

Unless the therapist is able to grasp the patient's "internal reality", it is unlikely that he/she will be able to intervene effectively. Furthermore, it will be difficult for the therapist to establish rapport unless the patient believes that the therapist understands him/her. The therapist can convey this understanding by rephrasing or summarizing what the patient seems to be feeling. The therapist's tone of voice and non-verbal responses should convey a sympathetic understanding of the patient's point of view (although the therapist must maintain objectivity toward the patient's problems).

Ideally, the therapist's understanding of the patient's "internal reality" will lead to an accurate conceptualization of the patient's problems and then to an effective strategy for change.

Special Considerations in Rating:

"Understanding" seems to be one of the most difficult categories in terms of achieving interrater agreement. It is important, therefore, that raters pay special attention to the descriptions for each scale point. The 0 level means that the therapist **completely missed the point** of what the patient was saying. To score "0" the therapist fails to repeat accurately even the most obvious elements of what the patient says. The 2 level applies to therapists who are too literate or tangential -- they are able to reflect what the patient explicitly says, but either seem dense regarding more subtle connotations that suggest something else is going on or they accurately repeat peripheral aspects of what the patient says but they miss the main point.

The 4 and 6 levels both indicate that the therapist seems to grasp the patient's perspective. The 6 level, however, indicates both greater skill at communicating a sympathetic understanding to the patient and a keener grasp of the patient's world that may be reflected in the therapist's ability to predict how and why the patient reacts as he/she does in particular situations.

4. INTERPERSONAL EFFECTIVENESS

Objective:

The cognitive therapist should display optimal levels of warmth, concern, confidence genuineness, and professionalism.

Background Material:

Cognitive Therapy of Depression. pp. 45-47, 49-50.

Rationale:

A variety of research studies support the importance of these "non-specific" variables in favorable outcomes of psychotherapy. For cognitive therapists, these interpersonal skills are essential in establishing collaboration.

Desirable Therapist Strategies:

The cognitive therapist should be able to communicate that he/she is **genuine**, sincere, and open. The therapist should not act in a manner that seems patronizing or condescending, not should he/she evade patients' questions. Thus, the experienced cognitive therapist does not seem to be playing the role of a therapist, but comes across as straightforward and direct.

Coupled with this openness, cognitive therapists should convey warmth and concern through the content of what they say and through such non-verbal behaviors as tone of voice and eye contact. Therapists must be careful that, in the course of questioning the patient's point of view they do not seem to be critical of, disapproving of, or ridiculing the patient's perspective. The therapist can often use and encourage humor in establishing a positive relationship.

It is also vital for therapists to display a professional manner. Without seeming distant or cold, the cognitive therapist must convey a relaxed confidence about his/her ability to help the depressed patient. This confidence can serve as a partial antidote to the patient's initial hopelessness about the fixture. A professional manner may also make it easier for the therapist to take a directive role, impose structure, and be convincing in expressing alternative points of view. Although the patient and therapist share responsibility for the therapy, the effective therapist must be able to use the leverage accorded him as the professional when necessary.

Special Considerations in Rating:

Interpersonal effectiveness is another category in which interrater agreement has been less than ideal. The 0 level should be used for therapists who could reasonably be expected to have negative effects on the patient because of their poor interpersonal skills. Such therapists, because they are hostile, cold, or critical, may undermine the patient's self-esteem and make the development of trust impossible. The 2 level is intended for therapists who are not likely to be destructive to the patient, but who may hinder therapy progress by being impatient, insincere, aloof, or by not seeming competent. Such therapists will not be able to use the leverage available to therapists who are able to build a stronger relationship with their patients. 4 and 6 levels both represent interpersonal skills; the difference is simply one of degree.

5. COLLABORATION

Objective:

One of the fundamental precepts of cognitive therapy is that there be a collaborative relationship between the patient and therapist. This collaboration takes the form of a therapeutic alliance in which the therapist and patient work together to fight a common enemy: the patient's distress.

Background Material:

Cognitive Therapy and the Emotional Disorders, pp. 220-221; *Cognitive Therapy of Depression,* pp. 50-54.

Rationale:

There are at least three goals of this collaborative approach. First, collaboration helps insure that the patient and therapist have compatible goals at each point in the course of treatment. Thus, they will not be working at cross purposes. Second, the process minimizes patient resistance that often arises when the therapist is viewed as a competitor or an aggressor, or is seen as trying to control or dominate the patient. Third, the alliance helps prevent misunderstandings between the patient and therapist. Such misunderstandings can lead the therapist to go down blind alleys or can lead the patient to misinterpret what the therapist has been trying to convey.

Desirable Therapist Strategies:

Rapport: Rapport refers to harmonious accord between people. In cognitive therapy, this rapport involves a sense that the patient and therapist are functioning together as a team, that they are comfortable working together. Neither is defensive or unduly inhibited. To develop rapport, the therapist will often need to exhibit the understanding and interpersonal qualities described in items 2, 3, and 4 on the Cognitive Therapy Scale. Rapport, however, involves more than showing warmth and empathy. It requires that the therapist adapt the structure and style of the therapy to the needs and desires of each particular patient.

Balancing structure against patient autonomy: To establish a collaborative relationship, the therapist needs to strike a balance between being directive and imposing structure on the one hand, and allowing the patient to make choices and take responsibility on the other. This balance involves deciding when to talk and when to listen; when to confront and when to back off; when to offer suggestions and when to wait for the patient to make his/her own suggestions.

Focusing on problems both patient and therapist consider important: One of the most important aspects of collaboration is the knowledge that the session is focused on a problem that both patient and therapist consider important. Unless the therapist is attentive to the patient's desires in each session, he/she may persist in focusing on a problem or technique that the patient does not consider relevant or important. The patient and therapist may begin to work at cross purposes and the collaboration can break down.

Explaining the rationale for interventions: Another element of the collaborative process is for the therapist to explain the rationale for most interventions he/she makes. This rationale demystifies the process of therapy and thus makes it easier for the patient to understand a particular approach. Furthermore, when the patient can see the relationship between a particular homework assignment or technique and the solution to his/her problem, it is more likely that the patient will participate conscientiously.

6. PACING AND EFFICIENT USE OF TIME

Objective:

The therapist should accomplish as much as possible during each session, taking into account the present capacity of the patient to absorb new information. To optimize the available time, the therapist must maintain sufficient control, limit discussion of peripheral issues, interrupt unproductive discussions, and pace the session appropriately.

Background Material:

Cognitive Therapy of Depression, pp. 65-66.

Desirable Therapist Strategies:

We have often observed sessions in which the therapist paced the session much too slowly or too rapidly for a particular patient. On the other hand, the therapist may belabor a point after the patient has already grasped the message or may gather much more data than is necessary before formulating a strategy for change. In these cases, the sessions seem painfully slow and inefficient. On the other hand, the therapist may switch from topic to topic too rapidly, before the patient has had an opportunity to integrate a new perspective. Or the therapist may intervene before he/she has gathered enough data to conceptualize the problem.

The agenda provides a structural plan that should help the therapist use time efficiently. The therapist should monitor the flow of discussion and **maintain sufficient control** over the process of each session to ensure that both patient and therapist adhere to their original plan. In so doing, the most important agenda items will be covered. Unfinished business should be rescheduled.

During agenda-setting, the therapist's input can **limit discussion of peripheral issues**. However, during the session, the patient and therapist may inadvertently drift from the critical agenda topic to a related, yet less important item. In such cases, the therapist should politely interrupt these peripheral discussions and return to the agenda item.

Even when focused on a central issue, the therapy discussion may reach a point when progress is no longer being made. In such cases, the therapist should gently interrupt the unproductive discussion and try to approach the issue from another perspective.

7. GUIDED DISCOVERY

Objective:

Guided discovery is one of the most basic strategies of the effective cognitive therapist. The cognitive therapist often uses exploration and questioning to help patients see new perspectives where other therapists use debating or lecturing. The cognitive therapist attempts to avoid "cross-examining" the patient or putting the patient on the defensive.

Background Material:

Cognitive Therapy of Depression, pp. 66-71.

Rationale:

We have observed that patients often adopt new perspectives more readily when they come to their own conclusions than when the therapist tries to debate with the patient. In this respect, the cognitive therapist is more like a skilled teacher than a lawyer. He/she guides the "student" to see logical problems in the student's present position; to examine evidence that contradicts the students beliefs; to gather information when more is necessary to test a hypothesis; to look at new alternatives that the student may never have considered, and to reach valid conclusions after this exploration. The techniques for changing cognitions and behaviors in this therapy can for the most part be subsumed within this more basic strategy, which educators label "guided discovery". Thus, hypothesis testing, empiricism, setting up experiments, inductive questioning, weighing advantages and disadvantages, etc., are all tools at the therapist's disposal to aid in the process of "guided discovery."

Desirable Therapist Strategies:

Questioning deserves special attention since it is so critical to the process of guided discovery. Skillfully-phrased questions presented in a logical sequence are often extremely effective. A single question can simultaneously make the patient aware of a particular problem area, help the therapist evaluate the patient's reaction to this new area of inquiry, obtain specific data about the problem, generate possible solutions to problems that the patient had viewed as insoluble, and cast serious doubt in the patient's mind regarding previously distorted conclusions.

Some of the functions that questioning may serve in this process are outlined below:

1. To encourage the patient to begin the decision-making process by developing alternative approaches.

2. To assist the patient in resolving a decision by weighing the pros and cons of alternatives that have already been generated, thus narrowing the range of desirable possibilities.
3. To prompt the patient to consider the consequences of continuing to engage in dysfunctional behaviors.
4. To examine the potential advantages to behaving in more adaptive ways.
5. To determine the **meaning** the patient attaches to a particular event or set of circumstances.
6. To help the patient define criteria for applying certain maladaptive self-appraisals (see the discussion of the technique of operationalizing a negative construct in Section 9).
7. To demonstrate to the patient how he/she is selectively focusing on only negative information in drawing conclusions. In the excerpt that follows, a depressed patient was disgusted with herself for eating candy when she was on a diet.

   Patient: I don't have any self-control at all.

   Therapist: On what basis do you say that?

   Patient: Somebody offered me candy and I couldn't refuse it.

   Therapist: Were you eating candy every day?

   Patient: No, I ate it just this once.

   Therapist: Did you do anything constructive during the past week to adhere to your diet?

   Patient: Well, I didn't give in to the temptation to buy candy every time I saw it at the store...Also, I did not eat any candy except the one time it was offered to me and I felt I couldn't refuse it.

   Therapist: If you counted up the number of times you controlled yourself versus the number of times you gave in, what ratio would you get?

   Patient: About 100 to 1.

   Therapist: So if you controlled yourself 100 times and did not control yourself just once, would that be a sign that you are weak through and through?

   Patient: I guess not -- not through and through (smiles).

8. To illustrate to the patient the way in which he/she disqualifies positive evidence. In the example below, the patient recognizes that he has ignored clear-cut evidence of improvement.

   Patient: I really haven't made any progress in therapy.

   Therapist: Didn't you have to improve in order to leave the hospital and go back to college?

   Patient: What's the big deal about going to college every day?

   Therapist: Why do you say that?

   Patient: It's easy to attend these classes because all the people are healthy.

   Therapist: How about when you were in group therapy in the hospital? What did you feel then?

   Patient: I guess I thought then that it was easy to be with the other people because they were all as crazy as I was.

   Therapist: Is it possible that whatever you accomplish you tend to discredit?

9. To open for discussion certain problem areas that the patient had prematurely reached closure on, and which continue to influence his/her maladaptive patterns.

This is not to say that the effective cognitive therapist relies solely, or even primarily, on questioning in all sessions. In some instances, it is appropriate for the therapist to provide information, confront, explain, self-disclose, etc. rather than question. The balance between questioning and other modes of intervention on the particular problem being dealt with, the particular patient, and the point in therapy. The appropriateness of an intervention can be assessed by observing: its effect on the collaborative relationship; the degree of dependency it promotes on the patient; and, of course, its success in helping the patient adopt a new perspective.

There is often a fine line between **guiding** a patient and trying to **persuade** a patient. In some instances, the cognitive therapist may need to reiterate forcefully a point that the therapist and patient have already established. The main distinction, then, in deciding whether a therapist is acting in a desirable manner is not whether the therapist is forceful or tenacious but whether the therapist overall seems to be **collaborating** with the patient rather than **arguing** with the patient. In the excerpt that follows, the therapist uses questioning to demonstrate to the patient the maladaptive consequences of holding the assumption that one should **always** work up to one's potential.

Patient: I guess I believe that I should always work up to my potential.

Therapist: Why is that?

Patient: Otherwise I'd be wasting time.

Therapist: But what is the long-range goal in working up to your potential?

Patient: (*Long pause.)* I've never really thought about that. I've just always assumed that I should.

Therapist: Are there any positive things you give up by always having to work up to your potential?

Patient: I suppose it make it hard to relax or take a vacation.

Therapist: What about "living up to your potential" to enjoy yourself and relax? Is that important at all?

Patient: I've never really thought of it that way.

Therapist: Maybe we can work on giving yourself permission not to work up to your potential at all times.

Example of an Undesirable Application:

The desirable applications above can be contrasted with one of the most common stylistic errors we observe in trainees. The therapist's behavior sometimes inappropriately resembles that of a high pressure salesman, persuading patients that they should adopt the therapist's point of view. For contrast, here is a brief example of the "high pressure" approach:

Patient: I just can't do anything right in school anymore.

Therapist: That's easy to understand. You're depressed. And when people are depressed, they have a hard time studying.

Patient: I think I'm just stupid.

Therapist: But you did very well up until a year ago, when your father died and you got depressed.

Patient: That's because the work was easier then.

Therapist: Surely there must be something you are doing right in school. You're probably exaggerating.

8. FOCUSING ON KEY COGNITIONS AND BEHAVIORS

Objective and Rationale:

Once the therapist and patient have agreed on a central target problem, the next step is for the therapist to conceptualize why the patient is having difficulty in this particular area. In order to conceptualize this problem, the therapist must elicit and identify the key automatic thoughts, underlying assumptions, behaviors, etc. that comprise the problem. These specific cognitions and behaviors then serve as targets for intervention.

Background Material:

Cognitive Therapy and the Emotional Disorders pp. 6-131, 246-257; *Cognitive Therapy of Depression pp.* 142-152, 163-166, 244-252.

Conceptualizing the Problem:

The effective cognitive therapist is continually engaged in the process of **conceptualizing the patient's problem** while he/she is helping the patient identify key automatic thoughts, assumptions, behaviors, etc. Through this conceptualization, the therapist integrates specific cognitions, emotions, and behaviors into a broader framework that explains why the patient is having difficulty in a particular problem area. Without this broader framework (which may undergo continued revision) the therapist is like a detective who has a lot of clues but still has not solved the mystery. (Once the clues are pieced together, though, the nature of the "crime" becomes clear.) The therapist can then distinguish between thoughts and behaviors that are central to the probing and those that are peripheral. The conceptualization therefore guides the therapist in deciding which automatic thoughts, assumptions, or behaviors to focus on first, and which to postpone until a later date. Without such conceptualization, the therapist may select cognitions or behaviors in a "hit-or-miss" fashion and therefore make limited or erratic progress.

Although the quality of a therapist's conceptualizing is difficult to assess from observing a single session, we believe that in the long run it proves to be one of the most crucial determinants of the effectiveness of a cognitive therapist. **We try to make inferences about the quality of the conceptualization by observing whether the specific conditions or behaviors focused on in a given session seem to be central to the patient's problem rather than peripheral**. If the therapist's conceptualization is poor (we hypothesize), then the rationale for focusing on a particular thought or behavior will not be clear to the experienced rater. Furthermore, target problems, interventions, homework, etc. will appear to "hang together" in a unified framework if the conceptualization is good.

Desirable Therapist Strategies for Eliciting Automatic Thoughts

Inductive Questioning

The therapist can ask the patient a series of questions designed to explore some of the possible reasons for the patient's emotional reactions. Skillful questioning can provide patients with a strategy for introspective exploration that they can later employ by themselves when the therapist is not nearby. (See the example in the section on guided discovery).

Imagery

When patients can identify events or situations that seem to trigger the emotional response, the therapist can suggest that the patients picture the distressing situation in detail. If the image is realistic and clear to the patients they are often able to identify the automatic thoughts they were having at the time. The excerpt below illustrates this technique:

Patient: I can't go bowling. Every time I go in there, I want to run away.

Therapist: Do you remember any of the thoughts you had when you went there?

Patient: Not really. Maybe it just brings memories, I don't know.

Therapist: Let's try an experiment to see if we can discover what you were thinking. OK?

Patient: I guess so.

Therapist: I'd like you to relax and close your eyes. Now imagine you are entering the bowling alley. Describe for me what's happening.

Patient: (Describes entering the alley, getting a score sheet, etc.) I feel like I want to get out, just get away.

Therapist: What are you thinking now?

Patient: I'm thinking "Everyone I play with is going to laugh at me when they see how bad I play."

Therapist: Do you think that thought might have led to your wish to run away?

Patient: I know it did.

Role Playing:

When the trigger event is interpersonal in nature, role-playing is often more effective than imagery. With this strategy, the therapist plays the role of the other person involved in the upsetting situation, while patients "play" themselves. If patients can involve themselves in the role-play, the automatic thoughts can often be elicited with the assistance of the therapist.

Mood Shift During the Session:

The therapist can take advantage of any changes in mood that take place during the session by pointing them out to the patient as soon as possible. The therapist then asks the patient what he/she was thinking just prior to the increase in dysphoria, tears, anger, etc.

Daily Record of Dysfunctional Thoughts:

This is the simplest method of pinpointing automatic thoughts once the patient is familiar with the technique. The patient lists automatic thoughts at home in the appropriate column on the form. The therapist and patient review these thoughts during the session.

It is important to distinguish this process of eliciting automatic thoughts from the "interpretations" made in other psychotherapies. The cognitive therapist does not volunteer an automatic thought that the patient has not already mentioned. This "clairvoyance" undermines the patient's role as collaborator and makes it difficult for the patient to identify these thoughts at home when the therapist is not nearby. Even more important, if the therapist's "intuition" is wrong, he/she will be pursuing a blind alley. On occasion, it will be necessary for the therapist to suggest several plausible automatic thoughts (a multiple choice technique) when other strategies have failed.

The example of "clairvoyance" that follows provides a contrast to the imagery technique illustrated previously:

Patient: I can't go bowling. Every time I go in there, I want to run away.

Therapist: Why?

Patient: I don't know. I just want to leave.

Therapist: Do you tell yourself, "I wish I didn't have to bowl by myself'?

Patient: Maybe. I'm not sure.

Therapist: Well, maybe you keep thinking that bowling isn't going to solve the problems in your life. You're right, but it's a beginning.

Ascertaining the Meaning of an Event:

Sometimes, skillful attempts by the therapist to elicit automatic thoughts are not successful. Then, the therapist should attempt to discern, through questioning, the specific meaning for the patient of the event that preceded the emotional response. For example, one patient began to cry whenever he had an argument with his girlfriend. It was not possible to identify a specific automatic thought. However, after the therapist asked a series of questions to probe the meaning of the event, it became obvious that the patient had always associated any type of argument or fight with the end of a relationship. It was this meaning, embedded in his view of the event that preceded his crying.

Desirable Therapist Strategies for Identifying Underlying Assumptions:

We often observe general patterns that seem to underlie patients' automatic thoughts. These patterns, or regularities, act as a set of rules that guide the way a patient reacts to many different situations. We refer to these rules as assumptions. These assumptions may determine for example, what patients consider "right" or "wrong" in judging themselves and other people.

Although patients can often readily identify their automatic thoughts, their underlying assumptions are far less accessible. Most people are unaware of their "rulebooks." Typical unarticulated assumptions include:

1. In order to be happy, I have to be successful in whatever I undertake.
2. I can't live without love.

When these rules are framed in absolute terms, are nonrealistic, or are used inappropriately or excessively, they often lead to disturbances like depression, anxiety, and paranoia. We label rules that lead to such problems as "maladaptive."

One of the major goals of cognitive therapy, especially in the later stages of treatment, is to help patients identify and challenge the maladaptive assumptions that affect their ability to avoid future depressions.

In order to identify these maladaptive assumptions, the therapist can listen closely for themes that seem to cut across several different situations or problem areas. The therapist can then list several related automatic thoughts that the patient has already expressed on different occasions, and ask the patient to **abstract the general "rule" that connects the automatic thoughts**. If the patient cannot do this, the therapist can suggest a plausible assumption, list the thoughts that seem to follow from it, and then ask the patient: if the assumption "rings true." The therapist should be open to the possibility that the assumption does not fit that patient and then work with the patient to pinpoint a more accurate statement of the underlying "rule."

Special Considerations in Rating:

There are essentially two separate processes incorporated into this category. The first process involves using appropriate techniques to **elicit** automatic thoughts, underlying assumptions, behaviors, etc. from the patient. If the therapist completely fails to elicit them, then the rater should assign a 0. If the therapist uses appropriate techniques to elicit thoughts and behaviors, he/she should be given a rating of at least 2.

The second step in this process is for the therapist to integrate these cognitions and behaviors into a conceptualization of the patient's problem. The conceptualization explains how the particular constellation of cognitions/behaviors are peripheral to the problem -- and therefore should be postponed -- and which are central and should serve as the **focus** of intervention. If the therapist fails to

focus on a particular thought or behavior, the therapist should be rated 2. Or, if the therapist's conceptualization is so far off that the focus seems totally inappropriate, the therapist should be rated 2.

If the therapist selects a relevant cognition/behavior to focus on, but the rater's conceptualization strongly suggests that some other focus would have been more fruitful, the rater should assign a 4. If the therapist's conceptualization and focus seem very promising and "on target", the rater should assign a 6.

Note that for this item the therapist need not intervene at all to receive a high score. The only requirement is that the therapist successfully elicit relevant thoughts/behaviors, conceptualize the problem, and identify important foci.

9. STRATEGY FOR CHANGE

Objective:

After conceptualizing the problem and pinpointing key cognitions and/or behaviors, the therapist should plan a strategy for change. The strategy for change should follow logically from the conceptualization of the problem and should incorporate the most promising cognitive-behavioral interventions chosen for the particular patient and point in treatment.

Background Material:

Cognitive Therapy and The Emotional Disorders, pp. 233-300 (esp. 257-262); *Cognitive Therapy of Depression, pp. 104-271.*

Rationale:

There are so many different therapeutic tactics available to the cognitive therapist that, unless he/she develops an overall strategy for a given case, the therapy may follow an erratic course based on trial-and-error. The therapist may be employing several procedures simultaneously; when this is the case, all of the procedure should fit together as part of a master plan. The strategy for change should follow logically from the conceptualization of the problem discussed in Section 9 ("Focusing in Specific Cognition or Behaviors").

The overall strategy for change generally incorporates techniques drawn from one or more of three intervention categories: testing automatic thoughts, modifying assumptions, and changing behaviors.

Desirable Techniques for Testing Automatic Thoughts:

Once the therapist and patient have identified a key automatic thought, the therapist asks the patient to suspend temporarily his/her conviction that the thought is undeniably true and instead to view the thought as a hypothesis to be tested. The therapist and patient collaborate in gathering data, evaluating evidence, and drawing conclusions.

This experimental method is basic to the application of cognitive therapy. The therapist help patients learn a **process** of thinking that resembles scientific investigation. The therapist demonstrates to the patient that the **perception** of reality is not the same as reality itself. Patients learn to design experiments which will test the validity of their own automatic thoughts. Patients thus learn how to modify the maladaptive thinking so that they can maintain their gains after treatment ends.

There are several techniques for testing the validity of automatic thoughts:

Examining available evidence

The therapist asks the patient to draw on his/her previous experiences to list the evidence supporting and contradicting the hypothesis. After weighing all available evidence, patients frequently reject their automatic thoughts as false, inaccurate, or exaggerated.

Setting up an experiment

The therapist asks the patient to design an experiment to test the hypothesis. Once the experiment has been planned, the patient predicts what the outcome will be, then gathers data. Frequently the data contradicts the patient's prediction, and the patient can reject the automatic thoughts.

Inductive questioning

When the previous two approaches are not appropriate or applicable, the therapist may produce evidence from his/her own experience that contradicts the patient's hypothesis. This evidence is presented in the form of a question which poses a logical dilemma for the patient (e.g., "90% of my patients say they won't get better, yet most of them do improve. Why do you think you are different from them?"). Alternatively, the therapist, through questioning, may point out logical flaws within the patients' own belief system. (e.g., “You say that you have always been a weak person. Yet you also tell me that before you were depressed you got along fine. Do you see any inconsistency in this thinking?”)

Operationalizing a negative construct and defining terms

Sometimes, as a step in testing an automatic thought, the therapist and patient have to define in more concrete terms what the patient means by using a particular word or expression. For example, one patient at our clinic kept telling himself, "I'm a coward." To test the thought, the therapist and patient first had to define and give referents of the construct. In this instance, they operationalized "cowardice" as not defending oneself when being attacked. After this criterion had been agreed upon, the therapist and patient examined past evidence to assess whether the label of "coward" was a valid one. This procedure can help the patient recognize the arbitrary nature of his self-appraisals and bring them more in line with common-sense definitions of these negative terms.

Reattribution

One of the most powerful techniques for testing automatic thoughts is "reattribution." When patients unrealistically blame themselves for unpleasant events, the therapist and patient can review the situation to find other factors that may explain what happened other than, or in addition to, the patient's behavior. This technique may also be used to show patients that some of the problems they are having are symptoms of depression (e.g., loss of concentration) and not indications of permanent physiological deterioration.

Generating alternatives

When patients view particular problems as insoluble, the therapist can work with the patient to generate solutions to the problem that had not been considered. Sometimes the patient has already considered a viable solution, but has prematurely rejected it as unworkable or unlikely to be effective.

Desirable Techniques for Modifying Underlying Assumptions:

The cognitive therapist emphasizes **questioning** in the modification of underlying assumptions. We find that the most effective approach is one in which the patient develops evidence against the assumption either alone or in collaboration with the therapist. After an assumption has been identified, the therapist asks the patient a series of questions to demonstrate the contradictions or problems inherent in the assumption.

Another strategy for testing assumptions is for the therapist and patient to generate **lists of the advantages and disadvantages** of changing an assumption. Once the lists have been completed, the therapist and patient can discuss and weigh the competing considerations. A related approach is for the patient to weigh the long-term and short-term utility of the assumptions.

Many assumptions take the form of "shoulds" -- rules about what patients should ideally do in given situations. A behavioral strategy, "**response prevention**" has been adapted as a technique for overcoming these "shoulds." Once the "should" has been identified, the therapist and patient devise an experiment to test what would happen if the patient did **not** obey the rule. The patient makes a prediction about what the result would be, the experiment is carried out, and the results are discussed. Generally, it is desirable to generate a series of graded tasks which violate the "should," so that the patient attempts less threatening changes first. For example, the patient who believes he "should" work all of the time could experiment with gradually increasing the amount of time devoted to leisure pursuits.

Desirable Techniques for Changing Behaviors:

The cognitive therapist also uses a variety of behavioral techniques to help the patient cope better with situations or inter-personal problems. These behavioral techniques are "action-oriented" in the sense that patients practice specific procedures for dealing with concrete situations or for using time more adaptively. In contrast to strictly cognitive techniques, therefore, behavioral techniques focus more on how to act or cope than on how to view or interpret events.

One of the principle goals of behavioral techniques is to modify dysfunctional cognitions. For example, the patient who believes "I can't enjoy anything anymore" often modifies this automatic thought after completing a series of behavioral assignments designed to increase the number and variety of pleasurable activities he/she engages in. Thus behavioral change is often used as evidence to bring about cognitive change.

Behavioral techniques are incorporated throughout the course of treatment, but are usually concentrated during the early stages of therapy. This is especially true with more severely depressed patients who are immobilized, passive, anhedonic, socially withdrawn and have trouble concentrating.

Brief descriptions of behavioral techniques follow below:

Scheduling activities

The therapist uses an activity schedule to help the patient plan activities hour-by-hour during the day. The patient then keeps a record of the activities that were actually engaged in hour-by-hour. Scheduling activities is usually one of the first techniques used with the depressed patient. It often seems to counteract loss of motivation, hopelessness, and excessive rumination.

Mastery and pleasure

One of the goals of activity scheduling is for patients to derive more pleasure and a greater sense of accomplishment on a day-to-day basis. To do this, the patient rates each completed activity for both mastery and pleasure on a scale from 1 to 10. These ratings generally serve to directly contradict patients' beliefs that they cannot enjoy anything and cannot obtain a sense of accomplishment anymore.

Graded task assignment

In order to help some patients initiate activities for mastery and pleasure, the therapist will have to break down an activity into subtasks, ranging from the simplest part of the task to the most complex and taxing. This step-by-step approach permits depressed patients to eventually tackle tasks that originally seemed impossible or overwhelming to them. These graded tasks provide the immediate and unambiguous feedback to patients that they can succeed.

Cognitive rehearsal

Some patients have difficulty carrying out tasks requiring successive steps for completion. Frequently this is because of problems in concentration. "Cognitive rehearsal" refers to the technique of asking the patient to imagine each step leading to the completion of the task. This rehearsal imagery helps patient focus their attention on the task, and also permits the therapist to identify potential obstacles that may make the assignment more difficult for a particular patient.

Self-reliance training

The therapist may have to teach some patients to take increasing responsibility for their day-to-day activities, rather than relying on other people to take care of all their needs. For example, patients may begin by showering, then making their own beds, cleaning the house, cooking their own meals, shopping, etc. This responsibility also includes gaining control over their emotional reactions. Graded task assignments, assertiveness training, and running experiments may all be used as part of self-reliance training.

Role-playing

In the context of cognitive therapy, role-playing may be used to elicit automatic thoughts in specific interpersonal situations; to practice new cognitive responses in social encounters that had previously been problematic for the patient; and to rehearse new behaviors in order to function more effectively with other people. A variation, role-reversal, is often effective in guiding patients to "reality test" how other people would probably view their behavior, and thus allow patients to view themselves more sympathetically. Role-playing can also be used as part of assertiveness training. Role-playing frequently is accompanied by modeling and coaching procedures.

Diversion techniques

Patients can use various forms of diversion of attention to reduce temporarily most forms of painful affect, including dysphoria, anxiety, and anger. Diversion may be accomplished through physical activity, social contact, work, play, or visual imagery.

Special Note to Raters:

In assessing the strategy for change, the rater should be primarily concerned with how appropriate the particular techniques are for the problems presented by the patient in the session being rated. In deciding the **appropriateness** of the techniques, the rater should try to determine whether the techniques seem to be a part of a coherent strategy for change that follows logically from the therapist's conceptualization of the problem. If the rationale for employing the techniques is not clear, or if the rationale seems faulty, the rater should assign a low score to the therapist. If the rationale seems clear and appropriate, the rater should assign a high score.

The rater should not confuse the quality of the **strategy** for change (which is the main concern of this item) with how effectively the techniques are **implemented** (which is assessed in item 10) or whether change **actually occurred** (which is not necessary to receive a high score on any item).

10. APPLICATION OF COGNITIVE-BEHAVIORAL TECHNIQUES

Objective and Rationale:

Once the therapist has planned a strategy for change that incorporates the most appropriate cognitive-behavioral techniques, he/she must apply the techniques skillfully. Even the most promising strategy will fail if executed poorly.

Background Material:

Cognitive Therapy and The Emotional Disorders, pp. 221-225, 229-232, 250-254, 282-299; *Cognitive Therapy of Depression,* pp. 27-32, 67-72, 104-271, 296-298.

Desirable Application of Techniques:

It is extremely difficult to specify how to know whether a technique is being applied skillfully or not. Clearly, rating this item requires a great deal of clinical judgment and experience. Some general criteria

can be outlined. The therapist should be **fluent** in applying the techniques, rather than fumble around and appear unfamiliar with them. The techniques should be presented **articulately**; in language the patient can easily understand. The techniques should be applied **systematically**, so that there is usually a beginning (introduction, statement of problem, rationale), middle (discussion of possible solutions or change), and end (summary of conclusions, relevant homework assignment). The therapist should be **sensitive** to whether the patient is actually involved in the change process, or merely "going through the motions" out of compliance. The therapist should be **resourceful** in presenting ideas to the patient in such a way that the patient can begin to superimpose the therapist's conflicting views. The therapist needs to anticipate problems the patient may have in changing perspectives or behaviors outside the session. Finally, the therapist should collaborate with the patient rather than debate, cross-examine, or high-pressure him/her.

Example of a Desirable Application:

In the abbreviated example below, the therapist sets up an experiment to test the automatic thought, "I can't concentrate on anything anymore."

Patient: I can't concentrate on anything anymore.

Therapist: How could you test that out?

Patient: I guess I could try reading something.

Therapist: Here's a newspaper. What section do you usually read?

Patient: I used to enjoy the sports section.

Therapist: Here's an article on the Penn basketball game last night. How long do you think you'll be able to concentrate on it?

Patient: I doubt I could get through the first paragraph.

Therapist: Let's write down your prediction. (*Patient writes "one paragraph."*) Now let's test it out. Keep reading until you can't concentrate anymore. This will give us valuable information.

Patient: (*Reads the entire article.*) I'm finished.

Therapist: How far did you get?

Patient: I finished it.

Therapist: Let's write down the results of the experiment. (*Patient writes "eight paragraphs."*) You said before that you couldn't concentrate on anything. Do you still believe that?

Patient: Well, my concentration's not as good as it used to be.

Therapist: That's probably true. However, you have retained some ability. Now let's see if we can improve your concentration.

It is important that the therapist remained neutral regarding the patient's initial prediction and did not assume automatically that the patient's belief was inaccurate or distorted. In some instances, the patient will be correct.

Special Note to Raters:

In assessing how skillfully the therapist applied cognitive-behavioral techniques, the rater must try to ignore whether the techniques are appropriate for the patient's problem (since this is assessed in item 9) and also whether the techniques seem to be working. Sometimes a therapist will apply techniques very

skillfully, yet a particular patient may be extremely rigid or unyielding and does not respond. In such cases, the therapist's flexibility, ingenuity, and patience may justify a high score on this item, even though the patient does not change.

It should also be pointed out that this item refers to the application of techniques designed to **modify** thoughts, assumptions, and behaviors (as outlined in item 9), not to techniques designed primarily to **elicit** cognitions (since the "eliciting" techniques are assessed in item 8).

11. HOMEWORK

Objective:

The therapist assigns homework "custom-tailored" to help the patient test hypotheses, incorporate new perspectives, or experiment with new behavior outside the therapy session. The therapist should also review homework from the previous session, explain the rationale for new assignments, and elicit the patient's reaction to the homework.

Background Material:

Cognitive Therapy of Depression, pp. 272-294.

Rationale:

The systematic completion of homework is of crucial importance in cognitive therapy. Unless patients can apply the concepts learned in the therapy sessions to their lives outside, there will be no progress. Homework, therefore promotes transfer of learning. It also provides a structure for helping patients gather data and test hypotheses, thereby modifying maladaptive cognitions so they are more consistent with reality. Homework thus encourages patients to **concretize** the abstract concepts and insights that have traditionally been the province of psychotherapy, making psychotherapy a more active, involving process. Finally, homework encourages self-control rather than reliance on the therapist, and therefore is important in assuring that the improvement is maintained after termination of treatment.

Desirable Therapist Strategies:

Providing Rationale:

The therapist must stress the importance of homework in treatment. This can be accomplished by explaining the benefits to be derived from each assignment in detail, and periodically reminding patients of how vital these benefits will be in helping the patient improve.

Assigning Homework:

The therapist tailors the assignment to the individual patient. Ideally, it should follow logically from the problems discussed during the session. The assignment should be clear and very specific, and should be written in duplicate (one copy for the patient and one copy for the therapist), usually near the end of the session. Some typical homework assignments include asking patients to:

a. Keep a Daily Record of Dysfunctional Thoughts, with rational responses;

b. Schedule activities;

c. Rate mastery and pleasure;

d. Review a list of the main points made during the session;

e. Read a book or article relevant to the patient's problem;
f. Count automatic thoughts using a wrist counter;
g. Listen to or view a tape of the therapy session;
h. Write an autobiographical sketch;
i. Fill out questionnaires like the Dysfunctional Attitude Scale or the Depression Inventory;
j. Graph or chart hour-by-hour mood changes like anxiety, sadness, or anger;
k. Practice coping techniques like distraction or relaxation; and
l. Try out new behaviors that the patient may have difficulty with (e.g., assertiveness, meeting strangers).

Eliciting Reactions and Possible Difficulties:

It is usually desirable for the therapist to ask patients for their reactions to assignments ("Does it sound useful?" "Does it seem manageable?" "Is the assignment clear?"). It is often helpful for the therapist to suggest that the patient visualize carrying out the assignment to identify any obstacles that might arise. Finally, as therapy progresses, the patient should play an increasing role in suggesting and designing homework assignments.

Reviewing Previous Homework:

Unless the therapist routinely reviews homework assigned from the previous week, the patient may come to believe that there is no need to complete the assignments carefully. Near the beginning of each session, the therapist and patient should discuss each assignment, and the therapist should summarize conclusions derived or progress made.

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ORIGINAL ARTICLE

The Factor Structure of the Cognitive Therapy Rating Scale (CTRS) in a Sample of Community Mental Health Clinicians

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Abstract
Treatment fidelity is an essential outcome of implementation research. The gold standard measure for Cognitive-Behavioral Therapy (CBT) fidelity is the Cognitive Therapy Rating Scale (CTRS). Despite its widespread use in research and training programs, the structure of the CTRS has not been examined in a sample of community mental health clinicians with adult and child clients. The current study addressed this gap. The sample consisted of 355 clinicians and 1298 CBT sessions scored using the CTRS. High interrater reliability was observed and factor analysis yielded separate structures for child and adult treatment sessions. These structures were not consistent with previous factor analyses conducted on the scale. Findings suggest that the CTRS is a reliable measure of CBT in community mental health settings but that its structure may depend on the clinical population measured. Additionally, the factor structure can provide guidance for delivering feedback in training and supervision settings.

Keywords Treatment fidelity · Cognitive Therapy Rating Scale · Community mental health · Factor analysis · Psychometrics

Cognitive-Behavioral Therapy (CBT) is the most widely studied form of psychotherapy (Beck and Haigh 2014; Gaudiano 2008; Hofmann et al. 2013) and has a large base of empirical support for treating various mental health disorders (see Hofmann et al. 2012 for a review). Beyond its strong history, CBT also continues to represent innovation in mental health treatment, as it is refined and implemented to serve new clinical populations in diverse settings (Beck and Haigh 2014; Creed et al. 2016a). Measuring and ensuring high quality CBT and other evidence-based practices (EBPs) increases the likelihood that clients will experience the benefits demonstrated in clinical trials. As such, a variety of measures have been developed to assess the quality (i.e., fidelity) of clinicians delivering CBT (Muse and McManus 2013). However, despite the strong emphasis placed on transporting EBPs to real-world practice, very little is known about how fidelity measures developed for clinical trials perform in these settings.

Treatment Fidelity

Treatment fidelity, or the adherence to and competence with core features of a specific treatment, is a key implementation outcome for a number of reasons (Proctor et al. 2011). For example, greater treatment fidelity is predictive of desirable client outcomes across numerous mental health disorders (Hogue et al. 2008; Schoenwald et al. 2008; Strunk et al. 2010; Stirman et al. 2013a). Strategies that increase fidelity to an implemented EBP increase the likelihood that clients will benefit from that treatment. Indeed, there is a large consensus on the need to verify fidelity for EBPs (Rollins et al. 2016). Yet, clinicians often report making modifications to standardized treatments in routine care (Aarons et al. 2012; Cook et al. 2014; Stirman et al. 2013b). Without valid fidelity measures these modifications go unquantified, which prevents our understanding of how adaptations affect client outcomes. That is, valid fidelity measures allow us to differentiate between "flexibility within fidelity", which is

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linked to desirable client outcomes, and poor adherence to a treatment, leading to poor client outcomes (Hamilton et al. 2008; McHugh et al. 2009).

Measurement of fidelity is also particularly important in the training of clinicians. Research suggests that many therapists who believe they are already delivering an EBP in their regular practice may not actually do so with fidelity (Creed et al. 2016b) and a significant proportion of clinicians continue to fail to deliver the therapy with fidelity even after training (Miller et al. 2004; Stirman et al. 2012). Fidelity measurement provides a structure to inform clinicians whether they are successfully delivering the chosen EBP and trainers use this structure to examine areas of skill deficit and provide feedback to bolster those skills. Integration of fidelity measures into the training of therapists is a useful strategy for increasing fidelity through the provision of feedback and monitoring of skill (Sholomskas et al. 2005; Waltman et al. 2018), but only if the psychometric properties of those measures are understood within the treatment population and context.

Cognitive Therapy Rating Scale

Among the over 60 different measures of CBT fidelity that were identified in a recent review (Muse and McManus 2013), the most common and widely used measure of CBT fidelity is the Cognitive Therapy Rating Scale (CTRS; Young and Beck 1980). Although a revised version of the CTRS exists, the Cognitive Therapy Scale Revised (CTS-R), the primary difference between the two scales is the additional CTS-R item (e.g., "eliciting of appropriate emotional expression") that is subsumed under a different CTRS domain, and the splitting of an CTRS item (e.g., "Focusing on key cognitions and behaviors") into two items that separately assess focus on cognitions and behaviors. Indeed, both scales show the same relation with symptom change in the treatment of depression (Kazantzis et al. 2018). The CTRS remains the gold standard for measuring CBT treatment fidelity in clinical trials (e.g., Borkovec et al. 2002; McManus et al. 2010), studies of effective CBT delivery for a range of disorders (Forand et al. 2011; Keen and Freeston 2008), training programs (Creed et al. 2016a; Lewis et al. 2014) and formal certification (e.g., the Academy for Cognitive Therapy).

Previous examination of the CTRS found it to display strong psychometrics in clinical trials of CBT, though there remains a paucity of information about its psychometric characteristics in real-world clinical settings and its applicability to the fidelity of child CBT sessions (Fuggle et al. 2012). The CTRS has demonstrated high internal consistencies, both in the original investigation of its psychometrics (Dobson et al. 1985) and in a recent study (McManus et al. 2010). Scores on the CTRS increased following CBT training sessions (Simons et al. 2010; Westbrook et al. 2008) and differentiated between low and high quality sessions (Vallis et al. 1986). Additionally, studies have found it to provide predictive validity. Trepka et al. (2004) found that CTRS total scores significantly correlated with self-rated depression scores. Similar results were reported for clinician, but not patient, rated scores (Shaw et al. 1999). Importantly, there is mixed evidence on the link between CTRS competence and treatment outcomes (e.g., Branson et al. 2015). The CTRS has demonstrated moderate to high inter-rater reliability intraclass correlations (ICC; Dimidjian et al. 2006; McManus et al. 2010; Westra et al. 2009; Creed et al. 2016a), with few exceptions (e.g., Jacobson and Gortner 2000; Rozek et al. 2018). The lack of uniform standards around training for coding and obtaining reliability across studies may have contributed to the mixed evidence for the reliability of the CTRS. Indeed, the majority of studies reporting inter-rater reliability statistics have reported at least moderate to strong ICC. Yet, even with strong psychometrics, and high utility and use in research and training, there is a dearth of research exploring the factor structure of the CTRS.

The CTRS was originally developed to contain two theorized factors: 'general therapeutic skills' and 'cognitive-behavioral skill' (Young and Beck 1980). Among the empirical examinations of these factors, findings have not uniformly supported this division. For example, the primary study of the CTRS factor structure did find a two-factor solution but specific items did not load on the domains as hypothesized (Vallis et al. 1986). One factor explained 8.9% of the score variance and consisted of 3 items (i.e., Agenda, Pacing, and Homework) that did not match with the expected structure. The other factor accounted for 64.8% of score variance and included the remaining 8 items (i.e., Feedback, Understanding, Interpersonal Effectiveness, Collaboration, Guided Discovery, Focusing on Key Cognitions and Behaviors, Strategy for Change, and Application of CBT Techniques). Other studies have reported separate structures. For example, a three factor structure, measuring 'general interview procedures', 'interpersonal effectiveness', and 'specific CBT techniques,' was examined in one study and found to have significant correlations among them (Trepka et al. 2004). However, this was not a formal factor analysis but a division of the measure into subscales based on a priori decisions. A separate study employed a similar procedure, where a priori decisions were the rationale for dividing the measure into the same three clusters (Westbrook et al. 2008).

In addition to the limitations that arise when using an a priori model to determine factor structure (i.e., the a priori model may not be valid), there are also important considerations regarding the clinician sample in these studies. For example, Vallis et al. (1986) used a small sample of

doctoral level clinicians (i.e., Ph.D. or M.D.) trained as part of a research training program, and Westbrook et al (2008) and Trepka et al. (2004) used samples of clinical psychologists. Although the sample in McManus et al's (2010) was also from a cohort of trainees in a CBT training program, the majority of clinicians were doctoral level practitioners (e.g., psychologists or psychiatrists). The authors did not report the nature of their practice settings. All clinicians in these studies worked primarily with adults. The results of these studies, except for possibly McManus et al (2010)'s, are most pertinent to those clinicians working with adults in university or research settings, with ample supervision, training, and resources. McManus et al (2010)'s sample may reflect a sample of clinicians working in the community, though it is unclear, but no information on the factor structure of the CTRS is provided. Further study is necessary to determine whether the CTRS factor structure would be replicated when therapy is delivered by clinicians working in non-academic practice settings with diverse populations, age groups, and presenting problems. This is particularly true given the sharp increase in effort aimed at implementing CBT in community mental health settings (McHugh and Barlow 2010). Clinicians in community mental health settings may face unique and different challenges related to funding issues, staff turnover, leadership challenges, and low levels of technical support (Fixsen et al. 2005). These clinicians typically also have less training and supervision than study therapists in clinical trials and often treat more diverse populations in regard to presenting problem (i.e., all who present in a community clinic versus those who meet criteria for a clinical trial) and demographics (e.g. child versus adult; Creed et al. 2016a).

The Current Study

As noted earlier, treatment fidelity measures such as the CTRS are an integral part of understanding and measuring EBP implementation efforts (Herschell et al. 2010). They help us understand how to achieve desirable outcomes, enhance efficacy, replicate successful programs, and measure performance over time (Essock et al. 2015). However, if these fidelity measures are only examined within samples of research clinicians working within university settings, they may not represent community clinicians and findings based on them may be misleading. Exploring fidelity measures in samples of community clinicians is needed to assure robust conclusions from their use. That is, factor structures differ for different populations and community mental health clinicians represent a unique population, due to the environment in which they work, when compared to research clinicians working in university settings (Morse et al. 2012). By understanding the factor structure of the CTRS in a sample of community clinicians, we can provide better training and feedback to community mental health clinicians and more accurately assess implementation efforts of CBT in community mental health settings.

The primary aim of the current study was to examine the factor structure of the CTRS within a sample of outpatient community mental health clinicians who treat both adults and children with diverse presenting problems. Specifically, we sought to examine whether the two-factor structure of the CTRS would be reproduced in this sample. To ensure the factor analysis is valid, we will also examine interrater reliability. Additionally, given that the CTRS factor structure had not previously been examined using child CBT sessions despite extensive research in this field (Fuggle et al. 2012; James et al. 2013), we also sought to examine variability in structure between treatment sessions with children and adults. We hypothesized that the two-factor structure proposed by Vallis et al. (1986) would fit this sample and would be invariant across clinicians working with children or adults. To our knowledge, this is the first investigation of this measure in a broad community mental health population and encompassing diverse populations.

Method

Procedures

Data for the current study were collected as part of an ongoing implementation effort and related program evaluation project, The Beck Community Initiative (BCI). The BCI is a community-academic partnership to provide CBT training and implementation support for community mental health clinicians in under-resourced settings. The BCI has successfully implemented CBT in a wide range of settings and populations (e.g., chronic homelessness psychosis, substance abuse, and child and family services; Creed et al. 2013; Pontoksi et al. 2016; Riggs and Creed 2017). The BCI protocol has been described in detail elsewhere (Creed et al. 2014, 2016a), though a brief summary is presented here for context.

When a community agency partners with the BCI, they receive an intensive 22-h in-person didactic in the theory and practice of CBT followed by 6 months of direct consultation to improve CBT skill. Clinicians receive weekly group consultation that includes feedback on audiotaped sessions from doctoral level experts in CBT. Subsequent to the training period, a consultation leader is identified to help facilitate an ongoing peer consultation group and to assist in the enrollment of additional clinicians. These additional clinicians are provided access to an extensive online training (German et al. 2017) followed by 6 months of peer consultation, including tape review. Throughout the intensive

training phase, tailored strategies target the sustainability of CBT (e.g., adaptation of policies and procedures to support the model, consultation with supervisors), and after intensive training ends, the consultation team continues to meet periodically with the agency to provide support and promote sustainability. Certification in CBT is provided to clinicians who meet competency requirements, based on CTRS total scores. Clinicians attempt recertification 2 years after completion of their initial certification.

Fidelity rating is conducted by doctoral level experts in CBT prior to training, post-workshop, mid-consultation (3 months post workshop), end of consultation (6 months post workshop), and for recertification purposes (2 years after certification) using the CTRS. More information about the scoring process is reported below. Prior to obtaining audio recordings, clients of participating clinicians provide consent for therapy sessions to be audio recorded and reviewed by the BCI instructors. The current study was deemed exempt by the University of Pennsylvania Institutional Review Board.

Participants

Participants were 355 outpatient clinicians enrolled in the BCI. Outpatient clinicians were selected from the larger group of clinicians (e.g., inpatient, residential, intensive outpatient) who participated in the BCI in order to create a homogenous sample across both adult and child clinicians. That is, because all child clinicians were based in outpatient settings, a sample of adult clinicians from outpatient settings was selected in order to facilitate comparisons, rather than including settings in which the full milieu was trained in CBT principles (e.g., Pontoksi et al. 2016; Riggs and Creed 2017). This selection also facilitated a more appropriate comparison with previously published factor analyses. Clinicians were mostly female (81.7%; 17.5% male) and varied in age from 23 to 74 ($M = 36.10$, $SD = 10.48$). The sample of clinicians was 31.3% Caucasian, 14.4% African American, 5.1% Hispanic, 3.9% Asian, 1% Native American and Native Hawaiian or Pacific Islander, 2.3% other, and 42% chose not to provide this information. The highest degree obtained for most clinicians was a Master's degree (85.4%), with 6.8% having obtained a doctorate or MD, and 2.5% as completing some doctoral work. Most clinicians identified their primary role was as a therapist (81.4%), with few social workers (5.9%), psychologists (1.1%), and creative arts therapists (1.1%). Clinicians previous knowledge of CBT was rated as "nothing" (0.2%), "only the basics" (72.4%), and "a great deal" (14.1%). Of the current sample of clinicians, 181 (51%) were child clinicians whereas 174 (49%) were adult clinicians.

From the 355 clinicians, a total of 1298 audio recordings were rated ($n = 585$ for child therapy sessions, $n = 713$ for adult therapy sessions). All audio recordings were active treatment cases. Clinicians submitted at least one therapy session, though clinicians averaged more than three sessions submitted, with a range from one to five sessions. Clinicians chose a CBT session recorded within 2 weeks of the submission due date at each time point; thus specific clients were not followed over time and sessions submitted at different time points represent different clients at different points in their treatment. However, it is possible clinicians submitted sessions from the same client, at two different time points in their treatment. To ensure clinicians were familiar with and conducting CBT in rated audio sessions, the current study used only those audio recordings that were recorded following the completion of in-person or online CBT training (i.e., baseline audio recordings were excluded).

Measures

The Cognitive Therapy Rating Scale (CTRS; Young and Beck 1980; Vallis et al. 1986) was used to assess therapist fidelity to Cognitive-Behavioral Therapy within treatment sessions. The CTRS consists of 11 items (see Table 1) that are rated on a 0 to 6 Likert-type scale. Total scores range from 0 to 66, and a score of 40 is the cutoff for determining competence (Shaw et al. 1999). Doctoral-level CBT experts, either clinical psychologists or postdoctoral fellows in clinical psychology who served as instructors on the BCI, evaluated audio recorded sessions and rated therapist CBT skill on each item, the sum of which were calculated for a total score. There were 24 raters over the course of the study who scored an average of approximately 54 therapy sessions (number of therapy sessions scored by raters ranged from 3 to 311). Initial calibration was achieved by all raters prior to that individual scoring the current sample of CBT audio sessions. Training audio were archived audio recordings from community mental health clinicians who had previously participated in the BCI. Prior to initial calibration, all raters undergoing training were provided the CTRS scoring manual (Young and Beck 1980), as well as training materials developed by the research team with scoring rules to support interrater reliability. During this initial calibration period, raters undergoing training also observed formal calibration meetings held among trained raters to discuss scoring and prevent drift. During calibration, raters were provided feedback on their scores until accurate scores were obtained in 5 consecutive sessions. Accuracy was determined by rating each item scores within one point of a gold-standard score, as well as agreement about whether the total score reflected competence (total ≤ 40).

Additionally, in order to reduce the effect of rater drift on scores, regular calibration meetings were held among raters following their initial reliability training. All raters independently scored sessions blind to the scores of other

Table 1 Means, standard deviations, ICC and item-total correlations of CTRS total score and items by clinical population

	Total sample ($N=1298$) *M* (SD)	Child treatment ($n=585$) *M* (SD)	Adult treatment ($n=713$) *M* (SD)	Group differences *t*	ICC	Item-total correlation
Agenda	2.18 (1.61)	2.45 (1.65)	1.96 (1.54)	5.63**	.81	0.78**
Feedback	2.14 (1.42)	2.29 (1.40)	2.01 (1.43)	3.44*	0.86	0.76**
Understanding	3.10 (0.81)	3.10 (0.90)	3.08 (0.73)	0.36	0.77	0.68**
Interpersonal effectiveness	3.83 (0.89)	3.89 (0.95)	3.78 (0.83)	2.16*	0.75	0.52**
Collaboration	3.14 (0.99)	3.18 (1.08)	3.10 (0.90)	1.46	0.86	0.74**
Pacing and efficient use of time	2.76 (1.03)	2.85 (1.09)	2.68 (0.97)	2.99*	0.85	0.74**
Guided discovery	2.54 (0.98)	2.65 (1.00)	2.45 (0.94)	3.72**	0.77	0.75**
Focusing on key cognitions or behaviors	2.59 (1.24)	2.70 (1.26)	2.50 (1.22)	2.86*	0.86	0.81**
Strategy for change	2.39 (1.38)	2.57 (1.26)	2.24 (1.33)	4.31**	0.89	0.83**
Application of CBT techniques	2.07 (1.31)	2.23 (1.36)	1.93 (1.25)	4.18**	0.88	0.85**
Homework	1.83 (1.43)	1.77 (1.45)	1.88 (1.42)	1.35	0.94	0.72**
Total score	28.56 (9.85)	29.70 (10.62)	27.63 (9.07)	3.79**	0.89	-

ICC intraclass correlation, *CTRS* Cognitive Therapy Rating Scale, *CBT* cognitive-behavior therapy

* $p<.05$, ** $p<.001$

raters, and then used the meetings to discuss the rationale for individual item scores, rather than group scoring sessions during meetings. A subset of 45 treatment sessions was used to obtain interrater reliability, calculated using intraclass correlations with a one-way random effects model because not all sessions were rated by the same raters. Assumptions for calculating ICC were met, including approximately normally distributed data and homogenous variance. High interrater reliability was obtained for CTRS total scores (ICC = .89). Although some previous studies have shown discrepant interrater reliability (e.g., Rozek et al. 2018), the current study is consistent with a number of studies finding acceptable interrater reliability with doctoral-level raters (e.g., McManus et al. 2010). Individual item ICC are presented in Table 1.

The CTRS items compose two theory-driven subscales: General Therapeutic skills and Cognitive-Behavioral Therapy skill. General Therapeutic skills consist of the items: Agenda, Feedback, Understanding, Interpersonal Effectiveness, Collaboration, and Pacing. Cognitive-Behavioral Therapy skill consists of the items: Guided Discovery, Focusing on Key Cognitions and Behaviors, Strategy for Change, Application of CBT Techniques, and Homework. However, as noted previously, factor analysis has demonstrated that a different two-factor solution may be appropriate (Vallis et al. 1986). Studies examining the scale's psychometrics have found it to be moderately reliable, $r=.59$, a valid measure, and sensitive to changes in the quality of CBT skill (Dobson et al. 1985; Vallis et al. 1986).

Statistical Analyses

Data were analyzed using IBM SPSS Statistics (SPSS) version 21 and AMOS version 21 (Arbuckle 2012). AMOS uses maximum likelihood estimation procedures to determine model parameters. Prior to testing study hypotheses, descriptive statistics, item-total correlations, and group differences were calculated. Demographic and CTRS score differences between child clinicians and adult clinicians were examined using *t* tests and ANOVA where appropriate.

In order to investigate whether the original factor structure found by Vallis et al. (1986) fit the current sample, a confirmatory factor analysis (CFA) was performed. A CFA was then performed with child clinicians and adult clinicians separately to test for multiple group invariance. To assess model fit, five separate indicators were examined: Chi square (χ^2), Tucker Lewis Index (TLI), root mean square error of approximation (RMSEA), standard root mean square residual (SRMR), and comparative fit index (CFI). Using different fit indices allows for a broad estimation of goodness of fit for the full model, while not relying on any single indicator that may have limitations. Goodness of fit is indicated by a nonsignificant χ^2, TLI > .90, RMSEA < 0.06, SRMR < 0.08, and CFI > 0.95 (Hu and Bentler 1999). If the factor structure was found to be ill-fitting for the current data, post hoc exploratory factor analysis (EFA) would be used to explore underlying structure that would best fit the data. EFA and CFA would be conducted using the same sample to ensure that if differences were observed they were due to methodological explanations, rather than substantive

ones (i.e., the difference in factors cannot be explained differences in samples; Van Prooijen and Van Der Kloot 2001). EFA and CFA, due to differences in the statistical basis for each analysis, provide unique information about the factor structures examined essential to the analysis. Although there are strengths to using separate samples for EFA and CFA, sample size considerations and the benefit of parsimonious model building (Patil et al. 2008) led us to conduct EFA and CFA in the same sample.

As noted above, clinicians had more than one therapy session included in the sample, which may violate the assumption of independence. However, because sessions were obtained at different stages of the training and consultation process, rated independently, and clinicians were allowed to select different clients, the sessions are likely not significantly nested. Additionally, because the focus of the study was on the factor structure of the CTRS at the individual therapy session level, not the clinician level, this nested structure does not necessarily impact the analyses (Huang 2016). Indeed, ICC for this nested structure was small (ICC = .023) indicating sessions are essentially independent (Thomas and Heck 2001).

Results

Descriptive and Correlational Analyses

Means, standard deviations, item-total correlations, and ICC of the CTRS items and total score are presented in Table 1. The CTRS demonstrated high levels of interrater reliability, with ICC ranging from .75 to .94 for individual CTRS items and .89 for the CTRS total score. Additionally, all items were moderately to highly correlated with the total score and the subscale scores (i.e., general therapeutic skill and CBT skill) were highly correlated with each other $r = .82$, $p < .001$. Differences in specific CTRS items were observed between child and adult therapy sessions. Scores for Agenda, Feedback, Interpersonal Effectiveness, Pacing, Guided Discovery, Focusing on Key Cognitions or Behaviors, Strategy for Change, and Application of CBT techniques were all found to significantly differ between child and adult sessions. Importantly, effect sizes for these differences were uniformly in the small range, with Cohen's d values ranging from 0.16 (Focusing on Key Cognitions or Behaviors) to 0.31 (Agenda).

Factor Structure of the CTRS

The fitness of the factor structure proposed by Vallis et al. (1986) was examined using confirmatory factor analysis (CFA) with the full sample. When taken together, the model fit indices for this model (see Table 2, Model 1) were not acceptable based on the criteria listed above (Hu and Bentler 1999). As such, we did not conduct a CFA to examine invariance of this model based on child or adult therapy sessions. However, post hoc analyses were conducted to examine the factor structure in the current sample. An exploratory factor analysis (EFA) with oblique rotation (Costello and Osborne 2005) was performed to explore the underlying factor structure of the data. Additionally, a Kaiser–Meyer–Olkin (KMO) test was conducted to ensure the sample was appropriate for conducting factor analysis. The KMO value was 0.92, greater than the 0.70 cutoff, indicating the items are suitably factorable (Beavers et al. 2013). The results from the EFA (see Table 3) show that no item had a factor loading below .30 and thus, no items were dropped from the analyses. Though two factors were extracted from the items, explaining 59.3% of the variance, the loadings differed from the Vallis et al. (1986) model.

A CFA was performed using a structure based on the results of the EFA. In this model, errors between homework and agenda, strategy for change and application of CBT technique, and feedback and agenda were correlated given partial overlap in scoring of these items (e.g., receiving client feedback is an important part of agenda setting; Landis et al. 2009). Model fit indices (see Table 2, Model 2) indicated that this model had adequate to good model fit. Although the Chi square (χ^2) test remains significant, it not a preferred measure of fit due to insensitivity when used in large samples (Byrne 2004; Hu and Bentler 1999). RMSEA, SRMR, and CFI are all less sensitive to sample

Table 2 Summary of confirmatory factor analysis model fit indices

Model	Chi square (χ^2)	TLI	RMSEA	SRMR	CFI
1. Vallis et al. two factor replication	1283.99	0.82	0.15	0.07	0.86
2. Two factor model based on EFA	387.42	0.94	0.08	0.04	0.96
3. Configural invariance unconstrained model	482.62	0.95	0.06	0.03	0.95
4. Metric invariance constrained model	524.30	0.94	0.06	0.05	0.95
5. Adult treatment session model	224.09	0.94	0.08	0.05	0.96
6. Child treatment session model	219.20	0.95	0.09	0.04	0.96

TLI Tucker Lewis Index, *RMSEA* root mean square error of approximation, *SRMR* standard root mean square residual, *CFI* comparative fit index, *EFA* exploratory factor analysis

Table 3 Results of exploratory factor analyses

Item	Whole sample		Adult treatment sessions		Child treatment sessions
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1[a]
Agenda	**.82**	.09	**.78**	.08	**.73**
Feedback	**.81**	.09	**.81**	.13	**.73**
Understanding	.12	**.75**	.14	**.72**	**.75**
Interpersonal effectiveness	.07	**.75**	.11	**.70**	**.62**
Collaboration	.36	**.49**	.37	**.47**	**.78**
Pacing and efficient use of time	**.50**	.30	**.48**	.36	**.72**
Guided discovery	**.48**	.35	**.48**	.36	**.76**
Focusing on key cognitions or behaviors	**.61**	.26	**.66**	.17	**.84**
Strategy for change	**.74**	.14	**.75**	.10	**.84**
Application of CBT techniques	**.73**	.18	**.78**	.13	**.84**
Homework	**.77**	.11	**.74**	.11	**.68**
Eigenvalue	6.17	1.17	5.66	1.39	6.30
% Variance explained	52.52	6.77	47.55	8.27	57.28

Factor loadings > .40 are in boldface

[a]1 Factor solution

size and were used to evaluate the model. Given the good model fit obtained with this model, a multi-group analysis was performed to examine the structural equivalence of the model across child and adult treatment sessions.

The test for configural invariance across child and adult treatment sessions was conducted in accordance with Byrne's (2004) recommendations. The freely-estimated, unconstrained model, analyzed across the two groups, yielded good model fit (see Table 2, Model 3). Additionally, metric invariance was tested across child and adult treatment sessions and yielded good model fit (see Table 2, Model 4). However, the Chi square (χ^2) difference test between these models resulted in a significant Chi square, $\chi^2\,(12) = 41.68$, $p < .001$, indicating significant variability across groups. Post hoc analyses were conducted to examine group differences.

In order to explore the underlying factor structure within each group (Matsunaga 2010) exploratory factor analyses (EFA) with oblique rotation were conducted separately for child and adult treatment session groups. Kaiser–Meyer–Olkin (KMO) values were 0.90 for adult treatment sessions and 0.93 for child treatment sessions, greater than the 0.70 cutoff, indicating the items are suitably factorable (Beavers et al. 2013). The results of these EFAs are presented in Table 3 and show no item with a factor loading below .30; thus, all items were retained for each group. However, the adult treatment group EFA yielded a two-factor structure similar to that obtained for the whole sample (Table 2, Model 2), whereas the child treatment group EFA yielded a one-factor structure. Confirmatory factor analysis (CFA) was then conducted on each group separately. Results of these CFAs are found in Table 2 (Models 5 and 6).

Factor loadings and parameter weights for each the child treatment sessions and the adult treatment sessions are shown in Figs. 1 and 2. In both models, similar to Model 2, errors between homework and agenda, strategy for change and application of CBT technique, and feedback and agenda were correlated. Additionally, for the child treatment group, the errors between understanding and interpersonal effectiveness were also correlated. For the adult treatment group, when accounting for correlated errors, pacing and efficient use of time was found to load on the general therapy skill factor. This differed from the EFA. Both models demonstrated adequate to good model fit, when model fit indices were examined holistically. Although RMSEA is greater than the suggested cutoff, it has been found to be especially conservative at smaller sample sizes (Hu and Bentler 1999) and may require larger sample sizes in each individual group to meet suggested cutoffs.

Discussion

The current study examined the factor structure and reliability of the CTRS in a sample of child and adult clinicians working in outpatient community mental health settings. We hypothesized that the two-factor structure proposed by Vallis et al. (1986) would best fit the current sample and that this factor structure would be invariant across clinicians who work with children or adults. Our data did not support these hypotheses. Instead, our results demonstrated a unique two-factor solution for adults and a one-factor solution for

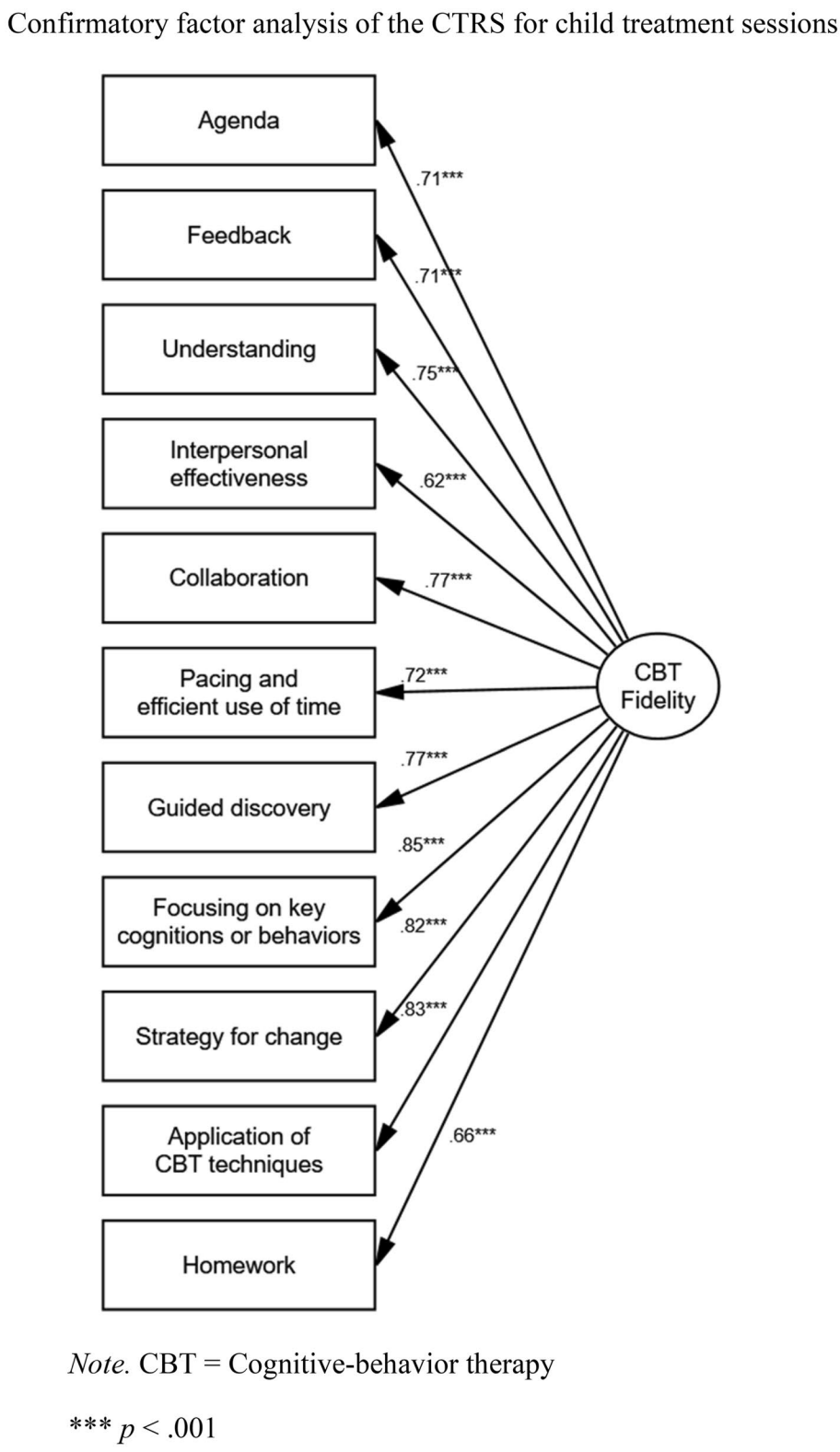

Fig. 1 Confirmatory factor analysis of the CTRS for child treatment sessions. *CBT* Cognitive-Behavior Therapy. ***$p < .001$

children that suggests that the CTRS structure may differ based on clinical populations and settings.

Overall, the CTRS was found to be a reliable measure of cognitive-behavior therapy for children and adults in community mental health settings. Although previous research has been inconsistent on whether the scale demonstrates high levels of inter-rater reliability (e.g., Jacobson and Gortner 2000), this study was consistent with other studies

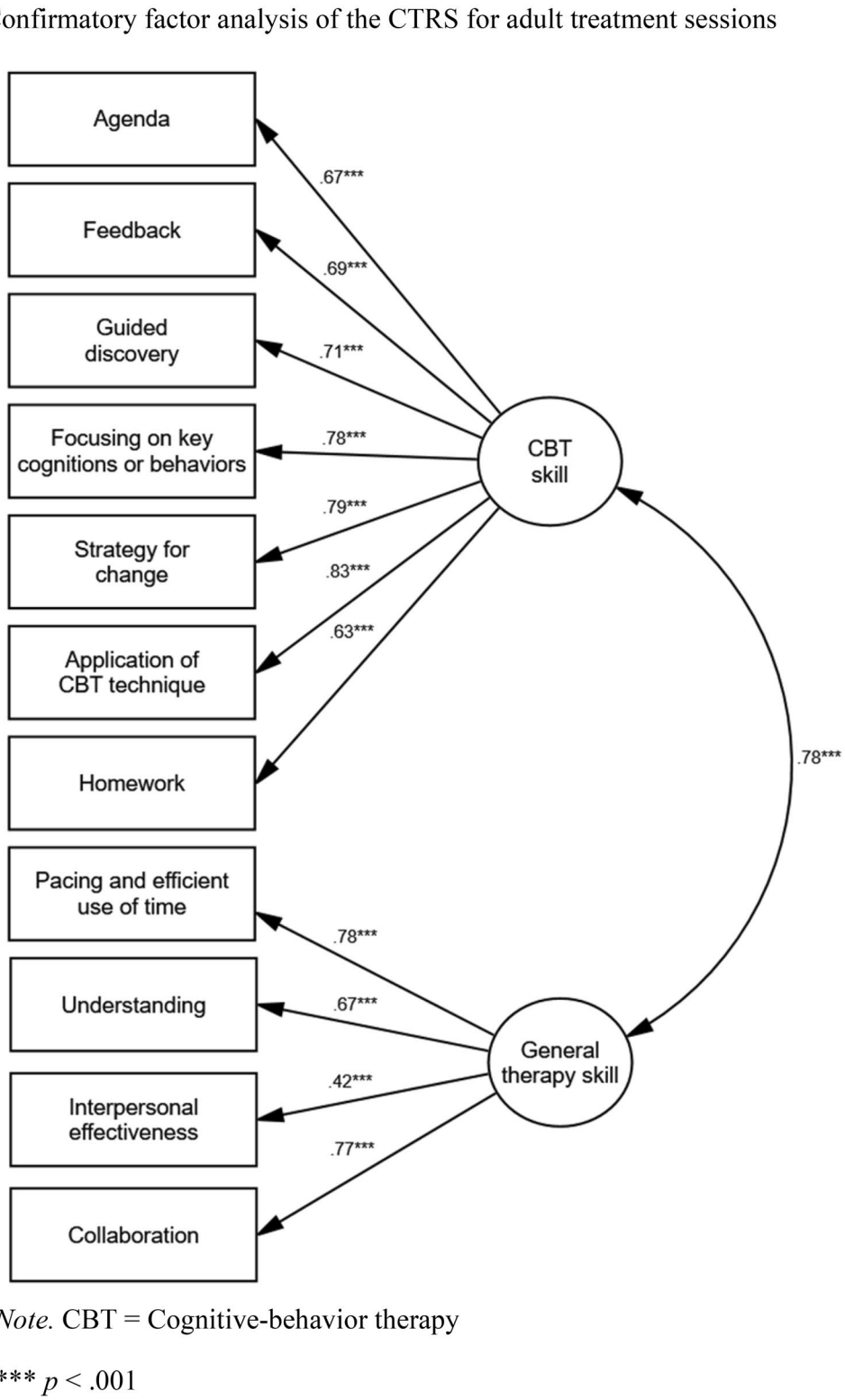

Fig. 2 Confirmatory factor analysis of the CTRS for adult treatment sessions. *CBT* Cognitive-Behavior Therapy. ***$p < .001$

that showed high inter-rater reliability when the raters were trained CBT experts (e.g., McManus et al. 2010). Indeed, some studies that have shown lower inter-rater reliability have used non-CBT expert or undergraduate level research assistants (Rozek et al. 2018). High inter-rater reliability was shown not only for total scores, which are used for certification purposes, but for individual item scores as well, which may be integral for training purposes. That is, agreement

across both total and item scores suggests not only are competence scores reliably obtained, but also expert trainers can reliably identify specific strengths and weaknesses from individual items on the CTRS. Trainers can use this information to formulate individualized feedback to strengthen areas of difficulty. Importantly, in keeping with best practices, rigorous reliability training ensured that all raters were calibrated before rating any study tapes, and ongoing group calibration meetings were used to prevent drift.

As noted above, the best fitting model for the entire sample was a two-factor structure, though the specific items differed from those previously found to load on the two factors. In the current two-factor solution the general therapeutic skill factor consisted of: understanding, interpersonal effectiveness, and collaboration. The Cognitive-Behavioral Therapy skill factor consisted of: agenda, feedback, pacing and efficient use of time, guided discovery, focusing on key cognitions or behaviors, strategy for change, application of CBT techniques, and homework. This solution explained lower amounts of variance than Vallis et al.'s (1986) model, though it did achieve good model fit. Given that no other studies have conducted factor analysis on the scale, it is difficult to parse whether differences in the factor structure are due to differences in sample characteristics (e.g., community mental health clinicians versus research-trained clinicians) or variability inherent to the CTRS. However, given that differences do exist among the populations observed (Fixsen et al. 2005; Proctor et al. 2009), it is plausible that the structure observed is due to unique aspects of community mental health clinicians, such as low levels of support and supervision, and treatment of diverse presenting problems (Garety et al. 2017). Clinicians in the current sample may have benefited from the support of the BCI training program and may not extend to those clinicians who work in community mental health agencies without access to supplemental trainings.

Further examination of the factor structure did not support invariance between child and adult treatment sessions. That is, two different factor structures were observed to be the best fitting models: one for therapy sessions with children and the other for therapy sessions with adults. For adult treatment sessions, a two-factor solution was appropriate. The general therapeutic skills factor consisted of the items understanding, interpersonal effectiveness, collaboration, and pacing and efficient use of time. The Cognitive-Behavioral Therapy skill factor consisted of agenda, feedback, pacing and efficient use of time, guided discovery, focusing on key cognitions or behaviors, strategy for change, application of CBT techniques, and homework. This separation of items is in line with the theoretical differentiation in CTRS measurement. In other words, the CBT skill factor consists of those items relevant to performing CBT specific capabilities well (e.g., session structure and interventions). The general therapy skill factor consists of those items which are not unique to CBT, and may be demonstrated in non-CBT sessions.

Interestingly, pacing and efficient use of time loaded highly on both factors in our exploratory factor analysis (EFA) but was found to load only on the general therapy skill factor in our confirmatory factor analysis (CFA). Conceptually, high loadings on both factors is unsurprising given that pacing and proper session structure is necessary for quality CBT interventions to be performed but must not interfere with collaborative and interpersonal aspects of treatment. This has been supported by research that has shown the use of CBT session structure to correlate with treatment response (e.g., Ginsburg et al. 2012). Additionally, this is similar to the findings of Vallis and colleagues (1986). In their study 'pacing' had high factor loadings (> .5) on both factors as well. Importantly, under the constraints of the CFA, this item was found to have a low loading on CBT skill, which may suggest that pacing and efficient use of time is more related to general therapeutic skill.

For child treatment sessions, a one-factor model best represented the data. This result, not previously demonstrated in the literature, suggests that the CTRS structure may not be consistent across all clinical populations and settings. It also suggests that a common skill may underlie all items. Perhaps child clinicians with lower general therapeutic skills (e.g., collaboration) have difficulty applying CBT techniques, whereas those with higher general skills are able to apply CBT techniques more readily. As these skills tend to appear together, those who train and supervise clinicians working with children may need to approach training more broadly, teaching a more integrated skillset. Though research on this is sparse, this hypothesis is consistent with the finding that therapist flexibility and collaboration is related to child engagement (Chu and Kendall 2009; Hamilton et al. 2008) and that child engagement is related to treatment response (Chavira et al. 2014). Further, this finding suggests the need for future research to examine the CTRS in different clinical settings with different clinical populations in order to best understand its structure.

It has been suggested elsewhere that competencies required for CBT in children may be distinct from those required for CBT in adults (Roth et al. 2011). Indeed, Stallard (2005) describes the importance of partnering with parents/caregivers, matching the intervention to child developmental level, presenting CBT information creatively and flexibly, and engagement, among others, as specific competencies needed for effective CBT treatment for children. This was the basis for the creation of a separate scale specifically aimed at measuring CBT competence for practitioners working with children (i.e., The Cognitive Behaviour Therapy Scale for Children and Young People; Stallard et al. 2014). The scale was created to include the concepts from the

CTRS with specific applicability to children. Although the CTRS does capture some of the domains listed above (e.g., collaboration and interpersonal effectiveness), the current data suggest that CBT competence with children requires broader skills, consistent with Stallard's (2005) theory. That is, the general therapeutic skills domain is important, but separate from CBT skills, for CBT competence with adults; whereas, CBT competence with children does not differentiate between the two. Further research is required to confirm this hypothesis.

These findings are also relevant to CBT implementation efforts. Given the importance of treatment fidelity to the implementation of CBT (e.g., Waltman et al. 2017; Stirman et al. 2013a), valid measurement of treatment fidelity is essential. Although the CTRS is used widely in both research and training settings (Forand et al. 2011), our results are the first exploration of its structure in a sample of community clinicians. This is an essential step in validating the use of the CTRS among this population. Valid fidelity measures serve many stakeholder groups in implementation and training settings, including researchers, trainers, and supervisors (Essock et al. 2015), all of which are informed by the current findings. For example, fidelity research trials (e.g., Stirman et al. 2018) should be cautious regarding the factor structure of the CTRS dependent on setting and population of enrolled clinicians.

In training and supervisory contexts, the feasibility of using the CTRS is a concern. The CTRS is a time and resource intensive measure of fidelity that may not be feasible in many practice settings. However, the results provide a framework for training and delivering feedback efficiently on cases. For example, adult clinicians may be able to independently learn CBT skills and general therapeutic skills effectively; whereas, child clinicians may require a broader more integrated approach. This allows trainers and supervisors to create more effective and efficient training tools and programs, to better observe the successes and failures of clinicians and broader implementation initiatives, and to measure performance accurately to ensure program efficiency and desirable outcomes. This may assist in decreasing the burden of using an observation-based measure of fidelity in community mental health settings.

The findings of the current study should be tempered by certain limitations. The sample of clinicians was obtained from a single implementation program in one urban community mental health care system (Beck Community Initiative; Creed et al. 2014, 2016a), and may not generalize to other settings. Although the project has been shown effective in a range of populations (e.g., Creed et al. 2013; Pontoski et al. 2016), the structure observed may be influenced by the specific training these clinicians have received. That is, more studies in community mental health settings are needed to confirm this structure extends beyond the current sample of clinicians trained by the BCI. Conducting factor analyses in separate samples will help confirm or disconfirm the stability and robustness of the findings. Additionally, we did not track patient level data in this cohort and thus cannot speak to presenting problems of the clients. This could have an effect on the findings of the study and future studies should include patient level data to determine its effect on the factor structure. Similarly, because clinicians were able to choose which CBT sessions to submit from among all clients with whom they were practicing CBT, we are unable to control for the phase of therapy clients may have been in for that session, whether multiple recordings from the same client were submitted, or whether a session was a more favorable representation of their work. Instead, early, middle, and later stages of the clinicians' training and learning process were represented in the data. Finally, it is important to note that this new factor structure does not necessarily link to improved outcomes for clients. It will be important to examine whether this new factor structure can inform on client outcomes in future research.

Despite these limitations, the current study is an important addition the literature. It is the first study to examine the reliability and factor structure of the CTRS in a sample of community mental health clinicians. Additionally, it is the first study to examine differences in the factor structure of the CTRS based on clinical population. The results were consistent with previous studies showing the CTRS to have high levels of interrater reliability (McManus et al. 2010; Westra et al. 2009). However, factor analyses showed differences in factor structure from previous studies (Vallis et al. 1986) and these differences varied between child and adult therapy sessions. This has important implications for assessing fidelity in community mental health settings whether that occurs within training programs, implementation, or regular supervision. We recommend that feedback and scores be provided within factor structures to ensure that clinicians perform CBT with high levels of fidelity (Waltman et al. 2017). Additionally, future studies are needed to determine whether CBT conducted in other clinical populations and mental health settings is related to different CTRS factor structures from those observed here.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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.

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

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

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The structure of competence: Evaluating the factor structure of the Cognitive Therapy Rating Scale

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Abstract

The Cognitive Therapy Rating Scale (CTRS) is an observer-rated measure of cognitive behavioral therapy (CBT) treatment fidelity. Although widely used, the factor structure and psychometric properties of the CTRS are not well established. Evaluating the factorial validity of the CTRS may increase its utility for training and fidelity monitoring in clinical practice and research. The current study used multilevel exploratory factor analysis to examine the factor structure of the CTRS in a large sample of therapists (n = 413) and observations (n = 1264) from community-based CBT training. Examination of model fit and factor loadings suggested that three within-therapist factors and one between-therapist factor provided adequate fit and the most parsimonious and interpretable factor structure. The three within-therapist factors included items related to (a) session structure, (b) CBT-specific skills and techniques, and (c) therapeutic relationship skills, although three items showed some evidence of cross-loading. All items showed moderate to high

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loadings on the single between-therapist factor. Results support continued use of the CTRS and suggest factors that may be a relevant focus for therapists, trainers, and researchers.

Keywords

Cognitive Therapy Rating Scale; cognitive behavioral therapy; treatment fidelity; adherence and competence; multilevel factor analysis

Cognitive behavioral therapy (CBT) is a widely used psychotherapy that is used to treat a range of psychiatric conditions (e.g., anxiety, depression). A substantial body of empirical literature supports CBT's efficacy when delivered with high quality (Butler, Chapman, Forman, & Beck, 2006; Hoffmann et al., 2012). However, considerable variation can occur in the way in which CBT is actually delivered (Webb, DeRubeis, & Barber, 2010), and some have argued that lower quality implementation may be linked to poorer outcomes in routine clinical care (Shafran et al., 2009). Treatment fidelity is conceptualized to have two components: *adherence* refers to whether a therapist provides theory-specified treatment components (Moncher & Prinz, 1991). *Competence* refers to the degree to which a therapist implements these components skillfully, adapting as necessary based on the needs of a given client (McHugh & Barlow, 2010). Thus, competence is predicated on a therapist adhering to treatment principles. Based on the assumption that skillful implementation of treatment-specific ingredients leads to beneficial outcomes, adherence and competence are vital for clinical practice; assurance that treatments are delivered as intended is crucial for research and implementation efforts (Fairburn & Cooper, 2011). However, to date relatively little attention has been paid to the psychometrics of CBT adherence and competence assessment; measurement limitations may in part explain the lack of a consistent link between these factors and treatment outcome (Webb et al., 2010).

Typically, to assess adherence and competence, trained raters provide standardized assessment of a therapist's behavior during a session. Among the more than 60 different measures of CBT fidelity that were identified in a recent review (Muse & McManus, 2013), the most common and widely used observer-rated measure of CBT fidelity was the Cognitive Therapy Rating Scale (CTRS; Young & Beck, 1980). The CTRS has been used as a benchmark for CBT competence in large-scale randomized clinical trials (e.g., Shaw et al., 1999). The measure includes 11 items rated on a seven-point scale ranging from 0 to 6 (Young & Beck, 1980), covering a range of general therapy skills (e.g., interpersonal effectiveness) and CBT-specific skills (e.g., focusing on key cognitions and behaviors).

The psychometric properties of the CTRS were evaluated at the time of its creation and in one recent study. The original validation studies relied on relatively modest amounts of data drawn primarily from the National Institute of Mental Health Treatment of Depression Collaborative Research Program (NIMH TDCRP; Elkin et al., 1989), while the more recent study (Creed et al., 2016) was conducted in a larger community sample. In this more recent study, Creed et al. demonstrated improvements in CTRS scores over the course of training, with most clinicians (79.6%) reaching established competency benchmarks by the final assessment. Although providing support for the construct validity of the CTRS (i.e., increases over the course of training in CBT; Cronbach & Meehl, 1955), Creed et al. did not

evaluate the factor structure of the CTRS. Evaluating the CTRS in a community sample may be particularly valuable given the greater variability in therapist performance, relative to clinical trials, as well as greater external validity related to how CBT may be delivered in practice contexts. In addition, evaluations using larger samples of therapists and clients are vital for reliably establishing the psychometric properties of the CTRS.

Existing evaluations of the CTRS have generally been promising. The CTRS has shown excellent internal consistency reliability (α = .95, item-total correlations ranging from .59 to .90; Dobson et al., 1985; Vallis et al., 1986) as well as evidence of inter-rater reliability (ICC = .59 in Vallis et al., 1986, with high reliability [ICC =.84] in a more recent assessment; Creed et al., 2016). Construct validity has been supported with CTRS scores increasing over the course of training in CBT (Creed et al., 2016).

Another important form of validity is structural (or factorial) validity. Structural validity is important for evaluating the theory underlying a given measure (i.e., what constitutes competence in CBT) as well as informing scoring procedures (e.g., use of subscale scores). The CTRS was originally theorized to be composed of two factors: (1) general skills (e.g., collaboration) and (2) cognitive therapy skills (e.g., conceptualization, strategy, and technique; Young & Beck, 1980; Young, Shaw, Beck, & Budenz, 1981). However, early evaluation of the CTRS factor structure did not fully align with this two-factor model. Vallis et al. (1986), which to our knowledge is the only published factor analysis of the CTRS, used principle components analysis on a small sample of n = 90 session recordings from n = 9 therapists. The authors found that items from both the general skills and cognitive therapy skills subscales loaded on the first factor. This first factor was then defined as “overall cognitive therapy quality” (p. 383, Vallis et al., 1986), with the second factor including items related to session structure (agenda, pacing, and homework). One limitation of this early work was the use of repeated measures without adjustment (i.e., multilevel models or clustered standard errors; Baldwin, Murray, & Shadish, 2005). More recently, researchers have suggested that a three-factor structure may more accurately represent the CTRS components: (1) general therapeutic skills, (2) CBT-specific skills, and (3) case conceptualization (Creed et al., 2016). This proposed structure has not, however, been evaluated empirically.

Typically, therapists are rated multiple times with the CTRS, which means that ratings are nested within therapists. No study to our knowledge has examined the factor structure of the CTRS using multilevel modeling, which can account for the nesting of multiple ratings within a given therapist. Just as multilevel regression can model relationships at the therapist and client levels (e.g., Baldwin, Wampold, & Imel, 2007; Baldwin & Imel, 2013), multilevel factor analysis can model factor structures at the therapist and client levels.

The items in the therapist-level portion are the CTRS item-averages for a therapist (i.e., aggregating across all clients for a given therapist). Thus, the therapist-level model represents how items “hang together” when considering therapists’ entire caseload. In contrast, items in the client-level portion are the CTRS within-therapist deviations—how clients differed from their therapists’ mean. Thus, the client-level model represents how the items “hang together” when considering specific clients or sessions. It may be, for example,

that certain therapist behaviors (e.g., setting an agenda, using specific CBT skills) vary within a therapist's caseload; a therapist might not structure a session with a given client. However, in general, this more specific subscale may not provide unique information after aggregating across clients. Therefore, the client-level competence ratings from the CTRS are most relevant when supervising a specific case whereas the therapist-level ratings are most relevant when assessing therapists' competence over multiple cases.

Based on the limited number of prior psychometric evaluations of the CTRS, only one prior factor analytic study (Vallis et al., 1986), and the need for evaluation in a large sample using multilevel modeling to account for nested observations within therapists, the present study examined the CTRS using multilevel factor analysis. This was conducted in a large sample of therapists (n = 413) and sessions (n = 1264). Given uncertainty regarding the proposed structure of the CTRS, a lack of prior multilevel factor analyses, and the sample size requirements for reliable within- and between-factor loadings, exploratory (rather than confirmatory) factor analysis was used.

Materials and Methods

Participants

CTRS data were available for n = 413 therapists across n = 1264 observations. Therapists were drawn from 26 agencies participating in the Beck Community Initiative, a partnership between the University of Pennsylvania and a large publicly funded mental health system that serves more than 120,000 people annually. Therapists participating in this study were involved in a large-scale CBT training and implementation initiative. A detailed description of the training model for therapists is available for review (see Creed et al., 2016). Briefly, training included attending CBT workshops, six months of weekly group consultation, and submitting recorded sessions for competency assessment and training purposes. Session recordings were drawn from all points of the training protocol (i.e., pre-workshop, post-workshop, three months into the six-month consultation period, end of six-month consultation period, two years post-consultation period). Having sessions drawn from throughout the training procedure was intended to maximize variability in CTRS scores. Therapists received detailed written feedback on their audio submissions. Participants were drawn from a variety of disciplines and varied in their educational backgrounds and level of training (see Creed et al., 2016).

As the focus of this initiative was on training and implementation of an already-established evidence-based practice, no data were collected regarding client-level variables (e.g., client demographics, outcomes). Although a subsample of clients appears on multiple occasions within the data set, client identification variables were not available, making it impossible to separate client- from session-level variability. Thus, inferences from our models provide information about therapist-level competence across clients included in their caseload. The lack of client-level identifiers prohibits drawing conclusions regarding the factor structure of the CTRS for a particular client across time. Based on uncertainty regarding the nested structure of the data, analyses were conducted using maximum likelihood estimation with robust standard errors (see below; White, 1980). The use of robust standard errors addresses

a liberal bias in estimates of standard errors (i.e., inaccurately small standard errors) when repeated observations of the same client were included in a therapists' caseload.

Procedures

Data for the current study were drawn from CTRS ratings administered as part of the Beck Community Initiative. Raters were trained using the CTRS manual and a supplemental rater guide developed to improve reliability. Raters were required to demonstrate reliability on ratings of five consecutive audio recordings prior to becoming study raters by scoring within one point of a gold-standard score on each CTRS item, as well as agreement with whether the total score was ≥ 40. A total of 31 doctoral-level cognitive therapy experts served as trained CTRS raters, with a single rater rating each session (i.e., no session was rated by multiple raters in the current data set). Regular reliability meetings were held among all raters to prevent rater drift, wherein raters independently scored the same audio, recorded their scores to track interrater reliability, and then discussed their rationale for all ratings with the group to reach a consensus score for ongoing training purposes. For this study, raters completed a total of 1264 CTRS ratings. The therapists had an average of 3.06 sessions rated (SD = 1.20, range = 1 to 7). Interrater reliability on CTRS total scores could not be computed directly in the current sample due to a lack of repeated ratings of a given session. However, interrater reliability was high in the larger sample of ratings from which the current subsample is drawn (ICC = .84; Creed et al., 2016).

Measures

The Cognitive Therapy Rating Scale (CTRS; Young & Beck, 1980) is an observer-rated measure used to evaluate competence in cognitive therapy skills (Beck, 2011). The measure includes 11 items (see Table 1) scored on a 7-point Likert-type scale ranging from 0 (*poor*) to 6 (*excellent*). A score of 40 has been used as a benchmark for CBT competence (Shaw et al., 1999). Items are designed to assess therapeutic relationship skills (e.g., interpersonal effectiveness), CBT-specific skills (e.g., focusing on key cognitions and behaviors), and structure (e.g., agenda setting). Internal consistency across all 11 items was high in the current sample (α = .94).

Data Analysis

Data were analyzed using R (R Core Team) and Mplus statistical software (Muthén & Muthén, 2017). Given uncertainty regarding the hypothesized factor structure, a multilevel exploratory factor analysis (EFA) was conducted (see Supplemental Materials Table 1 for Mplus code). Just like single-level EFA, multilevel EFA requires selecting the number of factors, except in multilevel models one selects the number of factors at the therapist- and client-levels. Fit indices from models with a varying number of factors at the therapist- and client-levels were compared. Specifically, the number of factors were varied from 0 to 4 at both the therapist- and client-levels. Models with 0 factors at a specific level only model the covariance among the items at that level. For example, a model with 0 factors at the therapist-level would include covariances among all therapist-level items (i.e., an unrestricted covariance matrix). The fit indices used were the Bayesian Information Criterion (BIC; smaller values better), root mean square error of approximation (RMSEA; smaller values better), comparative fit index (CFI; larger values better), Tucker-Lewis index

(TLI; larger values better), and standardized root mean square residuals (SRMR; smaller values better). Per Brown (2015), the following cut-off values were used to define acceptable fit: RMSEA < .05, CFI > .95, and TLI > .95. Models were selected on the basis of fit and evaluation of loadings based on clinical utility and rationale.

As noted above, some clients were represented on multiple occasions within the data set, yielding dependencies between observations (i.e., nesting of clients within therapists, nesting of sessions within clients). Modeling this nested structure was not possible due to a lack of client identifiers. To account for this statistically and reduce a liberal bias in standard error estimates (i.e., inaccurately small standard errors), maximum likelihood estimation with robust standard errors was used. This approach does not assume a particular nesting structure within multilevel data (White, 1980).

Results

Descriptive statistics for CTRS items in the current sample are presented in Table 1. Item means ranged from 2.14 (Homework, standard deviation [*SD*] = 1.50) to 3.96 (Interpersonal Effectiveness, *SD* = 0.94), with a mean total score of 31.04 (*SD* = 11.10). Inspection of item-level histograms did not indicate significant floor or ceiling effects (Figure 1). The overall total score (*Mean* [*M*] = 31.04) was below the clinical competence benchmark score of 40, although there was evidence that scores increased from pre-training (*M* = 19.88, *SD* = 6.98, *n* = 294) to six-month post-training follow-up assessment (*M* = 38.80, *SD* = 8.88, *n* = 280). Among the subsample with both pre-training and six-month post-training follow-up assessments (*n* = 171), a large and statistically significant increase was observed (*t*[170] = 25.76, *p* < .001, *d* = 2.42).

Between-therapist variation in CTRS scores was measured with intraclass correlation coefficients (ICC; see Table 1, see Supplemental Materials Table 2 for Mplus code). Higher ICCs indicate that a greater proportion of variance in CTRS scores occurred at the between-therapist level (as opposed to within-therapist level). ICCs varied from 0.08 (strategy for change) to 0.21 (interpersonal effectiveness). Due to a lack of client identifiers in the data set, it was not possible to further disaggregate within-therapist variance into client- and session-level components.

Fit indices from multilevel EFA models are presented in Table 2. Models were examined with one to four within-therapist factors and one to four between-therapist factors. Models were also examined with an unrestricted within-therapist covariance structure. BIC values followed a pattern of improved fit as the number of within-therapist factors increased from one to three, with slightly poorer fit with four within-therapist factors. This pattern was evident regardless of the number of between-therapist factors. RMSEA values followed a pattern of improved fit as the number of within-therapist factors increased from one to four, with the exception of models including two within-therapist factors, for which fit was decreased relative to one within-therapist factor. This pattern was consistent regardless of the number of between-therapist factors. RMSEA values reached the recommended level of < 0.05 with three within-therapist factors regardless of the number of between-therapist

factors. Similarly, CFI and TLI values reached the recommended level of > 0.95 with three within-therapist factors, regardless of the number of between-therapist factors.

Next, patterns of factor loadings were examined for interpretability and item absence of cross-loading. As it appeared that either three or four within-therapist factors fit the data best, factor loadings were examined for these models. The model with three within-therapist factors and one between-therapist factor showed fairly low levels of cross-loaded items and highly interpretable within-therapist factors (Table 3).

At the within-therapist level, Factor 1 was comprised of four items related to session structure (Agenda, Feedback, Homework, Pacing), Factor 2 was comprised of four items related to CBT-specific skills (CBT Technique, Strategies for Change, Key Cognitions and Behaviors, Guided Discovery), and Factor 3 was comprised of therapeutic relationship skills (Collaboration, Interpersonal Effectiveness, Understanding). Collaboration also loaded modestly on Factor 1 (loading = 0.31) and both Pacing and Guided Discovery loaded modestly on Factor 3 (loading = 0.29 for both items). At the between-therapist level, all items showed moderate to high loadings (≥0.44) on the single factor. The addition of a fourth within-therapist factor did not appear to improve factor interpretability. One item (Pacing) failed to load strongly on any of the four factors.

Models were then examined with three within-therapist factors and varying numbers of between-therapist factors. Increasing the number of between-therapist factors did not yield interpretable patterns of factor loadings. In a model with three within- and two between-therapist factors, two items (Key Cognitions and Behaviors, Guided Discovery) showed high cross-loading. Similarly, a model with three within- and three between-therapist factors also failed to yield interpretable factor loadings, with several instance of cross-loaded items (Key Cognitions and Behaviors, Guided Discovery, Homework, Feedback). Thus, it appeared that the model with three within-therapist factors and one between-therapist factor provided the most parsimonious and interpretable factor structure, while simultaneously providing adequate model fit.

Discussion

Evaluation of treatment fidelity is crucial for dissemination and implementation of evidence-based psychotherapies as well as for rigorous psychotherapy research. While the CTRS is a widely used observer-rated measure of CBT treatment fidelity, the measure's factor structure has not been established. The present research is the first large, robust analysis of the CTRS factor structure, using a large sample of community-based therapists (n = 413) being trained in CBT and observed over n = 1264 observations. Analyses modeled the nesting of observations within therapist, showing that three within-therapist factors and one between-therapist factor yielded a good-fitting model and interpretable factors.

Examination of the pattern of loadings at the within-therapist level may provide insight into the structure of CBT treatment fidelity. The first factor represented structure-related skills, including setting an agenda, assigning homework, eliciting feedback from clients, and pacing the session (CTRS items 1, 2, 6, and 11; Young & Beck, 1980). The second factor

was comprised of items specific to CBT, including implementing CBT techniques fluently, engaging in guided discovery, focusing on key cognitions and behaviors, and planning a CBT-oriented strategy for change (CTRS items 7, 8, 9, 10). The third factor was comprised of items reflecting therapeutic relationship skills, including communicating an understanding of clients' thoughts and feelings, interpersonal effectiveness and warmth, and developing a collaborative relationship (CTRS items 3, 4, 5). Thus, it appears that CBT fidelity as assessed via the CTRS in a given session (i.e., within therapist) is composed of a combination of both CBT- and non-CBT-specific skills, along with the ability to structure a session effectively.

In contrast, there appeared to be a single between-therapist factor on which all items loaded, rather than empirically separable domains of competence. Thus, at the therapist level, the CTRS appears to be most useful for making omnibus distinctions of CBT competence. The ability of the CTRS to detect overall, therapist-level skill supports its use in training, supervisory, and quality monitoring contexts. In addition, this omnibus assessment may be further enriched through the three within-therapist factors providing a finer-grained depiction of specific classes of therapeutic behavior that can be targeted for training, supervision, and quality monitoring.

It is worth considering factors that may help contextualize this pattern of multiple within-therapist factors and a single between-therapist factor. One potential contributor is the relatively small between-therapist variability for each item. While generally larger than the proportion of variance in client outcomes attributable to the therapists (i.e., ICC = .05; Baldwin & Imel, 2013), ICCs observed in the current study indicate that the lion's share of variance exists within therapist. This finding puts into question the degree to which competence, as assessed via the CTRS, can be viewed as a therapist-level, rather than client- or session-level, construct. Rather, it may be that some sessions, rather than some therapists, demonstrate competence. There are several theoretically plausible factors that may explain this between-therapist pattern. It may be that therapists' behavior is strongly linked to clients' behavior, such that conceptualizing adherence to specific CTRS domains as a therapist-level trait is less tenable. This could occur for clinically appropriate reasons (e.g., therapists customizing their level of adherence based on a client's needs in a particular session) or could indicate therapists having greater difficulty delivering to a treatment protocol with competence with some clients (e.g., more interpersonally challenging clients; Imel, Baer, Martino, Ball, & Carroll, 2011; Imel et al., 2014). It may also be that most therapists engage in most of the necessary behaviors at some point, such that when scores are aggregated at the between-therapist level, differences between therapists are muted. Further examination of these questions in a data set that includes both therapist and client identifiers is warranted. This would be in keeping with ongoing efforts to establish therapist-level variables that may help explain variation in outcomes across therapists (i.e., therapist effects; Baldwin & Imel, 2013; Goldberg et al., 2018; Johns, Barkham, Kellett, & Saxon, in press; Lingiardi, Muzi, Tanzilli, & Carone, 2017). It may be particularly worthwhile to include CTRS assessments conducted on multiple clients and multiple CTRS assessments conducted on the same therapist-client dyad, in order to increase dependability of therapist-level and dyad-level estimates of adherence, respectively (see Crits-Christoph, Connolly Gibbons, Hamilton, Ring-Kurtz, & Gallop, 2011; Flückiger et al., in press).

This study adds to several decades of work using the CTRS and aids in establishing this measure as a valid and reliable measure of CBT fidelity, marking the first robust analysis of the measure's structural validity. Although a readily interpretable factor structure was derived using the current data, it will be important for future work to replicate these results, ideally through confirmatory factor analysis and a similarly large sample. Given the high resource demands associated with observer rating systems, it may be valuable to explore the integration of modern technologies such as natural language processing and machine learning to augment and perhaps replace time-intensive human coding (Imel, Steyvers, & Atkins, 2015). The feasibility of this approach has already been demonstrated for assessing motivational interviewing fidelity (Atkins, Steyvers, Imel, & Smyth, 2014) and more recently in the context of CBT (Flemotomos et al., 2018).

While our study lends empirical support to the structural validity of the CTRS, it is worth considering limitations of the CTRS as a measure of CBT fidelity that could be improved through future studies. (We are appreciative to an anonymous reviewer for highlighting these limitations of the CTRS.) For one, the measure was published in 1980. Decades of theoretical and empirical work have continued to clarify both the common and specific mechanisms of action within CBT. It is possible that an updated CTRS could more effectively capture these features than the original version. Relatedly, while the CTRS was presumably developed based on theory and clinical experience, it may be possible to create a more empirically-based fidelity using modern data analytic and measurement methodologies. A second limitation is the measure's emphasis on cognitive techniques. Many modern forms of CBT include behavioral strategies that may not be represented sufficiently on the CTRS (e.g., the word "exposure" does not appear in the CTRS manual; Young & Beck, 1980). Thus, the measure's ability to capture fidelity to some forms of CBT may be less robust.

Several limitations of the current study are worth mentioning. Although our sample size was adequate for conducting EFA, a large enough sample was not available to separate into two portions for conducting both EFA and confirmatory factor analysis, leaving open the question of whether or not the observed factor structure will replicate in other samples. It is therefore crucial that future confirmatory work re-evaluate our findings in a separate sample. The potential availability of technologies capable of automating session coding would support this possibility (Imel, Steyvers, & Atkins, 2015). Further, although the varied settings in which sessions occurred supports external validity, organizational differences may have also introduced systematic variation (e.g., by workload, productivity demands, staff attitudes towards evidence-based treatment). Unfortunately, the large number of clinics included (n = 26) precluded our ability to test for measurement invariance across clinics. Conducting our study in varied settings limited our ability to include additional measures (e.g., ratings of alliance, treatment outcomes) by which to externally validate our findings. This lack of extra-test correlates greatly limits the degree of validity evidence we can provide in support of the CTRS. Future studies examining the association between CTRS factor scores and key CBT process and outcome measures is therefore a crucial next step.

Another significant limitation was our inability to model nesting of observations within clients. Although statistical techniques designed to account for dependencies within the data

(i.e., through use of robust standard errors) were used, lacking client identifiers, it was not possible to disaggregate within-therapist variance into client- and session-level components. While our findings provide insight into therapist competence at the level of their caseload, no information is provided to infer the structure of competence for a particular client over time. It would be valuable to examine this further in a future study. Such a study could assess the degree to which therapist competence appears as a stable therapist-level factor or manifests to varying degrees depending on the particular client (i.e., client-level) or session (i.e., session-level). The relatively modest therapist-level ICCs reported here suggest that a sizable proportion of therapists' competence may depend on the particular client or even session being observed.

Our use of session recordings drawn from a CBT training context is likely both a strength and limitation. Training in CBT may have increased the variability in CTRS scores, which may have increased our ability to reliably estimate factor loadings, a strength provided the validity of ratings is retained. It is also possible that recordings from a CBT training study may not generalize to non-training contexts (i.e., routine clinical practice in which training in CBT was not being implemented). Being observed within both a training and research context may have influenced therapists' behavior (i.e., Hawthorne effects; Adair, 1984) and therefore the observed structure of the CTRS. It would be valuable for future studies to examine the structure of CTRS scores outside of a training context.

A related limitation was our inability to test for measurement invariance across assessment time points. It is theoretically possible that the structure of the CTRS varies depending on the point in training at which it is assessed. We attempted to conduct a *post hoc* longitudinal measurement invariance test restricting our sample to the pre- and post-workshop assessments. However, the available sample size (e.g., number of observations per therapist) was limited and model was un-identifiable. Future studies using a larger sample could explore this possibility further.

Conclusion

Despite these limitations, the current study provides the first multilevel factor analytic investigation of the factor structure of the CTRS. The three within-therapist factors and the single between-therapist factors derived from these models provide insight into what characteristics comprise adherent CBT. These results can inform CBT clinical training by identifying component parts of CBT competence that could be targets for training. Results can also inform future investigations studying the CTRS, as well as research on treatment fidelity and therapist differences more generally.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Highlights

- The multilevel factor structure of the Cognitive Therapy Rating Scale was evaluated
- Three distinct and interpretable within-therapist factors were found
- A single between-therapist factor was found

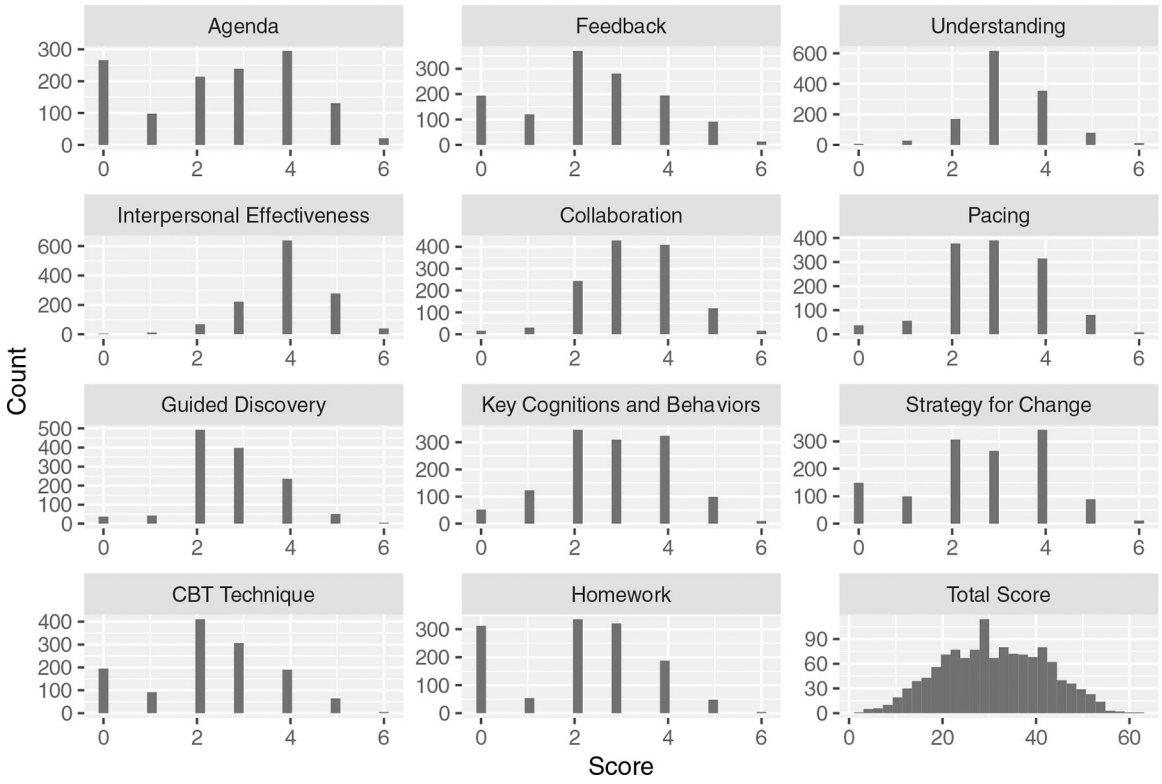

Figure 1.
CTRS item-level and total score histograms.

Table 1

Item and total score descriptive statistics

Items	Mean	SD	Min	Max	Therapist ICC [95% CI]
1. Agenda	2.53	1.72	0	6	0.04 [0.01, 0.09]
2. Feedback	2.39	1.49	0	6	0.14 [0.08, 0.20]
3. Understanding	3.24	0.91	0	6	0.18 [0.12, 0.24]
4. Interpersonal Effectiveness	3.96	0.94	0	6	0.21 [0.14, 0.27]
5. Collaboration	3.27	1.07	0	6	0.13 [0.08, 0.19]
6. Pacing	2.92	1.14	0	6	0.10 [0.05, 0.16]
7. Guided Discovery	2.73	1.05	0	6	0.13 [0.08, 0.19]
8. Key Cognitions and Behaviors	2.84	1.29	0	6	0.13 [0.07, 0.19]
9. Strategy for Change	2.69	1.47	0	6	0.08 [0.03, 0.14]
10. CBT Technique	2.33	1.39	0	6	0.11 [0.06, 0.17]
11. Homework	2.14	1.50	0	6	0.08 [0.03, 0.14]
Total Score	31.04	11.10	2	62	0.12 [0.06, 0.18]

Note: Based on n = 1264 ratings. Item numbering based on Young and Beck (1980). ICC = intraclass correlation coefficient representing the between-therapist variation in CTRS scores.

Table 2

Exploratory factor analysis model fit indices

Within #	Between #	BIC	RMSEA	CFI	TLI	SRMR within	SRMR between
1	1	35995	0.09	0.92	0.90	0.06	0.57
2	1	35703	0.12	0.87	0.81	0.06	0.70
3	1	35460	0.04	0.99	0.98	0.03	0.29
4	1	35463	0.03	0.99	0.99	0.03	0.31
NA	1	35093	0.00	1.00	0.99	0.00	0.34
1	2	35945	0.09	0.93	0.90	0.06	0.72
2	2	35729	0.10	0.92	0.87	0.05	0.18
3	2	35492	0.04	0.99	0.98	0.02	0.13
4	2	35499	0.03	0.99	0.99	0.01	0.10
NA	2	35120	0.00	1.00	0.99	0.00	0.07
1	3	35972	0.09	0.93	0.89	0.05	0.13
2	3	35766	0.09	0.94	0.89	0.04	0.12
3	3	35530	0.04	0.99	0.98	0.01	0.06
4	3	35542	0.03	1.00	0.99	0.01	0.04
NA	3	35160	0.00	1.00	1.00	0.00	0.04
1	4	36011	0.10	0.94	0.88	0.05	0.12
2	4	35810	0.24	0.67	0.29	0.04	0.12
3	4	35576	0.05	0.99	0.97	0.01	0.05
4	4	35589	0.06	0.99	0.96	0.01	0.03
NA	4	35203	0.00	1.00	1.00	0.00	0.02
1	NA	35750	0.07	0.93	0.83	0.05	0.01
2	NA	35500	0.06	0.95	0.85	0.04	0.01
3	NA	35223	0.01	0.99	0.97	0.01	0.00
4	NA	35232	0.00	1.00	0.98	0.01	0.00

Note: NA = unrestricted within covariance; BIC = Bayesian Information Criteria; RMSEA = root mean square error of approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = standardized root mean square residuals.

Table 3

Within- and between-therapist factor loadings

	Within			Between
CTRS Item	**Factor 1**	**Factor 2**	**Factor 3**	**Factor 1**
1. Agenda	**1.09***	−0.26*	0.00	**0.79**
2. Feedback	**0.79***	0.01	0.04	**0.47**
11. Homework	**0.87***	0.01	−0.13*	**0.44**
6. Pacing	**0.40***	0.16*	0.29*	**0.81***
10. CBT Technique	−0.03	**0.96***	0.00	**0.87***
9. Strategies for Change	0.00	**0.96***	−0.04	**0.59**
8. Key Cognitions and Behaviors	0.17*	**0.57***	0.16*	**0.94***
7. Guided Discovery	0.15*	**0.41***	0.29*	**0.79***
5. Collaboration	0.31*	0.00	**0.55***	**0.98***
4. Interpersonal Effectiveness	−0.07	−0.01	**0.77***	**0.82***
3. Understanding	0.00	0.17	**0.65***	**0.95***

Note: Item numbering based on Young and Beck (1980). Loadings bolded to indicate highest factor loading for each item.