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Development and preliminary validation of the Group Cognitive Therapy Scale

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Abstract

Aim: The aim of this research was to create a scale to assess the competency of therapists who conduct group cognitive behavioral therapy (G-CBT). The scale is intended to serve as a tool to aid the training of therapists.

Methods: Three stepped studies were conducted. Process 1: Through literature review and experts' consensus process, essential skills for G-CBT were articulated and categorized according to the criteria of the Cognitive Therapy Scale, a well-established rating scale for evaluating clinicians' skills in individual cognitive behavioral therapy. The list of those skills was organized into a rating scale. Process 2: Behavioral anchors were added to each skill and were classified by the levels of difficulty (beginner, intermediate, and advanced levels), based on the rating by G-CBT experts. Process 3: Inter-rater reliability and validity of the rating scale were examined in a sample of 41 videotaped G-CBT sessions of actual clinical sessions and educational role-plays.

Results: The 12-item Group Cognitive Therapy Scale (G-CTS) was developed. It consists of 11 items that are adapted from the original Cognitive Therapy Scale, and a new 12th item called "Intervention using relationships with other participants," which describes therapists' skills to address group dynamics. The G-CTS showed excellent internal consistency (Cronbach's α: 0.95), satisfactory inter-rater reliability (interclass correlation coefficients: 0.65–0.88), and high predictive validity.

Conclusion: A novel rating scale to evaluate therapists' competency in G-CBT was developed and successfully validated. The G-CTS behavioral checklist created in this study provides concrete guidelines that can be used by therapists to hone their skills in G-CBT.

KEYWORDS
assessment, Cognitive Therapy Scale, competency, group cognitive behavior therapy, training

INTRODUCTION

Group cognitive behavioral therapy (G-CBT) is a type of cognitive behavioral therapy (CBT) that is conducted in a group format. A group format embodies social and emotional benefits for the participants in sharing their experiences with others.[1] G-CBT is generally considered more cost-effective than individual CBT,[1,2] although its effect size is somewhat smaller. Therefore, G-CBT is considered a part of low-intensity interventions, which is provided prior to more intense interventions, such as individual psychotherapy and pharmacotherapy.[3] G-CBT has also been implemented outside the medical field, for instance in the judiciary and industrial fields.[4]

Although G-CBT is categorized as a low-intensity intervention, it does not mean that G-CBT is easier for therapists to conduct than individual CBT. Providing group therapy requires therapists' skills to facilitate interactions and communication among the members of the group, to focus on the therapeutic group processes, and to find solutions for the problems that arise in the group.[5,6] Therefore, therapists of G-CBT need to have such skills in addition to the skills that are required in individual CBT.

A few manuals and competence assessment scales for group psychotherapies have been developed as aiding tools for therapist training.[7–10] However, quality control methods have not been established in the field of G-CBT.[11–14] Some of the few scales that measure therapists' competence in G-CBT include the following. Hepner et al. developed an adherence and competence rating scale for G-CBT for depression.[15] The scale includes items specific to group therapy (group dynamics, group motivation, group participation, etc.). Wong et al. developed a quality assessment checklist for rehabilitation group therapists of people with acquired brain injury working on their memory skills.[16] These tools have limitations in the following ways: (1) they are specific to people with depression, substance dependence, or acquired brain injury and do not include skills that could be applied to G-CBT for other conditions; and (2) the scales do not contain specific examples of therapist behavior, which limits the reliability of the rating. In learning CBT, it is recommended that beginners first focus on a few fundamental components, work carefully, and be trained step-by-step in three stages.[17] Therefore, it is desirable that the abilities required for therapists who implement G-CBT are also described in a step-by-step manner, starting with the least difficult one. There is a need to develop a more reliable and general rating scale that assesses therapists' competency for G-CBT.

The objectives of this study were to develop and validate a rating scale to evaluate therapists' competency in conducting G-CBT. Specifically, we focused on developing a scale that assesses the underlying skills common to a range of disorders. Also, we aimed to develop a checklist of illustrative therapist behaviors to improve the reliability of the rating, in reference to the Assessment of Core CBT Skills (ACCS), developed by Muse et al.,[18] which employed behavior-based assessment criteria, resulting in high inter-rater agreement.

We conducted the study in the following steps. Process 1: Articulating essential skills for G-CBT through literature review and experts' consensus. Process 2: Providing behavioral anchors to each of the scale items and categorizing them by the levels of difficulty (beginner, intermediate, and advanced levels). Process 3: Examining internal consistency, inter-rater reliability, and predictive validity of the scale using G-CBT video samples.

PROCESS 1

The objective of the first process was to articulate essential clinical skills of therapists who conduct G-CBT.

Methods

The following three steps were taken: (1) literature search of the required skills for G-CBT therapists, (2) categorization and organization of those skills, and (3) examination of face and content validities.

Literature search

A literature search for the required skills for G-CBG therapists was conducted. Articles included in the review were English publications regarding clinical competence to conduct face-to-face group therapy for adults with mental health problems. Publications regarding individual, family, or online therapies were excluded. We searched peer-reviewed articles published from January 1980 to October 2020, using PsychInfo, Scopus, and PubMed databases, which included any of the following competence-related terms: "therapeutic factor," "therapeutic competence," "clinical skill," or "clinical competence," in combination with one or more of the following group therapy terms: "group psychotherapy," "group format," or "group therapy." First, two independent reviewers (M. M. and M. N.) screened the titles and abstracts of all searched articles. Second, they reviewed full copies of screened articles and assessed them for eligibility. When there was any discrepancy, a discussion was held until they reached an agreement.

Categorization and organization of group therapist skills

The required skills for G-CBT that were derived from the literature search were categorized and organized by mapping onto the framework of an existing rating scale, the Cognitive Therapy Scale (CTS). The CTS is a well-established scale to assess therapists' competence in individual CBT. The original CTS, which was developed by Young and Beck,[19] and its revised edition by Blackburn et al.[20] comprise 11 essential skills for CBT—agenda

setting, feedback, understanding, interpersonal effectiveness, collaboration, pacing and efficient use of time, guided discovery, focusing on key cognition or behaviors, strategy for change, application of cognitive-behavioral techniques, and homework. Each item has clear goals, and a therapist's skills are rated on a 7-point scale (from 0 = *poor* to 6 = *excellent*), which is evaluated based on video- or audio-recordings or direct observation of actual CBT sessions. These scales have been used as the standard for therapist qualification in clinical trials and training,[21,22] and have been used in many accrediting bodies in CBT, such as the Beck Institute (https://beckinstitute.org/) and the Academy of Cognitive and Behavioral Therapies (https://www.academyofct.org/).

Four clinicians of different disciplines (a psychiatrist, a physician in psychosomatic medicine, a psychotherapist, and a clinical psychologist) with expertise in G-CBT had four focused-group discussions (6 h each) to categorize the extracted skills according to the framework of the CTS.

The descriptions in the original CTS that can be applied to G-CBT were adopted as they were, and a few new descriptions that are unique to G-CBT were added. In addition to 11 items of the original CTS, a new 12th item, "Intervention using relationships with other participants," was created, in order to accommodate skills that are specific to G-CBT. We organized the skills from the following aspects: (1) objectives of each skill; (2) desirable therapist skills; and (3) a behavioral checklist for each item, so that it could serve as an objectively measurable standard of behavior of therapists. We devised the scale so that it could be used for various mental problems and in a wide range of settings (e.g., clinical, educational, industrial, or judicial settings and stress management for healthy individuals). Through this procedure, a prototype of the 12-item Group CTS (G-CTS) was developed.

Examination of face and content validities

To assess the face validity of the scale, an expert panel consisting of 10 G-CBT experts outside the research team rated the appropriateness and importance of each G-CTS item using a 5-point rating scale as follows: 1: *Not important*; 2: *Slightly important*; 3: *Somewhat important*; 4: *Important*; and 5: *Very important*. The members of the panel were board members of the Japanese Association of Cognitive Behavioral Group Therapy, with more than 10 years of experience in G-CBT. The panel consisted of psychiatrists, nurses, licensed mental health workers, occupational therapists, and clinical psychologists from different fields (medical, welfare, industrial, and educational).

The impact score (IS) for each item of the scale was calculated using the following formula,

$$IS = \text{Frequency (\%)} \times \text{Importance},$$

where "Frequency" is the number of experts who rated the item as 4 or 5, and "Importance" is the mean score of the item. The items with an IS of 1.5 or more were considered appropriate for the scale.[22,23]

To assess the content validity of the scale, the content validity ratio (CVR) and the content validity index (CVI) were calculated. The CVR indicates whether important and correct items are included in the scale. The CVR is calculated by the following formula:

$$CVR = Ne - (N/2)/N/2,$$

where N is the total number of experts and Ne is the total number of experts who rated the intended item as essential. The CVR of 0.62 and more is considered appropriate.[24] The expert panel evaluated the essentiality of the items on the following 4-point scale: 4: *Essential*; 3: *Essential but needs modification*; 2: *Relevant but not essential*, and 1: *Not essential*.

The CVI was calculated to determine whether the items appropriately measure clinical skills of therapists in G-CBT. The expert panel rated the simplicity, relevancy, specificity, and clarity of each item on a 4-point rating scale. The number of experts who rated an item as 3 or 4 was divided by the total number of experts to calculate the CVI of that item. Items with a CVI of more than 0.90 were kept, while items with a CVI of 0.80–0.89 were revised. In addition, the items were modified based on free comments by the expert panel.

Intra-class correlation coefficients and standard deviations for each value were calculated.

Results

Literature search

Our literature search yielded the following 148 papers after excluding duplications: 38 (PubMed), 17 (Web of Science), 57 (Scopus), and 36 abstracts/titles (PsychInfo). Papers that were irrelevant to our topic were deleted. Thirteen of these 148 papers were included in the review, based on the consensus review by two of the authors. Further, five relevant books were identified by manual search.[5,25–28] The following clinical skills that are required for group therapists were extracted: (1) Interventions tailored to the developmental stage of the group (Group cohesiveness, Interpersonal learning, Individual member and leader roles)[27,29,30]; (2) Retention of executive function/Responsibility for agenda progress (Executive function/Responsibility for agenda progress, Guidance, Executive functions)[5,25,26,31]; (3) Tolerance of and openness to individual differences (Acceptance, Model tolerance and openness to individual differences)[28,32]; (4) Communication using language such as "we" and "us" to relate the universality of experiences (Learning from interpersonal action, Communication for the universality of experiences using "we" language, Interaction)[28,32]; (5) Active effort to solve any obstacles or problems within the group[5,33]; (6) Emotional stimulation (Catharsis, Interaction, Self-perceptions through feedback, Emotional stimulation)[26,29,30,32,34–36]; (7) Encouragement for open-mindedness and supportive feedback among group members

(Encouragement for open-mindedness and supportive feedback among group members, Feedback, Altruism, Cohesion, Socializing techniques, Group cohesion)[5,33,37-39]; (8) Early establishment of therapeutic alliance (Early establishment of therapeutic alliance, Therapeutic alliance)[25,40]; (9) Understanding of demarcation and subgroups (Understanding of subgroups, Interaction, Self-perceptions through feedback, Group cohesion)[25,31,33,35]; (10) Individual member and leader roles[25,27]; (11) Caring/Empathy, genuineness, and warmth (Catharsis, Caring/Empathy, Genuineness and warmth, Interaction, Self-perceptions through feedback)[5,25,30,32,34-36]; (12) Transparency and use of self (Transparency and use of self, Self-disclosure)[25,32]; (13) Sensitivity regarding group process factors and observation of important connections among members (Respect for the evolution of group dynamics and allowing the group enough autonomy for members to work with one another, Self-perceptions through feedback, Learning from interpersonal action)[5,32,35]; (14) Utilization of the active participation model (Learning from interpersonal action, Model active participation)[28,32]; (15) Sensitivity for group development stages, respect for the evolution of group dynamics and for the autonomy of the members to work with one another (Group processes, Altruism, Sensitivity to the stage of group development, Respect for the evolution of group dynamics and allowing the group enough autonomy for members to work with

one another, Self-perceptions through feedback)[5,31,33,35,36]; (16) Use of collaboration and Socratic dialogue (Encouragement of openness and supportive feedback between group members, Insight, Group climate, Use of collaboration and Socratic dialogue)[5,28,40,41]; and (17) Meaning-attribution (Meaning-attribution, Interaction, Learning from interpersonal action, Goal consensus/Collaboration, Insight).[25,26,33,36,40]

Organization of group therapist skills

Table 1 shows the extracted 17 therapeutic skills that were projected onto the items of the CTS. A new 12th item, "Intervention using relationships with other participants," was created in order to accommodate skills that are specific to G-CBT. For example, a therapist may deliberately ask other participants to comment on their fellow participants, as a way of bringing insight to a single participant. This item covers therapists' skills to address interaction of the participants ("group dynamics"), which are described in past research as "functional analysis of problem behavior between patients."[34,41] The creation of this item was also suggested by the panel of experts who evaluated the face and content validity of the scale. Table 1 presents an example of an item of the G-CTS.

TABLE 1 Relationship between clinical skills required for group therapy therapists and Group Cognitive Therapy Scale (G-CTS).

G-CTS item	Clinical skills required of group therapy therapists
Agenda setting	(1),[27,29,30] (2),[5,25,26,31] (3),[28,32] (4),[28,32] (5)[5,33]
Feedback	(1),[27,29,30] (6),[26,29,30,32,34-36] (7)[5,33,37-39]
Understanding	(8),[25,40] (1),[27,29,30] (9),[25,31,33,35] (10),[25,27] (11),[5,25,30,32,34-36] (6),[26,29,30,32,34-36] (12),[25,32] (3),[28,32] (13),[5,32,35] (7),[5,33,37-39] (5)[5,33]
Interpersonal effectiveness	(8),[25,40] (10),[25,27] (2),[5,25,26,31] (11),[5,25,30,32,35,36,40] (6),[26,29,30,32,35,36,40] (12),[25,32] (14),[28,32] (3),[28,32] (4),[28,32] (7),[5,33,37-39] (5),[5,33] (15)[5,31,33,35,36]
Collaboration	(8),[25,40] (11),[5,25,30,32,35,36,40] (3),[28,32] (16),[5,28,40,41] (7),[5,33,37-39] (15)[5,31-33,35,36]
Pacing and efficient use of time	(2),[5,25,26,31] (3)[28,32]
Guided discovery	(11),[5,25,30,32,34-36] (17),[25,26,33,36,40] (16)[5,28,40,42]
Focusing on key cognition or behaviors	(11),[5,25,30,32,35,36,40] (17),[25,26,33,36,40] (16),[5,28,40,42] (15)[5,31-33,35,36]
Strategy of change	(11),[5,25,30,32,35,36,40] (17),[25,26,33,36,40] (16)[5,28,40,42]
Application of cognitive-behavioral techniques	(11),[5,25,30,32,35,36,40] (17),[25,26,33,36,40] (16)[5,28,40,42]
Homework	(16)[5,28,40,42]
Intervention using relationships with other participants	(1),[27,29,30] (9),[25,31,33,35] (4),[28,32] (13),[5,32,35] (5)[5,31-33,35,36]

Note: (1) Interventions tailored to the developmental stage of the group; (2) Retention of executive function/Responsibility for agenda progress; (3) Tolerance of and openness to individual differences; (4) Communication using language such as "we" and "us" to relate the universality of experiences; (5) Active effort to solve any obstacles or problems within the group; (6) Emotional stimulation; (7) Encouragement for open-mindedness and supportive feedback among group members; (8) Early establishment of therapeutic alliance; (9) Understanding of demarcation and subgroups; (10) Individual member and leader roles; (11) Caring/empathy, genuineness, and warmth; (12) Transparency and use of self; (13) Sensitivity regarding group process factors and observation of important connections among members; (14) Utilization of the active participation model; (15) Sensitivity for group development stages, respect for the evolution of group dynamics and for the autonomy of the members to work with one another; (16) Use of collaboration and Socratic dialogue; (17) Meaning-attribution.

Face and content validity

The IS, CVR, and CVI for each item of the prototype G-CTS are shown in Supporting Information: Table 2–6. All of the items had an IS of 1.5 or more and thus were kept in the scale. The mean ICC of CVR was 0.719 (95% confidence interval: 0.607–0.809), which showed a substantial agreement rate. Three items with a CVR of less than 0.62 and six items with a CVI of 0.80–0.89 were revised. Nine items were revised based on narrative comments by the panel. The details of the revision are described in Supporting Information: Tables 3–6. Finally, the G-CTS, with 66 behavioral-checklist items, was created (Table 2).

PROCESS 2

The objective of the second process was to classify G-CBT therapists' desirable behaviors according to the degree of difficulty in implementing these conducts (beginner, intermediate, and advanced levels), thereby establishing a rating system for the Group Cognitive Behavioral Therapy Scale (G-CTS).

Methods

A survey was administered by the board members of the Japanese Association of Group Cognitive Behavioral Therapy. The clinical background of the respondents was diverse, consisting of 15 clinical psychologists (42.9%), 10 physicians specializing in psychiatry or psychosomatic medicine (28.8%), six psychiatric social workers (17.1%), three nurses (8.6%), and others (8.5%). Their areas of expertise were medical ($n = 26$, 74.3%), welfare ($n = 6$, 17.1%), education ($n = 3$, 8.6%), industry ($n = 2$, 5.7%), and judicial ($n = 2$, 5.7%). The members with more than 3 years of G-CBT experience were eligible.

This survey asked the respondents to evaluate each of the 66 items on the behavior checklist by selecting one of the following five choices: (1) Beginner Level (required skills for every G-CBT therapist), (2) Intermediate Level (desirable skills for skilled therapists), (3) Advanced Level (optional skills for skilled therapists), (4) Too Complex (can be relevant with G-CBT, but is too difficult for even advanced-level therapists), and (5) Inappropriate (not relevant to G-CBT).

We classified each item into Beginner, Intermediate, and Advanced levels based on the response distribution according to the following criteria:

1) The items with more than 10% of endorsement to "Advanced level" were categorized as "Advanced level."
2) The items with <10% of endorsement to "Advanced level" and with more than 50% of endorsement to another specific difficulty level were categorized into that level.
3) The items with <10% of endorsement to "Advanced level" and with <50% of endorsement to any other difficulty level were categorized as "Intermediate level."

Results

The results of the survey are shown in Supporting Information: Tables 7–10. Twenty-three items were classified as Beginner Level, 31 as Intermediate Level, and 12 as Advanced Level. No item fell into "Too Complex" or "Inappropriate."

Additionally, we organized the above checklist according to the Revised Cognitive Therapy Scale (CTS-R) rating system,[19] which provides anchor points for evaluation on the seven-level Likert scale. We did so because both the level of competence in the execution of CBT techniques and adherence to CBT protocols are taken into consideration in the CTS-R. A score of 0 indicates nonadherence to a standard CBT protocol, and a score of 6 indicates extreme expertise, even in difficult cases.

We added the following scoring rules based on the behavioral checklists:

1) Three points or more are given if a therapist satisfied all the Beginner-Level items.
2) Four points or more are given if a therapist satisfies all the Beginner-Level and Intermediate-Level items.
3) Five points or more are given if a therapist satisfies all the items of both the Beginner-Level and Intermediate-Level items, in addition to some of the Advanced-Level items (Table 3).

PROCESS 3

The objective of this third process was to investigate the reliability and validity of the G-CTS. In this study, we used video sessions of G-CBT for depression. The original CTS was first developed as a quality-assurance measure for a clinical trial of CBT for depression,[43] and was subsequently used for CBT for various disorders not limited to depression. We followed the same path. CBT for depression constitutes fundamental skills for CBT that are also applied to other disorders and problems. We considered that application of G-CTS to G-CBT for depression is an appropriate first step for the verification of the scale.

Methods

Samples

Two sets of G-CBT session videos were prepared (Beginner-group samples and Advanced-group samples). The Beginner-group videos were video-recordings of the role-plays of typical G-CBT sessions for mild depression, conducted by psychology graduate students as a way of training. The Advanced-group videos were video-recordings of actual clinical G-CBT sessions for patients with mild depression. The therapists in the Advanced-group completed the basic G-CBT training course offered by the Association of Cognitive Behavioral Group

TABLE 2 Items of Group Cognitive Therapy Scale.

No.	Therapist behavior
Agenda setting	
1	Clarified the agendas and the structure of the session to the participants (e.g., wrote the agendas and schedule on a whiteboard or printed material).
2	Asked the participants about their impressions of and changes in their lives from the previous session, their current mood and physical conditions, and their implementation and impressions of their homework (check-in).
3	Presented the agenda to the participants at the beginning of the session (usually within 5–10 min) and obtained their consent.
4	Proceeded along with the set agenda. When changing the agenda, explained the rationale and obtained the participants' agreement. Intervened when a discussion deviates from the agenda or when the discussion pace was too slow.
5	Explained why the set agendas are useful/helpful to the participants. Modified the agenda as necessary, based on the feedback from the participants during the check-in and other related information (if any).
6	Conceptualized the experiences of the participants and presented these to the participants by linking them to the agenda (e.g., when a participant said, "I can't get started easily although I know I have to do it," the therapist said, "Today's topic is 'behavioral activation,' a useful skill to deal with such problems").
Feedback	
7	Checked participants' understanding and satisfaction at the end of the session.
8	Received feedback from participants and shared with the participants what the therapist understood.
9	Checked participants' understanding and satisfaction throughout the session.
10	Created an atmosphere that allowed the participants to express their moods and thoughts frankly, even if they were negative ones (e.g., asked a participant who remained silent during feedback and told them that even negative comments, if any, would be helpful for the group members to deepen their understanding; used self-disclosure techniques, such as asking, "The pacing of the session may have been a little too fast today. Did you find it difficult to follow?").
11	Used feedback from the participants to conceptualize the participants or modify the behavior of the therapist as needed (e.g., 1: Slowed down when the session pace was perceived by the participants as being too fast. 2: In response to a specific participant's comment, asked the whole group for comments in order to generalize that person's comments, such as, "Thank you for your precious comment. It must have been a bit hard for you to share it. Are there any other people who have similar opinions?")
12	Encouraged each participant to talk about their experiences in their own words (e.g., asked clarifying questions when a participant's remark was too abstract).
Understanding	
13	Listened to each participant and understood their thoughts and emotions accurately.
14	Elicited remarks from each participant, understood their cognition, behavior, and emotions, and conveyed the therapist's understanding to the participants (case conceptualization).
15	Tried to understand the participants' moods through verbal and non-verbal communication and to convey the therapist's understandings through his/her attitudes and behaviors (understanding).
16	Understood the dynamics and processes taking place in the group and shared them with the co-leader(s) (e.g., paid attention to the occurrence of subgroups and fixed the roles of the participants).
17	Understood the participants' thoughts and feelings, not only from the information in the group session, but also from background information, such as their medical history, family status, and remarks at prior sessions, and shared these with the participants (case conceptualization).
Interpersonal effectiveness	
18	Was fair and honest with all participants. Didn't take condescending or deliberately humble attitudes. Did not evade participants' questions. Conveyed warmth and interest to each participant not only by the contents of his/her remarks but also with nonverbal behavior, such as tone of voice and eye contact.
19	Appropriately intervened with participants' behavior that might have hindered other participants' sense of security (e.g., competition, aggression, and imposition of opinions on others).
20	Made the group a safe and secure place by balancing attending to each participant with managing the group as a whole.

TABLE 2 (Continued)

No.	Therapist behavior
21	Showed confidence that the therapist was capable of helping the participants (e.g., showed expertise related to the program or illustrated examples of thoughts and feelings that are common to many of the participants). Was not distant toward the participants. Did not show cold or intimidating attitudes.
21	Was aware of the therapist's own emotions during the session and verbalized or used them to understand the participants' feelings. Provided appropriate self-disclosure as necessary.
22	Was fair and honest with all participants. Didn't take condescending or deliberately humble attitudes. Did not evade participants' questions. Conveyed warmth and interest to each participant not only by the contents of his/her remarks but also with nonverbal behavior, such as tone of voice and eye contact.
Collaboration	
23	In response to the remarks by one participant, asked other participants or the co-leader whether they had similar experiences and thereby elicited empathy and opinions.
24	Informed the participants that their active participation was essential for the progress of the therapy (e.g., addressed a participant's reluctance to take part in the tasks in the session or homework).
25	Considered sharing the contents of a participant's remarks with the others so that the input could be treated as common issues in the entire group. Did not end with a 1:1 conversation between therapist and participant.
26	Facilitated the session by cooperatively sharing roles among the therapists—i.e., moderator, follower, confrontational.
27	Explained the rationale for how the program can be helpful for each participant's treatment goals.
Pacing and efficient use of time	
28	Informed the participants that the time of the sessions should be shared equally among the participants. Clarified as a rule that one participant should not speak too long.
29	Presented a rough time allocation for each agenda.
30	Progressed the session according to the pre-planned schedule.
31	Focused on important topics. When the group was distracted from the central topics and the discussion became unproductive, gently interrupted the discussion and led the discussion back to the original topic.
32	Made the discussion fruitful. When important treatment issues were not sufficiently discussed (e.g., a participant remained silent or was dedicated to unproductive chatting), the therapist cast questions to facilitate deeper discussion or explored the reason the participant(s) was not facing his/her own problems.
33	Encouraged participants to use their time equally. When a participant spent too much time on him/herself, conceptualized the participant and limited his/her talk (e.g., gently interrupted him/her by providing a summary).
34	Adjusted the session pace according to the characteristics of the participants. For hurried participants, instructed them to pace down and listen more carefully to other participants. Conceptualized and attended to the participants who were not motivated enough or who had difficulty in understanding the program.
Guided discovery	
35	Asked specific questions to help participants identify their cognition and behavior (e.g., when asking patients to identify automatic thoughts, directed them to think about specific situations using 5W1H).
36	Did not confront the participants. Avoided pressing or confronting issues that they were not fully aware of or were denying.
37	Provided sufficient time for the participants to reflect on their own experiences and listen to the experiences of other participants.
38	Provided support that was tailored to each participant depending on their characteristics (e.g., for those who found it difficult to recognize their cognition, behavior, or emotions, the therapist offered clues, such as providing choices that the participants may pick up).
39	Responded to participants' comments with various techniques, such as providing frequent summaries (clarification), information (e.g., general ideas and examples of other participants), modest self-disclosure (the therapist's own experiences, thoughts, feelings, and behavior), or questions to broaden the participants' perspectives (e.g., gave extreme examples or asked about differences from past experiences).
Focusing on key cognition or behaviors	
40	Conceptualized the cognition and behavior that were related to each participant's problems (e.g., depression, absence from work); had a working hypothesis.

(Continues)

TABLE 2 (Continued)

No.	Therapist behavior
41	Asked questions about cognition and behavior that were related to each participant's problems (e.g., depression, absence from work) to foster their understanding of themselves.
42	Conceptualized participants' treatment tasks from their remarks and behavior in the session (e.g., attitudes toward the therapists and other participants, attitudes toward the programs, or homework adherence).
43	Explained to the participants the link between their personal treatment tasks and the program agenda.
44	When too much time was spent on the discussion on cognition and behavior of lower priority, refocused the attention on cognition and behavior of higher priority.
45	Identified a participant's cognitive-behavioral patterns that are common in different situations and identified underlying beliefs.
Strategy for change	
46	Chose techniques that were helpful to the participants based on their characteristics, such as their problems, motivation for the program, and comprehension abilities.
47	Explained how the chosen techniques can be helpful to each participant's treatment task.
Application of cognitive-behavioral techniques	
48	Introduction (explanation): Explained the general usage of cognitive-behavioral techniques and their effectiveness.
49	Summary: Discussed the results of using cognitive-behavioral techniques with the participants.
50	Used examples and metaphors that were appropriate for the background and characteristics of the participants.
51	Adjusted the adaptation of the technique according to the characteristics of the participants (e.g., adjusted the pacing of the session or selected the contents of the session according to the level of their understanding).
52	Interventions: Applied cognitive-behavioral techniques to the problems of each participant and helped them to learn those techniques.
53	Devised cognitive-behavioral techniques so that the participants could use the techniques outside the session (e.g., considered the applicability of the techniques in each participant's living condition).
Homework	
54	Assigned homework that is related to the agenda.
55	Devised homework so that the participants would not forget to do it.
56	Explained the rationale of the homework.
57	Took some time to review the homework that was assigned in the last session.
58	Shared adherence and specific contents of the homework of each participant among staff members in advance and utilized them for the progress of the session.
59	Modified the homework to suit the understanding and situations of each participant.
60	Let the participants consider the feasibility of the homework and discussed possible barriers and ways to remove such barriers in advance.
61	Conceptualized the participants who have not done the homework. Discussed with such participants about possible modifications of the homework or ways to do it within their living conditions so that they could complete it.
Intervention using relationships with other participants	
62	Fostered participants' behaviors that were helpful to other participants (e.g., empathy, finding positive points, speaking about common experiences, helping other participants solve problems).
63	Shared a particular participant's remarks with the whole group in a generalized form so that other participants could find the issue relevant to themselves.
64	Asked for responses (cognition, behavior, or emotions) of other participants in response to a specific participant's statement. Showed diversity.
65	Understood and responded to the participants' cognitions and emotions to others (e.g., when a participant felt, "I am not capable of doing the tasks that are easy for other participants," was sensitive to such participants and responded accordingly).
66	Made sure that each participant could participate in the program according to their level of awareness and ability (e.g., provided each participant with a role in which he/she could take advantage of their strength, or asked a question that the participant could respond with confidence).

TABLE 3 Scoring for each item.

Competence level	Features
0	The therapist failed to use cognitive behavioral skills.
1	The therapist applied cognitive behavioral skills in insufficient or inappropriate ways.
2	The therapist applied cognitive behavior skills with limited skill and flexibility.
3	The therapist applied a number of cognitive behavioral skills in competent ways, although some of the interventions were incomplete.
	(At least 3 points are given if all the items of the Beginner Level are satisfied)
4	The therapist applied a sufficient range of cognitive behavioral skills skillfully and flexibly, enabling the patient to develop new perspectives.
	(At least 4 points are given if all the items of the Beginner and Intermediate Levels are satisfied)
5	The therapist systematically applied an appropriate range of cognitive behavioral skills in a creative, resourceful, and effective manner.
	(Five or more points are given if all the items of the Beginner and Intermediate Levels are satisfied and any items of the Advanced Level are satisfied)
6	Excellent range of successful application of cognitive behavioral skills in the face of difficulties.

Therapy in Japan (https://cbgt.org/) and had 5 or more years of experience in G-CBT (mean length of G-CBT experience = 10.47 years). We aimed to prepare 23 videos for each group, but for a practical reason, we were able to shoot only 18 videos for the Beginner Group.

Participants

Two clinicians with 5 or more years of experience in G-CBT who had undergone training in G-CTS (a 2-h lecture and an evaluation exercise) independently rated each video, based on the G-CTS. The raters were blinded to whether the videotaped therapist was a novice or an advanced therapist.

Sample size analysis

A past study that examined degree of proficiency of group CBT therapists' skills yielded moderate effect size (Cohen's $d = 0.58$).[19] Since our study sample comprised expert and novice therapists, we assumed that the effect size would be large ($d = 0.8$). Using the G*Power 3 program,[44] we estimated our target sample size as 23 participants per arm to detect an effect size of 0.8 at an α error level of 0.05 and a beta error level of 0.2.

Statistical analysis

We computed Cronbach's α coefficient to examine the internal consistency of the G-CTS and interclass correlation coefficients to assess the inter-rater reliability. Since the data did not show normal distribution, we compared the total G-CTS scores of the Beginner

Group and the Advanced Group sessions using the Mann–Whitney test, to examine predictive validity. Data were analyzed using SPSS Statistics 25 (IBM Corp.). This study's design and its analysis were not preregistered.

Results

Internal consistency

Cronbach's α coefficients were 0.95 [0.93–0.97] and 0.96 [0.95–0.98] for each rater, confirming a high level of internal consistency.

Inter-item correlations

The correlation coefficients between each item, which ranged between 0.55 and 0.83, showed that the redundancy of the scale was not very high.

Inter-rater reliability

Interclass correlation coefficients for each item were satisfactory, ranging from 0.75 to 0.90. The interclass correlation coefficient for the total G-CTS score was 0.82 [0.68–0.90] (Table 4).

Predictive validity

The comparison between each G-CTS score of the Beginner Group and Advanced Group videos is shown in Table 5. The means (SDs) of the number of years of experience with G-CBT are 1.3 years (0.5) in

TABLE 4　Interclass correlation coefficients for pairs of raters for each item in the Group Cognitive Therapy Scale.

Item		Total		Beginner		Advanced	
		Interclass correlation coefficients	Confidence interval (95%)	Interclass correlation coefficients	Confidence interval (95%)	Interclass correlation coefficients	Confidence interval (95%)
1	Agenda setting	0.82	0.68–0.90	0.80	0.52–0.92	0.59	0.23–0.81
2	Feedback	0.81	0.66–0.89	0.91	0.77–0.97	0.56	0.06–0.73
3	Understanding	0.81	0.67–0.90	0.63	0.23–0.85	0.51	0.12–0.76
4	Interpersonal effectiveness	0.80	0.66–0.89	0.87	0.67–0.95	0.20	0.24–0.56
5	Collaboration	0.81	0.66–0.89	0.89	0.72–0.96	0.38	0.04–0.69
6	Pacing and efficient use of time	0.75	0.58–0.86	0.79	0.51–0.92	0.58	0.22–0.80
7	Guided discovery	0.77	0.60–0.87	0.63	0.24–0.85	0.36	0.06–0.67
8	Focusing on key cognition or behaviors	0.78	0.63–0.88	0.87	0.67–0.95	0.36	0.06–0.67
9	Strategy of change	0.77	0.61–0.87	0.82	0.58–0.93	0.05	0.37–0.45
10	Application of cognitive–behavioral techniques	0.90	0.82–0.95	0.85	0.63–0.94	1.00	1.00–1.00
11	Homework	0.88	0.79–0.94	0.93	0.82–0.97	0.62	0.27–0.82
12	Intervention using relationships with other participants	0.80	0.65–0.89	0.55	0.12–0.81	0.16	0.27–0.54
	Total	0.82	00.68–0.90	0.98	00.94–0.99	0.82	0.62–0.92

the Beginner Group and 10.5 years (3.9) in the Advanced Group. All the scores of each item and the total were significantly higher in the Advanced Group than in the Beginner Group, with large effect sizes [0.60–0.88].

DISCUSSION

The purpose of this study was to develop a scale for evaluating the quality of G-CBT and to investigate its validity and reliability.

We created a 12-item scale for G-CBT with concrete behavioral anchors by reforming the CTS, which is a well-established scale to evaluate the quality of individual CBT, and by adding specific skills for group psychotherapy. The most important feature of the G-CTS was that it increased rater agreement by describing many specific examples of desired therapist behavior.

We demonstrated that G-CTS has high internal reliability and high inter-rater reliability compared with existing instruments that measure the quality of individual CBT. For example, the interclass correlation coefficients of the CTS-R and Assessment of Core CBT Skills (ACCS) were 0.40–0.86 and 0.27–0.83, respectively.[18,21] The interclass correlation coefficients for the total scores of the CTS-R were 0.63 (13-item edition) and 0.57 (14-item edition).[21] Our scale achieved exceptionally high inter-rater reliability, probably because it

TABLE 5　Differences in Group Cognitive Therapy Scale scores according to number of years of experience.

Item	Beginner (n = 18)		Advanced (n = 23)		U	r
	Mean	(SD)	Mean	(SD)		
1	2.97	(0.53)	4.11	(0.45)	23.00**	0.78
2	2.89	(0.76)	3.85	(0.41)	66.00**	0.60
3	2.92	(0.39)	4.07	(0.38)	3.00**	0.88
4	2.86	(0.38)	4.24	(0.37)	0.50**	0.88
5	3.08	(0.69)	4.24	(0.37)	29.50**	0.76
6	3.08	(0.19)	4.11	(0.50)	7.50**	0.85
7	2.97	(0.55)	3.96	(0.30)	32.50**	0.77
8	2.86	(0.38)	4.00	(0.34)	2.00**	0.88
9	3.22	(0.49)	4.04	(0.14)	31.50**	0.81
10	3.17	(0.59)	4.02	(0.10)	55.00**	0.75
11	2.97	(0.61)	4.09	(0.44)	33.00**	0.75
12	2.94	(0.34)	4.13	(0.43)	3.00**	0.87
Total	35.94	(3.91)	48.85	(2.52)	0.00**	0.85

Note: The means (SDs) of the number of years of experience with G-CBT are 1.3 years (0.5) in the Beginner Group and 10.5 years (3.9) in the Advanced Group.

**$p < 0.001$.

has clear behavioral anchors for rating. Further, the high predictive validity of the G-CTS was demonstrated by comparing the total scores and the scores for each item in the Beginner Group and the Advanced Group of G-CBT therapists.

There are a few limitations to this study. First, the video sessions used in the assessment were exclusive of mild-depression patients, and the reliability and validity of the G-CTS were not examined for G-CBT in other disorders. Second, the G-CTS targets only the leader therapist and does not include co-leaders. Third, there were substantial differences in the videos of Beginner- and Advanced Groups. For example, role-plays were filmed in the beginner videos, and clinical scenes were filmed in the advanced videos. The therapists' years of experience and ages were relatively proportional, and the video evaluators may have been able to predict the years of experience from the therapists' physical appearances. Fourth, the definition of the criteria for difficulty levels of the skills (beginner, intermediate, and advanced) and the scoring rules were articulated by the research team and may be arbitrary. Lastly, and most importantly, the validation process was limited to internal consistency, inter-rater reliability, and predictive validity. We were not able to conduct factor analysis, which is a part of the COSMIN recommendation, due to the small sample size. Further verification with a larger sample is needed.

Despite these limitations, our study is noteworthy since we developed a novel rating scale for G-CBT that is not specific to a certain disorder. The scale provides solid behavioral anchors, which led to the high reliability of the scale. The G-CTS behavioral checklist created in this study provides concrete guidelines that can be used by therapists to hone their skills in G-CBT. This scale offers a framework that can be utilized in teaching, supervision, research, and qualification of G-CBT therapists as well as in programs that facilitate training of new practitioners and contribute to the dissemination of G-CBT. Classifying therapist behaviors in this manner not only increases the convenience of administering the scale but also clearly indicates priorities for skill acquisition for beginner practitioners and supervisors of G-CBT.

Future research implications include the following: First, the reliability and validity of the G-CTS may need to be verified in samples other than depression. It is also necessary to establish an evaluation system that can accommodate the evaluation of co-therapists. Finally, since therapists' desirable behavior may be different among different cultures, cultural adaptation of behavioral anchors of the G-CTS may be needed.

AUTHOR CONTRIBUTIONS

Misuzu Nakashima, Miki Matsunaga, Makoto Otani, Hironori Kuga, and Daisuke Fujisawa designed the study. Misuzu Nakashima, Miki Matsunaga, and Daisuke Fujisawa wrote the manuscript. Data analyses were performed by Misuzu Nakashima under the supervision of Hironori Kuga and Daisuke Fujisawa, and Makoto Otani provided clinical advice. Misuzu Nakashima and Miki Matsunaga provided their sessions' video data. Misuzu Nakashima and Miki Matsunaga reviewed the literature. Misuzu Nakashima, Miki Matsunaga, and Makoto Otani rated the videos. All authors contributed to the article and approved the submitted version.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Materials and analysis code for this study are not available because of ethical reasons.

ETHICS APPROVAL STATEMENT

This study was reviewed and approved by the Ethics Committee of the National Hospital Organization Hizen Psychiatric Medical Center (approval number: 28-7).

PATIENT CONSENT STATEMENT

The participants (patients, therapists, and raters) provided their written informed consent to participate in this study.

CLINICAL TRIAL REGISTRATION

This study's design and its analysis were not preregistered.

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