



Examining the content validity of the Comprehensive Assessment of Functioning for Mental Illness-Subjective Version (CAMI-S) with reference to the framework of the International Classification of Functioning, Disability, and Health (ICF)

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Abstract

Aim: To support the achievement of life goals and social participation of persons with mental illness, based on the World Health Organization's International Classification of Functioning, Disability, and Health (ICF), we generated items, identified domains, and examined the content validity of the Comprehensive Assessment of Functioning for Mental Illness-Subjective Version (CAMI-S). The purpose was to assess patients' strengths and weaknesses by incorporating the patient and public involvement perspective.

Methods: Focus group interviews on the items to be included were conducted with Group A. A draft scale was constructed by extracting articles mentioning factors for social participation and recovery for each ICF component from PubMed. Group B participants rated themselves using the draft and highlighted items they considered inappropriate. Experts then rated the importance of the items through the Delphi method. Lastly, Group C participants evaluated whether the draft scale would help in understanding their strengths and weaknesses.

Results: The interviews revealed subjective experience items. The draft scale had 81 items (physical and mental functions, 10; activities, 23; participation, 24; environment, 12; individuals, six; and subjective experience, six). Through the Delphi method, the number of items was reduced to 34 in six domains. Most participants ($N = 50$) indicated that it helped them ascertain patients' strengths and weaknesses (mean = $2.11 \pm .714$). Completion time for the scale was 56 min, including the 60-item face sheet (20–110 min).

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Conclusion: The CAMI-S helped participants ascertain patients' strengths and weaknesses. Its reliability and validity will be verified through a large-scale survey in the future.

KEYWORDS

activities of daily living; International Classification of Functioning, Disability, and Health (ICF); mental disorders; patient participation; social participation

INTRODUCTION

The goals of psychiatric treatment and rehabilitation for persons with mental illness have evolved from focusing on symptom improvement to functional improvement and, more recently, personal recovery.¹ Personal recovery includes objective functional recovery but also encompasses subjective factors, such as the person's desires, perception of their own condition, and satisfaction. Therefore, it is crucial to assess the subjective factors associated with the current treatment and rehabilitation goals and implementation plans.²

The International Classification of Functioning, Disability, and Health (ICF)³ is a widely used international scale that attempts to describe various aspects related to human health, ranging from one's functional status to the social systems and resources surrounding the individual. It evaluates patients' strengths and weaknesses in relation to activities of daily living and social participation.³ The ICF classifies human functioning and disabilities into numerous categories, totaling approximately 1500 items for "body functions and structure," "activities and participation," and "environmental factors" that affect them. However, the ICF does not address the assessment of subjective factors that may contribute to personal recovery in individuals with mental illness.⁴

Several attempts have been made to develop ICF-based scales.⁵⁻¹¹ The World Health Organization Disability Assessment Scale (WHODAS2.0)^{5,6} is based on the ICF model and includes interviewer (and a proxy version, such as a family member) and self-administered versions, aiming to assess subjective and objective aspects. However, WHODAS2.0 does not cover environmental and personal factors beyond life functioning.^{5,6} The ICF Core Set^{7,8} has been developed for specific health conditions, but it includes only bipolar disorder and depression for psychiatric disorders.

To encourage greater social participation, it is important to assess the surveyed participants' level of independence. However, all these measures are intended to assess the extent of their challenges or limitations. Some researchers⁹ have developed scales based on the ICF to assess ability and performance in activities and social participation, but these scales rely on objective evaluations made by observers and do not consider subjective factors. As previously mentioned, the treatment and rehabilitation of individuals with mental illness now emphasize personal recovery, but most of the scales developed in line with the ICF are rooted in objective observer evaluations.^{9,10} Furthermore, for personal recovery to be the focal point, it is essential to elucidate the individual's hopes and desires, but there is currently no survey form available for this purpose. No attempt was made to evaluate subjective ratings or individual factors for activities or

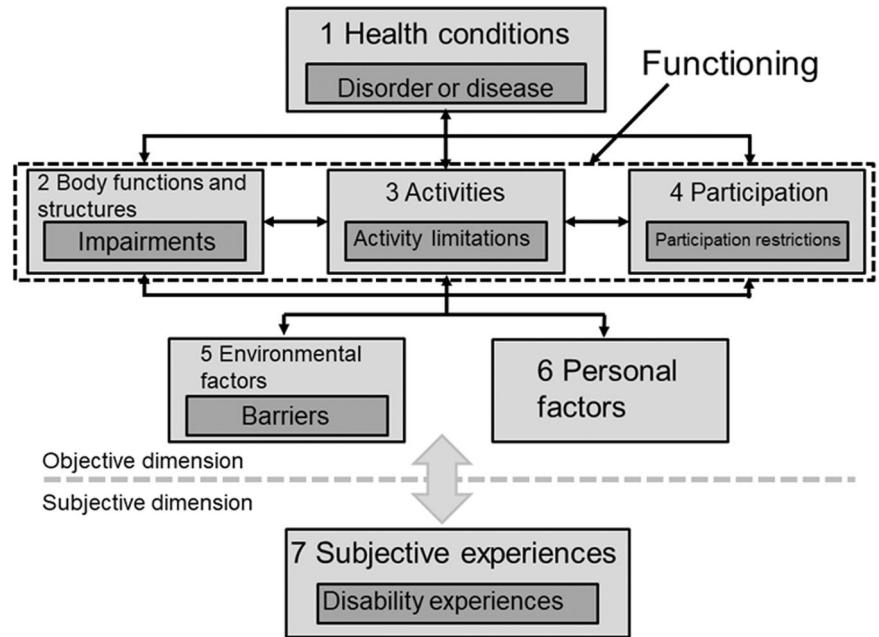
participation items.¹⁰ Additionally, one of the five most comprehensive self-administered measures of activity and participation, the Community Living Skills Scales, covers measures of functional status in community living.¹¹ One of the strengths of this scale is that it was developed in collaboration with persons with mental illness, although it predates the publication of the ICF model.¹¹

Therefore, we aimed to develop an assessment scale based on the ICF model and not limited to specific people with mental illness. This scale, which we named the "Comprehensive Assessment of Functioning for Mental Illness-Subjective Version" (CAMI-S), aims to fulfill the aspirations of persons with mental illness for social participation. The scale includes the following assessment items and criteria: (1) items related to social participation of persons with mental illness, which have been derived from previous studies; (2) items that distinguish activity and participation; (3) items that allow for self-assessment of the necessary environmental support and its sufficiency in each area of participation; (4) items that enable individuals to self-assess their degree of satisfaction; and (5) criteria for assessing "independence" rather than "difficulty" when evaluating participation and activity domains.

In the ICF model (Figure 1), "functioning" is considered an umbrella concept and includes all three aspects: participation, activity, and psychosomatic function and structures.³ These are considered background factors related to an individual's life. Additionally, physical and human "environmental factors" and "individual factors" influence (interact with) life function. These elements constitute the objective dimension of the ICF model. We incorporated the "subjective experience,"¹² which builds on the concept proposed by Ueda in 1981 as "disability as experience" based on the ICF philosophy. The reasons for adding this aspect are: (1) a high level of subjective life function enables mental independence and the ability to exercise self-determination under mental independence¹²; (2) "defeatist beliefs" have recently been considered an intermediate variable between neurocognitive ability and life function, and are associated with a decline in life function¹³; and (3) the presence of hope and degree, such as the degree of motivation toward social independence and recovery, are also evaluated as subjective experiences.

While developing the CAMI-S, we also incorporated the patient and public involvement (PPI) perspective,¹⁴ which has been emphasized by the Japan Agency for Medical Research and Development (AMED) in recent years. PPI serves not only as a research tool to address problems beyond the expertise of researchers but also as a means to incorporate the empirical knowledge of patients and citizens, offering unique viewpoints that researchers might overlook.^{14,15}

FIGURE 1 Improvement of the life function model of International Classification of Functioning, Disability, and Health (ICF). Factors 1–6 are included in the Objective dimension of the ICF and all interact with each other; Functioning comprises Factors 2–4. We added a new factor, subjective experience, to these factors, making a total of seven factors for the scale.



This study aims to provide the first report on the three-step¹⁶ development process of the Subjective Evaluation version of the CAMI (hereafter referred to as “the scale”). Step 1 involves “domain identification and item development,” which was conducted through focus group interviews with patients and an exhaustive literature search. Step 2 focuses on “content validity and assessment of items that appropriately measure the domain of interest,” utilizing item ratings from patients and the Delphi method involving experts. Finally, Step 3 involves the “assessment of the utility of the draft scale” through patient surveys using the draft rating scale.

METHODS

For the seven constructs mentioned above (see numbers 1–7 in Figure 1), a scale useful in assisting the parties to achieve their life goals was developed according to the following procedure. Figure 2 shows the overall flow of the study. All participants provided written informed consent. The study was approved by the institutional ethics committee of each participating researcher.

PPI Part 1: Discussion between the advisors with mental illness (advisors)

Five advisors (three men and two women) with schizophrenia, aged between 18 and 50 years, who did not have an intellectual developmental disorder, were involved in this study. We asked them to discuss the issues to be included in the evaluation scale to promote social participation without the intervention of the researchers in a focus group format.¹⁷

Item selection process by experts

Twelve experts were divided into seven groups for each of the seven components; each group proceeded with the item-selection process while sharing the direction and progress of the work in plenary sessions, as appropriate. The 12 experts included four psychiatrists, two rehabilitation physicians, one occupational therapist, two mental health workers, one nurse, and one PhD researcher.

Creation of the item pool

A systematic literature search was conducted on PubMed to identify potential scale items. In light of the opinions of the advisors in PPI Part 1: Discussion between the advisors with mental illness (advisors), each group deliberated and determined candidate search terms pertaining to social participation, as detailed in Table 1. Subsequently, literature search terms were chosen for each group, aiming to contribute to the realization of patients' life goals (Table 1). The search formula comprised: (disease) AND (search term for social participation) AND (year of publication) AND (randomized controlled trial) AND (search terms for each group). Search terms for each group were connected by “OR.”

Item selection for physical and mental function, activity, and participation

The searched literature was divided among the group members, summarized according to a predefined summary table, and discussed between each group to extract factors related to the social participation of the parties. Further, at the group meeting, each factor was

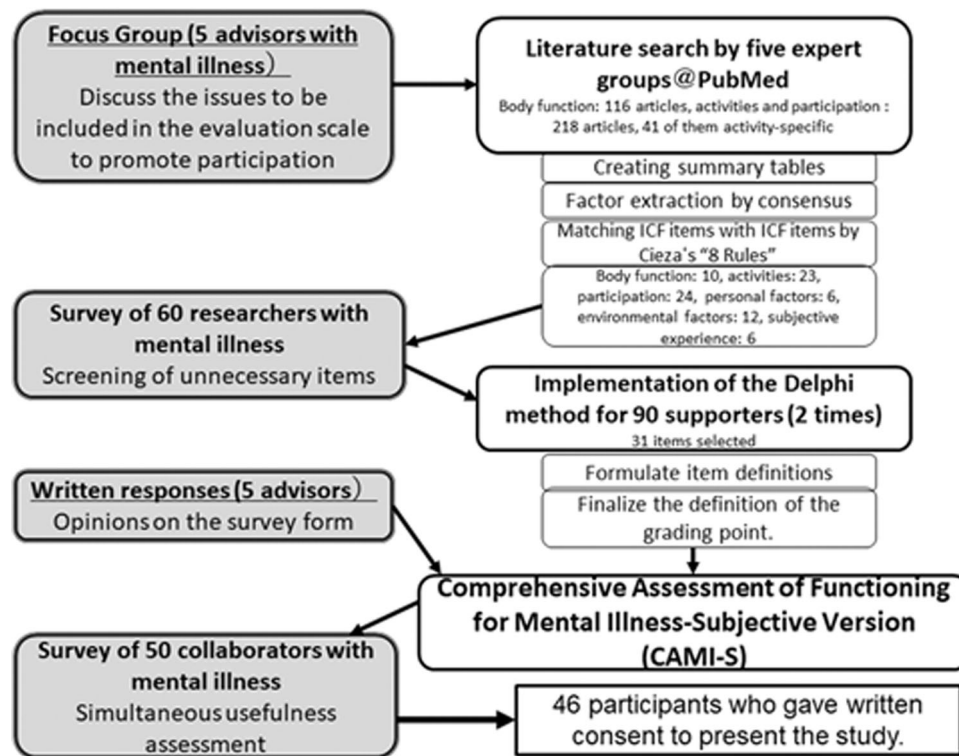


FIGURE 2 Overall flow of the study. The study began with the “Focus group” in the upper left-hand corner. The items on the left indicate the involvement of people with mental illness (PMI), the items on the right indicate the involvement of researchers, and the items on the right indicate the involvement of PMI and researchers alternating. The bottom right square indicates that ethical considerations were fully taken into account; written consent was obtained from the subjects at this step of the research. The items on the right indicate what the researcher did; PMI and the researcher alternated in their involvement to facilitate the study. This study analyzed data obtained from the 46 individuals shown in the bottom right-hand square.

mapped to the ICF items of “mental and physical function,” “participation,” and “activity,” based on the eight rules mentioned by Cieza et al.¹⁸

Item selection for the environment and personal

As there were no reference evaluation scales for environmental and personal factors, based on the opinions of the advisors, the experts selected items (20 and 16 for environmental and 16 personal factors, respectively) that they considered appropriate based on their clinical experience and conducted a literature search using the above search formula. Consequently, numerous studies considered to support the validity of the items selected by the experts' experience were retrieved. Among them, the items that were related to prognosis were adopted.

Item selection for subjective experience

Subjective experiences are life functions and disabilities at an existential level, and are active reactions based on individual personality traits, disability-related values, self-image, ideals, beliefs, goals,

conventional coping experiences, and so forth.¹² Self-esteem and self-confidence, which are included in “Chapter 5: General Mood and Emotions” of the *ICF Individual Factor Classification Draft*,¹⁹ are individual factors. The self-evaluation of whether these factors are satisfied is the subjective experience. Additionally, satisfaction and expectations from “Chapter 6: Satisfaction and Expectations” of the same draft, were considered a subjective experience.

PPI Part 2: The researcher with mental illness (hereafter referred to as “researcher”) survey

We included approximately 10 researchers in each group to conduct a survey of people with mental illness, between the ages of 18 and 50, and with no intellectual problems, using the kinship method with mental health professionals among the authors (60 researchers). These 60 patients were collected regardless of the name of the disease. After discussion at a plenary session, draft Scale 1 was prepared by replacing the ICF definitions of the items extracted in Item selection process by experts with plain language. The respondents were further asked whether the items were relevant for the evaluation conducted to promote the achievement of life goals.



TABLE 1 Item extraction

	Body functions	Activities	Participation	Environmental factors	Personal factors	Subjective experiences
Mental disorders	"schizophrenia"[MH] OR "Depressive Disorder, Major"[MH] OR "bipolar disorder"[MH] OR "Obsessive-Compulsive Disorder"[MH] OR "autism spectrum disorder"[MH]					
Search Terms Related to Participation		"quality of life" OR "community participation" OR "social participation" OR "work engagement" OR "patient participation"	AND			
Year of Publication			AND	2010:2020[dp]		
Search terms for each group	"human activities" "exercise" "physical fitness" "Personality Development" "social behavior" "aggression" "psychomotor performance" "attention function" "emotion" "memory" "thinking" "language" "sleep initiation and maintenance disorders"	"education" ^a "educational status" ^a "household" ^a "interpersonal relations" ^a "work" ^a "employment" ^a "economic life" ^a "social life" ^a "recreation" ^a "religion" ^a "thinking" "self care" "communication" "transportation" "learning"	AND	Based on the opinions of the five advisors involved, the experts selected appropriate items, extracted MeSH terms that they thought would reflect those items, and conducted a literature search. A considerable number of studies was retrieved, which supported the validity of the items selected from the experts' experience, and they were adopted. ^b		Self-assessment of whether self-esteem and self-confidence are fulfilled, which is included in "Chapter 5: General Mood and Emotions" of the ICF Personal Factor Classification Draft16).
Number of items^c	10	23	24	12	6	6

Note. Search terms for each group were connected by OR.

^aCommon search terms for activities and participation.

^bSimilar item extraction methods implemented in environmental factors and personal factors.

^cNumber of items selected as factors related to social participation in each group.

Implementation of the Delphi method for supporters

The Delphi method was administered to qualified persons who had been supporting individuals with mental illness for at least 2 years, were staff members of 58 facilities where the research team is involved, and were able to cooperate with the survey by the kinship method of the authors. No staff members refused to participate in this study. The occupational categories of the 90 people who cooperated were physicians (19), nurses (20), psychologists (8), occupational therapists (16), mental health social workers (26), and teacher (1). Of these, 14 were members of the research team. The items in draft Scale 1 were rated in terms of improving the level of participation using a 5-point scale ranging from 5 (*extremely important to the extent that the item is indispensable*) to 1 (*extremely unimportant to the extent that the item is dispensable*). The second evaluation was conducted 16 days after the first survey, using the same method as the first, with the mean, standard deviation, median, maximum, and minimum values for each item of the first survey explicitly indicated.

Simultaneously, the survey asked about knowledge and use of ICF. To structure the questionnaire items, respondents were asked to rate six participation situations (work, home, community life outside of work and home, spending time with supporters, spending time with peers, and leisure and recreation) on a 5-point scale ranging from 5 (*extremely important*) to 1 (*extremely unimportant*).

Definition of grading points

Regarding "Participation" and "Activity" items, we followed the draft evaluation point criteria²⁰ of the Expert Committee on the Classification of Life Functioning of the Statistical Subcommittee of the Social Insurance Council of the Ministry of Health, Labour, and Welfare. We defined the following grades for participation: 0, active participation; 1, partial participation; 2, partial restriction; 3, total restriction; 4, no participation. Regarding activity, the following grades were defined with the consensus of the group: 0, universal independence; 1, limited independence; 2, partial limitation; 3, total limitation; and 4, not done.

PPI Part 3: Consolidation of opinions from advisors

The same five advisors as in PPI Part 1: Discussion between the advisors with mental illness (advisors) were asked whether the developed questionnaire (Draft 2) was appropriate from the viewpoints of the parties concerned.

PPI Part 4: Trial with the collaborators with mental illness (hereinafter referred to as "collaborators")

A survey using the draft Scale 2 was conducted, involving the collaborators using the kinship method of mental health professionals

among the authors. It involved five people, each diagnosed with schizophrenia, bipolar disorder, major depression, obsessive-compulsive disorder, social anxiety disorder, and/or autistic spectrum disorder, aged between 18 and 50 years, and with no intellectual problems. Ultimately, 50 people participated. Written informed consent was obtained from all 50 participants for this study after the trial to prepare this paper. A team member obtained responses to draft Scale 2 from the collaborators.

Simultaneously, the collaborators were asked, "Did you find the 'Strengths and Weaknesses Disability Rating Scale Subjective Rating Version' useful in understanding your strengths and weaknesses to realize your life according to your wishes? (Please select one number that most closely matches your opinion and put a '0' around the number.)" The respondents were asked to rate the question from 1 (*very useful*) to 5 (*not useful at all*). Of the 50 collaborators, data from 46 respondents (45 valid responses) who consented to the publication of their data were included in the study.

RESULTS

Opinions of advisors with mental illness

The opinions on items that should be included in the evaluation scale to promote social participation in PPI Part 1: Discussion between the advisors with mental illness (advisors) were summarized as follows: (1) subjective experience of feeling that hardships have been alleviated by connecting with peers; and (2) ways to help social participation by alleviating hardships are important, whether they are able to do so by themselves or share them with others. The specific comments were: (1) "I can share my failures," "They believe in my struggles," "We can understand each other without words," "Sharing stories calms me down and they understand me," and so forth; (2) "I don't bully myself," "I forgive myself," "Sharing information about myself keeps me from being alone," and "Someone understands"; and (3) "Don't bully yourself," "Forgive yourself," "Don't be alone by sharing your information," "You will be less likely to be judged for your coping skills if someone understands you," and "Rely on your friends who understand you more than doctors." These opinions were incorporated into the creation of the rating scale.

Selection of items by experts

The following items were evaluated: physical and mental function, 10; activity, 23; participation, 24; environment, 12; and personal, six. Subjective experience was discussed at a group meeting, followed by a plenary session to conclude the number of items. Lastly, it was determined that the life domains to be included in this scale were work, family, and society in general outside of home, and a total of six items, for current satisfaction and future concerns about the three domains, were selected as candidates for "subjective experience." Consequently, a total of 81 items were selected as candidates for the rating scale.

Survey by the researchers with mental illness

The items that were considered unnecessary or inappropriate by 56 researchers were close relationships (41.0%), interaction in town (35.7%), schooling (32.1%), and role at home (30.4%). No items were deemed unnecessary or inappropriate by the majority.

Development of the scale (Draft 2)

The scale was designed to promote social participation and recovery in accordance with the ICF model. To be usable in actual clinical practice, it was designed to be completed in approximately 1 h, together with 60 items on the face sheet. Therefore, based on the results of the Knowledge and Use of ICF survey conducted at the same time as the Delphi survey, 22 items, which had a mean score of 4 or higher among “those who are aware of their basic knowledge of ICF” ($N = 30$; “knowledgeable group”) were selected first for the questionnaire: “Current home physical environment (including natural environment) surrounding their lives” (environment items) (4.70); “Activities of daily living related to taking breaks when needed and as desired” (activity items) (4.60); “Coping skills” (mental and physical functioning items) (4.53), and so forth. In addition, six items (informal social relationships, life activities for recreation and leisure time, lifestyle, etc.), which had a high mean score of 4 or more for “those who fully understand the ICF model” ($N = 11$; “familiarity group”), and activities corresponding to them when there were only participation items added (e.g., activities of living that pay attention to health, nonwork and academic difficulties at work and school, and activities of daily living such as doing household chores other than cooking in the home). Supplementary Table S1 shows the results of the first and second round of the Delphi survey. Supplementary Table S2 shows the process of item selection as described above.

Three of the six social participation scenarios implemented to structure the questionnaire items were work, home life situations, and community life situations other than work and home life, both in the overall ($N = 90$) and knowledgeable groups. The research team organized the questionnaire into six domains, adding health care, mental and physical functions, and ways of thinking/enjoying to the three domains mentioned above. The questions were arranged in the following order: I. Work, II. Family life, III. Wider life outside of work and home, IV. Health management considering work, family, and social life, V. Mental and physical functioning, and VI. Your way of thinking and enjoying life. Except for Domain V, the items were arranged according to participation, activity, environment, and subjective items. For Domain III, the items were arranged as (1) how you spend your leisure time (free time), (2) going to places other than home or work and what you do there, (3) interpersonal relationships, and (4) activity of life and rest (Table 2). Supplementary Table S3 shows Questions 1 and 2 of the scale. The final scale (Draft 2) comprised five domains, with the integration of IV and V into a new domain titled “Questions about health management considering

work, family, and social life.” The descriptive annex Questions 5, 10, and 22 inquire about respondents' desire for increased activities and areas they wish to improve, indicating their hopes and aspirations.

Evaluation of the usefulness of the scale

The advisors' opinions on this scale were positive: “The purpose of reflecting the subjective awareness and wishes of the respondents is the main axis of this scale, and it is good that there are many free text fields,” and “The questions are written in a way that is easy to understand, no matter when or where anyone reads them.” Suggestions for improvement from the viewpoints of the parties involved were obtained and reflected in the survey form (second draft).

In the trial with the collaborators ($N = 46$), the average time required to complete the questionnaire on both the face sheet and this scale was 56 min (range: 20–110 min), meeting out target completion time. The mean value of the response to the question “Did it help you understand your strengths and weaknesses to further realize your hopes?” ($N = 45$) was 2 (“somewhat useful”), with no difference among the six diseases at a value around 2. In the free response column, there were a number of comments such as “I was able to reconsider my current situation. I now understand how to relate to others,” “I became aware that I have a developmental disability when I filled out this evaluation scale,” “I think this is a step toward visualizing the problems each person is facing,” and “I learned something about myself that I had not noticed before.”

Additionally, based on the impressions of the team members who conducted the survey among the collaborators, it was confirmed that in the plenary session, there were no problems with the content of the questionnaire and that no revisions were necessary. There were no comments regarding the number of items or the associated burden on respondents.

DISCUSSION

Incorporating the patients and public involvement perspective, we generated items, identified domains, and examined the content validity of a subjective evaluation scale. The scale, called the CAMI-S, was developed to assess the strengths and weaknesses of people with mental illness in achieving their life goals and social participation. The primary target population for the CAMI-S first comprises outpatient attendees aged 18–50 years with schizophrenia, depression, bipolar disorder, obsessive-compulsive disorder, social anxiety disorder, and/or autistic spectrum disorder, without intellectual disability, who were surveyed in this pre-survey. Although we did not measure the time required to complete the CAMI-S itself, we believe that it is less than half the time required to complete the Face Sheet and the CAMI-S entirely, specifically 56 min on average, as described in above 3–5, and that the burden of using the CAMI-S is insignificant.

TABLE 2 Whole items of the scale.

Areas of work	Area of community/social life		Health care	
Q 1: Work	Part.	Q 12: Leisure	Part.	Q 23: Treatment, prevention, and health promotion
Q 2: Work-related actions or decisions	Act.	Annex Question 1 (descriptive)		Q 24: Stress management
Q 3: Non-work behaviors and actions	Act.	Annex Question 2 (descriptive)		Annex Question 1 (descriptive)
Q 4: Environment and support	Environ.	Q 13: Outings	Act.	Annex Question 2 (descriptive)
Annex Question (descriptive)		Annex Question 1 (descriptive)		Q 25: Emotional Regulation
Q 5: Satisfaction with work-related matters	Subject.	Annex Question 2 (descriptive)		Annex Question 1 (descriptive)
Annex Question (descriptive)		Q 14: Walking outdoors	Act.	Annex Question 2 (descriptive)
Areas of Family Life		Q 15: Public transportation	Act.	
Q 6: Roles in the family	Part.	Q 16: Personal	Act.	Mental and Physical Functioning
Q 7: Role-related behaviors and decisions	Act.	Annex Question (descriptive)		Q 26: Mental functioning
Q 8: Family relationships	Part.	Q 17: Interpersonal relationships	Part.	Annex Question (descriptive)
Q 9: Environment and support	Environ.	Q 18: Personal relationships	Part.	Q27: Sleep
Annex Question 1 (descriptive)		Q 19: Physical activity	Act.	Annex Question (descriptive)
Annex Question 2 (descriptive)		Q 20: Fatigue	Act.	Q 28: Treatment of illness, work, family life, other satisfactions
Q 10: Satisfaction with family life	Subject	Q 21: Environment and support	Environ.	Thinking and Enjoyment
Annex Question (descriptive)		Annex Question (descriptive)		Q 29: Feelings and intensity of independent action
Q 11: Family help and support	Environ.	Q 22: Satisfaction with community/social life	Subject.	Q 30: Ability to cope with stress and difficulties
Annex Question 1 (descriptive)		Annex Question (descriptive)		Q 31: Feelings of isolation and self-doubt
Annex Question 2 (descriptive)				Q 32: Things that are important to you (descriptive), Q 33: When you have fun (descriptive), Q 34: Your priorities in life (descriptive)
				One accompanying question (descriptive) for each

Note. Part. denotes participation, Act. denotes activities, Environ. denotes environmental factors, Subject. denotes subjective experiences, Body denotes body functions and structures, and Person. denotes personal factors.

Seven strengths in item selection for the scale

To create a systematic and comprehensive scale that reflects the characteristics of mental disorders while using the ICF model, seven strengths were made in the item selection: (1) inclusion of previous studies related to factors affecting social participation in six mental disorders; (2) mapping each ICF item with the eight rules¹⁸; (3) surveying 60 persons on the 81 items to determine whether they were relevant; (4) evaluating the usefulness of the 34-item questionnaire by 50 parties; (5) use of the Delphi method for nationally certified persons who have been engaged in supporting individuals with mental disorders for more than 2 years, and selecting items based on the results of the knowledgeable and familiarity groups regarding the ICF; (6) addition of the “subjective experience” items to the ICF model; and (7) incorporation of advisors' opinions in the selection of items for each component, especially for subjective experience.

Five strengths in the creation of the scale

To create a scale that reflects the subjective awareness and wishes of the participants and promotes their social participation and recovery, the following five strengths were made: (1) a subjective experience item was added to the three domains of work, home, and community life outside of work and home; (2) the rating point was defined based on the draft¹⁹ of the evaluation point criteria of the Technical Committee, instead of the “degree of problem”; (3) opinions were gathered from advisors on the appropriateness of the scale (Draft 2) for evaluating the promotion of social participation; (4) the scale was made to reflect the subjective attitudes and wishes of the respondents; and (5) collaborators were directly asked about the usefulness of the scale in evaluating “strengths and weaknesses.” Moreover, we decided to conduct an empirical analysis in a large-scale survey by adding a column on the face sheet for “the hope for the future (image of recovery) that the person being evaluated has at the time of evaluation” and “the degree of motivation of the person.”

Characteristics of the scale

The existing evaluation scales (e.g., the WHODAS 2.0^{5,6}) were introduced as an alternative to the Global Assessment of Functioning (GAF) when it was published in the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (DSM-5).²¹ There are three versions available: interviewer-completed, self-administered, and third-party proxy-completed, all consisting of the same set of questions (six factors and 36 items). These versions provide an overall assessment based on the ICF domains. However, these are not useful in developing personalized support plans for the individuals involved. The ICF Core Sets^{7,8} assess the physical and mental status of a person with a disability by a

professional using the ICF items. The ICF Core Sets created for various diseases and conditions have limited categories to be evaluated, use the same questions for physical and mental disorders, and do not reflect the characteristics of mental disorders. The scales of capacity and performance focused solely on depression and bipolar disorder as mental illnesses. These scales served as a means for objectively evaluating individuals, and the assessments were conducted by an observer (trained health care professionals).⁹

Compared with these existing scales, this new scale has relatively few items (34 items in six domains) and comprises items that clearly distinguish “participation” and “activity” within each domain, and the rating points are not scored according to the “degree of problem” and summed up, but are rather assigned to participation, activity, environment, and subjective categories within each domain, such as work and home. The ICF model and subjectivity are systematically related, and the participation and activity items are graded at each level. Additionally, this scale is based on the following subjective evaluation of the respondents: (1) three items (Questions 5, 10, and 22) directly assess subjective experiences (satisfaction) in the areas of work, family, and community/social life; (2) six items under the category “V—Thinking and Enjoyment” (Questions 29–34: three quantitative and three descriptive) evaluate subjective aspects, such as cognitive processes and enjoyment; and (3) one or two descriptive items, as applicable, prompt respondents to express their “hopes” and “wishes.”

Perspectives of the participants: Significance of PPI^{14,15}

The most significant feature of this survey instrument is that it was developed with the cooperation of the people with mental illness referred to above as advisors, researchers, and collaborators involved in each step of the development process, incorporating their opinions and responses. We took a PPI consultation-type approach, in which the views of the parties involved as users were asked and used by experts to make decisions.²²

This scale is a self-administered, subjective rating version by the parties involved, with an emphasis on collaboration with the parties. The PPI utilized the opinions of the parties involved in the process of item selection, method of description in the survey form, and forming name of the rating scale, which led to the rating of “2—Somewhat useful” in the usefulness evaluation by the parties involved. This suggests that, using PPI, the scale items and survey form were created from the perspective of the parties actually completing the form.

CONCLUSION

We report on the development process of the CAMI-S that conforms to the ICF model, and emphasizes collaboration between the person concerned and the rater. This scale helped

the patients ascertain their strengths and weaknesses in relation to their activities of daily living and social participation. There is a need for a larger survey to test the reliability and validity of the scale. The time required to complete the scale itself also needs to be measured. Further research will verify whether the scale is useful in promoting social participation and recovery, which was the original purpose of the study.

AUTHOR CONTRIBUTION

All authors contributed to the conception and design of the study, data acquisition, and data analysis. Takashi Amagasa wrote the draft of the manuscript. All authors contributed to the critical revision of the manuscript. All authors have read and approved the final version of the manuscript.

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CONFLICT OF INTEREST STATEMENT

All authors declare no conflicts of interest for this study.

DATA AVAILABILITY STATEMENT

N/A

ETHICS APPROVAL STATEMENT

This study was approved by the Research Ethics Committee of Fukushima Medical University (approval numbers: General 2020-258 and General 2021-140).

PATIENT CONSENT STATEMENT

All participants provided written informed consent.

CLINICAL TRIAL REGISTRATION

N/A.

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