Development of a Self-Care Competency Assessment Scale for Persons with Mental Disabilities

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Abstract

Objective: The objective of this study is to develop a self-care competency assessment scale for persons with mental disabilities and evaluate its reliability and validity.

Method: We created a scale proposal based on concept analysis and qualitative research. We conducted a third-party assessment-type questionnaire targeting 191 persons with mental disabilities hospitalized at dedicated mental health hospital and then validated reliability and validity.

Results: An exploratory factor analysis resulted in the extraction of six factors and 35 items. In order, we named the factors “Actions to maintain one’s own lifestyle”, “Social skills for building, maintaining, and deepening interpersonal relationships”, “Disease management through judgments, decision-making, ingenuity, and adjustments”, “Time design”, “Sleep and rest adjustments”, and “Mental health management”. For the reliability coefficient, the Cronbach’s α coefficient for the overall scale was .974. Convergent reliability resulted in a Rehab correlation coefficient of r = .75. Results showed that for discriminant validity, compared to the short-term hospitalization group, the long-term hospitalization group produced meaningfully higher total scores on the scale.

Conclusions: We confirmed that the developed scale fulfilled specific standards for reliability and validity, and that the scale would be used to simply and adequately assess self-care competence among persons with mental disabilities.

Introduction

Due to the skyrocketing costs of healthcare, more attention is being given to the importance of disease management. In September 2004, the Ministry of Health, Labor and Welfare drafted its “Reform Vision for Mental Health Medicine and Welfare” [1] for mental healthcare in Japan. The Reform Vision outlines the basic concept of “Shift from focus on hospitalized care to focus on community living”. Since then, the government has implemented specific measures towards realizing that basic concept, including enacting the Law on Comprehensive Support for Daily and Social Life (Disability Comprehensive Support Act, 2013) and revised compensation for repeat care. Amid such a background, the patients with mental disabilities, which are viewed as chronic patients, need to manage their care independently and maintain a lifestyle in their local community while coping with their illness or disorder.

Critical to achieving this is support that will increase the self-care competence of persons with mental disabilities from the hospitalization stage. Recent years have seen the identification of the elements of self-care that can enable persons with mental disabilities to live in their own communities. This includes the elements for building lifestyle fundamentals such as mental disorder management, the elements for managing lifestyle such as the management of bathing, time management and the elements for improving quality of life such as the use of free time, developing and maintaining relations with other people [2]. Numerous benchmarks for assessing self-care activities have been developed. These include the Summary Self-Care Activities Measure [3] and Self-Management Skill (SMS) [4]. However, using benchmarks designed for the general population on persons with mental disabilities has been reported as lacking sensitivity, suggesting that benchmarks specific to persons with mental disabilities are effective. Conversely, benchmarks specifically designed for persons with mental disabilities include the Life Assessment Scale for the Mentally Ill [5], the Life Function Assessment Scale for Persons with Mental Disabilities [6], the Mental Health related Self care Agency Scale [7], and other benchmarks related to self-care.

However, existing benchmarks are limited in their assessments, only focusing on aspects of self-care such as lifestyle functions, social functions, and psychological aspects. At present, neither in Japan nor overseas does there appear to be a benchmark specifically design for persons with mental disabilities that comprehensively encompasses the concept of self-care. A patient’s discharge from the hospital based solely on the improvement of symptoms without adequately assessing self-care competency will result in the inability to sufficiently evaluate the use social resources and support content based on the patient’s self-care ability. Furthermore, insufficient self-care or support risks triggering symptoms and causing in a revolving door phenomenon [8] that results in hospitalized on and off. At a time of the growing...
emphasis on moving persons with mental disabilities back into their own communities, self-care support is critical and thus benchmarks for simple and comprehensive evaluation are invaluable. In this study, we develop a self-care competency assessment scale for persons with mental disabilities and then evaluate the reliability and validity of that scale.

Methods

Scale proposal creation

Through the concept analysis [2] and the interview [9], we created a hypothesis for a construct concept framework. We identified three structural elements: lifestyle functions, social functions, and psychological functions. We further referenced sources such as SDSCA, SMS, LASMI, the Life Function Assessment Scale for Persons with Mental Disabilities, and the MH-SCA to create a questionnaire. Lastly, we created a proposal for a Self-Care Competency Assessment Scale for Persons with Mental Disabilities consisting of 50 items. Each question was set as a 6-point Likert scale with scoring based on “5: Fully capable”, “4: Largely capable”, “3: Rather capable”, “2: Rather incapable”, “1: Largely incapable”, and “0: Incapable”. Furthermore, this scale aims to be applicable as a scale for assessing hospitalized patients of all progressions, from the acute stage to the recovery stage. This scale is a third-party assessment scale. The reason for creating a third-party assessment scale is because, depending factors such as on illness or cognitive function disorder, it can be difficult for a person to objectively and adequately assess yourself.

Study method

Subjects

Persons with mental disabilities age 18 and older diagnosed as having a mental illness who were hospitalized at a dedicated mental health hospital in Prefecture (A) between May and July 2018. Persons observed as having significant disorders affecting the cognitive or judgment capacity necessary to decide on participation in this research, persons hospitalized for less than one week, and persons with severe mental retardation that require assistance in all aspects of daily life were excluded as subjects for this study. Nurses assessing subjects’ self-care were people who had been providing self-care support to subjects for one week or longer.

Survey method

Between May and July 2018, we conducted a cross-sectional study via a third-party assessment-based questionnaire. Furthermore, assessments were third-party assessments conducted by nurses via a culmination of methods including observation, clinical records, and interviews with the individual.

We judged that consent was received from the subject and the transcribing nurse by the insertion of the questionnaire into collection boxes setup in each hospital ward. Collection boxes were recovered from each hospital ward by the nurse manager and batch mailed via postal mail from the nursing department to the researcher.

Survey content

As base attributes, we asked the subjects their age, gender, name of diagnosis, number of times hospitalized in a mental healthcare ward, total period of hospitalization in a mental healthcare ward, and the gender and years of working experience in the mental healthcare nurse of assessors. The self-care competency assessments scale for persons with mental disabilities created by the researcher was configured as a 6-point assessment, with a higher score representing a higher degree of competency.

The study also involved surveying the 23 Rehab items. Rehab is a scale developed by Roger Baker and John Hall. There is a Japanese version [10] and the reliability and validity of the scale has been confirmed. Rehab is structured as a total of 23 items comprised of seven items covering deviant behaviour (3-point assessment) including incontinence, violence, and self-wounding, and 16 items covering general behaviour (10-point assessment) including interactions inside and outside the hospital ward, free time, activeness, voluntary speech, eating methods, ability to self-prepare, and money management. The higher the score, the more it is assessed that the individual is unable to live independently or in a community setting. Furthermore, this is a third-party assessment with assessment possible if the staff can observe the subject over the course of one week.

Analysis method

Item analysis and Kaiser-Meyer-Olkin sample validity

We used the List wise deletion method to eliminate subjects with incomplete data and then calculated the item average value and standard deviation, and validated the ceiling effect and floor effect, I-T correlation, and the G-P analysis Kaiser-Meyer-Olkin sample validity.

Exploratory factor analysis

For the exploratory factor analysis, we conducted a factor analysis using the non-weighted least squares method and the Promax rotation. Furthermore, we set the factor eigen value as 1.0 or higher and the factor load as 0.4 or higher.

Validity evaluation

To confirm co-dependence validity, we evaluated the correlation to Rehab via the calculation of Pearson product-moment correlation coefficient. Also, to confirm judgment validity, we divided subjects into two groups based on the mean value for total mental health hospitalization time and used a t test to evaluate the scale average value.

Reliability evaluation

To confirm internal consistency, we calculated the Cronbach’s α coefficient.

Ethical considerations

This study was conducted with the approval of the ethics review committees of the respective affiliated universities and subject facilities. We received consent from the nursing department chiefs of the subject facilities based on the provision of written and verbal explanations of the study overview, methods, and ethical considerations (discretion to choose study cooperation, data handling, study results publication methods, study inquiry contact information, etc.). Through the nurse managers of hospital ward, we provided written and verbal explanations of the study overview, methods, and ethical considerations to nurses. Consent from subjects was received following the provision of written and verbal explanations of the study overview, methods, and ethical considerations by nurses. The questionnaire was anonymous. The collection of completed questionnaires sealed in an
envelope constituted the receipt of consent from the subjects and the assessors.

**Results**

Of the 270 subjects, we collected responses from 208 people (recovery rate of 77.0%). Of these, there were 191 effective responses (effective response rate: 91.8%). These were set as the subject of analysis.

**Subject attributes**

Subjects were 82 males (43.5%) and 108 females (56.5%) with an average age of 56.38 years (SD15.27). For subject illness names, approximately 80% were diagnosed with schizophrenia. The average number of hospitalizations for the subjects was 5.17 (SD5.87) and average total hospitalization period was 2356.48 (SD2823.65) days. Of the transcribing nurses, 72.2% were female and 27.8% were male. The average number of years working in mental healthcare was 8.87 (SD5.70) Table 1.

| Gender   | n=191 | Male | 85 | 43.50% |
|----------|-------|------|----|--------|
|          |       | Female| 108| 56.50% |
| Age      |       | 56.38| ±15.27 |
| Schizophrenia |       | 152  | 78.40% |
| Mood disorders |     | 26   | 13.60% |
| Dependence |       | 3    | 1.60%  |
| Personality disorder |       | 1    | 0.50%  |
| Neurotic disorder |       | 2    | 1.00%  |
| Organic mental disorder |       | 2    | 1.00%  |
| Stress disorder |       | 4    | 2.10%  |
| Somatoform disorder |       | 2    | 1.00%  |
| Developmental disorder |       | 12   | 6.30%  |
| Other    |       | 31   | 16.20% |

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| Total hospitalization length |       | 2356.48 | ±2823.65 |

Some subjects have multiple illness names

**Table 1:** Subject attributes.

**Item analysis**

We calculated the average value and standard deviation for each item, then evaluated the ceiling effect and floor effect to confirm there were no applicable items. We also confirmed the I-T correlation but there were no items which were less than the standard value of 0.4. In the G-P analysis, we divided total scale scores into the high score group (n=96) and the low score group (n=95), and conducted a t-test to compare the average score for each item and total score of each group. This analysis showed that for all items and total score, the average score of the high-score group was meaningfully high. Using the above procedures, we conducted a factor analysis for all 50 items.

**Exploratory factor analysis**

To verify the factor validity, the eigen value was set to 1 or higher for all 50 items, and we repeated the factor analysis using the non-weighted least squares method and Promax rotation. Questions with a factor loading of less than 0.4 and where factor loading extends to two factors were re-evaluated, resulting in the deletion of 15 items and the final adoption of six factors and 35 items. The six factors are [actions to maintain one’s own life], [social skills for building, maintaining, and deepening interpersonal relationships], [disease management through judgments, decision making, ingenuity, and adjustments], [time design], [sleep and rest adjustments], and [mental health management].

Factor I was comprised of 14 items. This covers actions for maintaining one’s own life, such as using transportation and public institutions, managing money and personal belongings, cleaning and organizing, separating and disposing of garbage, and was named [Actions to maintain one’s own life]. Factor II was comprised of six items. This covers content for building new interpersonal relationships, such as greetings, listening to/sympathizing with the other party’s talks, talking based on the situation, and for maintaining and deepening existing interpersonal relationships. This was named [Social skills for building, maintaining, and deepening interpersonal relationships].

Factor III was comprised of four items. This covers content related to managing mental disability through proper use of medication and the continued use of prescription medicines, measures to prevent mistaken use of medicine, and adjustments when one forgets to take oral medicines. This was named [Disease management through judgments, decision making, ingenuity, and adjustments]. Factor IV was comprised of five items. In addition to time management such as bedtime, wake-up time, meal time, etc., the content also covers living according to one’s own schedule with a purpose, and was named [Time design]. Factor V was comprised of two items. The content covers adjustments for resting the body, such as satisfied sleep and rest during fatigue, and was named [Sleep and rest adjustments]. Factor VI was comprised of four items. This covers content related to behaviours for psychological relaxation and mental stability, such as personal relaxation methods, stress coping behaviour, and establishing a place of belonging. This was named “Mental health management” (Table 2).

**Reliability evaluation**

The Cronbach’s α coefficient for the entire assessment scale was .974. The α coefficients of the lower factors were: Factor I .964, Factor II .940, Factor III .917, Factor IV .900, Factor V .775, and Factor VI .865.

**Validity evaluation**

Rehab consists of items that assess a range covering from basic daily activities such as “how to eat”, “preparation of outfit” and “organization of things” to social aspects such as “money management” and “conversation with others.” We think there is a correlation of concepts with the self-care competency evaluation scale for persons with mental disabilities. Therefore, we calculated the Pearson product-moment correlation coefficient with Rehab to examine the convergent validity. As a result, the correlation coefficient between the total score of the scale and Rehab showed a high negative correlation of r = -.75 (p <0.01). By factor, Factor I was r = -.77 (p <0.01), Factor II was r = -.65 (p <0.01), Factor III was r = -.58 (p <0.01), Factor IV was r = -.56 (p <0.01), Factor V was r = -.33 (p <0.01), and Factor VI was r = -.58 (p <0.01). A mid-to high significant negative correlation was observed.
| Factor | Description | Cronbach’s α | Factor I | Factor II | Factor III | Factor IV | Factor V | Factor VI | Commonality |
|-------|-------------|--------------|----------|-----------|------------|-----------|----------|-----------|-------------|
| I     | Actions to maintain one's own life | .964 | .917 | .072 | -.071 | -.083 | .207 | -.081 | .791 |
| 14    | Capable of face-washing, styling, shaving, brushing, etc. and other personal grooming | | | | | | | | |
| 16    | Able to dress based on time, place and occasion | | | | | | | | |
| 19    | Able to wash clothing with awareness of time | | | | | | | | |
| 26    | Able to use financial institutions such as banks or post office | | | | | | | | |
| 15    | Able to bath in order to maintain cleanliness | | | | | | | | |
| 18    | Able to identify clean and unclean clothing | | | | | | | | |
| 17    | Able to clean up personal area | | | | | | | | |

| Factor II | Social skills for building, maintaining, and deepening interpersonal relations | .940 | .035 | .922 | .129 | .022 | .080 | -.137 | .852 |
|-----------|-----------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 47        | Able to listen to others | | | | | | | | |
| 49        | Able to apologize after doing something bad | | | | | | | | |
| 50        | Able to align conversation with others and situations | | | | | | | | |
| 48        | Able to empathize with others who talk with | | | | | | | | |
| 46        | Able to greet others | | | | | | | | |
| 40        | Able to adjust speech in consideration of others (conversation speed, loudness, etc.) | | | | | | | | |

| Factor III | Disease management through judgments, decision-making, ingenuity, and adjustments | .917 | .154 | .003 | .915 | -.093 | .048 | -.111 | .794 |
|------------|--------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5          | Able to take medication when needed or as directed | | | | | | | | |
| 2          | Able to continue medication as directed | | | | | | | | |
| 3          | Able to implement methods to prevent forgetting to take medication or taking the wrong medication | | | | | | | | |
| 4          | Able to take action after forgetting to take medication | | | | | | | | |

| Factor IV | Time design | Cronbach’s α: .908 | .154 | -.001 | .197 | -.069 | 1.034 | .253 | .036 | .906 |
|-----------|-------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 29        | Able to sleep at approximately same time | | | | | | | | |
| 30        | Able to wake up at approximately same time | | | | | | | | |
| 31        | Able to eat in approximately same timeframe | | | | | | | | |
| 32        | Able to keep promised times | | | | | | | | |
| 28        | Able to live on a schedule | | | | | | | | |

| Factor V | Sleep and rest adjustments | Cronbach’s α: .775 | .021 | .077 | .185 | .123 | .674 | .197 | .694 |
|----------|---------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|
| 13        | Able to rest when tired | | | | | | | | |
| 12        | Able to achieve satisfying sleep | | | | | | | | |

| Factor VI | Mental health management | Cronbach’s α: .865 | .051 | .000 | -.021 | .076 | .255 | .846 | .776 |
|-----------|-------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|
| 56        | Able to relax on one's own | | | | | | | | |
| 54        | Able to take own coping measures to deal with stress | | | | | | | | |
| 55        | Have a place of belonging | | | | | | | | |
| 53        | Able to self-assess appropriately | | | | | | | | |

| Factor II | Inter-factor correlation Factor I | | | | | | | | |
|-----------|---------------------------------| | | | | | | | |
| 1         | 1.747 | 719 | 731 | .426 | .743 | | | | |

| Factor III | Cumulative contribution rate (%) | | | | | | | | |
|------------|----------------------------------| | | | | | | | |
| 54.295 | 5.248 | 4.097 | 3.957 | 2.466 | 2.175 | | | | |

| Factor IV | Cumulative contribution rate (%) | | | | | | | | |
|------------|----------------------------------| | | | | | | | |
| 54.295 | 5.248 | 4.097 | 3.957 | 2.466 | 2.175 | | | | |
In addition, self-care behaviours such as medication management, meals, and cleanliness are mentioned as requirements for schizophrenia patients who are hospitalized for a long time to live alone after discharge (Miyosawa & Sugiura, 2019). Ability may be related to the cumulative length of hospital stay. Therefore, based on the median cumulative hospitalization period (1500 days), the patients were classified into a long-term hospitalization group (n=96) and a short-term hospitalization group (n=96), and the average of the scores for each group on this scale was calculated using the t-test and examined. As a result, the short-term hospitalization group had a significantly higher total score on this scale (t (189) = 2.88, p <0.01).

**Discussions**

**Scale structural elements**

Factor I content relates to maintaining one’s own life, including managing money and personal belongings, cleaning and organizing. Factor V content relates to adjustments to rest one’s body, including satisfied sleep and rest during fatigue. These Factors were interpreted as elements for evaluating living functions. We also interpreted these as “life-related behaviour” on social function evaluation scales and social life evaluation scales developed for persons with mental disabilities. Factor I covers essential activities for maintaining one’s life, such as grooming, laundry, and corresponds to the main concepts of self-care. Therefore, it is reasonable that this Factor shows the highest factor contribution ratio. Factor II is content related to social skills, such as greetings, listening, to build new interpersonal relationships, and to maintain and deepen existing interpersonal relationships. We interpreted these as elements for assessing social skills. According to the results of a survey of the distress of long-term hospitalized patients, threats to loneliness are mentioned (11). The use of social skills is invaluable to avoiding loneliness. We believe that the use of various social skills will lead to the construction of new interpersonal relationships, the maintenance and deepening of existing interpersonal relationships, the reduction of suffering for persons with mental disabilities, and the promotion of transitions into communities. Therefore, it is important to assess social functions appropriately and to provide support to enhance social functions.

Factor III covers the management of mental illness by taking appropriate medications or taking prescribed medications continuously, and devising and adjusting to prevent erroneous medications. Mental illness is regarded as a chronic illness, and is prone to relapse and recurrence unless proper disease management actions are taken. However, symptom characteristics such as lack of knowledge, positive symptoms, negative symptoms, and cognitive dysfunction may make it difficult to perform illness management actions. Because compliance with medication for mentally ill persons is as low as approx. 40% (12), it can be said that assessing and supporting self-care abilities for disease management of persons with mental disabilities also leads to prevention of relapse and recurrence.

Factor IV relates to managing time and living based on one’s own schedule with purpose. Subjects and their families recognize the difficulties and the need for support to enable orderly living and time management [13]. Time management can be said to be an essential element in living in a community. Irregular living has the potential to affect psychiatric symptoms and upset the basics of living, so it is important to design time, that is, to plan how to use time and manage time individually during the time of hospitalization. This is believed to be effective in promoting smooth regional migration. Factor VI covers psychological relaxation and mental stability, such as self-relaxation and establishing a place of belonging.

The definition of “a place of belonging” often includes not only the physical meaning of where people are, but also psychological aspects such as places where people can be relieved mentally and places where self-existence can be felt [14]. The relationship between a place of belonging and depression [14], and the correlation between a place of belonging and psychological well-being [15] have been observed and it is inferred that a place of belonging is a factor that strongly predicts association with mental health. Having a place of belonging and stress coping behaviour are important actions for maintaining the well-being of persons with mental disabilities, and this sub-scale was interpreted as an element corresponding to “psychological aspects”.

**Scale validity and reliability**

As for content validity, we believe that certain validity is maintained by creating items and refining the expression of items based on the opinions of psychiatrists, visiting nurses, mental health workers and other professionals who support persons with mental disabilities in the community, psychiatric nursing specialists, and persons with mental disabilities living in communities. We also found a significant negative correlation with Rehab, which is conceptually related. Based on the median cumulative hospitalization period, the scores were classified into two groups, and the scores of this scale were examined. As a result, there was a significant difference in the mean values, confirming the validity of the criteria. Finally, the components of this scale included “life functions”, “social functions” and “psychological aspects”. This scale satisfies the self-care component of persons with mental disabilities predicted from previous studies and can be judged to have construct concept validity.

In examining the reliability of this scale, internal consistency was confirmed based on the reference value of Cronbach’s α coefficient of 0.7 or higher. The Cronbach’s α coefficient of this scale as a whole was .974, and the α coefficient of each sub-factor was .775 to .964, all of which were above the reference value, indicating the internal consistency of each sub-scale. This confirmed the reliability of the self-care ability rating scale for persons with mental disabilities.

**Study Limitations and Future Issues**

This study is the results of analysis for persons with mental disabilities with a definite diagnosis of mental illness. Therefore, the relationship between the characteristics of the disease, the background of the subject, and the level of disability has not been clarified. In our next article, we examine the relationship between these factors and...
this scale, and further examine the usefulness of this scale. In addition, the supporters who conducted a survey of persons with mental disabilities were nurses who provided support to the subjects for at least one week, and we did not examine the reliability between assessors. Since the assessors of this study have an average of 8.8 years of psychiatry experience, it is considered that sufficient observation and judgment can be made. However, in the future, it is necessary to further examine how supporter background factors influence the assessment and to evaluate reliability. In this study, the self-care of persons with mental disabilities was examined via the third-party assessment method. In the future, we will assess if this can be used as a self-evaluation-type scale so that persons with mental disabilities can evaluate their own self-care abilities and can work independently to improve their self-care abilities.

**Conclusion**

I developed a self-care competency assessment scale for persons with mental disabilities and evaluated its reliability and validity. This scale comprises the life functions, social functions, and psychological aspects of the self-care of persons with mental disabilities. If we can evaluate the self-care ability of persons with mental disabilities simply and multilaterally, it will serve as important data for taking concrete support measures such as providing social resources and support necessary during hospitalization to live in the community. Additionally, this will become a new guideline for medical professionals on the direction of support, and will enable support for specific and clear issues, thereby contributing to the improvement of self-care for persons with mental disabilities.

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