副論文1

Content and face validity of an occupational identity questionnaire based on MOHO concept for community-living elderly people requiring support

Masataka Shikata^{1,2)}, Hiroyuki Notoh¹⁾, Kazuya Shinohara¹⁾, Kenji Yabuwaki³⁾, Yoshikazu Ishii²⁾, Takashi Yamada^{4,5)}

- Department of Occupational Therapy, Faculty of Health and Medical Sciences, Tokoha University
- Department of Occupational Therapy, Graduate School of Human Health Sciences, Tokyo Metropolitan University
- 3) Faculty of Health Sciences, Tohoku Fukushi University
- 4) Professor Emeritus, Tokyo Metropolitan University
- 5) Research Institute of the Model of Human Occupation in Japan, Inc

Journal of Japan Academy of Health Sciences, 23 (2), 75-87, 2020

Received 15 April 2020, Accepted 4 September 2020

Abstract

Introduction

Participating in meaningful activities that reflect one's identity promotes the wellbeing of elderly people. This study aimed to prepare a questionnaire draft to evaluate occupational identity of the elderly and to examine the content and face validity of the questionnaire.

Methods

First, we generated questionnaire items to evaluate the occupational identity of elderly people. Second, a content validity study was conducted with experts, using three rounds of the Delphi method. Lastly, the face validity study was undertaken by elderly participants, who reported on whether they could understand the questionnaire.

Results

The 50 original questionnaire items were reduced to 21 items with the Delphi method. The items showed item-level content validity index (I-CVI) ranging

between 91.7% and 100%, and scale-level CVI with the universal average method (S-CVI/Ave) of 97.4%, which fulfilled the consensus criteria. In the result of the face validity, although none of the items were checked as "Difficult to understand," there were four items checked as "Difficult to answer." Accordingly, only one item was corrected.

Conclusion

Results suggest that this assessment possesses content and face validity in a sample of elderly people. The questionnaire is likely to allow occupational therapists to gain information about elderly peoples' occupational identity.

Keywords: Model of human occupation; Occupational identity; elderly people; assessment; Occupational therapy

I Introduction

The Model of Human Occupation (MOHO) is the most widely used clientcentred and occupation-focused conceptual practice model in occupational therapy¹⁻⁴⁾. The model views occupational identity as defining who a person considers themselves to be and who that person wishes to become as an occupational being⁵⁾. Occupational identity is generated from a person's history of occupational participation⁵⁾. This occupational participation takes place within a physical and social context (environment) and it is driven by a person's volition, habituation, and performance capacity⁵⁾. Occupational development involves the complex evolution of a person's volition, habituation and performance capacity over time, which are all expected to change dynamically as a person ages within changing environmental contexts⁶⁾. It is assumed that the composition and telling of one's life story will become more important in later adulthood⁶⁾. According to Kielhofner⁶⁾, as a person ages, the telling of his or her life story gains significance. Older

people need to make the most of the time they have left and, at the same time, they strive to put their past lives into perspective⁶. According to MOHO, the extent to which a person's occupational identity is a positive one depends on whether that individual has an engaging occupation⁵⁻⁶.

In a previous study, based on a combination of MOHO and educational methodology, improvement in health perception and meaningful occupational participation was reported in elderly individuals⁸). Furthermore, MOHO was also used to raise awareness regarding the difficulties and opportunities involved in meaningful occupation. According to Yamada⁹), occupational therapy intervention based on MOHO promoted quality of life and a sense of wellness among elderly people. In this study, participants were given an opportunity to reflect on their own occupational lives using MOHO concepts. They were also provided with the opportunity to collaboratively discuss and enact ways to better meet their occupational

needs. This application of MOHO was found to be useful among the elderly, as it was important for the elderly participants to tell stories about their lives and their futures in order to set goals on which they could continue to base their lives. In other words, it was important for them to gain clarity about their occupational identities.

Among the MOHO-based assessments, only the Occupational Performance History Interview Version 2 (OPHI-II) has been used to evaluate elderly people's occupational identities¹⁰⁾. With this tool, a therapist conducts a semi-structured interview¹¹⁾. Following the interview, the therapist assigns scores using three rating scales: the occupational identity scale, the occupational competence scale, and the occupational settings scale¹¹⁾.

Although the OPHI-II is a useful assessment, it is not designed to specifically measure occupational identity in older adults, and it is not as easy to

administer as a more concise self-report questionnaire. The Food and Drug Administration (FDA) defines patient-reported outcomes (PRO) as any information or data provided directly by the patient without the interpretation by a clinician or anyone else¹²⁾. Incorporating PRO into health care practice has the potential to enhance patient outcomes and quality of care ¹³⁻¹⁴⁾. Besides, self-report provides clients with the opportunity to reflect on their abilities and needs independently of the therapist's influence, which can lead to more effective problem-solving and planning during intervention¹⁵⁾. Therefore, it would be beneficial to have an evaluation method specific for elderly people, which considers one's occupational development and the telling of one's life story to reflect on one's occupational identity.

Therefore, the aim of this study was to prepare a questionnaire draft to evaluate the occupational identity of elderly people and to examine the

content and face validity of the questionnaire. This can aid in the development of an occupational identity questionnaire for elderly people.

II Methods

The Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) was proposed as an international standard for developing methods of evaluation for PRO scales¹⁶. In this study, we examined the content and face validity of an occupational identity questionnaire for elderly people. This study was implemented in three phases. In phase 1, questionnaire items to evaluate occupational identity of elderly people were generated. In phase 2, the content validity study was conducted with experts, using three rounds of the Delphi method. In phase 3, the face validity study was undertaken by elderly people, who reported on whether they could understand the questionnaire.

Phase 1: Generating questionnaire items

Method. As a method of developing an assessment, first, an item pool had to be generated, and the items had to adhere to the operational definition of the construct¹⁷). According to this method, existing instruments, the literature, and qualitative research are all possible sources for generating an item pool. Additionally, the number of items pooled should be 3 or 4 times as many as the number of items planned¹⁸). This research used occupational identity, which is a construct of MOHO. There is only one previous research study that has investigated the occupational identity of elderly individuals in Japan. According to this study¹⁹⁾, semi-structured interviews were conducted with elderly people at a senior care centre in order to clarify their occupational identity. Consequently, 30 concepts about occupational identity were identified through qualitative analysis (Table 1). In order to develop a relatively quick assessment that is easy to implement for the elderly, the number of planned items was assumed to be approximately 15 in this study.

Thus, among the concepts obtained in the previous research, concepts with multiple meanings were itemised for each meaning.

Phase 2: Content validity study

Method: Delphi survey. Content validity, defined as the extent to which the content of the scale adequately captures the construct, requires expert judgment to examine¹⁷). The Delphi technique is a method that is widely used when making such judgments²⁰⁾. The Delphi survey is a group facilitation technique using an iterative multistage process, designed to transform opinion into group consensus²¹⁾. In this study, a Delphi survey of three rounds was conducted. The panel members were asked to complete the questionnaire by mail. In each Delphi round, we asked if the panel members agreed that the questionnaire items were appropriate indicators of occupational identity among elderly people. Agreement was rated on a 4point scale (strongly disagree, 1; disagree, 2; agree, 3; and strongly agree,

4). The panel was also encouraged to make comments about questionnaire items if they disagreed with them. In the second round, we provided a second questionnaire that we revised with reference to the expert opinion. In addition, the results of the previous round were presented in a feedback report that included the percentage of agreement, medians, reasons for the revised items, and comments for each item. This process was repeated up to the third round.

Consensus criteria. Content validity for the questionnaire was assessed by computing the content validity index (CVI). Polit and Beck²²⁾ recommended that researchers report the range of the item-level CVI (I-CVI) values for items on the scale in addition to the scale-level CVI value with an averaging method (S-CVI/Ave) and the scale-level CVI value with the universal average method (S-CVI/UA). I-CVI is computed as the number of experts giving an agreement rating of 3 or 4 for each item, divided by the total

number of experts. In S-CVI/Ave, the sum of I-CVI is divided by the total number of items. In S-CVI/UA, the number of items considered relevant by all the judges is divided by the total number of items. When I-CVI is greater than 0.78, S-CVI/Ave is greater than 0.90, it suggests good content validity²²⁾. We adopted these criteria for questionnaire items on occupational identity for elderly people.

Participants. Occupational identity is one of the important concepts of MOHO in this research, and it was important that participants knew about the types of occupational identities that elderly individuals tend to have.

Therefore, the participants were selected based on the following inclusion criteria: (1) practicing occupational therapists and researchers who were accustomed to using MOHO-based intervention and have published at least one research paper about MOHO, and (2) occupational therapists with more than 5 years of practical experience in the field of services for elderly people.

There is no consensus on how many Delphi panels are appropriate in the literature²³⁾. Ludwig²⁴⁾ documents that most Delphi studies used between 15 and 20 respondents. We aimed to have a minimum of 20 members in the panel.

Phase 3: Face validity study

Method. Face validity refers to whether the instrument looks like it is measuring the target construct¹⁷⁾. In order to assess face validity, we assessed the legibility and clarity of the questionnaire items, using qualitative methods. This required that participants answered questionnaires and reported on any unclear points and ambiguities²⁵⁻²⁶⁾. Participants were asked to complete the occupational identity questionnaire that was developed in phase 2. They evaluated questionnaire items as "Difficult to understand" or "Difficult to answer" regarding: (1) comprehensibility, (2) clarity, and (3) judgment. Participants were subsequently interviewed to determine why they

did not understand or answer the questionnaire item, and participants' comments were recorded in the questionnaire. The interview took place in a private room. Additionally, we obtained information about sex, age, employment, and educational background of the participants. Based on the comments given for each questionnaire, when items were designated as "Difficult to understand" or "Difficult to answer" by participants, the necessity of the expression was examined. Moreover, we quantified the time taken for the interviews.

Participants. The sample size n=5 was chosen based on the recommendations for face validity²⁷⁾. First, the study's first author invited service users to participate at a care centre in Shizuoka prefecture, Japan. Participants were included if they were service users aged over 65 years living in the community and needed support services. Service users were excluded if they were unable to consent or had cognitive impairment. All

participants gave written informed consent prior to enrolment for their participation.

Research ethics. The content validity study received ethical approval from the ethical committee of Tokoha University in 2017, reference number 2017-009H. The face validity study received ethical approval from the ethical committee of Tokyo Metropolitan University in 2018, reference number 18035.

III Results

Phase 1: Generating questionnaire items

Items 5, 10, 11, 15, 20, 22, 24, 28, 29, and 30 in Table 1 were combined into one item, while the remaining items were divided to become two items.

Consequently, the preliminary questionnaire included 50 items for evaluating the occupational identity of elderly people.

Phase 2: Content validity study

Participants. We invited 28 experts to participate, and 26 (92.8%) agreed. Of the 26 participants, there were 21 males and 5 females. In the first, second and third rounds, 25, 24, and 24 participants were involved, respectively (with response rates of 96.2%, 96.0%, and 100.0%, respectively). The average number of years of clinical experience of the occupational therapists in rendering services for elderly people varied between 6 and 33 years (on average 15 years).

First round of the Delphi survey. Table 2 shows the I-CVI calculations for the 50 items. I-CVI ranged from 60.0% to 100.0%. S-CVI/Ave was 83.8%, S-CVI/UA was 2.0%. There were 13 items that did not meet the consensus criteria in the first round. Of the 13 items, the panel indicated duplicates with other items (Item 3, 25, and 28), unclear question intentions and

inappropriate expressions (Item 4, 5, and 11), difficulty in assessing occupational identity (Item 7, 15, 27, 31, and 41), and inappropriate expressions because they did not apply to all clients (Item 14 and 21). There were 37 items that met the consensus criteria, but the panel gave the following comments: duplicates with other items (Item 13, 23, 24, 33, 34, 43, and 44), unclear question intentions and inappropriate expressions (Item 6, 12, 29, 35, 37, 38, 46-48, and 50), difficulty in assessing occupational identity (Item 8 and 40), and inappropriate because they did not apply to all clients (Item 2 and 20).

Second round of the Delphi survey. For round 2, items were added or amended based on the results, and the questionnaire was resent to the panellists. In the second round, a second questionnaire was prepared. For the 27 items, I-CVI ranged from 79.2% to 100.0%. S-CVI/Ave was 94.1%, S-CVI/UA was 25.9%. Only Item 4 did not meet the consensus criteria in the

second round, because it was better not to limit the physical aspects of the patient, including cognitive aspects. There were 26 items that met the criteria, but the panel gave the following comments: duplicates with other items (Item 16 and 22), improvement of expressions to address occupational identity (Item 8, 18, 20, 26, 35, and 37), and inappropriate expressions (Item 12, 14, and 38).

Third round of the Delphi survey. For round 3, items were added or amended based on the earlier round of results and the questionnaire was resent to the panellists. In the third round, a third questionnaire was prepared. For the 21 items, I-CVI ranged from 91.7% to 100.0%. S-CVI/Ave was 97.4%, S-CVI/UA was 57.1%. All items met the consensus criteria in the third round. However, the following were still listed as reasons why experts could not agree: duplicates with other items (Item 5), improvement of expressions to address occupational identity (Item 12, 18, and 29), and inappropriate

expressions (Item 2, 11, 14, 20, and 37). We confirmed all 21 items in the third round of the Delphi survey as occupational identity questions for elderly people who need support and long-term care in community living.

Phase 3

Participants. Five participants (three females, two males) were included in this study. The average age was 75.2 ± 3.9 years old. Two participants were homemakers, while three participants were unemployed. Of the participants, one had a junior high school, one undergraduate, and three had high school educational backgrounds. The duration of the interviews ranged from 17 to 31 minutes (average 21.8 minutes).

Items that were "Difficult to understand" or "Difficult to answer". None of the items were checked as "Difficult to understand." There were four items checked as "Difficult to answer." The items versus responses to the items

were as follows: Item 20: "I think that there is a person who understands my feelings and I am satisfied with that" versus "Difficult to respond to, without a trusting relationship with my therapist;" Item 29: "I think I can do better than others think," versus "I do not know what others think of me;" Item 37: "I think that it is better to have something to do," versus "Is this question about what I will do in the future?;", and finally, Item 38: "I think that I live as I expected I would," versus "This is not only about me, but also about the lives of my family members."

Examination of the expression of question items. There were four items reported as "difficult to answer". However, only one item, that is Item37, "I think that it is better to have something to do" was corrected to "Rather than having nothing to do, it is better to have something to do."

IV Discussion

This study created a questionnaire to assess the occupational identity of community-living elderly people in Japan and examined its content and face validity. As a result, the 50 original questionnaire items were reduced to 21 items with the Delphi survey. Among the items examined for face validity, the expression of only one was corrected such that clarification was added concerning reference to the presence versus the future Through this process, we created a draft questionnaire to assess occupational identity among community-living elderly people requiring support in Japan. Below, we discuss the developmental process of this questionnaire.

Content validity

In this study, 21 items that were used in the third investigation ultimately fulfilled the consensus criteria, so we believe that all these items sufficiently reflect the construct of occupational identity among elderly people. While the study ended after the items fulfilled the consensus criteria through the

third questionnaire, there were still some experts who felt certain that items were not agreeable. This is thought to be due to the S-CVI/UA of 57.1%, and because the proportion of items agreeable to all experts did not reach 60% for all items. S-CVI/UA is considered to be too strict if many experts are participating²²⁾. Since there were 26 participants in this study, we believe it was difficult to obtain the agreement of all participants for all items. However, the I-CVI that expresses the rate of agreement with each item was at least 91.7%, and its average, S-CVI/Ave was 97.4%. For this reason, we believe we have been able to ensure content validity.

COSMIN includes face validity as part of its content validity evaluation, and the three aspects of content validity included whether or not the questionnaire item was related to the targeted concept, whether this concept was comprehensively included in the item, and whether or not it could be understood¹⁶⁾. This study found that the primary indication, based on the

comments of the experts who did not agree during the third investigation, was that the expressions used were not appropriate. Of the three aspects discussed previously, the appropriateness of the expression has to do with whether or not the questionnaire item had been understood. In other words, it is a matter to consider in terms of the face validity. For this reason, we believe that the other two aspects (i.e. whether questionnaire item is related to the targeted concept and whether this concept has been comprehensively included in the item) had been fulfilled.

Face validity

When presented to the 5 participants, none of the 21 items were designated as "Difficult to understand." For this reason, it was suggested that there was no difficulty with reading and understanding of the items for elderly people in this study who had no problems with cognitive function. On the other hand, four of the items were considered "Difficult to answer." As a result, we

corrected the single item number "37. I think that it is better to have something to do." The participant responded by saying: "Is this question concerning what I will do in the future?" However, this item was asking whether or not it is good to have some activities in everyday life. For this reason, we presumed that without correcting the expression, the responses to this item might have unintended nuance, depending on the client. Therefore, following the correction, the item now reads "Rather than having nothing to do, it is better to have something to do."

For the remaining three items considered "Difficult to answer," we decided that there was no need to correct the expressions. To Item "20. I think that there is a person who understands my feelings and I am satisfied with that," the response given was: "Difficult to respond to, without a trusting relationship with my therapist." However, this response can apply to all questions, and in the clinical context, for a client and a therapist working on

this questionnaire together, a trusting relationship could be built. To Item "29. I think I can do better than others think," the response given was: "I do not know what others think of me." However, this item was intended to ascertain how the clients evaluated their own capacity. Since this was not meant to be an assessment by someone else, there was no need to correct the expression. To Item 38: "I think that I live as I expected I would," the response given was: "This is not only about myself, but also about the lives of my family members." This item was intended to ascertain whether or not the clients were able to live the way they think or want, regardless of the composition of family members living with them. For this reason, there was no need to correct the expression. However, subsequently, in order for these items to be interpreted correctly, it would be necessary to propose explanations to the therapists.

Usefulness and challenges of the evaluation method

This questionnaire allowed the clients to self-report on their occupational identity, within a relatively short period of time than in OPHI-II. Besides, this assessment was specific for occupational identity. Since occupational competence is the degree to which one sustains a successful pattern of occupational participation that reflects one's occupational identity⁵⁾, at this point, the assessment of occupational identity is more important. Using this method enables the evaluation of the occupational identity of the client with the use of the items, and to obtain a client's occupational narrative related to occupational identity. The use of this questionnaire allows occupational therapists to understand how the clients see themselves as an occupational being, and what kind of occupation they want to be involved in. For many elderly people who need care, such information enables collaboration with the client to improve their activities and participation. For these reasons, we believe that the questionnaire may be useful.

This study was limited to examining the content and the face validity, and the S-CVI/UA was 57.1%; thus, further studies are needed in the future to establish the reliability and validity of this assessment. To address this, we need to examine the construct validity, criterion validity, and reliability of the questionnaire, based on COSMIN, in a future study.

V Conclusion

This study aimed to create an occupational identity questionnaire for elderly people. The 21 items created through the Delphi survey showed I-CVI ranging between 91.7% and 100%, and S-CVI/Ave of 97.4%. Based on these findings, we believe that the questionnaire has been validated based on the content and face validity. The fact that this questionnaire gives an understanding of how the clients feel about their occupational identity is useful. In the future, there is need to examine the construct validity, criterion validity, and reliability of the questionnaire.

Acknowledgements

We would like to thank all registered occupational therapists for their valuable contributions to the iterative evaluation procedure. We also would like to thank all the participants for their contributions to this study.

The authors disclosed receipt of the following financial support for the research project: Japan Society for the Promotion of Science (JSPS) funded

this research (Grant Number JP19K13992).

References

- 1) Haglund, L, Ekbladh, E, Thorell, L H, et al.: Practice models in Swedish psychiatric occupational therapy. Scand J Occup Ther, 7: 107-113, 2000.
- 2) Law, M, McColl, M A: Knowledge and use of theory among occupational therapists: A Canadian survey. Can J Occup Ther, 56: 198-204, 1989.
- 3) Lee, J: Achieving best practice: A review of evidence linked to occupation-focused practice models. Occup Ther Health Care, 24: 206-222, 2010.
- 4) National Board for Certification in Occupational Therapy: A practice analysis study of entry-level occupational therapist registered and certified occupational therapy assistant practice. OTJR (Thorofare N J), 24 (Spring Supplement): S1-S31, 2004.
- 5) Kielhofner, G: Dimensions of Doing. In: Model of Human Occupation,
 Theory and application (4th ed): 101-109, Lippincott Williams & Wilkins,
 Baltimore MD, 2008.

- 6) Kielhofner, G: Doing and Becoming: Occupational change and development. In: Model of Human Occupation, Theory and application (4th ed): 126-140, Lippincott Williams & Wilkins, Baltimore MD, 2008.
- 7) Jonsson, H, Josephsson, S, Kielhofner, G: Narratives and Experience in an Occupational Transition: A Longitudinal Study of the Retirement Process. Am J Occup Ther, 55: 424-432, 2001.
- 8) Rodríguez-Bailón, M, Pulido-Navarro, M J, Bravo-Quirós, A, et al.:

 Seeing, judging and...acting! Improving health perception and

 meaningful occupational participation in older Spanish adults. Educ

 Gerontol, 42(8): 572-584, 2016.
- 9) Yamada, T, Kawamata, H, Kobayashi, N, et al.: A randomised clinical trial of a wellness programme for healthy older people. Br J Occup Ther, 73(11): 540-548, 2010.
- 10) Forsyth, K: Assessment: Choosing and Using Standardized and Nonstandardized Means of Gathering Information. In: Taylor, R R (ed.)

Kielhofner's Model of Human Occupation (5th ed) :173-186, Wolters Kluwer, Philadelphia, 2017.

- 11) Hemmingsson, H, Forsyth, K, Haglund, L, et al.: Talking with Clients:
 Assessments that Collect Information through Interviews. In: Taylor, R
 R (ed.) Kielhofner's Model of Human Occupation (5th ed): 275-290,
 Wolters Kluwer, Philadelphia, 2017.
- 12) U.S. Department of Health and Human Services Food and Drug Administration, Center for Drug Evaluation and Research (CDER), Center for Biologics Evaluation and Research (CBER) and Center for Devices and Radiological Health (CDRH): Guidance for industry.

 Patient-reported outcome measures: Use in medical product development to support labeling claims. Silver Spring, MD: Food and Drug Administration, 2009.
- 13) Chen, J, Ou, L, Hollis, S J: A systematic review of the impact of routine collection of patient reported outcome measures on patients, providers

and health organisations in an oncologic setting. BMC Health Serv. Res., 13(1): 211, 2013.

- 14) Greenhalgh, J, Meadows, K: The effectiveness of the use of patient-based measures of health in routine practice in improving the process and outcomes of patient care: a literature review. J Eval Clin Pract, 5(4): 401-416, 1999.
- 15) Kramer, J, Forsyth, K, Lavedure, P, et al.: Self-Reports: Eliciting Clients'

 Perspectives. In: Taylor, R R (ed.) Kielhofner's Model of Human

 Occupation (5th ed): 248-274, Wolters Kluwer, Philadelphia, 2017.
- 16) Terwee, C B, Prinsen, C A C, Chiarotto, A, et al.: COSMIN methodology for assessing the content validity of PROMs- User manual, version 1.0.
 Amsterdam, Netherlands: VU University Medical Centre, 2018.
 Available at: https://cosmin.nl/wp-content/uploads/COSMIN-methodology-for-content-validity-user-manual-v1.pdf (accessed 2 April 2020).

- 17) Polit, D F, Beck, C T: Nursing Research, Generating and Assessing

 Evidence for Nursing Practice (10th ed): 331-355, Wolters Kluwer,

 Philadelphia, 2017.
- 18) DeVellis, R F: Scale Development: Theory and Applications (4th ed): 105-152, Sage Publications, Thousand Oaks CA, 2016.
- 19) Shikata, M, Yabuwaki, K, Notoh, H: The process of constructing occupational identity among elderly people while using day service centers. Japanese journal of occupational therapy, 50(6): 601-608, 2016 (in Japanese).
- 20) Linstone, H A, Turoff, M: The Delphi method: techniques and applications, 2002. Available at: https://web.njit.edu/~turoff/pubs/delphibook/delphibook.pdf (accessed 2 April 2020).
- 21) Hasson, F, Keeney, S, McKenna, H: Research guidelines for the Delphi survey technique. J Adv Nurs, 32(4): 1008-1015, 2000.

- 22) Polit, D F, Beck, C T: The content validity index: Are you sure you know what's being reported? Critique and recommendations. Res Nurs Health, 29(5): 489-497, 2006.
- 23) Hsu, C C, Sandford, B A: The Delphi Technique: Making Sense of Consensus. Pract. Assess. Res. Evaluation, 12(10): 2007.
- 24) Ludwig, B: Predicting the future: Have you considered using the Delphi methodology? J. Ext., 35(5): 1-4, 1997.
- 25) Azizi, N, Karimy, M, Abedini, R, et al.: Development and Validation of the Health Literacy Scale for Workers. Int J Occup Environ Med, 10(1): 30-39, 2019.
- 26) Engström, M S, Leksell, J, Johansson, U B, et al.: A disease-specific questionnaire for measuring patient-reported outcomes and experiences in the Swedish National Diabetes Register: Development and evaluation of content validity, face validity, and test-retest reliability. Patient Educ Couns, 101(1): 139-146, 2018.

27) Mokkink, L B, De Vet, H C W, Prinsen, C A C, et al.: COSMIN Risk of
Bias checklist for systematic reviews of Patient-Reported Outcome
Measures. Qual Life Res, 27(5): 1171-1179, 2018.

Table 1. Concepts clarified in previous study

No	Concept	Definition
1	Having some experience to feel rewarding and pleasure	Used to feel a sense of achievement and pleasure through work and hobby.
2	Satisfaction with past time of one's life	Appreciating own work and achievements to date, having received appreciation from others, and being satisfied therewith.
3	Having a life as desired	Having felt little difficulty in life, and having been able to continue own life even when issues arose.
4	Experiencing difficulties and adversities	Having experienced hard work and overcome issues while feeling unwell.
5	Needing favourable social relationships	It is necessary to maintain amicable relationships with others in life, and it is important to pay attention to certain aspects in order to achieve such relationships.
6	Accepting the current life	Accepting the current life while it is different from what others expect it to be and while it is not what I desired to be.
7	Not over-thinking	While having anxieties about, and dissatisfaction with, the current life, trying not to over-think me.
8	Not wanting to bother others	Not wanting to be looked after by others or not wanting to be a burden to others.
9	Having to do things by myself as there is no one else who can	As it is not possible to receive help from others, I have to take care of myself.
10	Performing tasks for myself to the maximum possible extent	Wishing to take care of myself in everyday life to the maximum possible extent.
11	A life with pleasure	Having found everyday activities which bring pleasure.
12	Good family relationships	Being satisfied with the way in which family provides support to me and continues doing what I had been doing.
13	Activities which cannot be done due to the current health condition	Due to deteriorating physical function, being unable to do what I was naturally able to do and what I was good at doing.
14	Being frustrated with not being able to handle tasks as desired	Handling tasks while being frustrated with the fact that I cannot do so as desired.
15	Being unable to meet expectations from others	While feeling complimented when I am expected to do a favour for others, and while wishing to meet such expectations, I find it increasingly difficult to do so.

Table 1. Concepts clarified in previous study (Continued)

No Concept	Definition
16 Difficult family relationship	Having difficulties in building a favourable family relationship as I am worried about bothering family members and as family members feel dissatisfied when there are different opinions within the family.
17 Restrictions by family members	Being unable to do what I wish to do and what I am thinking to do because of restrictions by family or because family members perform such tasks in place of me.
Losing important people and 18 tangible evidence of achievements	Feeling sad when losing people on whom I have relied and when losing tangible evidence of what I previously achieved through hard work.
19 Unwillingness to perform tasks	Not willing to perform tasks which I used to do and having lost motivation to perform them because my health condition has changed from that in which I was able to perform such tasks comfortably.
Wishing if others perform tasks in place of me	Wishing if others perform tasks which I have been performing, and wishing to stop performing such tasks. Not having any particular daily routine in which I would be
21 A self-indulgent lifestyle	interested, and spending time in a spontaneous manner throughout the day.
22 A life in vain	While knowing that it is not ideal, I am not doing any tasks.
23 Support from others	Due to restrictions on physical function and the current environment, maintaining my lives by receiving support from others and using care services through long-term care insurance.
24 Improvement for completing tasks	Making improvement to means of dealing with tasks in everyday lives as I no longer find it easy to perform them through means which I previously took for granted.
25 Planning for a good day ahead	Planning for a day in a way such that I spend the day comfortably in accordance with my physical condition and environment.
Maintaining physical and mental health	Considering that it is important to maintain my own physical and mental health, and practicing healthy habit to do so.
27 Being helpful to others	Feeling like accepting a role which is expected of me from family and acquaintances as well as performing tasks which would make others happy.
28 A life with pleasure	Wanting to engage in activities as I wish and have fun.
29 Wishing to die peacefully	Wishing to die without bothering others.
30 Anxieties for the future	While having managed to maintain my everyday lives to date, I am anxious about for how long I can continue to live in the same way.

Table 2. Results of the Delphi survey for occupational identity questionnaire.

Item	First Delphi		Second Delphi		Third Delphi	
No	Question item	I-CVI	Question item	I-CVI	Question item	I-CVI
1	Previously, I was doing things that I felt were fun.	100.0%	Previously, I was doing things that I felt were fun.	100.0%	Previously, I was doing things that I felt were fun.	100.0%
2	Previously, I was doing work that was rewarding.	92.0%	Previously, I felt a sense of reward in my vocational activities and my duties as a homemaker.	100.0%	Previously, I felt a rewarding sense of satisfaction about work and homemaking.	100.0%
3	I am satisfied with the work and fun things I did in the past.	64.0%	Deleted			
4	People around me thought well about the work and leisurely activities I did in the past.	76.0%	People around me thought well about the work and leisurely activities I did in the past.	95.8%	Deleted	
5	Previously, I lived without any particular discomfort.	76.0%	Previously, I lived without any particular discomfort.	79.2%	Previously, I lived with a well mind and body.	100.0%
6	Previously, I lived how I wanted to live.	92.0%	Previously, I lived how I wanted to live.	87.5%	Deleted	
7	Previously, I was very busy with work.	72.0%	Previously, I felt that I was helpful to others.	95.8%	Previously, I felt that I was helpful to others.	100.0%
8	Previously, I had a serious disease, but I managed to overcome it.	84.0%	Previously, I had some tough experiences, but I felt I overcame them well.	95.8%	Previously, I did well despite difficulties.	100.0%
9	I have had good human relations with other people.	96.0%	Previously, I did well with other people.	91.7%	Previously, I did well with other people.	100.0%
10	I try to understand the thoughts of other people that are different from mine.	80.0%	Although I have my own thoughts, I think I will also ask what other people are saying.	95.8%	Although I have my own thoughts, I think I will also ask other people's opinions.	95.8%
11	Although I do not have full control of my body right now, I am fine with how it is.	72.0%	Although I do not have full control of my body right now, I feel I am doing well with my body in spite of how it is.	87.5%	I cannot do as I did when I was young, but I think that I am doing well.	95.8%
12	There are times when I feel troubled, but I try not to think only about problems. I have some dissatisfactions,	88.0%	There are some hardships, but I try not to think about such things alone.		There are some hardships, but I try not to think about such things alone.	91.7%
13	but I try not to think only about troubles.	88.0%	Deleted			
14	Even if it is family members, I cannot bother or inconvenience them. I cannot bother or	68.0%	I think I am living by relying on the help of other people.	87.5%	I think someone helped me to live my life.	91.7%
15	inconvenience other people any further.	60.0%	Deleted			
16	There are things that I have to work hard on by myself.	96.0%	There are things that I have to work hard on by myself.	95.8%	Deleted	
17	There are things that I have to do for my own body.	92.0%	There is something I have to do to maintain my current life.	100.0%	There is something I have to do to maintain my current life.	100.0%
18	I think that I should do things for myself.	92.0%	I think that I should do things for myself.	100.0%	I think that I should do things for myself.	95.8%

Table 2. Results of the Delphi survey for occupational identity questionnaire. (Continued)

Item	First Delphi		Second Delphi		Third Delphi	
No	Question item	I-CVI	Question item	I-CVI	Question item	I-CVI
19	I have the joy of wanting to do it every day.	92.0%	I have fun in my life.	100.0%	I have fun in my life.	100.0%
20	I am satisfied because I have a family that supports me.	84.0%	I think that there is a person who supports me, and I am satisfied with that.	95.8%	I think that there is a person who understands my feelings and I am satisfied with that.	95.8%
21	I am satisfied with how my family has carried on what I had been doing.	76.0%	Deleted			
22	Due to deterioration of my physical condition, I cannot do things the way I used to.	88.0%	As I get older, I am not able to do things as I used to do when I was young.	91.7%	Deleted	
23	I cannot do things the way I want, which irritates me, but I manage.	88.0%	Deleted			
24	Due to deterioration of my physical condition, I can no longer do things that I was good at.	80.0%	Deleted			
25	Because I am unable to do things the way I want, I feel impatient when attending to my personal things.	76.0%	Deleted			
26	I like to respond to the expectations of others, but now, even that has become difficult.	92.0%	I want to respond to the expectations of those around me.	95.8%	Deleted	
27	I am worried about bothering my family, and it does not feel good.	60.0%	Deleted			
28	I disagree with my family, and we do not have a good relationship.	68.0%	Deleted			
29	My family does not let me do what I want to do.	92.0%	I think I can do more than what those around think of me.	95.8%	I think I can do better than others think.	91.7%
30	I've lost the person whom I relied upon, and it is now painful.	84.0%	Deleted			
31	My family is quick to do things I intended do by myself, which does not allow me to do it.	88.0%	Deleted			
32	I lost what I worked hard to create/build, and it is now painful.	88.0%	Deleted			
33	Things are different now compared to when I was healthy, and I am fed up with myself.	80.0%	Deleted			
34	I want somebody to help me with things that I have been doing until now.	88.0%	Deleted			

Table 2. Results of the Delphi survey for occupational identity questionnaire. (Continued)

Item			Second Delphi		Third Delphi	
No	Question item	I-CVI	Question item	I-CVI	Question item	I-CVI
35	Things are different from the time I was healthy, so I do not want to do things now that I used to do back then.	92.0%	I would like to challenge what I have never done before.	95.8%	I would like to challenge myself to do what I do not do now.	100.0%
36	There is nothing in particular that I want to do now.	92.0%	Deleted			
37	anything right now.	84.0%	I think it is good to have something to do.	91.7%	I think that it is better to have something to do.	91.7%
38	In every situation, I spend my time according to how I feel then.	84.0%	I live the way I want to.	91.7%	I think that I live as I expected I would.	95.8%
39	Due to deterioration in my condition, I am receiving long-term care.	68.0%	Deleted			
40	Due to deterioration in my condition, I am dealing with things in a different manner than when I was healthy.	88.0%	Deleted			
41	Nobody looks after me, so I am receiving long-term care services.	68.0%	Deleted			
42	I am trying to be creative with how I spend my day, bearing in mind my physical condition.	92.0%	Deleted			
43	I recognize that it is important to keep my body and mind from deteriorating.	84.0%	Deleted			
44	I think through a day's activities so that I can keep living in the house I am living in now.	84.0%	Deleted			
45	I am making efforts in activities that prevent my body and mind from getting worse.	88.0%	Deleted			
46	I want to continue to respond to the expectations from those around me, to help them in ways I can.	96.0%	I want to continue to respond to the expectations from those around me.	100.0%	From now on as well, I want to meet the expectations around me.	100.0%
47	I want to keep living while doing what I want to do and having fun.	96.0%	I want to live happily in the future.	95.8%	I want to live happily in the future.	100.0%
48	I want to continue to live without being dependent on other people.	80.0%	From now on, I want to do what I can do.	100.0%	From now on as well, I want to do what I can do.	100.0%
49	I want to do things that will make my family and friends happy.	96.0%	Deleted			
50	I am worried about how long I can continue to live this way.	88.0%	I am worried about whether I can continue to live this way.	91.7%	Deleted	