Print ISSN 1226-0134 Online ISSN 2671-4450
Korean Journal of Occupational Therapy, 34(2), 1-16 https://doi.org/10.14519/kjot.2026.34.2.01

# Development of the Korean Performance Assessment of Self-Care Skills

Hwang, Do-Yeon[*], Ph.D., O.T., Park, Jin-Hyuck[**], Ph.D., O.T., Kim, Soo-A[***], Ph.D., M.D., Park, Jemo[****], Ph.D., O.T., Lee, Seong-A[*****], Ph.D., O.T.

[*]Dept. of Occupational Therapy, Soonchunhyang University Hospital Cheonan, Occupational Therapist
[**]Dept. of Occupational Therapy, College of Medical Science, Soonchunhyang University, Assistant Professor
[***]Dept. of Physical Medicine & Rehabilitation, Soonchunhyang University Hospital Cheonan, Professor
[****]Dept. of Global Industry Convergence, Chunnam Techno University, Assistant Professor
[*****]Dept. of Occupational Therapy, College of Medical Science, Soonchunhyang University, Professor

## Abstract

**Objective :** This review of occupational therapy evaluation tools used in Korea highlights the lack of task performance assessments. This study aimed to develop the Korean Performance Assessment of Self-Care Skills (K-PASS) as a tool to evaluate functional mobility, self-care, and activities of daily living in patients with central nervous system (CNS) diseases.

**Methods :** The K-PASS was developed in two phases. Phase 1 involved translating the original scale into Korean, validating its appropriateness through an expert panel, assessing the comprehensibility of the translation, performing back-translation, and reviewing the back-translation for accuracy. Phase 2 focused on testing the validity and reliability of K-PASS.

**Results :** Several tasks were adapted for the Korean context. Content validity assessment yielded a scale-level content validity index (CVI) of 0.92, with item-level CVIs ranging from 0.80 to 1.00. Known-groups validity testing showed statistically significant differences between CNS disease patients and healthy adults ($p < 0.001$). Internal consistency reliability was excellent, with a Cronbach's alpha of 0.988.

**Conclusion :** The K-PASS was developed as a culturally adapted version, demonstrating strong validity and reliability for evaluating the performance of daily self-care tasks in patients with CNS diseases in clinical settings.

**Key words :** Assessment development, Client-centered, Performance skills, Performance-based, Self-care

ORCID: Hwang, Do-Yeon, https://orcid.org/0000-0002-2801-5664
Corresponding author: Lee, Seong-A (myanmy@sch.ac.kr/Dept. of Occupational Therapy, College of Medical Science, Soonchunhyang University)
Received 25 September 2025; Revised 30 October 2025; Accepted 5 November 2025
This paper was modified and developed at Soonchunhyang University, the Ph.D. dissertation of the first author. This study was supported by the Soonchunhyang University research fund.

# Ⅰ. Introduction

The neuronal interactions within the nervous system facilitate physiological functions (e.g., sustaining life and maintaining homeostasis) and higher-order cognitive functions, such as emotions, thoughts, language, perception, and learning (Carr & Shepherd, 2010; Lundy-Ekman, 2007). The central nervous system (CNS) diseases involve structural or functional damage to the brain and spinal cord (Pendleton & Schultz-Krohn, 2013). Neurological symptoms resulting from CNS damage include paralysis, loss of motor and sensory function, cognitive impairment, and dysphagia (Radomski & Trombly Latham, 2013), all of which negatively affect performance of basic and instrumental activities of daily living (ADLs) including functional mobility and self-care activities (Pendleton & Schultz-Krohn, 2013).

Recovery phases following CNS injury are typically categorized into acute (< 1 month), subacute (1-6 months), and chronic (> 6 months) stages (García-Rudolph et al., 2019). In Korea ('Korea' refers to 'Republic of Korea'), patients in large hospitals often need to transfer to other facilities due to the maximum length of hospital stay policy (Yang & Min, 2021), leading to repeated admissions and discharges, which imposes a significant financial burden on patients due to repeated tests and therapies (Choi, 2019). Functional recovery is most rapid during the first six months post-injury. Thus, it is crucial to initiate rehabilitation therapy, including occupational and physical therapy, in a timely manner. Appropriate use of functional evaluations can support this rehabilitation process, helping to expedite discharge to home and minimize unnecessary healthcare costs (Kim et al., 2009; Lee, 2017). Therefore, it is important to develop an assessment tool that can appropriately measure functional outcomes, including the performance of ADLs, for people with CNS injuries.

Client-centered and performance-based evaluations are essential for addressing challenges in performing ADLs and enhancing the quality of life for patients striving for reintegration into daily life and community participation (American Occupational Therapy Association, 2020; Christiansen et al., 2005; Kielhofner, 2007). Commonly used tools for evaluating task performance within the context of clients' backgrounds and environments include the Canadian Occupational Performance Measure (COPM), Assessment of Motor and Process Skills (AMPS), and ADL-focused Occupation-based Neurobehavioral Evaluation (A-ONE)(Árnadóttir, 2010; Fisher & Jones, 2011; Law et al., 1990). Despite their utility, these tools, developed in other countries, may not align well with Korean cultural contexts and can be difficult to implement within the limited evaluation time typically available in clinical settings. Furthermore, tools like the A-ONE and AMPS require significant time and financial investment to train evaluators, with the AMPS also necessitating specialized software for result interpretation. Additionally, COPM relies on interviews or self-reporting rather than direct observation, making them less suitable for assessing actual task performance levels.

The Performance Assessment of Self-care Skills (PASS) is a performance-based scale that evaluates the ability to perform functional mobility, self-care, and ADLs through observation, distinguished by its objectivity and reliability (Rogers et al., 2016). It is particularly characterized by its emphasis on the interaction between individuals and their

environments, a fundamental principle of occupational therapy (Wolf et al., 2019). Studies related to the PASS demonstrate its wide applicability (Bingham et al., 2018; Ciro et al., 2015; Eroğlu et al., 2020). Additionally, the PASS has been adapted to various cultural contexts, including Portuguese and Arabic versions, with studies testing its reliability and applicability (Ferreira et al., 2021; Hamed et al., 2012).

A review of occupational therapy evaluation tools used in Korea highlights a lack of task performance assessments, such as PASS, compared to the prevalence of tools for assessing motor, perceptual, and cognitive functions (Song, 2012; Yoo et al., 2006), suggesting a shortage of instruments designed to comprehensively evaluate daily living skills in Korean medical settings. Consequently, there is an urgent need for a culturally adapted Korean version of the PASS. This study aimed to develop and validate the Korean Performance Assessment of Self-Care Skills (K-PASS). The primary objective was to establish the reliability and validity of the K-PASS for evaluating functional mobility, self-care, and ADL performance in Korean patients with CNS diseases. The ultimate goal was to provide a culturally adapted, client-centered, and performance-based assessment tool to support clinical interventions effectively.

# II. Methods

## 1. Research Instrument

The PASS (Version 4.1), developed by Rogers et al. (2016), is a scale designed to assess functional mobility, self-care, and ADLs in patients with CNS diseases in clinical settings. The assessment involves direct observation of patients' functional behaviors. The PASS comprises 26 tasks divided into four domains: functional mobility (FM, five tasks), basic ADL (BADL, three tasks), instrumental ADL with a Cognitive emphasis (IADL-C, 14 tasks), and instrumental ADL with a Physical emphasis (IADL-P, four tasks). Each task is scored uniformly on a 4-point scale (0-3) based on predefined criteria, with scores reflecting independence, safety, and adequacy. Higher scores indicate better performance levels. The construct validity of the PASS was established using exploratory factor analysis (Chisholm, 2005). The inter-rater reliability of the PASS ranges from 0.90 to 0.93, and its test-retest reliability ranges from 0.82 to 0.92 (Holm & Rogers, 2007).

## 2. Research Procedure and Participants

Prior to developing the K-PASS, approval was obtained from the original co-authors, Margo B. Holm and Denise Chisholm, to translate and adapt the PASS in alignment with the specific cultural and societal context of Korea. The study was conducted in accordance with the Declaration of Helsinki, and ethical approval was obtained from the Institutional Review Board of Soonchunhyang University (Approval Number: 1040875-202301-SB-003).

The development of the K-PASS involved a two-phase process. In Phase 1, the PASS was adapted into Korean through a multi-step process: translating the PASS into Korean, validating its appropriateness with an expert panel, testing the comprehensibility of the translation, performing a back-translation, and validating the back-translation. Phase 2 focused

on evaluating the validity and reliability of the finalized K-PASS. Content validity was assessed through surveys completed by occupational therapists, who evaluated the appropriateness of the K-PASS scoring criteria, task conditions/instructions, and scoring of each task (hereinafter referred to as "item"). Known-groups validity and internal consistency reliability were tested by administering the K-PASS to study participants (Figure 1).

### 1) The PASS Adaptation Process

The researcher, a supervising professor, and a professional translator with a background in health sciences and experience living in Canada, conducted the translation of the PASS into Korean. The translation's appropriateness was evaluated by an expert panel consisting of two occupational therapy professors, three occupational therapists with at least five years of clinical experience, and one bilingual occupational therapist proficient in both Korean and English. None of the panel members had prior experience with the PASS. The evaluation comprehensively assessed the translated items for semantic accuracy in conveying the original English content, alignment with the intended evaluative concepts, and cultural suitability within the Korean context.

Following the expert panel's evaluation of translation adequacy, 10 healthcare professionals including occupational therapists, physical therapists, and nurses working in healthcare facilities with at least five years of clinical experience, but no prior familiarity with the

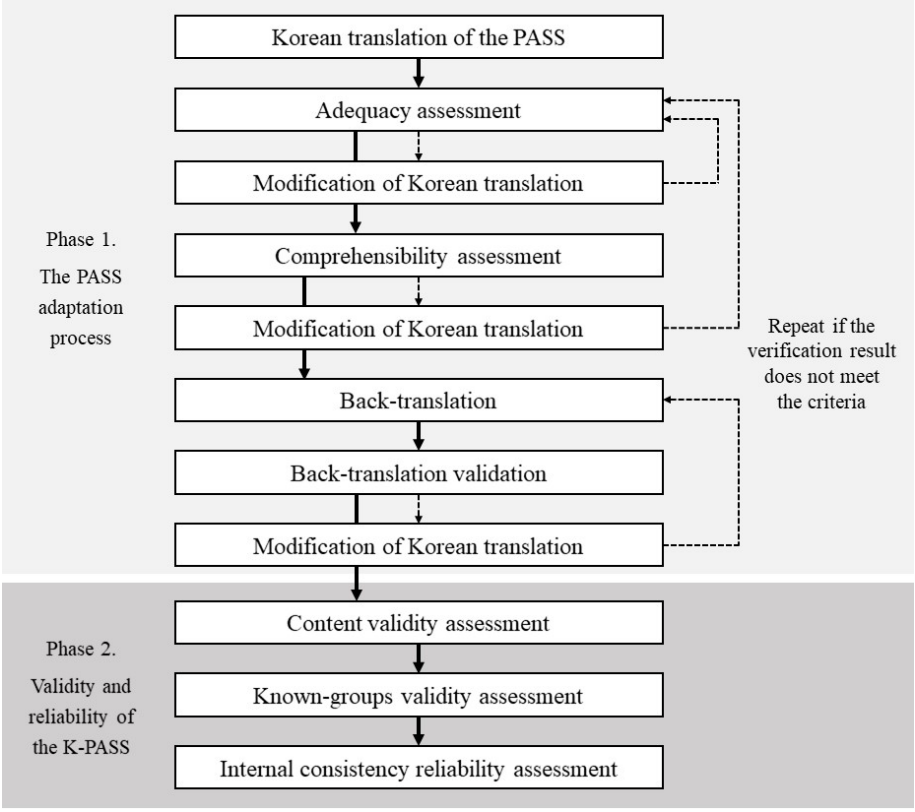


Figure 1. Flow Diagram of Research Procedure
K-PASS: Korean Performance Assessment of Self-Care Skills, PASS: Performance Assessment of Self-Care Skills.

PASS, assessed the clarity of the translated items. These professionals evaluated whether the translated items were clear, understandable, and free of ambiguity, using a process similar to that employed by the expert panel.

After assessing the comprehensibility of the translation, the Korean version of the PASS was back-translated into English by a professional translator with no prior exposure to the PASS. The back-translation was then reviewed by a bilingual evaluator who had not previously encountered the PASS, resided in the United States, and had completed a doctoral program in occupational therapy at a U.S. university. The evaluator examined the structural and semantic alignment between the original PASS and the back-translated version.

Throughout the validation processes, all items were evaluated using a 4-point Likert scale (4 = very adequate or very comprehensible or very similar, 3 = adequate or comprehensible or similar, 2 = inadequate or incomprehensible or dissimilar, 1 = very inadequate or very incomprehensible or very dissimilar), with those scoring 2 or below flagged for revision. Unrestricted feedback was collected to identify reasons for low scores and provide suggestions for improvement. The results obtained from the expert panel's assessments of translation adequacy and comprehensibility were converted into validation scores based on the 4-point Likert scale. Following methodologies proposed in previous studies (Chae et al., 2008; Jung et al., 2015; Park et al., 2017), items with an average validation score below 0.80 or individual item scores of 2 or below were iteratively revised until all the necessary criteria required for validation were met.

### 2) Validity and Reliability Testing of the K-PASS

Once the back-translation validation was completed, the content validity of the finalized K-PASS was evaluated by occupational therapists working in healthcare facilities, all with at least five years of clinical experience and no prior exposure to the PASS or the K-PASS. The number of participants was set at 10, following Lynn's recommendation that 5-10 experts are sufficient for content validity determination (Lynn, 1986). A 4-point Likert scale (4 = very appropriate, 3 = appropriate, 2 = inappropriate, 1 = very inappropriate) was used to assess whether the K-PASS items were conceptually aligned with the intended evaluation goals. Items rated 2 or below were supplemented with freely provided feedback, and the content validity index (CVI) was calculated as the proportion of items rated 3 or 4. A CVI cutoff score of 0.78, based on the criteria established by Lee (2021a) and Polit et al. (2007), was applied.

Known-groups validity testing for the K-PASS was conducted with 30 CNS disease patients and 30 healthy adults (Table 1). Participants diagnosed with CNS diseases by a specialist were assigned to the CNS disease group, while individuals with no history of CNS diseases were placed in the healthy adult group. Based on the central limit theorem, a total sample size of 60 (30 participants per group) was determined to enhance the likelihood of a normal distribution (Lee, 2000). Participants who met the inclusion criteria, were capable of communication, and provided informed consent were enrolled in the study after receiving detailed explanations about its purpose, procedures, and methods. The K-PASS was administered to all participants, and the mean summary scores across the 26 items were compared between the

Table 1. Subjects' General Characteristics (N = 60)

| Classification | | *n* (%) | |
|---|---|---|---|
| | | CNS disease patients (*n* = 30) | Healthy adults (*n* = 30) |
| Sex | Male | 13 (43.3) | 11 (36.7) |
| | Female | 17 (56.7) | 19 (63.3) |
| Age (year) | 〈 40 | 4 (13.3) | 9 (30.0) |
| | 40-49 | 7 (23.3) | 7 (23.3) |
| | 50-59 | 8 (26.7) | 9 (30.0) |
| | ≥ 60 | 11 (36.7) | 5 (16.7) |
| Diagnosis | Stroke | 14 (46.7) | - |
| | Parkinson's disease | 5 (16.7) | |
| | Alzheimer's disease | 6 (20.0) | |
| | Etc. | 5 (16.7) | |
| Period of onset (month) | 〈 1 | 8 (26.7) | |
| | 1-5 | 6 (20.0) | |
| | ≥ 6 | 16 (53.3) | |

The sum of the percentages does not equal 100% because of rounding.
-: Not applicable, CNS: Central nervous system.

CNS disease group and the healthy adult group.

We computed Cronbach's alpha using the K-PASS scores from the CNS disease group to examine the internal consistency reliability, which indicates whether the items of domains the K-PASS measure the same construct. A Cronbach's alpha of 0.70 or higher was considered acceptable for the study (Lee, 2021b).

### 3. Data Analysis

The data collected in this study were analyzed using the Statistical Package for Social Science version 20.0 (IBM Corporation, Armonk, New York, U.S., 2011).

During Phase 1, the results of the expert panel's adequacy and comprehensibility assessments were summarized using descriptive statistics. Following the methodology of Han and Kum (2017), the 4-point Likert scale scores were converted into validation scores (4 = 1.00, 3 = 0.67, 2 = 0.33, 1 = 0.00), and the arithmetic mean was calculated for each item.

In Phase 2, content validity was assessed by calculating the CVI, following the method proposed by Lynn (1986), as the proportion of responses rated 3 or 4 for each item. For known-groups validity, an independent t-test was performed to compare the K-PASS scores between the CNS patient and healthy adult groups. Internal consistency reliability was evaluated by calculating Cronbach's alpha coefficients through reliability analysis based on the CNS disease group's scores. Statistical significance for all analyses was set at a $p$-value of 0.05.

## Ⅲ. Results

### 1. Translation of the PASS and Adequacy Evaluation

An expert panel conducted a comprehensive evaluation of the Korean translation of the PASS,

comparing it with the original to assess the semantic equivalence, conceptual alignment, and cultural appropriateness of the items. The results of the translation accuracy and adequacy evaluation are as follows.

All items except for the conditions/instructions and scoring for items #9, #10, #11, #23, and #24 met the validation threshold of 0.80. These items required comprehensive adaptation to better align with Korean cultural contexts. Discussions held alongside the validation round focused on revising these items. Table 2 provides revised items.

## 2. Comprehensibility Assessment

After the expert panel's evaluation of translation adequacy, the comprehensibility of the translated PASS items was assessed by healthcare professionals working in healthcare facilities. The evaluation aimed to determine whether the item formulations were clearly understandable and free of ambiguity. Results showed that all items met the predetermined average validation threshold of 0.80.

## 3. Back-Translation Validation Process

Following the comprehensibility assessment, the translated PASS was back-translated into English. A bilingual evaluator proficient in both English and Korean, with no prior exposure to the PASS, compared the original PASS with the back-translated version to evaluate structural and semantic similarity. The evaluation revealed that all items scored 3 (similar) or 4 (very similar) on a 4-point scale. Since all items scored 3 or higher, meeting the validation threshold set in this study, no content revisions were necessary.

## 4. Content Validity Testing of the K-PASS

For the content validation of the K-PASS, occupational therapists assessed the alignment of the K-PASS items with the intended evaluation goals through a survey. The CVI was calculated from their responses, with all items scoring above the established cutoff of 0.78. The scale-level CVI (S-CVI) for the K-PASS was 0.92, and item-level CVI (I-CVI) ranged from 0.80 to 1.00.

Table 2. Comparison of the PASS and the K-PASS

| PASS (Task and content) | | K-PASS (Task and content) |
|---|---|---|
| Task #9. Bill paying by check:<br>The process of paying utility bills by checks | → | Task #9. Utility bill management:<br>The process of organizing utility bills and planning for payment of utility bills |
| Task #10. Checkbook balancing:<br>The process of writing checks on a checkbook | → | Task #10. Account book balancing:<br>The process of recording a account book through receipts |
| Task #11. Mailing bills:<br>The process of preparing utility bills and checks to be mailed | → | Task #11. Paying utility bills:<br>The process of preparing deposit slips (or using mobile banking) to pay utility bills |
| Task #23. Oven use:<br>The process of making muffin | → | Task #23. Use of electronic rice cooker:<br>The process of making rice |
| Task #24. Stovetop use:<br>The process of making soup | → | Task #24. Use of stovetop (induction):<br>The process of making stir-fried kimchi |

K-PASS: Korean Performance Assessment of Self-Care Skills, PASS: Performance Assessment of Self-Care Skills.

## 5. Known-Groups Validity Assessment of the K-PASS

Known-groups validity for the K-PASS was assessed by comparing the K-PASS scores of 30 CNS disease patients and 30 healthy adults, focusing on the average summary scores across the 26 items. Statistically significant differences were observed between the two groups in independence ($t$ = -23.296, $p$ < 0.001), safety ($t$ = -15.686, $p$ < 0.001), and adequacy ($t$ = -16.898, $p$ < 0.001). The CNS disease group scored significantly lower across all three criteria compared to the healthy adult group (Table 3).

## 6. Internal Consistency Reliability Assessment of the K-PASS

Cronbach's alpha coefficients ($\alpha$-value) were calculated to assess the internal consistency reliability of the K-PASS. The overall Cronbach's alpha was 0.988. For each domain, the Cronbach's alpha coefficients ranged from 0.711 to 0.874 for FM, 0.724 to 0.832 for BADL, 0.707 to 0.846 for IADL-C, and 0.712 to 0.831 for IADL-P. The deletion of any single item within a domain did not result in an increase in Cronbach's alpha compared to the subtotal for the domain (FM = 0.960, BADL = 0.933, IADL-C = 0.977, IADL-P = 0.947). These results confirm that no item detracted from the overall reliability of the K-PASS (Table 4).

# Ⅳ. Discussion

This study developed the K-PASS by adapting the original PASS to align with Korean cultural

Table 3. Verification of Known-Groups Validity of the K-PASS (N = 60)

| Classification | Score ($M \pm SD$) | | $t$ | $p$-value |
|---|---|---|---|---|
| | CNS disease patients ($n$ = 30) | Healthy adults ($n$ = 30) | | |
| Independence | 1.55 ± 0.31 | 2.87 ± 0.05 | -23.296*** | < 0.001 |
| Safety | 1.18 ± 0.46 | 2.58 ± 0.17 | -15.686*** | < 0.001 |
| Adequacy | 1.16 ± 0.45 | 2.61 ± 0.15 | -16.898*** | < 0.001 |

CNS: Central nervous system, K-PASS: Korean Performance Assessment of Self-Care Skills, *M*: Mean, *SD*: Standard deviation.
***$p$ < 0.001.

Table 4. Verification of Internal Consistency Reliability of the K-PASS (N = 30)

| Classification | | | | Cronbach's alpha value | Value if task deleted |
|---|---|---|---|---|---|
| FM | #1. | Bed mobility | I | 0.828 | 0.957 |
| | | | S | 0.792 | 0.957 |
| | | | A | 0.837 | 0.956 |
| | #2. | Stair use | I | 0.829 | 0.956 |
| | | | S | 0.808 | 0.956 |
| | | | A | 0.829 | 0.956 |

Table 4. Verification of Internal Consistency Reliability of the K-PASS (Continued)

| Classification | | | | Cronbach's alpha value | Value if task deleted |
|---|---|---|---|---|---|
| FM | #3. | Toilet mobility | I | 0.780 | 0.958 |
| | | | S | 0.734 | 0.958 |
| | | | A | 0.805 | 0.957 |
| | #5. | Bathtub/shower mobility | I | 0.811 | 0.957 |
| | | | S | 0.874 | 0.955 |
| | | | A | 0.720 | 0.958 |
| | #20. | Indoor walking | I | 0.727 | 0.958 |
| | | | S | 0.711 | 0.959 |
| | | | A | 0.736 | 0.959 |
| | | Sub-total | | 0.960 | - |
| BADL | #4. | Oral hygiene | I | 0.724 | 0.930 |
| | | | S | 0.764 | 0.926 |
| | | | A | 0.760 | 0.925 |
| | #6. | Trimming toenails | I | 0.776 | 0.926 |
| | | | S | 0.792 | 0.923 |
| | | | A | 0.832 | 0.921 |
| | #7. | Dressing | I | 0.760 | 0.928 |
| | | | S | 0.773 | 0.924 |
| | | | A | 0.741 | 0.926 |
| | | Sub-total | | 0.933 | - |
| IADL-C | #8. | Shopping | I | 0.735 | 0.976 |
| | | | A | 0.747 | 0.976 |
| | #9. | Utility bill management | I | 0.775 | 0.977 |
| | | | A | 0.749 | 0.976 |
| | #10. | Account book balancing | I | 0.791 | 0.976 |
| | | | A | 0.733 | 0.976 |
| | #11. | Paying utility bills | I | 0.787 | 0.976 |
| | | | A | 0.719 | 0.976 |
| | #13. | Telephone use | I | 0.761 | 0.976 |
| | | | A | 0.715 | 0.977 |
| | #14. | Medication management | I | 0.793 | 0.976 |
| | | | S | 0.707 | 0.977 |
| | | | A | 0.734 | 0.976 |
| | #16. | Obtaining critical information-radio (auditory) | I | 0.745 | 0.976 |
| | | | A | 0.760 | 0.976 |
| | #17. | Obtaining critical information-newspaper (visual) | I | 0.742 | 0.976 |
| | | | A | 0.734 | 0.977 |
| | #18. | Small device (flashlight) repair | I | 0.819 | 0.976 |
| | | | S | 0.745 | 0.976 |
| | | | A | 0.709 | 0.977 |

Table 4. Verification of Internal Consistency Reliability of the K-PASS (Continued)

| Classification | | | | Cronbach's alpha value | Value if task deleted |
|---|---|---|---|---|---|
| IADL-C | #21. | Home safety awareness | I | 0.821 | 0.976 |
| | | | A | 0.767 | 0.976 |
| | #22. | Playing bingo | I | 0.769 | 0.976 |
| | | | A | 0.806 | 0.976 |
| | #23. | Use of electronic rice cooker | I | 0.806 | 0.976 |
| | | | S | 0.760 | 0.976 |
| | | | A | 0.846 | 0.976 |
| | #24. | Use of stovetop (induction) | I | 0.775 | 0.976 |
| | | | S | 0.768 | 0.976 |
| | | | A | 0.775 | 0.976 |
| | #25. | Use of sharp utensils | I | 0.765 | 0.976 |
| | | | S | 0.734 | 0.976 |
| | | | A | 0.794 | 0.976 |
| | Sub-total | | | 0.977 | - |
| IADL-P | #12. | Taking out garbage & key use | I | 0.823 | 0.942 |
| | | | S | 0.712 | 0.944 |
| | | | A | 0.756 | 0.943 |
| | #15. | Changing bed linen | I | 0.756 | 0.945 |
| | | | S | 0.756 | 0.943 |
| | | | A | 0.739 | 0.943 |
| | #19. | Sweeping floor | I | 0.831 | 0.941 |
| | | | S | 0.752 | 0.943 |
| | | | A | 0.828 | 0.940 |
| | #26. | Cleanup after meal preparation | I | 0.804 | 0.944 |
| | | | S | 0.804 | 0.941 |
| | | | A | 0.748 | 0.943 |
| | Sub-total | | | 0.947 | - |
| Total | | | | 0.988 | - |

-: Not applicable, A: Adequacy, BADL: Basic activities of daily living, FM: Functional mobility, I: Independence, IADL-C: Instrumental activities of daily living with a Cognitive emphasis, IADL-P: Instrumental activities of daily living with a Physical emphasis, K-PASS: Korean Performance Assessment of Self-Care Skills, S: Safety.

contexts and subsequently validated its reliability and validity.

An analysis of time allocation among Koreans for daily activities revealed that household budgeting, financial planning, and banking are integral components of the IADL domain (Hong & Lee, 2010). Koreans dedicate approximately one-third of their daily living time to household management tasks such as budgeting, planning, and accessing financial or public services (Statistics Korea, 2020). Furthermore, with rice comprising 87.3% of the annual per capita grain consumption in Korea and kimchi-based dishes being highly popular (Gallup Korea, 2019; Statistics Korea,

2024), adaptations of the PASS items were tailored to incorporate these cultural aspects. The original evaluative concepts of financial management and meal preparation in the PASS were preserved, ensuring that the modified items were both culturally relevant and grounded in empirical evidence.

During the adaptation process of the PASS, the results from the translation adequacy, comprehensibility, and back-translation evaluations, conducted by an expert panel, showed that all items achieved the validation threshold of 0.80 or higher or a score of 3 or higher. This confirms the adequacy of the finalized K-PASS (Chae et al., 2008; Jung et al., 2015; Park et al., 2017). The 26 items of the K-PASS demonstrated strong content validity, as indicated by an S-CVI of 0.92 and I-CVI scores ranging from 0.80 to 1.00, confirming their alignment with the intended evaluation goals. These results validated the adequacy of the K-PASS items for assessing functional mobility, self-care, and ADLs in CNS disease patients within clinical settings, effectively reflecting the intended evaluative concepts (Polit & Beck, 2006; Polit et al., 2007).

The known-groups validity testing results for the K-PASS demonstrated that scores for CNS disease patients were significantly lower than those for healthy adults. This finding confirms that the K-PASS effectively distinguishes between the two groups and provides accurate and appropriate measurements (Polit & Yang, 2015). The results of internal consistency reliability testing indicated that the all K-PASS items achieved a Cronbach's alpha of 0.70 or higher. These findings confirm the homogeneity of the K-PASS items and demonstrate that the tasks within each domain consistently measure the same underlying concept (Lee, 2021b).

In localized PASS versions across the globe, adjustments have been made to align with cultural contexts. For example, the Arabic version replaced meal preparation tasks with dishes representative of local cuisine (Hamed et al., 2012). Similarly, in the Portuguese version, tasks such as 'Bill paying by check,' 'Checkbook balancing,' and 'Mailing bills' were adapted to involve paying bills through ATMs in line with regional practices. Validity and reliability were subsequently established for the localized version (Ferreira et al., 2021). These adaptations are analogous to the modifications implemented for the K-PASS, which also demonstrated high validity and reliability.

The significance of this study lies in the development of the K-PASS, a client-centered, performance-based evaluation tool designed for comprehensive or selective task assessment tailored to individual needs. Its design ensures efficient application in clinical settings with limited evaluation time. The K-PASS enables precise performance assessment through direct observation within standardized categories, clearly identifying task performance levels. Adapted to reflect Korean culture, it is well-suited for Korean clinical settings. Furthermore, its validity and reliability were rigorously established through extensive psychometric testing.

This study had limitations. The sample size for known-groups validity and internal consistency reliability testing was relatively small, and participant characteristics (e.g., sex, age, diagnosis, onset timing) were not distributed evenly. Moreover, test-retest reliability (to ensure consistency across repeated measurements) and inter-rater reliability (to assess agreement among evaluators) were not examined during the development process. Future research should address these limitations by including

diverse patient groups and larger sample sizes to further validate the tool's reliability and validity. Moreover, the ongoing refinement of the K-PASS should incorporate activities commonly performed in Korea and include gender- and age-specific activities to maintain its relevance in a changing societal context.

## V. Conclusion

This study developed and validated the K-PASS, a Korean adaptation of the original PASS, designed to assess functional mobility, self-care abilities, and ADLs in individuals with CNS diseases in clinical settings. The development process included translation, expert panel assessments of adequacy and comprehensibility, back-translation, and its subsequent review. Reliability and validity testing provided robust evidence of the K-PASS's content validity, known-groups validity, and internal consistency reliability. These results demonstrate that the K-PASS is a reliable and valid tool for evaluating daily living skills in individuals with CNS diseases. The K-PASS is anticipated to serve as an effective assessment tool and provide a foundation for creating client-centered, performance-based interventions in clinical practice.

## References


American Occupational Therapy Association. (2020). Occupational therapy practice framework: Domain and process (4th ed.). *American Journal of Occupational Therapy, 74*(Supplement 2), 7412410010p1-7412410010p87. https://doi.org/10.5014/ajot.2020.74S2001

Árnadóttir, G. (2010). *Measuring the impact of body functions on occupational performance: Validation of the ADL-focused Occupation-based Neurobehavioral Evaluation (A-ONE)* (Doctoral dissertation). Umea University.

Bingham, K. S., Kumar, S., Dawson, D. R., Mulsant, B. H., & Flint, A. J. (2018). A systematic review of the measurement of function in late-life depression. *American Journal of Geriatric Psychiatry, 26*(1), 54-72. https://doi.org/10.1016/j.jagp.2017.08.011

Carr, J. H., & Shepherd, R. B. (2010). *Neurological rehabilitation: Optimizing motor performance* (2nd ed.). Churchill Livingstone.

Chae, S. Y., Cho, S. J., Kwon, H. C., Kong, J. Y., & Chang, M. Y. (2008). A study on a Korean-translated version of the Psychosocial Impact of Assistive Devices Scale (PIADS). *Korean Journal of Occupational Therapy, 16*(3), 71-85.

Chisholm, D. (2005). *Disability in older adults with depression* (Doctoral dissertation). University of Pittsburgh.

Choi, J. J. (2019, April 19). *Disabled people who have become rehabilitated refugees*. Hankookilbo. https://www.hankookilbo.com/News/Read/201904181673316446

Christiansen, C., Baum, C. M., & Bass-Haugen, J. (2005). *Occupational therapy: Performance, participation and well-being* (3rd ed.). Slack.

Ciro, C. A., Anderson, M. P., Hershey, L. A., Prodan, C. I., & Holm, M. B. (2015). Instrumental activities of daily living performance and role satisfaction in people with and without mild cognitive impairment: A pilot project. *American Journal of Occupational Therapy, 69*(3), 6903270020p1-6903270020p10. https://doi.org/10.5014/ajot.2014.015198

Eroğlu, M., Karapolat, H., Atamaz, F., Tanıgör, G., & Kirazlı, Y. (2020). Occupational therapy

assessment and treatment approach in patients with subacute and chronic stroke: A single-blind, prospective, randomized clinical trial. *Turkish Journal of Physical Medicine and Rehabilitation, 66*(3), 316-328. https://doi.org/10.5606/tftrd.2020.4321

Ferreira, P. L., Simões, A. L., Dourado, M., Holm, M. B., & Rogers, J. C. (2021). The Portuguese performance assessment of self-care skills measure: Validity and reliability. *OTJR: Occupational Therapy Journal of Research, 41*(4), 299-308. https://doi.org/10.1177/15394492211021309

Fisher, A. G., & Jones, K. B. (2011). *Assessment of motor and process skills: Volume 1: Development, standardization, and administration manual* (7th rev. ed.). Three Star Press.

Gallup Korea. (2019). *40 things Koreans like (Food)*. https://www.gallup.co.kr/gallupdb/reportContent.asp?seqNo=1048

García-Rudolph, A., Sánchez-Pinsach, D., Salleras, E. O., & Tormos, J. M. (2019). Subacute stroke physical rehabilitation evidence in activities of daily living outcomes: A systematic review of meta-analyses of randomized controlled trials. *Medicine, 98*(8), e14501. https://doi.org/10.1097/MD.0000000000014501

Hamed, R., Tariah, H. S. A., Jarrar, M. B., & Holm, M. B. (2012). Development of the Arabic version of the Performance Assessment of Self-Care Skills (A-PASS). *Jordan Medical Journal, 46*(3), 221-228.

Han, H., & Kum, H. (2017). An empirical study on comparability of satisfaction measurement tools: Focusing on 4, 5 and 11 Likert type items for public service satisfaction survey. *Survey Research, 18*(1), 69-96. https://doi.org/10.20997/SR.18.1.3

Holm, M. B., & Rogers, J. C. (2007). *The Performance Assessment of Self-Care Skills (PASS)*. In B. J. Hemphill-Pearson (Ed.), *Assessments in occupational therapy mental health: An integrative approach* (2nd ed., pp. 101-110). Slack Incorporated.

Hong, S. P., & Lee, J. Y. (2010). Time use of areas of occupation according to the periods of life in Koreans. *Korean Journal of Occupational Therapy, 18*(1), 95-106.

Jung, H. Y., Jung, M. Y., Yoo, E. Y., & Kang, D. H. (2015). Development of the Korean version of Health Enhancement Lifestyle Profile (K-HELP) and its reliability. *Korean Journal of Occupational Therapy, 23*(2), 31-43. https://doi.org/10.14519/jksot.2015.23.2.03

Kielhofner, G. (2007). *Model of human occupation: Theory and application* (4th ed.). Lippincott Williams & Wilkins.

Kim, Y. H., Han, T. R., Jung, H. Y., Chun, M. H., Lee, J., Kim, D. Y., Paik, N. J., Park, S. W., Kim, M. W., Pyun, S. B., Yoo, W. K., Shin, Y. I., Kim, I. S., Han, S. J., Kim, D. Y., Ohn, S. H., Chang, W. H., Lee, K. H., Kwon, S. U., & Yoon, B. W. (2009). Clinical practice guideline for stroke rehabilitation in Korea. *Brain & Neurorehabilitation, 2*(1), 1-38. https://doi.org/10.12786/bn.2009.2.1.1

Law, M., Baptiste, S., McColl, M., Opzoomer, A., Polatajko, H., & Pollock, N. (1990). The Canadian occupational performance measure: An outcome measure for occupational therapy. *Canadian Journal of Occupational Therapy, 57*(2), 82-87. https://doi.org/10.1177/000841749005700207

Lee, E. H. (2021a). Psychometric property of an instrument 1: Content validity. *Korean Journal of Women Health Nursing, 27*(1), 10-13. https://doi.org/10.4069/kjwhn.2021.01.31

Lee, E. H. (2021b). Psychometric properties of an instrument 2: Structural validity, internal

consistency, and cross-cultural validity/measurement invariance. *Korean Journal of Women Health Nursing, 27*(2), 69-74. https://doi.org/10.4069/kjwhn.2021.05.18

Lee, S. H. (2017). *Stroke revisited: Diagnosis and treatment of ischemic stroke*. Springer Singapore. https://doi.org/10.1007/978-981-10-1424-6

Lee, Y. A. (2000). *A study on the limit theorem* (Master's thesis). Yonsei University.

Lundy-Ekman, L. (2007). *Neuroscience: Fundamentals for rehabilitation* (3rd ed.). Elsevier Saunders.

Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research, 35*(6), 382-386. https://doi.org/10.1097/00006199-198611000-00017

Park, S. K., Kim, H., Yoo, D. H., & Cha, T. H. (2017). Reliability and validity of Korean-translated version of Home Safety Self-Assessment Tool (K-HSSAT). *Korean Journal of Occupational Therapy, 25*(3), 117-130. https://doi.org/10.14519/jksot.2017.25.3.09

Pendleton, H. M., & Schultz-Krohn, W. (2013). *Pedretti's occupational therapy: Practice skills for physical dysfunction* (7th ed.). Elsevier.

Polit, D. F., & Beck, C. T. (2006). The content validity index: Are you sure you know what's being reported? Critique and recommendations. *Research in Nursing & Health, 29*(5), 489-497. https://doi.org/10.1002/nur.20147

Polit, D. F., & Yang, F. M. (2015). *Measurement and the measurement of change*. Wolters Kluwer.

Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health, 30*(4), 459-467. https://doi.org/10.1002/nur.20199

Radomski, M. V., & Trombly Latham, C. A. (2013). *Occupational therapy for physical dysfunction* (7th ed.). Lippincott Williams & Wilkins.

Rogers, J. C., Holm, M. B., & Chisholm, D. (2016). *Performance Assessment of Self-Care Skills (PASS) materials*. University of Pittsburgh. https://www.shrs.pitt.edu/performance-assessment-of-self-care-skills-pass-materials

Song, C. S. (2012). Current trends and future-oriented view of clinical measurement used by neurological occupational therapist. *Journal of the Korea Academia-Industrial Cooperation Society, 13*(11), 5229-5237. https://doi.org/10.5762/KAIS.2012.13.11.5229

Statistics Korea. (2020). *Time use survey in 2019*. https://kostat.go.kr/board.es?mid=a10301060400&bid=220&act=view&list_no=384161

Statistics Korea. (2024). *Food grain consumption survey in 2023*. https://kostat.go.kr/board.es?mid=a10301010000&bid=230&act=view&list_no=429221

Wolf, T. J., Edwards, D. F., & Giles, G. M. (2019). *Functional cognition and occupational therapy: A practical approach to treating individuals with cognitive loss*. AOTA Press.

Yang, G. Y., & Min, H. S. (2021). The effects of an integrated management program on physical function, cognitive function, and depression in patients with subacute stroke. *Journal of Korean Critical Care Nursing, 14*(1), 50-62. https://doi.org/10.34250/jkccn.2021.14.1.50

Yoo, E. Y., Jung, M. Y., Park, S. Y., & Choi, E. H. (2006). Current trends of occupational therapy assessment tool by Korean occupational therapist. *Korean Journal of Occupational Therapy, 14*(3), 27-37.

## Appendix

Table A1. K-PASS Score Record Sheet

**한국형 자기관리 수행기술 평가(K-PASS)**

| 이름 | | | 평가일 | | | | |
|---|---|---|---|---|---|---|---|
| 과제 | 일상생활활동 | | 점수 | | | 미평가 | 비고 |
| | | | 독립성 | 안전성 | 적절성 | | |
| #1 | FM: | 침상 이동 | | | | | |
| #2 | FM: | 계단 이동 | | | | | |
| #3 | FM: | 화장실 이동 | | | | | |
| #4 | BADL: | 구강 위생 | | | | | |
| #5 | FM: | 욕조/샤워실 이동 | | | | | |
| #6 | BADL: | 발톱 다듬기 | | | | | |
| #7 | BADL: | 옷 입기 | | | | | |
| #8 | IADL-C: | 쇼핑(금전 관리) | | | | | |
| #9 | IADL-C: | 공과금 확인(금전 관리) | | | | | |
| #10 | IADL-C: | 가계부 정리(금전 관리) | | | | | |
| #11 | IADL-C: | 공과금 납부(금전 관리) | | | | | |
| #12 | IADL-P: | 쓰레기 버리기, 열쇠 사용(힘든 집안일) | | | | | |
| #13 | IADL-C: | 전화기 사용 | | | | | |
| #14 | IADL-C: | 의약품 관리 | | | | | |
| #15 | IADL-P: | 침구 교체(힘든 집안일) | | | | | |
| #16 | IADL-C: | 중요한 정보 얻기-라디오(청각) | | | | | |
| #17 | IADL-C: | 중요한 정보 얻기-신문(시각) | | | | | |
| #18 | IADL-C: | 작은 장비(손전등) 수리(가정 유지관리) | | | | | |
| #19 | IADL-P: | 바닥 쓸기(가정 유지관리) | | | | | |
| #20 | FM: | 실내 걷기 | | | | | |
| #21 | IADL-C: | 가정 안전 인식 | | | | | |
| #22 | IADL-C: | 빙고 게임 | | | | | |
| #23 | IADL-C: | 전기밥솥 사용(식사 준비) | | | | | |
| #24 | IADL-C: | 가스레인지(인덕션) 사용(식사 준비) | | | | | |
| #25 | IADL-C: | 날카로운 도구 사용(식사 준비) | | | | | |
| #26 | IADL-P: | 식사 준비 후 정리(쉬운 집안일) | | | | | |
| 합계(A) | | | | | | ※ 범위<br>합계: 0~78점<br>수행 과제 수: 1~26개<br>평균 점수: 0~3점 | |
| 수행 과제 수(B) | | | | | | | |
| 평균 점수(A)÷(B)<br>※ 소수점 첫째 자리까지만 기록(소수점 둘째 자리부터 버림) | | | | | | | |

BADL: Basic activities of daily living (기본적 일상생활활동), FM: Functional mobility (기능적 이동), IADL-C: Instrumental activities of daily living with a Cognitive emphasis (인지 중점의 수단적 일상생활활동), IADL-P: Instrumental activities of daily living with a Physical emphasis (신체 중점의 수단적 일상생활활동), K-PASS: Korean Performance Assessment of Self-Care Skills (한국형 자기관리 수행기술 평가).

**국문초록**

# 한국형 자기관리 수행기술 평가(K-PASS) 개발

황도연*, 박진혁**, 김수아***, 박제모****, 이성아*****

*순천향대학교 부속 천안병원 작업치료실 작업치료사, **순천향대학교 의료과학대학 작업치료학과 조교수,
***순천향대학교 부속 천안병원 재활의학과 교수, ****전남과학대학교 글로벌산업융합과 조교수,
*****순천향대학교 의료과학대학 작업치료학과 교수

**목적 :** 국내에서 사용되고 있는 작업치료 평가 도구를 살펴본 결과, 과제 수행을 평가하는 도구가 부족하였다. 본 연구는 중추신경계(central nervous system; CNS) 질환 환자의 기능적 이동, 자기관리, 일상생활활동 수행 수준을 평가할 수 있는 한국형 자기관리 수행기술 평가(Korean Performance Assessment of Self-Care Skills; K-PASS)를 개발하고자 하였다.

**연구방법 :** K-PASS는 두 단계에 걸쳐 개발되었다. 1단계에서는 원척도를 한국어로 번역하고, 전문가 위원회를 통해 적합성을 검증하였으며, 번역본의 이해도를 평가하고, 역번역을 수행한 후 역번역본을 검토하였다. 2단계에서는 K-PASS의 타당도와 신뢰도를 검증하였다.

**결과 :** 여러 과제가 한국 문화에 맞게 수정되었다. K-PASS의 내용 타당도 검증 결과 척도-수준 내용 타당도 지수(content validity index; CVI)는 0.92였으며, 문항-수준 CVI는 0.80에서 1.00의 분포를 보였다. 집단 타당도 검증에서는 CNS 질환 환자군과 건강한 성인군 간에 통계학적으로 유의한 차이가 나타났다($p < 0.001$). 내적 일관성 신뢰도는 높은 수준으로, Cronbach's alpha 값이 0.988이었다.

**결론 :** K-PASS는 문화적으로 적합한 도구로 개발되었으며, 임상 환경에서 CNS 질환 환자의 일상 내 자기관리 과제 수행을 평가하는 데 있어 높은 타당도와 신뢰도를 보였다.

**주제어 :** 수행기술, 자기관리, 작업수행 기반, 클라이언트 중심, 평가 개발