

Japanese Adaptation of the Stroke and Aphasia Quality of Life Scale-39 (SAQOL-39): Comparative Study among Different Types of Aphasia

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Background: We have developed a Japanese version of the Stroke and Aphasia Quality of Life Scale-39 (SAQOL-39), designated as SAQOL-39-J, and used psychometric methods to examine its acceptability and reliability. **Methods:** The acceptability and reliability of SAQOL-39-J, which was developed from the English version using a standard translation and back-translation method, were examined in 54 aphasia patients using standard psychometric methods. The acceptability and reliability of SAQOL-39-J were then compared among patients with different types of aphasia. **Results:** SAQOL-39-J showed good acceptability, internal consistency (Cronbach's α score = .90), and test-retest reliability (intraclass correlation coefficient = .97). Broca's aphasia patients showed the lowest total scores and communication scores on SAQOL-39-J. **Conclusions:** The Japanese version of SAQOL-39, SAQOL-39-J, provides acceptable and reliable data in Japanese stroke patients with aphasia. Among different types of aphasia, Broca's aphasia patients had the lowest total and communication SAQOL-39-J scores. Further studies are needed to assess the effectiveness of health care interventions on health-related quality of life in this population. **Key Words:** Aphasia—quality of life—stroke—outcome.
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Stroke is a leading cause of disability in adults¹ and the most prevalent cardiovascular disease in Asia.² In addition, the various comorbidities and lifestyle changes associated with stroke can place substantial burdens on stroke

survivors.^{3,4} It is important to evaluate health-related quality of life (HRQOL) for assessment of psychological and physiological well-being as well as the impacts of health care interventions. Disease-specific measures can be used to quantify more clinically relevant domains than generic health status measures and are often more sensitive to changes in clinical condition.⁵ Hilari et al adapted the Stroke Specific Quality of Life⁶ for use in aphasia patients, and thus produced the Stroke and Aphasia Quality of Life Scale-39 (SAQOL-39),⁷ which showed good test-retest reliability, internal consistency, and construct validity. This tool has been translated and validated in many languages,⁸⁻¹⁰ but a Japanese version has yet to be reported. In addition, the type of aphasia may have an effect on HRQOL, but this has yet to be confirmed.

The present study was performed to validate the Japanese version of SAQOL-39, designated as SAQOL-39-J, and compare the scores among different types of aphasia.

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Materials and Methods

Development of SAQOL-39 Japanese Version

The SAQOL-39 tool consists of 39 items covering 4 subdomains: physical, psychosocial, communication, and energy.⁷ The subdomain and overall mean scores range from 1 to 5, with higher scores indicative of better HRQOL.

Permission to adapt the original version of SAQOL-39 to Japanese language was obtained from the corresponding author of the original study. Translation and adaptation of the original scale to Japanese were carried out by the translation and back-translation method to maintain conceptual equivalence of the terms used.¹¹

The original instrument was translated into Japanese by a speech language pathologist and a cognitive psychologist, both of whom were native speakers of Japanese. Back-translation to English was performed by a professional translator who was not familiar with the original document. The back-translation and the original were then compared by the speech language pathologist and cognitive psychologist, and any discrepancies led to changes to the reconciled translation. This translation was then back-translated into English by a professional translator and the reconciled back-translation was sent to the instrument developer for review. Any further comments were again discussed with the investigator until a satisfactory solution was found.

The original version permits the use of supplemental illustrations to enhance a participant's understanding. In the present study, we also created original illustrations taking into consideration Japanese culture and daily living to improve acceptability and reliability of this questionnaire for Japanese subjects (see [Appendix, Online Supplement 1 and 2](#)).

Psychometric Evaluation

Fifty-four participants were recruited from 4 settings, that is, 3 speech and language therapy service providers, and 1 not-for-profit organization for people with aphasia. The inclusion criteria were as follows: aphasia resulting from stroke and no known history of severe cognitive decline or mental health problems.

The study protocol conformed to the ethical guidelines of the 1975 Declaration of Helsinki and was approved by the Ethics Committee of Kitasato University. All patients provided informed, written consent to participation in the study.

Procedures and Measures

Participants were interviewed at the speech and language therapy service providers' sites or at the not-for-profit organization group meetings. Clinical and demographic data were recorded. Raven's Colored Pro-

gressive Matrices¹² were administered to evaluate nonverbal cognitive function. The Standard Language Test of Aphasia, which is the standardized test battery used to evaluate aphasic patients,¹³ was used to screen for aphasia. Aphasia type was determined based on speech fluency, comprehension, and repetition performance on language tests. Test-retest reliability data were collected within a period of 2-14 days from the participants at the first recruitment site who agreed to have the SAQOL-39-J administered twice.

Statistical Analysis

Continuous variables are expressed as the means $\pm$ standard deviation or median (interquartile range). Categorical variables are expressed as numbers and percentages. Acceptability was evaluated in terms of missing responses, floor and ceiling effects, and skewness. Internal consistency was assessed by Cronbach's α , and test-retest reliability was evaluated with the intraclass correlation coefficient (ICC).

After obtaining the results of acceptability and reliability of SAQOL-39-J, we compared total and 4 subdomain scores of SAQOL-39-J between patients with Broca's, Wernicke's, and other types of aphasia. SAQOL-39-J results were compared by analysis of variance, and the effect sizes were calculated using η^2 . Statistical analyses were carried out with SPSS 22.0 (IBM Corporation, New York, NY). In all analyses, *P* value less than .05 was taken to indicate statistical significance.

Table 1. Patient characteristics

Variable	
No. of patients	54
Age, y	66.4 $\pm$ 10.9
Male, n (%)	35 (64.8)
Stroke type, n (%)	
Ischemic	32 (59.3)
Hemorrhagic	22 (40.7)
Time since stroke, y	2.1 (.6-5.8)
Years of education	12.4 $\pm$ 3.5
Aphasia type, n (%)	
Broca's	23 (42.6)
Wernicke's	16 (29.6)
Anomic	8 (14.8)
Conduction	3 (5.5)
Transcortical mixed	2 (3.7)
Transcortical motor	1 (1.8)
Transcortical sensory	1 (1.8)
SLTA	169 (128-190)
RCPM	27 (21-31)

Abbreviations: RCPM, Raven's Colored Progressive Matrices; SLTA, Standard Language Test of Aphasia.

Values are expressed as mean $\pm$ standard deviation or median (interquartile range).

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