

Applicability of the Korean Version of the Oxford Cognitive Screen in Stroke Patient

Eunyoung Cho, Ph.D.¹, Demeyere, N, Ph.D.², Sungwon Choi, Ph.D.³, Hongseok Baek, MD¹, MinYoung Kim, MD, Ph.D.¹

¹Department of Rehabilitation Medicine, CHA Bundang Medical Center, CHA University School of Medicine, Seongnam 13496, Korea

²Oxford Cognitive Neuropsychology Centre, University of Oxford, United Kingdom

³Department of Psychology, Duksung Women's University, 33 Samyang-ro 144-gil, Dobong-gu, Seoul Korea



Introduction

- The Korean version of The Oxford Cognitive Screen (K-OCS) is a specialized tool for detecting post-stroke cognitive impairments in domains of language, attention, memory, praxis, executive function and number.
- This tool is suitable for patients with typical post-stroke symptoms such as aphasia, neglect, and visual field deficits with short administration time.
- The purpose of this study was to verify the clinical utility of K-OCS in screening post-stroke cognitive impairments.

Subjects and Methods

- Forty-one stroke patients participated in this study. The stroke patients who visited the study hospital and agreed to participate were enrolled after receiving permission from the Institutional Review Board between November 2020 and April 2022.
- To demonstrate usability of K-OCS, current classic screening tools, Korean-Mini Mental State Examination (K-MMSE) and Korean version of Montreal Cognitive Assessment (K-MoCA) were used for comparison analysis.
- Firstly, accessibility to stroke patients was assessed by completion rate of each test and the results were compared.
- Secondly, sensitivity to detect cognitive dysfunction was assessed by analyzing K-OCS results from normal K-MMSE or K-MoCA score acquired patients.

Table 1. Characteristics of the study participating stroke patients

Characteristics		N=41
Age	<50	8 (19.5)
	50 – 59	7 (17.5)
	>59	26 (63.4)
Gender	Male	28 (68.3)
	Female	13 (31.7)
Education (years)	≤6	4 (9.8)
	7 – 12	14 (34.2)
	>12	23 (56)
Etiology	Hemorrhagic	21 (51.2)
	Ischemic	20 (48.8)
Time post-onset (month)	<3	13 (31.7)
	3 – 12	6 (14.6)
	>12	22 (53.7)
Lesion lateralization	Unilateral left hemisphere	25 (61)
	Unilateral right hemisphere	14 (34)
	Bilateral/Cerebellum	2 (5)

Acknowledgement

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Results

- The rate of completion and reasons for incompleteness of K-MMSE, K-MoCA and K-OCS is presented in Fig 1. The failure rates of completing K-MMSE and K-MoCA were higher than it of K-OCS. This result demonstrates specific post-stroke symptoms affected their performance on the tasks and K-OCS enabled appropriate cognitive assessment with higher accessibility.
- The participants who were graded normal in K-MMSE (n=25), 85% (n=21) revealed impaired cognition in K-OCS test. Also, among the participants who were graded normal in K-MoCA (n=14), 71% (n=10) revealed impaired cognition in K-OCS test (Fig 2.). The results indicate significant limitation of screening ability on cognitive impairment of K-MMSE and K-MoCA and possible usability of K-OCS as a specialized tool for stroke patients.

Figure 1. Incidence of impairment in K-OCS, K-MMSE and K-MoCA as a function of NIHSS severity (mild = 1–4, moderate = 5–15, severe = 16–20). Incidence of impairment on the K-OCS was significantly higher than on the K-MMSE and K-MoCA in mild, moderate NIHSS severity group (P<.001).

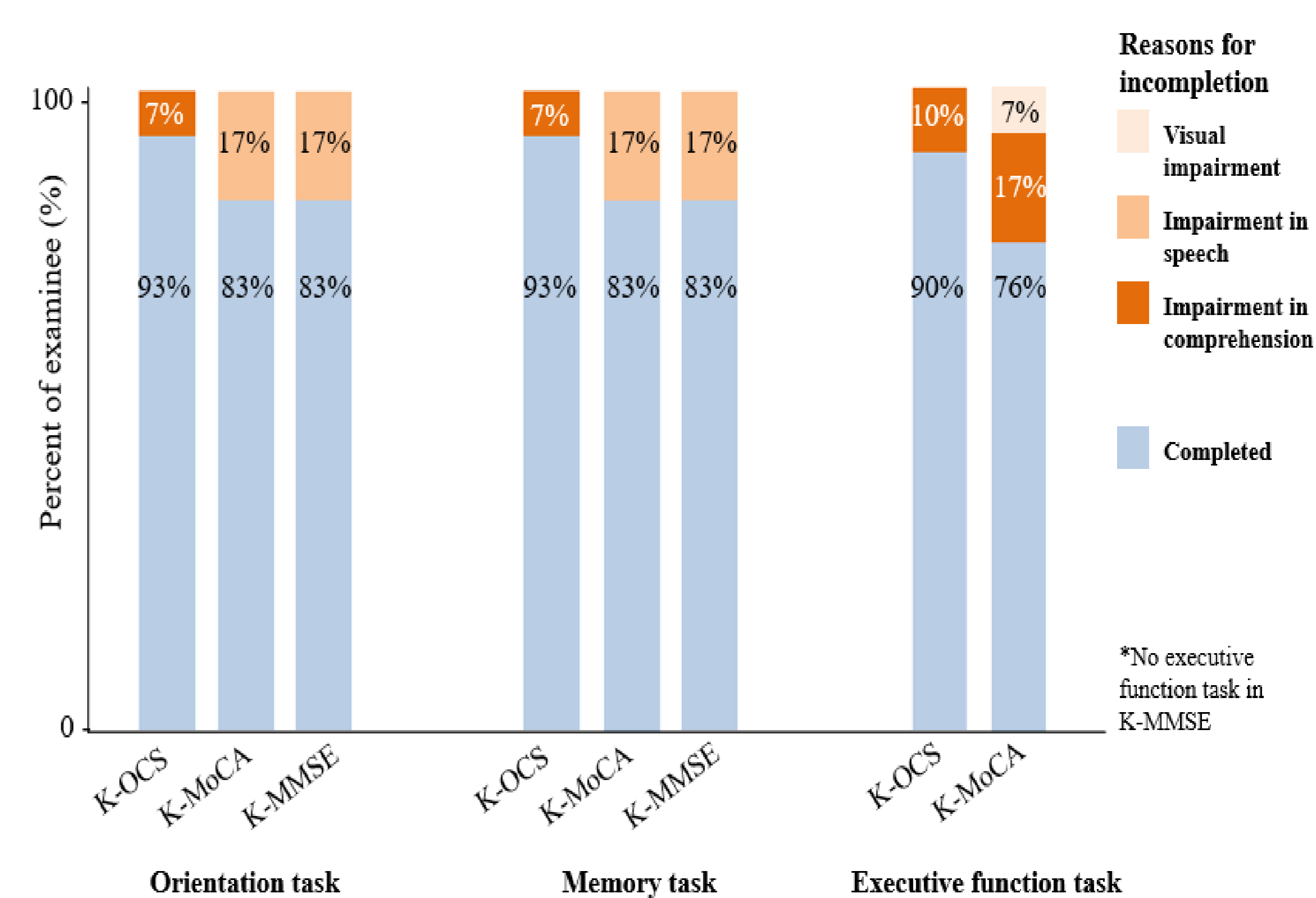
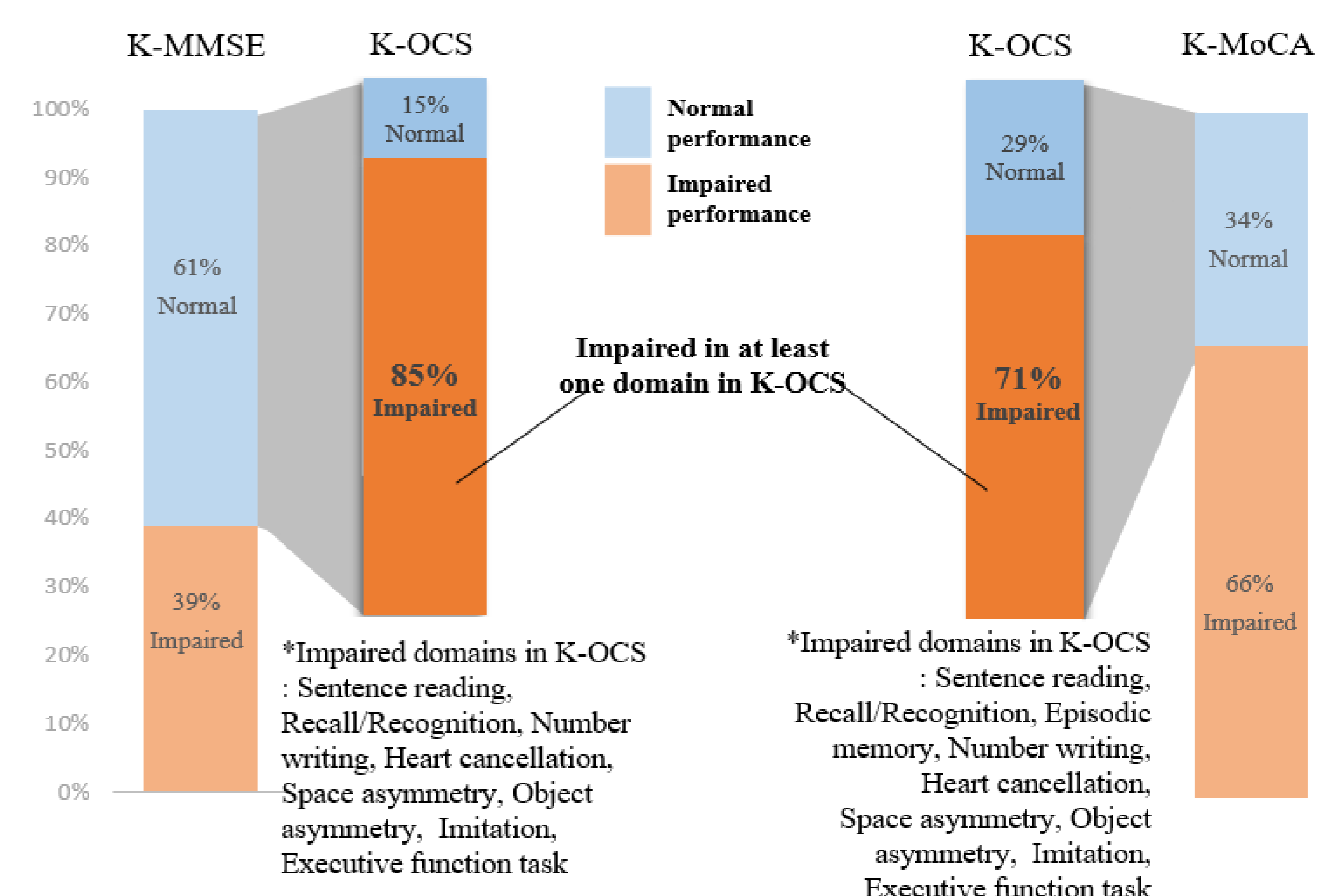


Figure 2. Percentage of the number of K-OCS domain suggesting impairments for each of hemisphere (bilateral N=2, left N=25, right N=14). The bilateral hemisphere group showed the most diverse cognitive impairment and followed by the left hemisphere and right hemisphere.



Conclusion

This study verified advisable applicability of K-OCS for stroke patients by revealing higher test completion rate and by higher detective rate of cognitive dysfunction compared to the conventional screening tests which have been used so far.