Effects of cognitive rehabilitation for outpatients with mild cognitive impairment

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Introduction

Cognitive rehabilitation aims to enable patients to achieve their optimal level of well- being.

However, there is no evidence on the efficacy of cognitive rehabilitation to improve cognitive function in daily living of the patients with mild Alzheimer’ disease or vascular dementia.

Meanwhile, Kaneko et al. reported that cognitive rehabilitation, especially an activation of the frontal lobe function, showed beneficial effect for maintenance of cognitive function in outpatients with mild cognitive impairment (MCI).

Objectives

The purpose of this study is to evaluate the efficacy of cognitive rehabilitation for outpatients with mild cognitive impairment (MCI).

Participants

Sixteen elderly outpatients with MCI were randomly assigned to rehabilitation group (n = 8; mean age = 75.3 years, 66 ~ 87) and control group (n = 8; mean age =78.9 years, 63 ~ 93).

Patients of rehabilitation group had scores on the Hasegawa's dementia scale-revised (HDS-R, maximum best point is 30) of 18.1±4.6. The three patients received donepezil.

The control group had HDS-R scores of 17.5±2.4.The four patients received donepezil. The control group was added no cognitive rehabilitation program for 16 ~43 months.

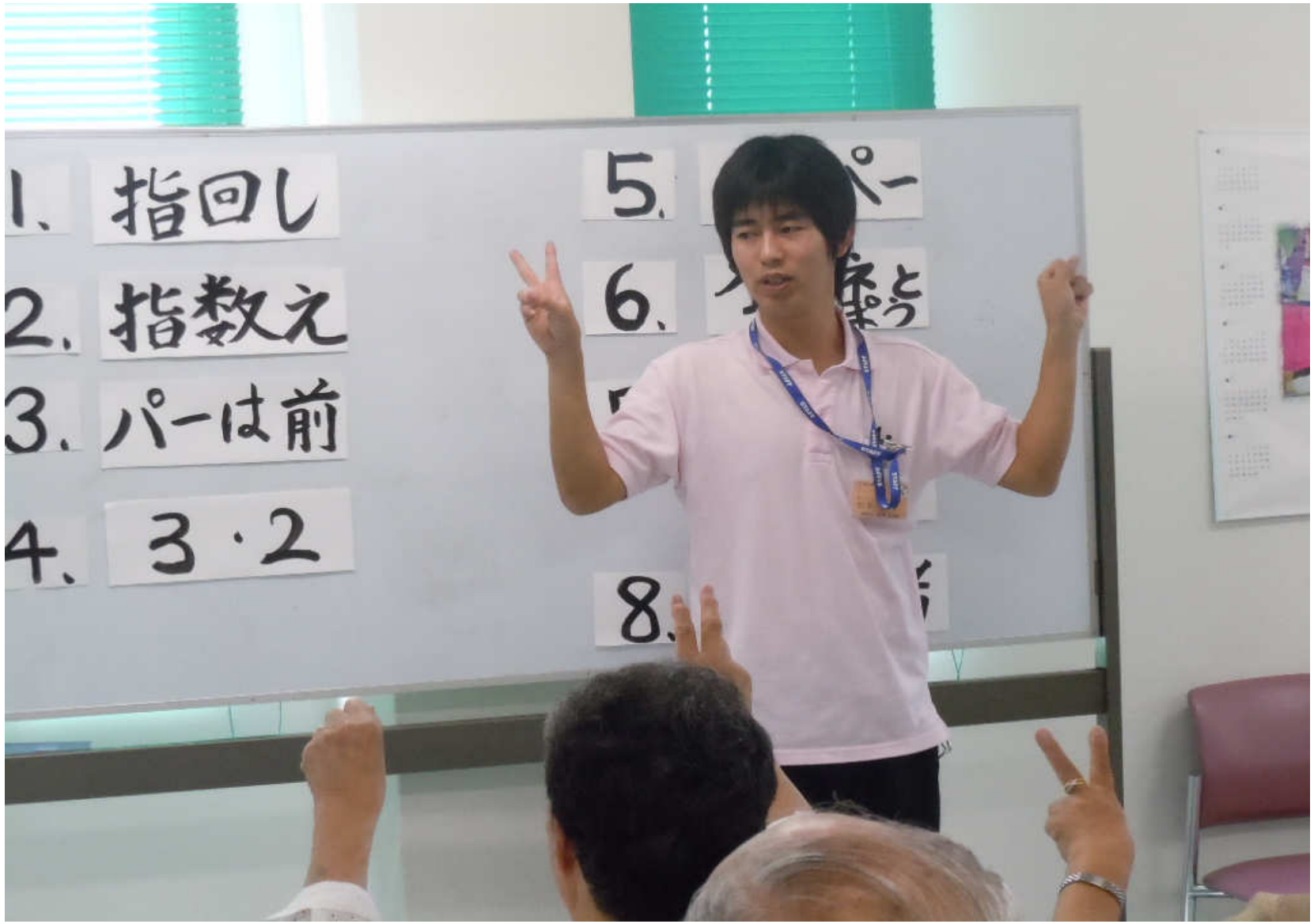
Methods

The rehabilitation group was treated with cognitive rehabilitation, such as exercise of finger, words findings, the spot the difference puzzle, and a Japanese KARUTA card game under the instruction of OT for 240 min/day, 1 or 2 days/week, for 25~37 months.

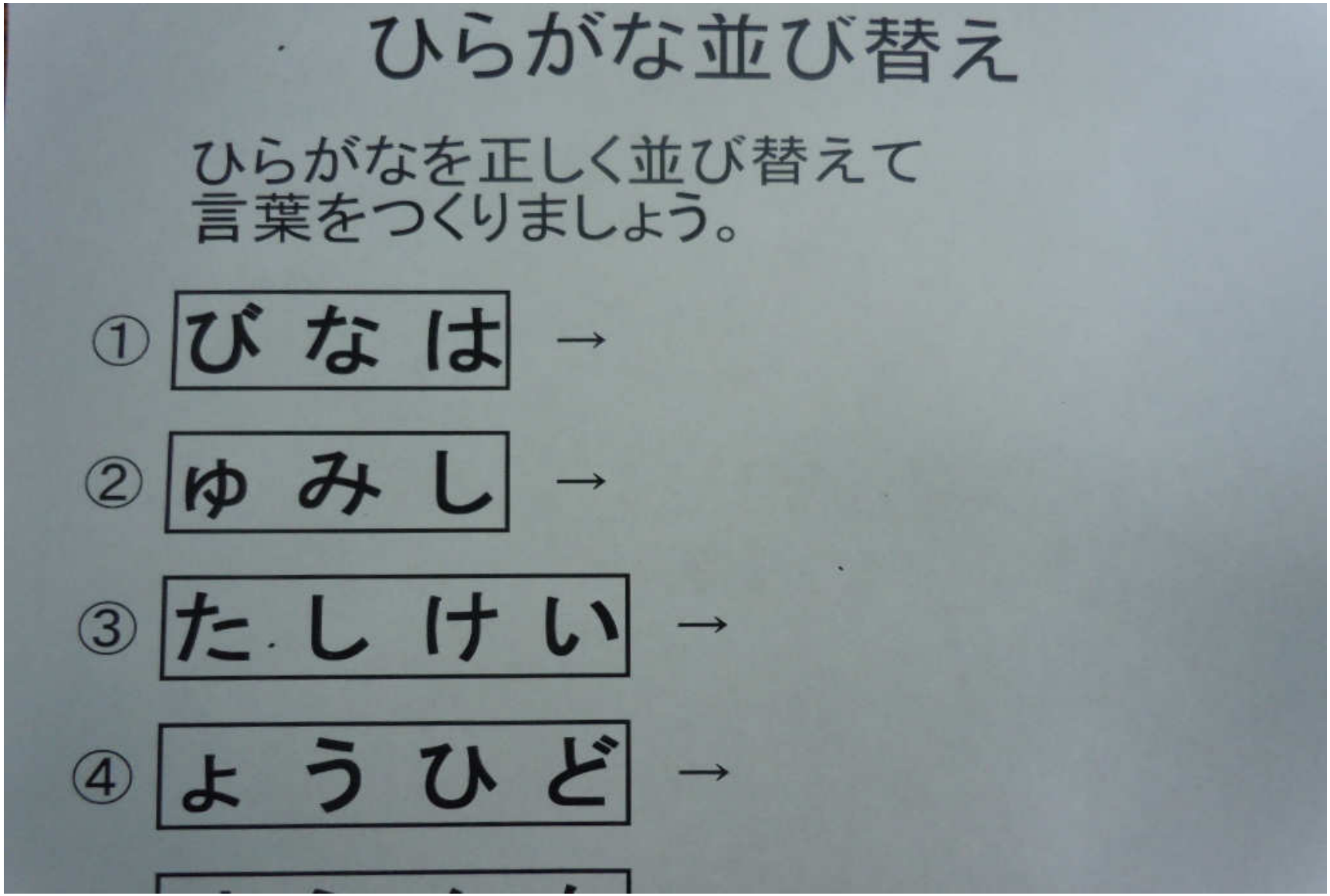
The change of HDS-R score before and after treatment was assessed.

Statistical analysis was performed using Student t test.

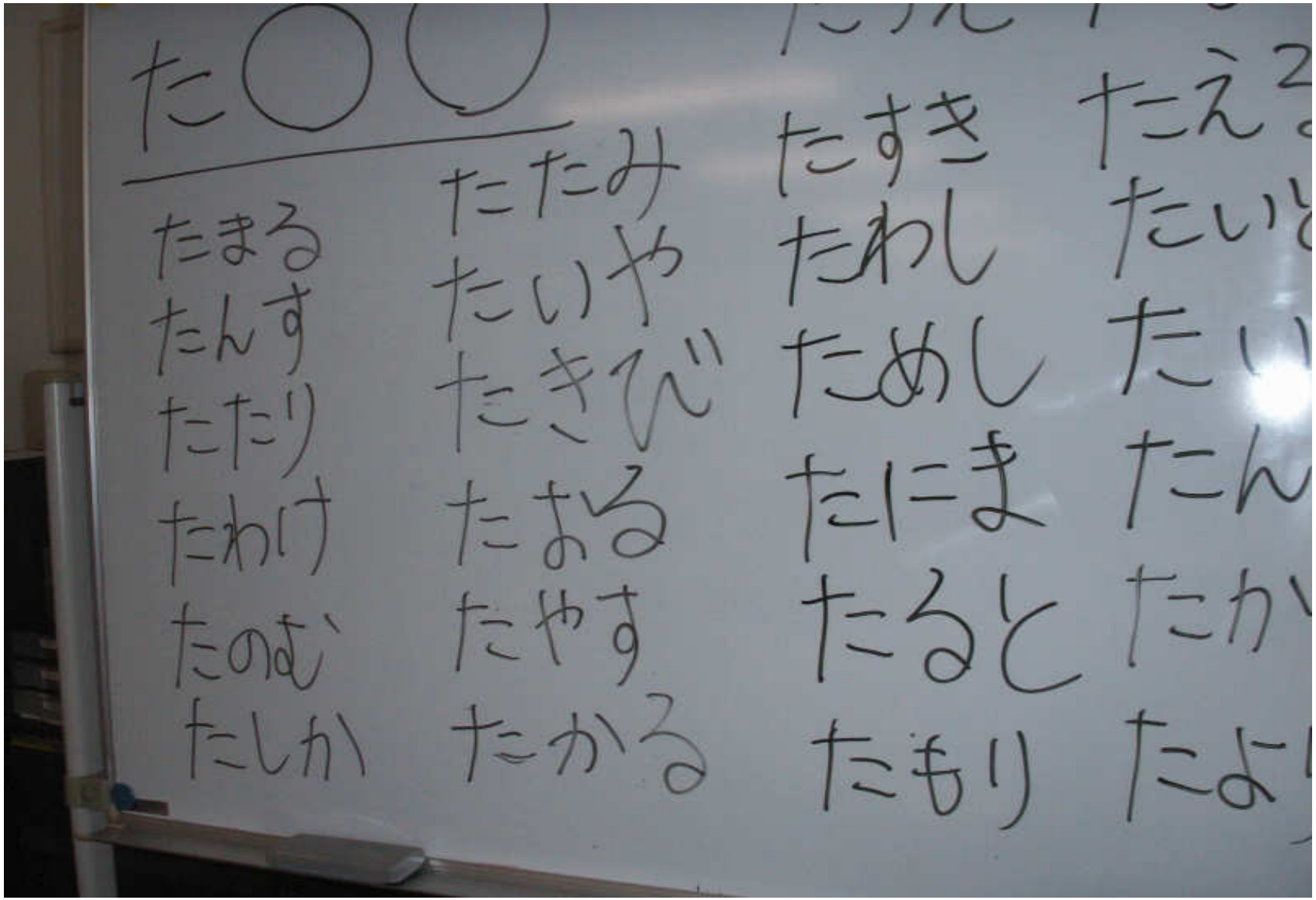
Exercise of fingers under the instruction of OT.



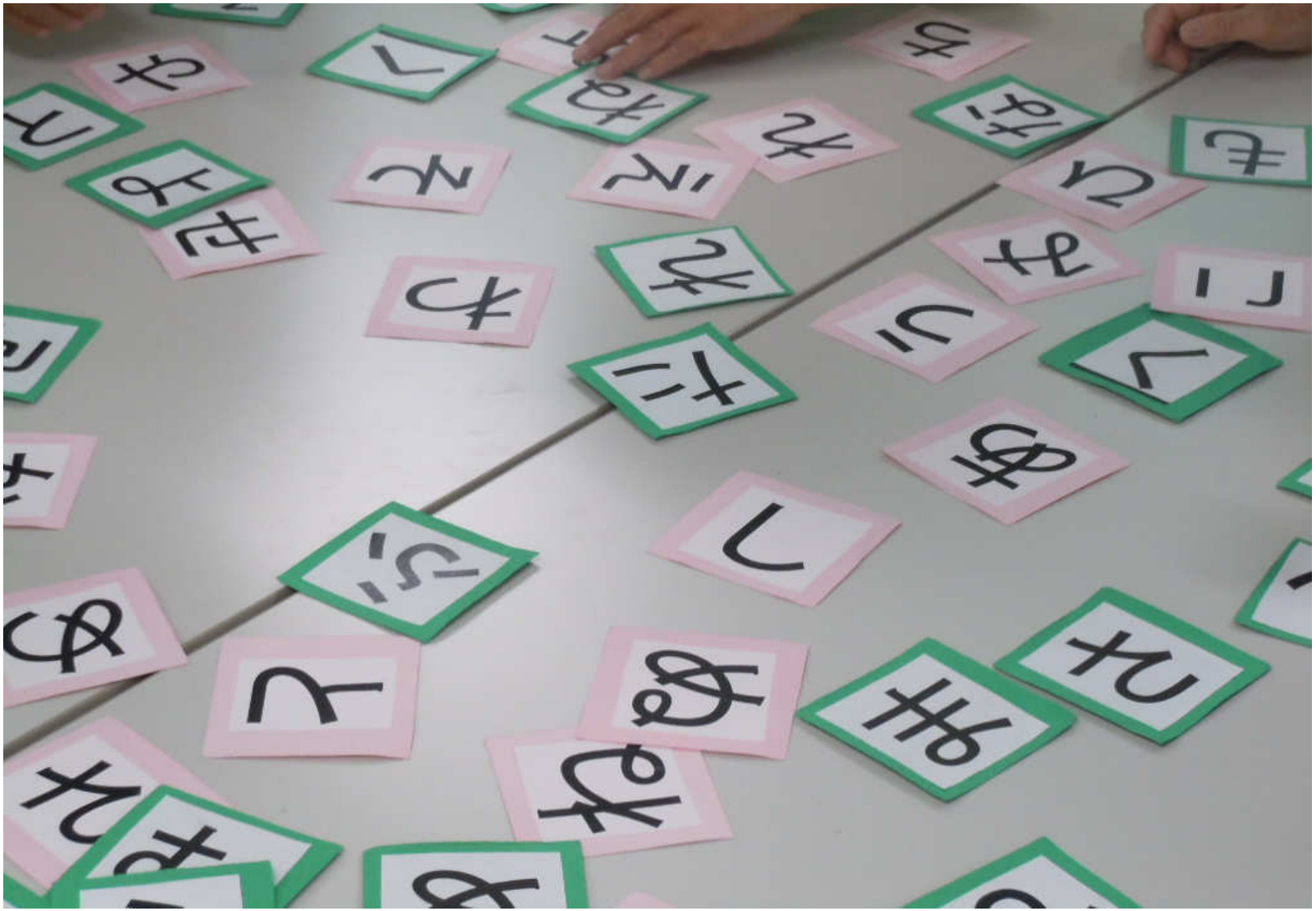
Create correct words by exchanging letters



The words finding game that start with same first letter and using just three letters



Create a lot of words using proper letter cards



Profile of the rehabilitation group

	diagnosis	age	sex	HDS−R at first	decline point	observation period (month)	donepezil
①	AD	late 80s	male	17	−5	25	○
②	AD	early 80s	female	21	−2	37	○
③	VD	late 60s	male	17	−2	37	
④	AD	early 80s	female	15	2	27	○
⑤	AD	early 70s	female	18	4	37	
⑥	AD	early 70s	female	10	−6	23	
⑦	VD	early 80s	male	22	3	34	
⑧	AD	early 80s	male	25	9	37	

Profile of the control group

	diagnosis	age	sex	HDS−R at first	decline point	observation period (month)	donepezil
①	FTD	early 90s	female	15	4	21	
②	AD	early 80s	male	22	12	27	○
③	AD	early 90s	female	18	7	43	
④	AD	early 80s	female	14	14	30	
⑤	AD	early 60s	female	18	13	33	○
⑥	AD	late70s	male	18	12	24	○
⑦	AD	late 70s	female	18	8	16	○
⑧	AD	late 80s	female	19	5	37	

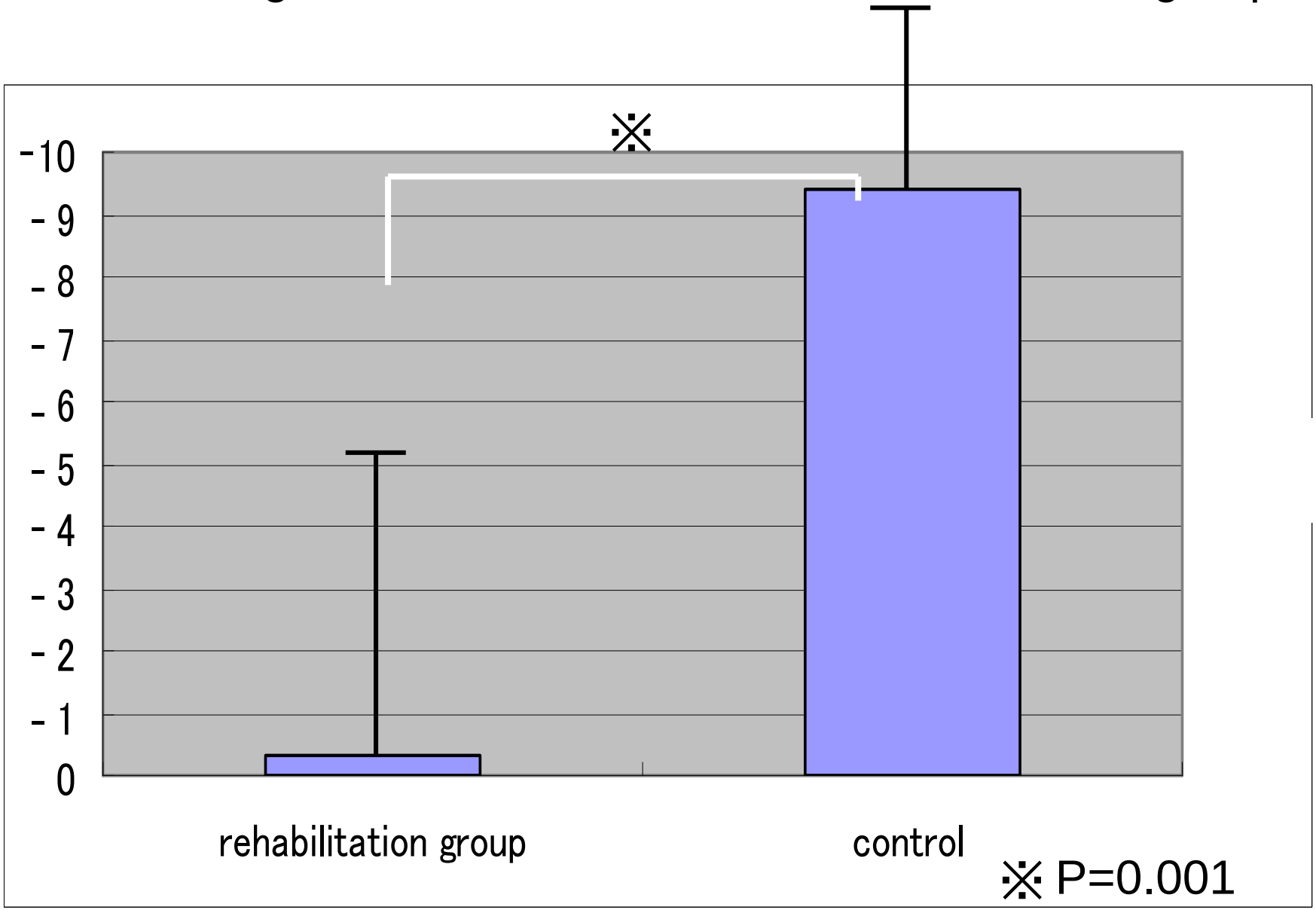
Results

The HDS-R score of the rehabilitation group was
– 0.3±5.4 after treatment compared with before treatment.

The HDS-R score of the control group was – 9.4±3.8.

There was a significant difference in the HDS-R score between the two groups（p=0.001）.

Mean change of HDS-R score from baseline in each group



Discussion

Kaneko M, a neurosurgeon in Japan, reported that an activation program to the prefrontal lobe had the efficacy of maintenance in cognitive function in patients with MCI.

We have conducted same program to the patients with MCI for 4 years.

We found a significant difference in the decline of HDS-R score between the rehabilitation group and the control group（p＝0.001）.

In this study, we found no significant difference of donepezil between the rehabilitation group and the control group, though the rehabilitation group included 2 patients with vascular dementia and the control group 1 frontotemporal dementia.

Discussion

(Continued)

This cognitive rehabilitation intervention showed a positive effect on maintenance of cognitive function in elder adults with MCI. Further high quality research of cognitive rehabilitation is needed to establish their efficacy for patients with MCI.

Conclusion

Our preliminary findings suggest that cognitive rehabilitation intervention activating frontal lobe has beneficial effect to prevent cognitive deterioration.