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The Comparison of EEG activity by computer assisted cognitive rehabilitation program in the normal elderly and the elderly with dementia

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Objective : The purpose of this study was to invest the activation of the brain and to compare with the normal elderly with the elderly with dementia after applying to the computer assisted cognitive rehabilitation program(Rehacom).

Method : They were divided into two groups (old people and dementia groups) based on the MMSE-K and K-DRS. The subject gazed point upon computer monitor during measure of EEG for 3 minutes in pretest. the subject was trained by AUFM(attention task mode) in computer assisted cognitive rehabilitation program. After computer training for 20 minutes, the subject gazed point upon computer monitor during measure of EEG for 3 minutes.

Result : Dementia group improved in mean score, but it wasn't significant change. The normal elderly were significantly increased in Activity Quotient(low beta/theta) on Fp1, F3, F4, T1, O1 and Attention Concentration Quotient(SMR/theta) on F4 ($p<0.05$). It was found that there was significant difference between dementia and normal elderly groups on F3, F4, T1, T2, O2.

Conclusion : Normal group were indicated significantly in frontal area. The dementia group were not aware, but said in general the ability to activate. This study present that the computer assisted cognitive rehabilitation program was a neurologically effective method of cognitive training in the elderly. Therefore, occupational therapist should have study of research on the nature of the brain activation and specific region through performance of the computer assisted cognitive rehabilitation task.