

Original Article

Effects of experience-based group therapy on cognitive and physical functions and psychological symptoms of elderly people with mild dementia

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Abstract. [Purpose] The purpose of this study was to investigate the effect of experience-based group therapy consisting of cooking and physical activities for elderly people with mild dementia on their cognitive and physical function, as well as on their psychological symptoms. [Subjects] The subjects of this study were 12 older adults with mild dementia (3 males, 9 females; 76.75 ± 3.61 years) who voluntarily consented to participate in the study. [Methods] In total, 12 subjects received experience-based group therapy for 2 hours per session once per week, totaling 10 sessions. Cognitive function was evaluated using the Mini Mental State Examination-Korean (MMSE-K), and physical function was evaluated using the Geriatric Physical health condition measurement Tool (GPT). The Geriatric Depression Scale Korean Version (GDS-K) and Geriatric Quality of Life-Dementia (GQOL-D) were used to measure psychological symptoms. [Results] There were significant differences between the MMSE-K, GPT, GDS-K, and GQOL-D scores of before and after group therapy. [Conclusion] In conclusion, it is regarded that cognitive function, physical function, and psychological health improved through experience-based group therapy.

Key words: Dementia, Elderly people, Experience-based group therapy

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INTRODUCTION

Dementia is a chronic and degenerative disease. Thus, increased rates of dementia are a problem for the aging population around the world. Dementia is exhibited through cognitive disorders, mood changes, and behavioral problems. Moreover, persons with dementia lose the ability to perform independent functions in daily life and have difficulty participating in social activities¹⁾.

The signs and symptoms of mild dementia may appear as mild problems with memory and less initiative; difficulty with attention and comprehension; depression; and mild to moderate impairment in Activities of Daily Living (ADL)²⁾. Physical performance abilities are significantly associated with quality of life in mild and moderate dementia³⁾. Moreover, depression can lead to adverse health outcomes, such as weakening from physical inactivity, functional decline, and decreased quality of life⁴⁾. Thus, depression is the greatest risk factor for increasing cognitive dysfunction in persons with mild dementia⁵⁾.

Cooking is a familiar activity for elderly people through past experience—selecting different cooking materials, tasting dishes, and cleaning—and it is an integrated process in

the cognitive, physical, socio-emotional areas⁶⁾. A study that conducted cooking activities with subjects with dementia for 12 sessions reported statistically significant improvements in cognition and depression as measured by the MMSE-K and GDS⁷⁾. Exercise is useful for improving the cardiovascular and motor functions of normal older adult populations⁸⁾. Moreover, physical exercise can be specifically helpful for enhancing the independent recovery of cognitive and behavioral functions of patients with dementia⁹⁾.

Previous research on group therapy has shown that cognitive therapy^{10, 11)} and horticultural therapy¹²⁾ improved the cognitive function of elderly people with dementia, music therapy increased the cognitive function of elderly people with dementia and decreased their depressive symptoms^{13, 14)}, and art therapy had statistically significant effects on the quality of life of mild Alzheimer's disease patients, but it did not have a significant effect on their cognitive function¹⁵⁾. The research results are inconsistent. In addition, elderly people with dementia find it difficult to learn something new due to cognitive function disorder, as well as to concentrate on one thing for a long time because their feelings and behaviors change rapidly and frequently. Therefore, recollecting what is familiar and what has already been learned may prevent memory damage and have a positive influence on emotional aspects¹⁶⁾. When elderly people with dementia recollect what they learned in the past rather than performing a new intervention method, their stress from learning is lower and they have no burden in performing the task, and may feel pleasure. Therefore, a positive effect can be expected¹⁷⁾. Accordingly, this study investigated the effects of group therapy consisting of cooking and physi-

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cal activities for elderly people with mild dementia on their cognitive and physical function, as well as on their psychological symptoms.

SUBJECTS AND METHODS

The subjects of this study were 12 older adults (3 males, 9 females; 76.75 ± 3.61 years) who were patients with mild dementia. The number of those with a lack of schooling was nine (75%), and the number of those who lived alone was eight (67%). Subjects were capable of independent gait, independent living, and communicating at a level where they could participate in a survey and understand the purpose of this study. This study conformed to the ethical principles of the Declaration of Helsinki. This study was approved by the Ethics Review Committee and the approval number is SMU-2014-09-002. The place of experiment was a cognitive activity room in the Y community health center.

Cognitive performance was assessed using the Mini Mental State Examination (MMSE; score, 0–30), which has been used worldwide to examine the severity of cognitive performance. The Mini Mental State Examination-Korean (MMSE-K), as presented by Gwon and Park¹⁸, is a translation of the MMSE into Korean, and it can evaluate diverse areas of cognitive functions within the short time period of 5 to 10 minutes. To evaluate the physical function of the subjects, the Geriatric Physical health condition measurement Tool (GPT) was used. The GPT is a 3-point scale tool comprised of 20 questions which measure abilities related to personal hygiene, social activity, digestive system, sex life, and bladder and bowel management and higher scores indicate better function¹⁹.

Gi and Lee²⁰ standardized the Geriatric Depression Scale (GDS) into the Geriatric Depression Scale Korean Version (GDS-K) with sufficient consideration of the characteristics of Korean elderly people. The GDS-K can simply measure elderly people's depression levels and reflects their thoughts, emotions, cognition, and physical and social aspects through which the overall phenomenon of depression may be easily known. GDS-K is a Yes/No 1-point scale tool with 30 questions and the more severe the depression, the higher the score. The Geriatric Quality of Life-Dementia (GQOL-D) was devised by the Korean Association for Geriatric Psychiatry to enable elderly people with dementia to freely report their quality of life, as perceived by themselves²¹. It consists of 15 questions: 13 questions that measure physical health, psychological health, level of independence, social relationships, and environment and religion, and two questions that measure health and overall degree of satisfaction with life. The total score ranges from 15 to 60 points, and higher scores indicate a better quality of life.

The group therapy program was composed of a warming-up activity lasting 10 minutes, a cooking activity lasting 10 minutes, a physical activity lasting 40 minutes, and a cooling down activity lasting 10 minutes. For the cooking activity, subjects were interviewed in advance regarding the dishes they knew how to cook. At each session, they introduced the dishes they could cook well and everyone cooked them together. The kinds of dishes included buckwheat pancakes, rice balls, Korean pancakes, fruit salad, and sweet potato

Table 1. Effect of intervention on cognitive and physical functions, as well as on psychological symptoms (Unit: score)

| | Before | After |
|--------|----------|------------|
| | Mean±SD | Mean±SD |
| MMSE-K | 18.3±3.0 | 19.5±2.2* |
| GPT | 46.4±6.9 | 47.2±6.0* |
| GDS-K | 11.1±5.6 | 6.0±3.3** |
| GQOL-D | 37.6±6.8 | 47.3±5.0** |

* $p < 0.05$. ** $p < 0.01$. MMSE-K: Mini Mental State Examination-Korean; GPT: Geriatric Physical health condition measurement Tool; GDS-K: Geriatric Depression Scale Korean Version; GQOL-D: Geriatric Quality of Life-Dementia

salad. Physical activities consisted of activities the subjects had performed when they were young. To induce pleasure during the activity, music and games were used. Physical activities comprised balloon volleyball, playing yut, Tuho, beanbag throwing, bowling, and dice play. The program was conducted for 2 hours per session once per week, for a total of 10 sessions.

For the data analysis of this study, SPSS version 20.0 was used to perform statistical processing. The Wilcoxon signed-rank test was used to determine the significance of differences in cognitive and physical functions, as well as psychological symptoms (MMSE-K, GPT, GDS-K, and GQOL-D), before and after group therapy. The significance level was chosen as $\alpha = 0.05$.

RESULTS

The MMSE-K, GPT, GDS-K, and GQOL-D scores before and after group therapy are shown in Table 1. Significant increase in cognitive function as assessed by MMSE-K and physical function as assessed by GPT were found both ($p < 0.05$). In addition, a significant increase in quality of life as assessed by GQOL-D was found ($p < 0.01$), while GDS-K showed a significant decrease in depression ($p < 0.01$).

DISCUSSION

Dementia is a significant health care problem because of the increasing number of individuals who are living longer, the higher incidence of dementia in older persons, the high cost of supervised care, and the extensive use of medical resources²². Communities can often provide a safe, structured activity program for older persons with dementia, and this study investigated the effects of experience-based group therapy for elderly people with mild dementia in public health centers, a local community base.

Our results show that scores in all tests were improved by the group therapy. Among them, there were significant increases in the MMSE-K, GPT, and GQOL-D scores, and there was a significant decrease in the GDS-K score. Because the GDS-K score is high when depression is severe, a decrease in its score denotes a functional improvement. Both GPT and GQOL-D have 60 points as their full score. The GPT score increased by an average of 0.75 points, and the GQOL-D score increased by an average of 9.75 points. These results suggest that GPT sub-items, such as social

activity, digestive system, sex life, and bladder and bowel management, were not considered relevant by the respondents. Most subjects lived alone, did not cook almost at all, and had no regular meetings. The program of cooking and physical activity once per week improved the participants' quality of life. MMSE-K and GDS-K perfect scores are 30 points. The MMSE-K score increased by an average of 1.17 points, and the GDS-K score improved by an average of 5.08 points. The reason the MMSE-K score increased is because while group therapy did not provide a program to enhance the subjects' cognitive function, it did require their cognitive ability to perform cooking and physical activities. The reason the GDS-K score increased more than the MMSE-K score was that the subjects' self-confidence was improved by the activities they experienced, weekly meetings, pleasant cooking, and physical activity decreased their depression.

Morgan-Brown²³) suggested an intervention with cooking activities gave subjects more interaction with their environment and they did more activities for themselves. In a study that considered cooking activities based on experience, like the present study, the scores of depression symptoms were significantly improved in the Cornell Scale for Depression in Dementia (CSDD), while cognitive function showed no significant improvement in the MMSE total score²⁴). A study that conducted cognitive activities combined with physical exercise for dementia subjects for 36 sessions also reported that there were improvements in cognition and depression according to the 7-Minute Screening and GDS²⁵). Vibro-acoustic therapy and frequent visits by family members are effective at decreasing depression in elderly nursing home residents with dementia^{26, 27}).

The present study had some limitations. First, there was no control group with which to compare group therapy. It is a difficult task to recruit more than 20 elderly people with mild dementia. Therefore, a study of two local communities where the bias is well controlled is desirable. Second, the scope of the tools used to assess the physical function of the elderly people with dementia was wide. Sex life and bladder and bowel management are topics that are difficult to deal with in group therapy. Future research should use an evaluation tool focusing on sub-items of physical functions. In this study, experience-based group therapy improved subjects' MMSE-K, GPT, GDS-K, and GQOL-D scores. The present study demonstrated the beneficial effects of experience-based cooking and physical activity on cognitive and physical functions, as well as on psychological symptoms. Prospective research and well-controlled groups are needed to confirm these findings.

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