A conversation method applying crossword game to improve the quality of life for older people

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The number of patients with dementia will reach 76 million until 2030 in the world, by 2015, one in five every 65 people in Japan will have dementia. Dementia is a syndrome, usually of a chronic nature, caused by a variety of brain illnesses that affect memory, thinking, behavior and ability to perform daily activities. Alzheimer's disease is the most common cause of dementia and possibly contributes to up to 70% of the cases. Cognitive dysfunction is also seriously adding to the difficulty of elders' life. To find out how should this situation be handled, cognitive training research is an attractive candidate to improve cognitive functions of the elders. This research investigates mind training game as one of the effective tools for maintaining cognition to help the elder improve their cognitive functions.

Verghese et al., NEngl J Med, 348 (2003)), found that those who are solving crossword puzzles have 40% less risk of getting dementia. This paper devised four types of crossword puzzles for training the elders, Each puzzle is a 3 by 3 grid filled with phrases. Making up 14 words. Those words, the dementia patient are picked from what is encountered in daily life (seven words are body organs, seven words are everyday objects).Choosing words from daily life makes easy for the elders to solve. As far as the design is concerned, two hints explain the words, first, the style of writing, the other is a cute photo. Bright color paper was used for the puzzles to make it interesting for the elders. The subjects select the hiragana blocks and put it in the corresponding puzzle grid. The purpose of this training is to let the patients more immersed to remember other things that happened before. This can help avoid worsening the conditions of dementia or relieve its symptoms. This research aims to reduce the burden on caregivers and to improve the cognitive skills of the elder dementia patients. Based on previous research, a simple crossword puzzle was devised and four subjects (two healthy seniors and two dementia patients) were

tested. Both groups were separately tested with simple crossword puzzles and other conversational tests. The test was carried out with the same content three times for each group. The healthy group was tested two weeks ago, while, the dementia patients were tested four weeks ago.

To find out if the dementia patients recognized the words when playing the crossword: it was necessary to confirm the name of the word in advance.

The crossword puzzle was played as follows:

(The dementia patients will spend duplation time of the healthy seniors)

Stage 1:

The experiment time is 5 minutes, we use the photos of the words, instead of the words to confirm recognition.

Stage 2:

The experiment time 2.5 minutes, and the subjects play the crossword puzzle (4 pieces) at the same time, while being monitored and encouraged.

Stage 3:

The experiment time is 2.5 minutes Training the language skills several times to facilitate re-recognition and re-memory of objects. We and the elderly, therefore, talk about the answer of one puzzle for five minutes after finishing each game. The conversations were about the phrases chosen to facilitate the process of recognizing the subjects' cognitive states. The conversation includes properties of the items referred to by the words employed. We utter those words which was used in the second stage. In order for the dementia patients to start the conversation, we chose topics related to the words.

Stage 4:

As same with Stage1.

The contribution of this research is as follows: 1) devising crossword puzzles, 2) training, the subjects to by solving one or more puzzles and make them interested in the game, the patients who could not finish the puzzle before can now solve it independently now. 3) Through the test of crossword puzzle, the elders' impression of the words appearing in the game improves. As the number of words used increases, the elderly can identify those words independently, 4) With the increase in the number of games, the memory function of the subjects has been improved, as well as the communication ability.