

Prevention of dementia by means of robotic music therapy

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Abstract

Introduction: Our preliminary trial revealed the results of music therapy involving a combination of brain training tasks, which was performed for three months. A significant improvement in the participants' cognitive ability was identified ($p < 0.05$)¹. We developed a method whereby the elderly participants danced to familiar music while performing brain training tasks². We set the music therapy to be delivered by a robot in order to more widely promote the value of such therapy for elderly persons. Since therapy delivered by robots can additionally be expected to promote psychological healing effects, we also investigated this expectation.

Method: A questionnaire concerning the uses of robot therapy was distributed to a group of elderly participants in a health promotion program.

Results: The responses of 62 participants (28 male, 34 female) were analyzed. The average age of the participants was 67.7 ± 5.3 years. Some 62.9% of the elderly people expected to develop an intimate friendship with the robot. Further, 19.4% of the elderly wanted to perform music therapy and brain training with the robot, while 6.5% of them wanted the robot to be responsible for their physical care.

Discussion and conclusion: The majority of elderly people exhibited a psychological attachment to their therapy robot. In addition, the elderly people wanted the robot to perform both brain training and care-related tasks. The value of brain training delivered by robots is likely to be significantly enhanced by the psychological attachment felt by the elderly in relation to the robot.

References

1. Verification of Preventive Effect of Dual-Task and N-Back Task-Incorporated Music Therapy against Dementia. *Neurochemistry & Neuropharmacology*. 2017.
2. Verification of the Impact of Storage by the Rhythm Phrase to be Repeated. *SciFed Journal of Geriatrics and Palliative Care*. 2017.

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Biography

Kazue Sawami of the presenter of this research is a professor at Nara Medical University. Her Ph.D. acquisition is a health science, and the recent study is the prevention of dementia in elderly people. Research currently being developed is the intervention by artificial intelligence, and support of the elderly by the information equipment remote control system. Results of their research group can be viewed at the following address. <http://www.g-nursing.com/katsudou.php>

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