Chapter 24
Rehabilitation of Elderly People with Dementia

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ABSTRACT
Numerous rehabilitation approaches have been attempted to improve the cognitive functions and quality of life (QOL) of elderly people with dementia. This chapter provides an outline of three major approaches that have been previously reported (music therapy, physical activity, and reminiscence therapy) and reviews their effectiveness. These approaches are typically used in clinical settings. However, the results of this review show that there is limited evidence to support the use of these approaches to improve cognition in older people with dementia. In addition, effective rehabilitation approaches for dementia still need to be established, and further high-quality research is needed. Finally, the author introduces a new approach for improving the cognitive functions of elderly people with dementia.

INTRODUCTION
The number of patients with dementia is currently estimated to be 2 million in Japan and 24 million worldwide (Kawas, Gray, Brookmeyer, Fozard, & Zonderman, 2000; Nakamura, Shigeta, Iwamoto, Tsuno, Niina, & Homma, 2003; Ferri, Prince, Brayne, Brodaty, Fratiglioni, Ganguli et al., 2005). Moreover, it is estimated that approximately 40 and 80 million people will be suffering from dementia in 2020 and 2040, respectively, and that 4.6 million people will develop dementia every year. The prevalence and incidence of dementia increase with age; for instance, 1 in 4 or 5 85-year old people or older suffer from dementia. The core symptom of dementia is cognitive impairment, primarily memory impairment; however, peripheral symptoms such as depression, anxiety, decreased motivation, hallucination/delusion, and wandering cannot be ignored. It is considered that these symptoms may cause a reduction not only in the ability to perform activities of
daily living (ADL) but also in the quality of life (QOL). Currently, several drugs that may possibly have a radical effect on dementia (in particular, on Alzheimer’s disease) are being developed. However, it remains extremely difficult to treat memory impairment, disorientation and cognitive decline, which are fundamental disturbances in dementia. Therefore, attempts have been made to improve dementia symptoms by methods other than pharmacological treatment. For instance, Hulme, Wright, Crocket, Oluboyede & House (2010) accomplished a systematic review of non-pharmacological approaches. Thirty-three reviews were identified, and 25 were judged to be of high or good quality. However, the studies included in this systematic review were characterized by weak study designs with low sample sizes. Furthermore, a Cochrane review (Helmans, Htay & McShane, 2007) revealed that there were no randomized clinical trials of non-pharmacological approaches for the prevention and management of wandering in people with dementia and that there is an urgent need for randomized controlled trials.

Elderly people with dementia often suffer from existential anxiety; they lose their roles, and their caregivers tell them about their “failure” due to their cognitive impairment from the relatively early stages of the disease; thus, they feel “scolded,” lose their dignity, and live confused lives. Therefore, establishing an effective method for improving the cognitive functions and QOL of elderly people with dementia, whose number is expected to increase in the future, constitutes an important and urgent task; in this manner, they can live their lives with dignity and with lower anxiety and confusion. One of the potential approaches for improving the cognitive functions and QOL of patients with dementia is rehabilitation. In this chapter, I first reviewed the previously reported rehabilitation approaches for elderly people with dementia. Then, I introduced an approach that has been studied by our group in recent years.

### REHABILITATION APPROACHES FOR DEMENTIA

#### Music Therapy

The purpose of music therapy is to relax the mind and body, reduce anxiety and stress, reduce non-adaptive behavior, improve spontaneity, enhance cooperativeness, develop the long- and short-term memory by retrieving memories, improve the discernment of reality, enhance interactions with others, strengthen physical fitness, and improve exercise capacity. Music therapy includes passive music therapy, in which participants passively listen to music, and active music therapy, in which participants actively participate in musical activities by singing songs and playing instruments. In other words, in passive music therapy, the participants listen to classical music and old time favorite songs as background music during meals or during their daily life activities with assistance. In contrast, in active music therapy, the participants themselves sing children’s songs, school songs, folk songs and military songs; they also play instruments, such as bells and tambourines while singing and stretching their bodies, performing singing exercises and dancing to the music.

The effects of music therapy in the treatment of behavioral, social, cognitive and emotional problems in older people with dementia were assessed by a Cochrane review (Vink, Birks, Bruinsma & Sholten, 2004). Randomized controlled trials that reported clinically relevant outcomes associated with music therapy in the treatment of behavioral, social, cognitive and emotional problems in older people with dementia were selected. Five studies met the inclusion criteria. The methodological quality of the studies was generally poor, and the study results could not be validated or pooled for further analyses. Therefore, it was concluded that the methodological quality and reporting methods of the studies were too poor to draw any useful conclusions.
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