Chapter 20

Music Therapy: An Intervention in Alzheimer’s Disease

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ABSTRACT

Alzheimer’s disease (AD) is a worldwide epidemic. Multiple domains including memory, cognitive abilities, language, behaviour, and emotions are affected, resulting in significant disability and distress both for patients and caregivers. The management of patients with Alzheimer’s disease is a significant public health problem. Different strategies have been applied to prevent/delay onset of Alzheimer’s disease or at least to improve quality of life and health conditions of Alzheimer’s disease patients and their caregivers. Given the limited effectiveness of pharmacological therapies combined with iatrogenic effects of drug treatments, the development of nondrug care has become a necessity. This chapter focuses on music therapy as an advanced intervention strategy for this population. Music therapy has evolved from a social science model to a neuroscience model of clinical practice and research. This paradigm shift has resulted in the formation of a new theory known as neurologic music therapy (NMT).

INTRODUCTION

Alzheimer’s disease (AD) is a progressive neurodegenerative disorder (Chengxuan, Miia., & Eva von, 2009) with characteristic neuropathological and neurochemical features characterised by symptom complex in which there is disturbance of multiple higher cortical functions, including memory, thinking, orientation, comprehension, calculation, learning capacity, language and judgement. These neurocognitive disturbances are occasionally preceded or often accompanied by deterioration in emotional control, social behaviour or motivation (ICD -10). Noncognitive neuropsychiatric symptoms (NPS) commonly

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occur in AD and are associated with adverse outcomes for patients and their caregivers (McClam, & Marano, 2015). These Behavioural and psychological symptoms in dementia (BPSD) are defined as signs and symptoms of disturbed behaviour, mood, thought or perception. These disturbances, namely agitation, depression, elation, delusions and hallucinations, are strongly correlated with each other. In addition, at least 50% of patients with dementia present with significant BPSD on a monthly basis (Ryu, Katona., & Rive, 2005). Agitation, together with depression, hinder activities and relationships, cause feelings of helplessness and distress in families and formal caregivers and are strong predictors for poor quality of life, as well as nursing home admission (Gaugler, Yu., & Krichbaum, 2009). First-line treatment options often involve drug therapies aimed at slowing down the progression of the illness and antipsychotic medication to address challenging behaviours. To date, research into non-pharmacological interventions has been limited. There is however growing interest in identifying non-pharmacological therapies effective in improving quality of life and reducing challenging behaviours (Yu-Shiuun et al., 2015). Significant reduction in symptom severity has been reported with nearly all the nonpharmacological interventions. Given the anticipated increase in the population aged 65 and over, the prevalence of persons with AD is expected to increase exponentially during the next 30 years (McClam et al., 2015). The burden is enormous and challenging to Health care systems to meet the needs of patients and their care givers. Research is actively underway to develop interventions, both to delay disease onset and to slow the progression. Among the innovative interventions evidence for Music Therapy a form of non-pharmacological therapies, is promising as an intervention for even late cases of Alzheimer’s disease. The music as a hierarchical, compound language of time, with its unique ability to access affective/motivational systems in the brain, provides time structures enhancing perception processes, mainly in the range of cognition, language and motor learning. It allows for emotional expression and improvement of the motivation for rehabilitation activities. Music regulates attention and arousal in the brain in a complex, bilaterally distributed fashion. Learning verbal material through song accesses different neural network configurations than learning through verbal presentation. Clinical outcome studies with music therapy points towards superiority of music than without music in the management of patients with Dementia. It is of paramount importance to know the epidemiology, burden of the disease, the determinants and the various innovative interventions available, with focus on evidence of research for Music Therapy in the management of the disorder.

Epidemiology

Data on the prevalence of Alzheimer’s indicate increasing prevalence. By 2050, one new case of AD is expected to develop every 33 seconds with an estimated prevalence to range from 11 million to 16 million (Alzheimer’s disease facts and figures[ADFF], 2015). It is now a worldwide epidemic. Research estimates reveal that 48% of cases worldwide are in Asia, and that the percentage in Asia will grow to 59% by 2050 described in table 1.

Burden of the Disease

AD significantly shortens life expectancy and is one of the principal causes of physical disability, institutionalization, and decreased quality of life among the elderly (Chengxuan et al., 2009). The Management of the patients with Alzheimer’s disease is a significant public health problem. Total payments in 2016 for health care, long-term care and hospice services for people age ≥ 65 years with dementia...