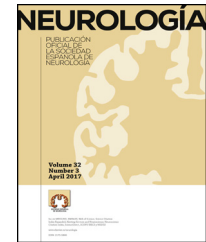




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## ORIGINAL ARTICLE

# Music therapy and Alzheimer's disease: Cognitive, psychological, and behavioural effects<sup>☆</sup>

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### KEYWORDS

Music therapy;  
Alzheimer disease;  
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### Abstract

**Introduction:** Music therapy is one of the types of active ageing programmes which are offered to elderly people. The usefulness of this programme in the field of dementia is beginning to be recognised by the scientific community, since studies have reported physical, cognitive, and psychological benefits. Further studies detailing the changes resulting from the use of music therapy with Alzheimer patients are needed.

**Objectives:** To determine the clinical improvement profile of Alzheimer patients who have undergone music therapy.

**Patients and methods:** Forty-two patients with mild to moderate Alzheimer disease (AD) underwent music therapy for 6 weeks. The changes in results on the Mini-Mental State Examination, Neuropsychiatric Inventory, Hospital Anxiety and Depression Scale and Barthel Index scores were studied. We also analysed whether or not these changes were influenced by the degree of dementia severity.

**Results:** Significant improvement was observed in memory, orientation, depression and anxiety (HAD scale) in both mild and moderate cases; in anxiety (NPI scale) in mild cases; and in delirium, hallucinations, agitation, irritability, and language disorders in the group with moderate AD. The effect on cognitive measures was appreciable after only 4 music therapy sessions.

**Conclusions:** In the sample studied, music therapy improved some cognitive, psychological, and behavioural alterations in patients with AD. Combining music therapy with dance therapy to improve motor and functional impairment would be an interesting line of research.

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**PALABRAS CLAVE**

Musicoterapia;  
Enfermedad de  
Alzheimer;  
Cognición;  
Síntomas  
neuropsiquiátricos

**Musicoterapia en la enfermedad de Alzheimer: efectos cognitivos, psicológicos y conductuales****Resumen**

**Introducción:** La musicoterapia forma parte de los programas de envejecimiento activo que se ofrecen a las personas mayores. Su utilidad en el campo de las demencias empieza a ser valorada por la comunidad científica, ya que se han reportado efectos positivos a nivel físico, cognitivo y psicológico. Son necesarios más estudios que perfilen el alcance de tales cambios en la enfermedad de Alzheimer.

**Objetivos:** Conocer el perfil de mejoría clínica que experimentan los pacientes con enfermedad de Alzheimer con la aplicación de una intervención de musicoterapia.

**Pacientes y métodos:** Se aplicó un tratamiento con musicoterapia durante 6 semanas a 42 pacientes con enfermedad de Alzheimer en estadio leve-moderado. Se estudiaron los cambios en las puntuaciones de Mini-examen del estado mental, Inventario de síntomas neuropsiquiátricos, Escala hospitalaria de ansiedad y depresión, e índice de Barthel. Se estudió si estos cambios se influían por el grado de severidad de la demencia.

**Resultados:** Se observó una mejoría significativa de memoria, orientación, depresión y ansiedad (escala HAD) en pacientes leves y moderados; de ansiedad (escala NPI) en pacientes leves; de los delirios, alucinaciones, agitación, irritabilidad y trastornos del lenguaje en el grupo con demencia moderada. El efecto sobre las medidas cognitivas es ya apreciable a las 4 sesiones de musicoterapia.

**Conclusiones:** En la muestra estudiada, la musicoterapia mejoró algunas alteraciones cognitivas, psicológicas y conductuales de los pacientes con enfermedad de Alzheimer. Sería interesante complementar la musicoterapia con intervenciones de danzaterapia a fin de mejorar los aspectos motores y funcionales.

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**Introduction**

The prevalence of dementia is increasing worldwide.<sup>1</sup> With this in mind, and since dementia requires a substantial share of the total healthcare and social resources, it is recognised as a priority in research. The most frequent cause of dementia in developed countries is Alzheimer disease (AD).<sup>2</sup> Current research aims to halt cognitive decline through pharmacological treatment.<sup>3</sup> Anticholinesterase drugs and memantine have demonstrated moderate effects on cognitive function. These drugs are effective for managing neuropsychiatric symptoms only at high doses and do not work in some cases.<sup>4</sup> These symptoms are usually treated with neuroleptic and anxiolytic drugs, which worsen motor function and result in premature death.<sup>5</sup> Non-pharmacological treatment provides a promising alternative for improving behaviour and cognitive function.<sup>6–8</sup> One such intervention is music therapy, which uses music to improve communication, learning, mobility, and other mental and physical functions.<sup>9</sup> Numerous music therapy techniques have been developed.<sup>9</sup> Active techniques are based on direct interaction with the patient, whereas receptive techniques require a lower level of participation. Interventions may be tailored to a specific subject and carried out with individuals or in groups. In patients with dementia, music therapy has been shown to improve neuropsychiatric symptoms and, to a lesser extent, cognitive

function.<sup>10,11</sup> However, we have yet to determine the symptoms most likely to improve with music therapy and whether clinical improvement depends on the stage of the disease. Our study included patients with AD, who were classified in 2 groups according to disease severity (mild or moderate). Our purpose was to determine whether music therapy can improve patients' cognitive function, neuropsychiatric symptoms, and functional capacity and, if so, to evaluate whether these changes depend on dementia severity.

**Patients and methods****Patients**

We selected patients from 2 geriatric residences in the Region of Murcia and included those who met the diagnostic criteria for probable AD proposed by the National Institute of Neurological and Communicative Disorders,<sup>12</sup> in a mild or moderate stage according to the Clinical Dementia Rating (CDR) scale.<sup>13</sup> We excluded deaf or aphasic patients who might have difficulty understanding instructions during the intervention. Patients and their relatives and carers at the geriatric residences signed informed consent forms prior to inclusion in the study. The study was approved by the ethics committee at Universidad de Murcia.

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