Music Therapy in the Treatment of Dementia

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Abstract

Dementia is a degenerative neurological disease affecting 3.4 million people worldwide. The symptoms of the disease are debilitating to the patient causing the eventual inability to care for oneself. The current mainstay of treatment is with acetylcholinesterase inhibitors which aim to slow the progression of the disease. However, not only do these medications cause multiple side effects negatively impacting the patient’s quality of life, but they are only at best shown to provide mild stabilization of cognition. Music therapy as a novel method of treatment without negative side effects, is an alternative option to pharmacological therapy. This paper will address the efficacy of music therapy (I), in contrast to the standard of care (C), in improving the quality of life (O) of older adults with dementia (P).

Literature Search:

- Performed in November 2018
  - PubMed
  - DOAJ
  - EBSCO

- Search Terms: "Dementia and cholinesterase inhibitors effectiveness" and "Dementia and music therapy" and "Dementia and cholinesterase inhibitors and quality of life" and "Dementia and music therapy and quality of life"

- Inclusion Criteria
  - Address the validity and potential bias of each article
  - Peer-reviewed journal
  - Publication date within the last five years

Introduction

Dementia

Overview

- Over 71→ prevalence is about 13.9% or 3.4 million individuals
- Progressive neurological degenerative disease
- Growing elderly population with increased life expectancy

Symptoms

- Loss of memory and cognitive abilities
- Behavioral and psychological symptoms of dementia: depression, psychosis, agitation and aggressive behavior

Treatment

- First line treatments include acetylcholinesterase inhibitors and N-methyl-D-aspartate (NMDA) receptor antagonists
- Music therapy has been researched as a possible non-pharmacological treatment alternative

Methods

Comparison of study designs; music therapy vs medications

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Age range</th>
<th>Intervention</th>
<th>Music Therapy</th>
<th>Outcome Measures</th>
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</thead>
<tbody>
<tr>
<td>Cho et al</td>
<td>RCT</td>
<td>65.4 (5.3)</td>
<td>24 weeks</td>
<td>Cholinesterase inhibitor</td>
<td>QOL-AD, MMSE, CMAI, TMT-A</td>
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<td>Kim et al</td>
<td>RCT</td>
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<td>Aki et al</td>
<td>SR</td>
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Results

   - RCT with 52 participants designed to investigate the effects of music therapy via singing on the quality of life and affect of those with dementia

   - Cohort study with 130 participants designed to investigate the long-term efficacy of cholinesterase inhibitors on various cognitive indicators in the treatment of dementia related diseases

   - RCT with 28 participants aimed to improve attention, enhance gait and balance, improve falls frequency, and reduce agitation through musical dual-task training with individuals with dementia

   - Meta-analysis with 15 studies, or 1,600 participants, designed to review the current randomized controlled trials for pharmacological and non-pharmacological management of behavioral and psychological symptoms of dementia (BPSD)

   - Meta-analysis with 8 studies, or 37-148 participants, aimed to assess research on the effects of non-pharmacological approaches to treatment on the behavioral symptoms of a patient with dementia

   - Meta-analysis with 80 studies designed to synthesize data on cholinesterase inhibitors to determine their impact on the Mini-Mental Status Exam (MMSE) for patients with dementia

   - Crossover trial with 42 participants directed at investigating how music therapy could improve agitation in individuals with moderate to severe dementia

Discussion

Studies were promising but inconclusive on the effects of music therapy as a stand alone treatment option

Strengths:
- Population of patients (representative age range)
- 6/7 studies used binding and randomization of subjects
- No reported side effects of music therapy

Limitations:
- Minimal statistically significant results
- Small sample sizes
- Not all were double-blinded
- Limited timeframe of studies
- Inability to compare due to varying methods of measuring the outcomes

Future Research:
- Larger sample sizes
- Double-blinded and randomized studies
- Long-term effects of music therapy
- Standardized method of measuring the outcomes of the survey

Conclusion

The initial study results are promising as it is shown there are improvements in the individuals who participated without harmful side effects, however more research is necessary to make an absolute conclusion. For those patients whose disease is too advanced to be treated with medications and for those who experienced too severe of adverse side effects of the medications to continue, music therapy is an appropriate and possibly effective alternative to improve quality of life.

Unfortunately these studies lack strength in statistical validity, bringing to attention the need for ongoing research on this topic. While evidence is still lacking in its depth of support, it is still important to consider music therapy as a treatment option when developing the plan of care for a patient with dementia.

Future research should focus on including larger sample sizes, longer treatment timelines and a standardized method of measuring the outcomes of the survey so as to facilitate comparisons with traditional treatments.

Overall, results of this study are positive, unfortunately evidence is insufficient to definitively recommend music therapy over acetylcholinesterase inhibitors.
References


