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The Effect of Music, Art, Photo, Animal Assisted, and Alternative Therapies on Quality of Life in Patients with Dementia: A Systematic Review

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The effect of music, art, photo, animal assisted, and alternative therapies on quality of life in patients with dementia

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Introduction
Dementia is an umbrella term that encompasses numerous diseases, all of which are a mystery to scientists. No cure exists for any dementia, and in most cases patients are to expect continual cognitive decline until death. Alzheimer’s disease alone is the sixth leading cause of death in the United States, killing more than breast cancer and prostate cancer alone.1 Having a friend or family member with any form of dementia can be emotionally exhausting and distressing, especially as the disease progresses and function declines. Due to limited pharmacological options, many caregivers may focus on improving quality of life. The objectives of this project are to find non-medication interventions that improve quality of life in patients with dementia and to learn how to conduct a systematic review and what the process entails.

Hypothesis
I propose music and art therapy will be the most frequently utilized interventions and will prove the most successful in improving patient quality of life. Additionally, I propose animal-assisted therapy will significantly improve quality of life whereas phototherapy will not.

Methodology
To begin the project, specific search criteria and appropriate limits were established for PubMed, CINAHL, and PsycINFO (See Table 1).

Table 1. Included databases, search criteria, and limits (left to right)

<table>
<thead>
<tr>
<th>Database</th>
<th>Search Criteria</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>PubMed</td>
<td>Dementia AND musical therapy AND art therapy</td>
<td>Language = English, Date = from 2000 to 2019</td>
</tr>
<tr>
<td>CINAHL</td>
<td>Dementia AND music therapy AND art therapy</td>
<td>Language = English, Date = from 2000 to 2019</td>
</tr>
<tr>
<td>PsycINFO</td>
<td>Dementia AND music therapy AND art therapy</td>
<td>Language = English, Date = from 2000 to 2019</td>
</tr>
</tbody>
</table>

Articles were included if patients had dementia, per the Diagnostic and Statistical Manual of Mental Disorders (DSM) IV or V criteria (depending on date of publication), Clinical Dementia Rating (CDR) score, National Institute of Neurological and Communicative Diseases criteria (NINCDS), or other criteria and if quality of life was an outcome scored at baseline and post-intervention per a quality of life scale such as the Quality of Life in Alzheimer’s Disease scale.

Methodology (cont’d)
After articles were screened for inclusion or exclusion, we individually scored each using the JADAD scoring system, discussing any disagreements, and included only articles scoring a 3 or higher. The PRISMA flow diagram in Figure 1 outlines the inclusion/exclusion process.

Results
Distribution of interventions among included articles showed music therapy and art therapy were the most common, aside from “other” interventions (See Figure 2). Other interventions included Sonas (comprised of light, multisensory, and reminiscence therapies),2 acupuncture, and Multimodal Cognitive Enhancement Therapy (MCET; a combination of cognitive stimulations, reality orientation, physical therapy, reminiscence therapy, and music therapy).3 Despite music therapy being included and individually analyzed in 5 of the 11 included articles, the intervention did not prove to have a significant difference (defined as p ≤ 0.05) in the majority of cases.4 Music therapy did show improvement in quality of life in patients with dementia across included records, with one statistically significant result for music listening (p = 0.00215) and one statistically significant result for music singing (p = 0.001).6 Art therapy proved statistically significant in one intervention (p = 0.002)6 but insignificant in another (per either measure of quality of life: PCS-8 with p = 0.421 and MCS-8 with p = 0.085).5 Phototherapy, while included in MCET, was not evaluated as a stand-alone intervention; thus, no conclusion may be drawn as to the effectiveness of its individual use.4

Animal therapy interventions from one trial were insignificant for improvement of quality of life (p = 1.00 at post test and p = 0.76 at follow up) but were significant in another trial in patients with severe dementia at follow up (p = 0.005).11 Patients with mild/moderate dementia saw no significant improvement on quality of life at the conclusion of the intervention (p = 0.692) or at follow up (p = 0.643).12

Discussion
Results support the proposal that music and art therapy were the most frequently utilized interventions with the most significant results for improving quality of life in patients with dementia. Conversely, results refuted the proposal that animal-assisted therapy provides significant improvement in quality of life for all patients with dementia. Because no trials evaluated phototherapy alone, no conclusions can be drawn to support or refute phototherapy as an intervention. Despite the lack of significant statistical evidence, each intervention did increase patient quality of life, suggesting potential clinical significance. Lack of statistical significance could result from small sample sizes across trials. Future studies would benefit from larger sample sizes and appropriate control groups. Some trials did not use standard care as a control group, which does not allow for comparison to baseline treatment.

Over the course of the project, some mistakes were made. I initially planned to include articles from Embase, but overlooked requesting unavailable sources early on. Additionally, I did not attempt the process demanding such a large amount of time, and did not reach the desired stage for the project. However, I have learned not to rush the process of systematically reviewing articles and to maintain a high level of organization throughout each step to reduce workload later. I have met my original learning outcomes and intend to follow the project through to completion, including articles from Embase and from hand searching systematic reviews and meta analyses.

References
5. Geriatric Research. 2014;24:529-532
9. Geriatric Research. 2014;24:529-532