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This critical

Selection Criteria

Studies included in this critical review were required to investigate the effects of MT on language functioning in adults with dementia. It was necessary for studies to specifically state that an MT intervention had taken place, as opposed to stating that music was simply played during the experimental condition. No limitations were set on the demographic variables (e.g., age, culture, race, gender, or socioeconomic status) of research participants, the research design or the outcome measures.

Data Collection

Results of the literature search yielded three articles that were consistent with the selection criteria: one within-subjects repeated measures design, one mixed repeated measures design and one mixed case-control study.

Within-Subjects Repeated Measures Design Study

MT has been found to improve speech content and fluency in individuals with dementia. Brotons and Koger (2000)

A paired *t*-test was used to compare pre- and post-intervention scores obtained from the MMSE for both the MT and control groups. Suzuki et al. (2004) found a significant improvement on the language subscale of the MMSE in the MT group ($p=0.012$), with no such improvement noted in the control group. Significant improvements were not seen specifically in participants with DAT, however, Suzuki et al. (2004) proposed that this may have been a result of the limited sample size.

Case studies for two participants with VD were also included for consideration in Suzuki et al. (2004), yielding Level 4 evidence. The first participant was an 86-year old man who would not initiate conversation or spontaneously give verbal contributions prior to receiving MT. During MT sessions however, he participated in all music activ89 /F1 0 0 Tm31 0 0 Tm / (u) -1 (a) JT 236.4326 676.32 41 4cm BT 0.0081 (n) -5 0.0043 Tc40081 (r

the MT interventions. While Suzuki et al. (2004) did outline the goals for their sessions, they were related to physical and mental functioning, as well as social interaction. In order to determine whether MT is a successful therapeutic technique that can be used with adults with dementia, measurable language goals need to be set. This will allow progress to be measured and comparisons to be made across studies.

Based on the limitations of the current research, it is recommended that further studies be conducted to determine the degree to which MT may improve language functioning in adults with dementia. Future studies should include the following in order to improve the strength of evidence in this area of clinical research:

- Larger sample sizes in order to improve the generalizability of results.
- Increased length of MT interventions and more longitudinal studies to determine whether the proposed effects of MT are long-term.
- More information on the type and severity of dementia of the participants. Researchers may want to include a variety of types and severity levels to determine whether the results can be generalized.
- A more comprehensive assessment of language functioning pre- and post-MT interventions to determine which areas may or may not be impacted by MT.
- More rigorous methodological designs for MT studies, as well as specific goals for MT intervention. This will allow researchers to make comparisons across studies, attempt to replicate results, and obtain more compelling evidence either for or against the use of MT in adults with dementia.

Further research should be conducted to determine the effects

Kumar, A. M., Tims, F., Cruess, D. G., Mintzer, M. J., Ironson, G., Loewenstein, D.,...Kumar, M. (1999). Music therapy increases serum melatonin levels in patients with Alzheimer's disease. *Alternative Therapies in Health and Medicine*, 5, 49-57.

Lindenmuth, G. F. (1992). Effects of music on sleep in