



AOTA Evidence Briefs

Older Adults

**A product of the American Occupational Therapy Association's Evidence-Based Literature Review Project*

OA#7

Music from earlier eras may improve recall, social interaction, and mood in patients with Alzheimer's disease

Lord, T. R., & Garner, J. E. (1993). Effects of music on Alzheimer patients. *Perceptual and Motor Skills, 76*, 451–455.

Level: IA2b

Randomized control trial, 20 or more participants per condition, moderate internal validity, moderate external validity

Why research this topic?

Research suggests that music is an effective therapy in health care. However, there have been few studies of music therapy with people who have Alzheimer's disease.

What did the researchers do?

Lord and Garner (1993), of Indiana University of Pennsylvania, investigated the effects of music on the memory, social interaction, and mood of Alzheimer's patients. They randomly selected 60 people from about 200 patients with Alzheimer's disease in a home for older adults. Eighteen were men, and 42 were women. They ranged in age from 72 to 103 years (no average reported). The researchers randomly assigned first the women, then the men, to one of three groups: music, placebo, or control. All groups participated in six 30-minute sessions a week for 6 months. The music group sat in a large circle behind a table, listening to music of the Big Bands of the 1920s and 1930s and playing along with children's musical instruments (triangles and tambourines). The placebo group also sat in a large circle behind a table but did jigsaw and pegboard puzzles instead of listening to music. The control group participated in the usual recreational activities of the home—drawing, painting, and watching television.

The researchers were interested in *recall*, *social interaction*, and *mood*, all as measured by a questionnaire developed by the home's chief therapist and nursing director and one of the researchers. The questionnaire was administered twice, once during the first 12 sessions of the study and again during the final 12 sessions. It involved both direct questions to each patient and 30-second observations of each patient three times per session (for a total of 36 observations per assessment period). The direct questions sought general information (age, sex, years of education, etc.) and specific information (recall) from the past (place of birth, mother's name, etc.). The observations focused on the patients' mood and interaction.

What did the researchers find?

The music group scored **significantly** (see *Glossary*) higher than the other groups on recall, social interaction, and mood.

What do the findings mean?

For therapists and other providers, the findings suggest that music from earlier eras can improve Alzheimer's patients' recall, social interaction, and mood.

What are the study's limitations?

The study has two biases. First, the observers were not **blinded** (see *Glossary*) to the group assignments. Thus they may have unconsciously influenced the results. Second, the researchers did not address the issues of possible co-intervention and **contamination** (see *Glossary*).

The study had several limitations. First, although participants were randomly selected from a large, privately funded nursing home, it cannot be assumed that this single site sample represents population characteristics. Second, evaluators were aware of group assignments and may have unconsciously influenced the results. Lastly, it is unclear whether participants were receiving additional treatments that may have influenced the results of this study.

Glossary

blinded/blinding—Blinding refers to the practice of keeping members of the research study unaware of which group a participant is assigned to (treatment or control) in the study. Single blinding usually refers to keeping study participants unaware of whether they are receiving the experimental or the sham treatment. Double blinding usually refers to keeping the participants and those who are administering the treatment unaware of who is receiving the experimental and who is receiving the sham treatment. In some cases, where it is impossible to blind those administering treatment, the individuals who are administering the outcome measures can be blinded to group status.

Studies in which blinding does not occur can have significant biases. When the participants know that they are receiving the experimental treatment, they often get better because they think they ought to (this is often referred to as the placebo effect). When researchers know that a participant is receiving the experimental treatment, they often subconsciously favor those participants when evaluating them on outcome measures. For instance, when timing a participant in the treatment group, researchers may unknowingly stop the watch a little faster or slower so the treatment participant seems to do better.

contamination bias—Participants in a control group receive some treatment that may have improved their outcome. This could be the start of a new medication or some form of therapeutic intervention. This type of bias is highly likely in longitudinal studies. This bias will mask the effect of treatment.

significance (or significant)—A statistical term, this refers to the probability that the results obtained in the study are not due to chance, but to some other factor (such as the treatment of interest). A significant result is one that is likely to be generalizable to populations outside the study.

Significance should not be confused with clinical effect. A study can be statistically significant without having a very large clinical effect on the sample. For example, a study that examines the effect of a treatment on a client's ability to walk may report that the participants in the treatment group were able to walk significantly longer distances than the control. However, if you read the study you may find that the treatment group was able to walk, on average, 6 feet, while the control group was able to walk, on average, 5 feet. While the outcome may be statistically significant, a clinician may not believe that a 1-foot increase will make his or her client functional.

■ Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform Terminology for Occupational Therapy Practice—Third Edition* (AOTA, 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

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For more information about the Evidence-Based Literature Review Project, contact the Practice Department at the American Occupational Therapy Association, 301-652-6611, x 2040.

