



# AOTA Evidence Briefs

## Older Adults

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

### OA#9

## **Short-term mental stimulation combining reminiscence, reality orientation, and remotivation may improve the mental status of patients with dementia**

Koh, K., Ray, R., Lee, J., Nair, A., Ho, T., & Ang, P. C. (1994). Dementia in elderly patients: Can the 3R mental stimulation programme improve mental status? *Age and Aging, 23*, 195–199.

#### **Level: IIB2b**

Nonrandomized control trial, two groups, less than 20 participants per condition, moderate internal validity, moderate external validity

#### **Why research this topic?**

If health care providers can delay progressive deterioration in older adults' mental state, those adults may be able to live independently longer. Most programs to improve the mental state of older adults rely on a single technique (e.g., reminiscence or reality orientation) rather than a combination of techniques.

#### **What did the researchers do?**

Koh and associates (1994), variously affiliated with National University Hospital, Community Health Services, the Ministry of Health, and Mount Elizabeth Hospital (all in Singapore), tested the effectiveness of a combination of techniques. They designed a study to determine whether the 3R mental stimulation program could improve the mental state of patients with dementia. The 3R's were "reminiscence," or "using past events and related objects to stimulate memory through recollection"; "reality orientation," or "stimulating the...patient[s] for time, place, persons and situations to which they can relate"; and "remotivation," or "testing and stimulat[ing]...the individual's intellectual and cognitive characteristics through discussion, thought and thought deduction" (pp. 195–196).

The participants in the study were patients attending a day care center at a senior citizens health care center in Singapore in 1991. To be eligible for participation, patients had to have a mental status score of 6 or less (indicating some degenerative mental dysfunction). Also, they had to be 55 years of age or older; not be noisy, violent, or irrational; not be on medication like sedatives or tranquilizers; not have impaired vision or hearing; and not be severely incontinent or insufficiently mobile. Thirty patients met the qualifications: 8 men and 22 women. Their average age was 71.9 years.

The first 15 patients to become eligible became the experimental group, the others the control group. The experimental group participated in the 3R program once a week for 8 weeks. The sessions, each involving discussion of a different topic (e.g., money, hobbies, pets), were intended to stimulate the participants' senses of sight, touch, smell, taste, and sound.

The control group received no intervention.

The researchers were interested in the *mental status* of the participants (as measured by a modified version of the Mental Status Questionnaire). Measurements were taken before the intervention began and at the end of the 8 weeks.

### **What did the researchers find?**

At the end of 8 weeks, the experimental group showed a **significant** (see *Glossary*) improvement in its mental state, whereas the control group showed a significant decline.

### **What do the findings mean?**

For therapists and other providers, the findings suggest that short-term mental stimulation using the 3R program can improve the mental status of patients with dementia.

### **What are the study's limitations?**

The study has several limitations. First, the sample may be too small to detect statistically significant or clinically important differences between intervention groups. Second, program staff provided an unusually stimulating social and supportive environment, which may have influenced outcomes. In addition, participants and their caregivers were aware of the purpose of the study. The lack of random assignment to groups may have also **biased** (see *Glossary*) the results. It is unclear whether evaluators were aware of the participants' group status and whether study participants were receiving other forms of intervention that may have influenced the results. Lastly, the researcher used a single 10-item questionnaire for pre- and posttests of mental status and mood. Using a single measure increases the risk of measurement bias.

## **Glossary**

**biased/biases**—Biases are systematic errors within a study. When a study is biased, the means of treatment and/or control groups are artificially inflated or reduced. This artificial inflation or reduction can cause the study's results to be incorrect; the treatment will appear to have an effect, when in reality it does not, or vice versa. Many of the limitations reported in these evidence briefs are related to biases.

**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 feel 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.

