



## AOTA Critically Appraised Topics and Papers Series Alzheimer's Disease

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

### CRITICALLY APPRAISED PAPER (CAP)

#### *Focused Question*

**What is the evidence for the effect of interventions designed to modify and maintain perceptual abilities on the occupational performance of persons with dementia?**

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Baillon, S., van Diepen, E., Prettyman, R., Rooke, N., Redman, J., & Campbell, R. (2005). Variability in response of older people with dementia to both Snoezelen and reminiscence. *British Journal of Occupational Therapy*, 68, 367–374.

#### **PROBLEM STATEMENT (JUSTIFICATION OF THE NEED FOR THE STUDY)**

State the problem the authors are investigating in this study.

Although originally developed as a leisure intervention, claims have been made about the therapeutic value of Snoezelen. Reminiscence therapy has also been associated with claims of therapeutic value, though little empirical evidence supports its use. The authors identified a need to evaluate the effectiveness of each intervention, in comparison to the other.

#### **RESEARCH OBJECTIVE(S)**

List study objectives.

The purpose of the study was to study the impact of Snoezelen on agitated behavior of people with dementia, using a comparison intervention (reminiscence) to control for the effects of increased staff attention.

Describe how the research objectives address the focused question.

Snoezelen is a form of intervention designed to increase or maintain a person's remaining perceptual abilities. The study should shed light on the effectiveness of this intervention. The outcomes of the study are not specifically targeting occupational performance outcomes, but communication is included within one outcome measure.

**DESIGN TYPE:**

Randomized, controlled, crossover design

**Level of Evidence:**

I

Limitations (appropriateness of study design):

Was the study design type appropriate for the knowledge level about this topic? *If no, explain.*

- Yes  Each participant acted as their own control; the two interventions were offered to each participant (randomized as to which intervention was offered first) with a 1 week break between them.
- No

**SAMPLE SELECTION**

How were subjects selected to participate? Please describe.

All participants were recruited from three locations: two units of care for older people with mental health problems (primarily in the day hospitals); one charity-run nursing home.

**Inclusion Criteria**

Inclusion criteria:

- Diagnosis of dementia
- Rated by staff as having significant agitation

**Exclusion Criteria**

People were excluded from the study if they:

- Had a pacemaker
- Had significant hearing impairment
- Had visual acuity of less than 3/6
- Did not speak English.

If people developed a delirium or had any changes in their usual psychotropic or cardiovascular medications immediately before or during the trial, they were withdrawn from the study.

Sample Selection Biases: *If yes, explain.*

Volunteers/Referrals

- Yes  Potential subjects were identified by staff, which could indicate bias of selecting participants most likely to benefit.
- No

Attention

Yes

No

Others (list and explain):

**SAMPLE CHARACTERISTICS**

N = 25

% Dropouts

# (%) Male

# (%) Female

Ethnicity

Disease/disability diagnosis

NR = Not reported

Check appropriate group:

<20/study group	20–50/study group <input checked="" type="checkbox"/>	51–100/study group	101–149/study group	150–200/study group
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Sample Characteristics Bias: If no, explain.

If there is more than one study group, was there a similarity between the groups?

Yes

No

Were the reasons for the dropouts reported?

Yes

No

**INTERVENTION(S)**—Included are only those interventions relevant to answering the evidence-based question.

*Add groups if necessary*

Group 1

Brief Description	Snoezelen Intervention: One-to-one intervention, individualized but based on guidelines; used all sensory equipment available in Snoezelen room, avoiding materials with a definite reminiscent purpose (e.g., music)
Setting	One of the 3 settings through which participants were recruited
Who Delivered?	One of 3 trained staff members; each participant was always with the same staff member
Frequency?	3 sessions over 2 weeks
Duration?	40 minutes per session

Group 2

Brief Description	Reminiscence Intervention: One-to-one intervention, individualized but based on guidelines; utilized pictures or objects to evoke memories for the participant; used music to complement or as a focus for the session
Setting	One of the 3 settings through which participants were recruited
Who Delivered?	One of 3 trained staff members; each participant was always with the same staff member
Frequency?	3 sessions over 2 weeks
Duration?	40 minutes per session

Intervention Biases: *Explain, if needed.*

Contamination

Yes

No  Guidelines for intervention suggest that contamination between the two interventions is unlikely.

Co-intervention

Yes

No

Timing

Yes

No

Site

Yes

No

Use of different therapists to provide intervention

Yes

No

**MEASURES AND OUTCOMES**—Included are measures relevant to answering the focused question.

Name of measure:

Agitation Behavior Mapping Instrument (ABMI)

Outcome(s) measured (what was measured?):

Frequency of agitated behavior

Is the measure reliable (as reported in article)?

Yes  Satisfactory (no statistic reported)

No

NR

Is the measure valid (as reported in article)?

Yes

No

NR

How frequently was the measure used for each group in the study?

3 minutes before, immediately after, and at 15 and 30 minutes after each session

Name of measure:

Heart rate monitor

Outcome(s) measured (what was measured?):

Heart rate

Is the measure reliable (as reported in article)?

Yes

No

NR

Is the measure valid (as reported in article)?

Yes

No

NR

How frequently was the measure used for each group in the study?

For each session, 15 minutes before until 30 minutes after the session finished.

Name of measure:

Interact Short scale (modified)

Outcome(s) measured (what was measured?):

Mood and behavior

Is the measure reliable (as reported in article)?

Yes

No

NR

Is the measure valid (as reported in article)?

Yes

No

NR

How frequently was the measure used for each group in the study?

Immediately after each session by the therapist

### Measurement Biases

Were the evaluators blinded to treatment status? *If no, explain.*

Yes

No  Ratings on the ABMI and Interact Short were completed by the treating therapists, who were not blind to the intervention or purpose of the study.

Recall or memory bias *If yes, explain.*

Yes  It is possible that therapists remembered past ratings.

No

Others (list and explain):

Limitations (appropriateness of outcomes and measures) *If no, explain.*

Did the measures adequately measure the outcome(s)?

Yes  It would have been beneficial to also have outcome measurement related to functional abilities, quality of life, or satisfaction of participants and/or their caregivers.

No

## **RESULTS**

List results of outcomes relevant to answering the focused question

Include statistical significance where appropriate ( $p < 0.05$ )

Include effect size if reported

Results reported in this study focused on the individual responses to the interventions (group differences are reported in a different publication).

Observed Agitated Behavior:

There was high variability in behaviors:

- 14/20 had decreased agitation immediately after Snoezelen
- 6/20 had decreased agitation following reminiscence
- 6/20 had increased agitation following Snoezelen
- 11/20 had increased agitation following reminiscence
- 8/20 showed decreased agitation after Snoezelen but not after reminiscence
- 2/20 had decreased agitation after reminiscence but not Snoezelen
- 6/20 had decreased agitation after both
- 4/20 had increased agitation after both.

Mood and Behavior:

Overall, both interventions resulted in more positive ratings on the Interact Short scale. Snoezelen resulted in more positive ratings than reminiscence for the following items: happy, fearful, perplexed, speaking sensibly, relating well, being attentive, agitated, enjoyed, and relaxed. Reminiscence resulted in more positive ratings than Snoezelen for the following items: spontaneous talk, initiative, and bored.

Snoezelen resulted in more negative ratings for the following items: fearful, spontaneous talk, and spoke sensibly. Reminiscence resulted in more negative ratings for initiative, agitated, and relaxed.

Severe Dementia Sub-Group:

Analysis was undertaken of 16 participants with Mini-Mental State Examination (MMSE) scores less than 10. These participants had significantly higher number of items with a positive change on the Interact Short scale for the Snoezelen session ( $p=0.01$ ) compared to reminiscence. There were no differences between the two interventions for agitated behaviors or heart rate.

Was this study adequately powered (large enough to show a difference)? *If no, explain.*

Yes

No  The authors state that “the sample size was determined by a power calculation based on data from a pilot study” (p. 368); however, the range of responses (both positive and negative) suggest that a study with a larger sample may be needed for conclusive findings, and to better understand who best responds to each type of intervention.

Were appropriate analytic methods used? *If no, explain.*

Yes

No

Were statistics appropriately reported (in written or table format)? *If no, explain.*

Yes

No

## CONCLUSIONS

State the authors' conclusions that are applicable to answering the evidence-based question.

This study showed that both Snoezelen and reminiscence can have positive effects on mood and behavior in people with dementia, but Snoezelen was not shown to be more effective. The results of the individual responses demonstrate highly variable responses. Snoezelen resulted in more positive mood and behavior ratings than reminiscence for those with severe dementia.

Were the conclusions appropriate for the Study Design (Level of Evidence)? *If no, explain.*

Yes

No

Were the conclusions appropriate for the statistical results? *If no, explain.*

Yes

No

Were the conclusions appropriate given the study limitation and biases? *If no, explain.*

Yes

No

## IMPLICATIONS FOR OCCUPATIONAL THERAPY

This section provides guidance about clinical practice, program development, and other implications of the study findings as they relate to the focused question.

From this study, it appears that Snoezelen is generally well-received in terms of agitated behaviors, and mood and behaviors, but not significantly more than reminiscence. In relation to specific occupational performance outcomes that are highlighted in the focused question, only communication was measured. Some items were more positive for Snoezelen and some for reminiscence. In this study, people with severe dementia had more positive outcomes in terms of mood and behavior, which may be related to the language demands of reminiscence that are not equivalent to Snoezelen. The two interventions are not comparable in terms of the intent of maintaining or improving perceptual abilities, since reminiscence is not linked to perception. If the goal of intervention is to maintain or improve perception, Snoezelen may be a useful intervention to try. However, the variable responses of individuals suggest that trial and caution may be needed in determining who is likely to benefit. Considering the costs associated with purchasing and installing Snoezelen, evidence from this study could not be used to justify its purchase. However, if it is already in place, it may be worthwhile to implement on a trial basis with clients with dementia.

This work is based on the evidence-based literature review completed in August 2005 by Lori Letts, PhD, OT Reg. (Ont.); Jacqueline Minezes, BSc (OT), OT Reg. (Ont.); Julie Berenyi, BHSc (OT) OT Reg. (Ont.); Mary Edwards, MHSc, OT Reg. (Ont.); Kathy Moros, BHSc (OT), OT Reg. (Ont.); Colleen O'Neill, BSc (OT), OT Reg. (Ont.); and Colleen O'Toole, MSc (OT), OT Reg. (Ont.).

CAP Worksheet adapted from: Critical Review Form – Quantitative Studies ©Law, M., Stewart, D., Pollack, N., Letts, L., Bosch, J., & Westmorland, M., 1998, McMaster University. Used with permission.

For more information about the Evidence-Based Literature Review Project, contact the American Occupational Therapy Association, 301-652-8611, x 2052.



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