



## 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?**

van Diepen, E., Baillon, S. F., Redman, J., Rooke, N., Spencer, D. A., & Prettyman, R. (2002). A pilot study of the physiological and behavioural effects of Snoezelen in dementia. *British Journal of Occupational Therapy*, 65, 61–66.

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

State the problem the authors are investigating in this study.

As cited in the article, Snoezelen therapy creates a relaxing, stimulating, and a failure-free environment and is used for the management of people with dementia, especially when there are associated behavioral and psychological problems. The lack of evidence on the impact of Snoezelen on these agitated behaviours has led to a pilot study being conducted in which Snoezelen is compared to reminiscence therapy in a group of patients with dementia and with associated agitation.

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

List study objectives.

- The main aim of the study was to evaluate the feasibility of using a detailed approach to behavioral and physiological assessments before, during, and after Snoezelen sessions for patients with various forms of dementia.
- A secondary aim was to identify if there were any large effects of the interventions which might be relevant in refining the methodology for a definitive study.

Describe how the research objectives address the focused question.

The objectives of the study can address the focused question in terms of how use of a multisensory input (Snoezelen) can result in increased or maintained perceptual abilities in people with dementia, thereby having an impact on their behavior, which influences occupational performance.

**DESIGN TYPE:**

Randomized controlled pilot study

**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

No

**SAMPLE SELECTION**

**Inclusion Criteria**

The sample was recruited from a day hospital for psychiatry for elderly people. One participant was recruited from an acute organic assessment ward.

- A clinical diagnosis of dementia
- Presence of significant agitated behavior as rated by the staff

**Exclusion Criteria**

- Significant hearing impairment
- Presence of visual acuity less than 3/6
- Does not speaking English
- Consumption of more than 21 units of alcohol per week

**Note:** Any participant who developed evidence of delirium or significant ill health or had any change in psychotropic medication immediately before or during the trial was withdrawn.

Sample Selection Biases: *If yes, explain.*

Volunteers/Referrals

Yes

No

Attention

Yes

No

Others (list and explain):

### SAMPLE CHARACTERISTICS

N= 15

% Dropouts

# (%) Male

# (%) Female

Ethnicity

Disease/disability diagnosis

NR = Not reported

Check appropriate group:

<20/study group <input checked="" type="checkbox"/>	20–50/study group	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	The first group received 8 Snoezelen therapy sessions.
Setting	The therapy was provided in a specially designed multisensory room, featuring comfortable seating and equipment that could create a relaxing as well as a stimulating atmosphere.
Who Delivered?	A therapist who has experience with both Snoezelen and reminiscence therapy. 1: 1 ratio of therapist and participant.
Frequency?	Twice a week for 40 minutes
Duration?	4 weeks

Group 2

Brief Description	The second group received 8 reminiscence therapy sessions.
Setting	A separate room at the facility
Who Delivered?	A therapist who has experience with both Snoezelen and reminiscence therapy. 1: 1 ratio of therapist and participant.
Frequency?	Twice a week for 40 minutes
Duration?	4 weeks

Intervention Biases: *Explain, if needed.*

Contamination

Yes

No

Co-intervention

Yes

No

NR

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:

The short form of the Cohen-Mansfield Agitation Inventory.

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

- Level of agitation
- Using a five-point Likert scale, it assessed the frequency of verbal, physically non-aggressive, and physically aggressive agitated 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?

The measure was used at baseline, after 4 weeks of therapy, and after 4 weeks without intervention both with the main carer and nurse key worker.

Name of measure:

The Agitation Behaviour Mapping Instrument

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

The frequency of agitated behavior during 3-minute episodes by direct observation. It distinguishes among verbally aggressive, verbally non aggressive, physically aggressive, and physically non-aggressive behaviors.

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?

The measure was completed by one of the investigators for 4 3-minute periods each session: one before the session, immediately after, 15 minutes after, and 30 minutes after the session.

Name of measure:

The Interact Scale

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

It was specifically designed to measure the effects of Snoezelen. The scale uses a 5-point Likert scale and includes 22 items about mood, speech, relating to other people, relating to the environment, need for prompting, stimulation level and wandering, and restless and aggressive 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?

The scale was completed by the therapist immediately after each session.

Name of measure:

CarioSport 2001 heart rate monitor

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

Participants' 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?

Every 1 minute from 10 minutes before each session, through the session, and until 30 minutes after each session.

Measurement Biases

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

Yes

No  As cited in the article, the scales were completed by raters who were aware of the intervention the participant received.

Recall or memory bias *If yes, explain.*

Yes

No

Others (list and explain):

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

Did the measures adequately measure the outcome(s)?

Yes

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

- The results on the Cohen-Mansfield Agitation Inventory (CMAI) showed a tendency for lower scores at the end of 4 weeks of therapy in both groups; this was preserved at follow-up. This did not reach statistical significance.
  - Both groups were similar in their levels of observed agitated behavior prior to the therapy sessions. The Agitation Behaviour Mapping Instrument (ABMI) indicated a lower score in the Snoezelen group just after the session as compared to prior to the session, but this was not sustained 15 and 30 minutes post-intervention. In contrast, the score for the reminiscence group increased over the 4 time points.
  - The Interact scale was moderately useful in determining the effects of intervention, as many items were less applicable to agitated behavior. The ratings in both groups indicate a positive outcome on participants' behavior and occasional negative outcome.

The direction of change of the heart rate appeared to be dependent on the behavior and activities during the intervention.

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

Yes

No  The sample size was 10 (because of the pilot nature of the project), which is not large enough to show a difference statistically. In addition, the groups are not similar and statistically significant findings cannot be reported.

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

Yes

No

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

Yes  As the two groups are not homogenous, the statistics were not reported and the analysis of the data is of a descriptive nature.

No

## CONCLUSIONS

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

The authors concluded that it is possible to recruit suitable participants who will tolerate the interventions and will help in planning future research. As cited, both interventions had short-term effects; for some patients, the outcome may be relaxing while for others, stimulating.

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  As the groups were heterogeneous, a descriptive analysis had to be undertaken. In the future it is important to have homogenous groups in order to draw statistically significant results.

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.

Snøezelen therapy is an intervention which allows the person with dementia and associated behaviors to use their remaining perceptual abilities. As noted in previous research, the effects of Snøezelen have been positive with a redirection in the level of disturbed behavior and positive changes in the level of enjoyment, the ability to relate to others, talk spontaneously,

recall memories, and attentiveness to the environment, all of which impact occupational performance issues. Unfortunately, in this study, the marked difference at baseline greatly limited the validity of any comparison between the two groups on the measures taken. However, this study was useful in planning for future research as it demonstrated that it was possible to recruit suitable participants who will tolerate the procedures. The authors also learned that baseline behavioral mapping is necessary and that revisions to the design study are required to minimize the effects of difference in independent group variables and revisions to the Interact Scale also required.

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.).

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For more information about the Evidence-Based Literature Review Project, contact the American Occupational Therapy Association, 301-652-6611, x 2052.



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