



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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Kincaid, C., & Peacock, J. R. (2003). The effect of a wall mural on decreasing four types of door-testing behaviors. *Journal of Gerontology*, 22(1), 76–88.

PROBLEM STATEMENT (JUSTIFICATION OF THE NEED FOR THE STUDY)

State the problem the authors are investigating in this study.

Environmental design can impact residents of special care units. There is no evidence of how murals affect door-testing behaviors in persons with dementia. What environmental cues decrease door-testing behaviors? This research adds to literature on strategies to decrease exit-seeking behavior. This intervention uses remaining perceptual abilities to modify the ways that people interact with the environment.

RESEARCH OBJECTIVE(S)

List study objectives.

This study examined the effect that a wall mural painted over an exit door had on decreasing door-testing behaviors of residents with dementia.

Describe how the research objectives address the focused question.

Environmental design relates to client perceptions of environment. If remaining perceptual abilities were used to disguise an environmental feature, it might result in reduced exit seeking/door-testing behaviors.

DESIGN TYPE:

Pretest–posttest

Level of Evidence:

III

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

How were subjects selected to participate? Please describe.

Residents of the special care unit of a nursing home with a diagnosis of dementia

Inclusion Criteria

- Resident of the special care unit of a nursing home
- > 65 years old
- English speaking
- Diagnosis of dementia
- Non-comatose.
- Lived in residence at least 2 months

Exclusion Criteria

Unable to ambulate to get to doors

Sample Selection Biases: *If yes, explain.*

Volunteers/Referrals

Yes Convenience sample

No

Attention

Yes

No

Others (list and explain):

SAMPLE CHARACTERISTICS

N= 12

% Dropouts

(%) Male # (%) Female

Ethnicity

Disease/disability diagnosis

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	Floor to ceiling wall mural was painted on unit exit door and adjoining walls to disguise doorway. Used similar colors to fit with atmosphere of unit.
Setting	North Carolina, nursing home special care unit
Who Delivered?	
Frequency?	Observations were daily at regular 2 hours periods: 5:30–7:30 p.m. 25 observations were taken before and after the mural was painted.
Duration?	Over 12 weeks; 6 weeks pre- and 6 weeks post-mural

Intervention Biases: *Explain, if needed.*

Contamination

Yes

No

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:

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

Is the measure reliable (as reported in article)?

Yes

No

NR

NR = Not reported

Is the measure valid (as reported in article)?

Yes

No

NR

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

Daily regular 2 hour observations 5:30–7:30 p.m.

Measurement Biases

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

Yes

No Observers also tallied behaviors

Recall or memory bias *If yes, explain.*

Yes

No N/A

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

- Total of all types of door testing: Pre-mural door testing 55.67, post mural 13.42 ($p = .024$)
- Type 1 and 3 behaviors decreased most (Type 1 from 35.67 to 6.17, $p < .05$; Type 3 from 3.42 to 0.75, $p < 0.05$).
- Type 2 and 4 behaviors decreased but were not statistically significant.

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

Yes

No

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.

Wall mural was effective as an environmental cue to decrease door-testing behaviors in persons with 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.

Occupational therapists make suggestions for adapting the environment in order to enable occupational performance. Environmental modifications such as the wall mural described in the study may be suggested by occupational therapists with the intention of using an individual's remaining perceptual abilities to decrease maladaptive behavior (e.g., exit seeking) that may be exhibited. While evidence from this study design is not high level, the intervention is low risk and benefits are noted in decreased exit-seeking behavior. It appears that the mural had an effect on residents, including decreased exit-seeking behaviors. As well, it is likely that the mural made the environment less institutional.

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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