



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?

.....
Dickinson, J. I., McLain-Kark, J., & Marshall-Baker, A. (1995). The effect of visual barriers on exiting behavior in a dementia care unit. *Gerontologist, 35, 127–130.*

PROBLEM STATEMENT (JUSTIFICATION OF THE NEED FOR THE STUDY)

State the problem the authors are investigating in this study.

Unsafe exiting due to wandering presents problems for residents and poses ethical dilemmas for staff as restriction of wandering is not considered a therapeutic option. Past research has investigated methods of reducing exiting attempts, including horizontal tape patterns and visual barriers that camouflaged the doorknob.

RESEARCH OBJECTIVE(S)

List study objectives.

Evaluate the use of a blind, as well as a cloth barrier, to see if either technique would reduce the attempts to exit on a dementia care unit

Describe how the research objectives address the focused question.

Studies suggest that a number of factors may contribute to attempts to exit, including being attracted to a light or a view at the door; others may be cued by the protrusion of the doorknob. Manipulating the environment to change perceptual information may reduce exiting.

DESIGN TYPE:

Non-randomized before after study

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

✓ There are a number of studies that look at a single intervention to reduce exiting, but not many actually look at comparing various methods.

No

SAMPLE SELECTION

Inclusion Criteria

Subjects were those residents on a special care dementia unit that triggered the alarm during the initial observation period.

Exclusion Criteria

NR

NR = Not reported

Sample Selection Biases: *If yes, explain.*

Volunteers/Referrals

Yes

No

✓ All residents on the unit were initially observed but only those that actually attempted to exit during the initial observation period were selected for the study.

Attention

Yes

No

Others (list and explain):

SAMPLE CHARACTERISTICS

N= 7

% 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
---	-------------------	--------------------	---------------------	---------------------

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	Week 1: Observational period to identify a baseline number of exit attempts and which residents would attempt to escape.
Setting	Dementia special care unit with emergency exit doors with panic bars
Who Delivered?	Not reported
Frequency?	Daily between 2:00 p.m. and 4:00 p.m.
Duration?	One week of observations

Group 2

Brief Description	Week 2: Closed mini-blind covering the window panel or glazing at the doors. The blind was blue and matched the color of the surrounding door and door frame.
Setting	Dementia special care unit with emergency exit doors with panic bars
Who Delivered?	Not reported
Frequency?	Daily between 2:00 p.m. and 4:00 p.m.
Duration?	One week of observations

Group 3

Brief Description	Week 4: Cloth barrier with the blind left open, allowing for light and view. The cloth panel was constructed of a lightweight cotton fabric and was held in place with a concealed white plastic pipe inserted in the top part of the casing. The panel was attached at the sides with Velcro and obscured the panic bar. The cloth was blue to match the doors and frames.
Setting	Dementia special care unit with emergency exit doors with panic bars
Who Delivered?	Not reported
Frequency?	Daily between 2:00 p.m. and 4:00 p.m.
Duration?	One week of observations

Group 4

Brief Description	Week 6: Both cloth barrier and blinds were used to obscure the door.
Setting	Dementia special care unit with emergency exit doors with panic bars
Who Delivered?	Not reported
Frequency?	Daily between 2:00 p.m. and 4:00 p.m.
Duration?	One week of observations

Intervention Biases: Explain, if needed.

Contamination

Yes

No

Co-intervention

Yes

No

Timing

Yes Potential for change in population during different weeks of intervention

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:

Observers' count and notes on behaviors

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

Number of times participants attempted to exit and activated the alarm during the time frame specified

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?

Observers recorded daily counts during the baseline (week 1) and intervention periods (Weeks 2, 4, 6) but not during the intervening “no intervention” periods between (Weeks 3, 5).

Measurement Biases

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

Yes

No

Recall or memory bias *If yes, explain.*

Yes Study authors believe that residents may have had the capability to learn that the panic bar was behind the visual barrier

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

Activation totals
Baseline: 115 times
Intervention 1—Closed Blind: 64 attempts (44% decrease)
Intervention 2—Panel: 5 attempts (96% decrease)
Intervention 3—Closed Blind + Panel: 14 attempts (88% decrease)

Wilcoxon rank sum analysis:

Intervention 1—Closed Blind: Marginally significant (rank sum = .07, $.04 < p < .07$)

Intervention 2—Panel: Statistically significant (rank sum=15.5, $p < .001$)

Intervention 3—Panel + Closed Blind: Statistically significant (rank sum=11, $p < .01$)

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 Statistics were displayed in a table and in a graph

No

CONCLUSIONS

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

Results support the findings of other studies that visual barriers that camouflage the panic bar or door knob are effective and cost-efficient controls for wanderers' exiting. Wandering is goal-directed and residents want to exit to repeat past routines. They recognize that the door is the place to exit. Visual barriers appear to reduce the ability to recognize the door; however, keeping the exit doors out of the wandering paths is the optimal solution.

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

Yes Study was done to replicate a previous study that recommended disguising the exit door to reduce exit attempts

No

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

Yes

No Limited time period of measurement of interventions may have showed initial change as significant but did not allow for time to see if familiarity would have increased exit attempts due to exploration or learning.

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.

This study has implications for occupational therapy practice as an environmental recommendation that can be suggested as a short-term solution to prevent wandering and reduce risk of injury. This intervention has the potential to impact health care delivery in terms of cost. The typical management of persistent exiters may result in increased assignment of staff to allow for constant monitoring. Further investigation is required to determine if a visual barrier is an effective intervention as a long-term solution or only an emergency measure. Additional investigation into what type of visual barriers proves most effective at maintaining lack of awareness of exit door would also be recommended.

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, MHS, 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, 301-652-6611, x 2052.



Copyright 2007 American Occupational Therapy Association, Inc. All rights reserved.
For personal or educational use only. All other uses require permission from AOTA.
Contact: copyright@aota.org