



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 establish, modify, and maintain activities of daily living (ADL), instrumental activities of daily living (IADL), leisure, and social participation on the quality of life, health and wellness, and client and caregiver satisfaction for persons with dementia?

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Fitzsimmons, S., & Buettner, L. (2003). A therapeutic cooking program for older adults with dementia: Effects on agitation and apathy. *American Journal of Recreation Therapy*, 23-33.

PROBLEM STATEMENT (JUSTIFICATION OF THE NEED FOR THE STUDY)

State the problem the authors are investigating in this study.

The study described a clinical trial of a recreational therapy cooking program for older adult with dementia living within an assisted living center. Providing individuals with the opportunity to engage in cooking commonly relieves stress, provides familiar sensory stimulation, increases cognitive and physical stimulation, and improves self image among countless other therapeutic benefits.

RESEARCH OBJECTIVE(S)

List study objectives.

The study was designed to address three basic questions:

- 1) Does participation in a therapeutic cooking program have a significant effect on agitated behavior in older adults with dementia?
- 2) Does participation in a therapeutic cooking program have a significant effect on passive behaviors in older adults with dementia?
- 3) Does participation in a prescribed therapeutic cooking intervention have an effect on physiological processes as measured by biofeedback?

Describe how the research objectives address the focused question.

Through the implementation of a therapeutic cooking program, agitation levels and passivity among participants is hypothesized to decrease, therefore, Potentially increasing enjoyment and engagement which could then lead to an increase in quality of life. Furthermore, the

physiological effects of a therapeutic cooking program may increase client health and wellness. The intervention is specifically focused on IADL performance.

DESIGN TYPE:

Pretest/Posttest Experimental 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

No

NR

SAMPLE SELECTION

How were subjects selected to participate? Please describe.

Inclusion Criteria

Participants were residents on a locked special care unit in an assisted living centre in Florida
Inclusion criteria included the following eight criterion:

- 65 years of age or older
- Living in the residential facility at least three months
- Diagnosis of dementia documented in the medical record
- MMSE score of 20 or less
- Identified by staff as having disturbing behaviors
- Signed consent by guardian
- Enjoyed cooking in the past
- Stable on current medications

Exclusion Criteria

NR

NR = Not reported

Sample Selection Biases: *If yes, explain.*

Volunteers/Referrals

Yes

No

Attention

Yes

Participants in the control group were involved in usual facility activities; it is likely that those in the intervention group received more attention.

No

Others (list and explain):

SAMPLE CHARACTERISTICS

N=12

% Dropouts

#/ (%) Male

#/ (%) Female

Ethnicity

Disease/disability diagnosis

Depression diagnosed within 9 participants
All participants were diagnosed with dementia; 6 AD; 1 Other; 1 Parkinson's; 1 Mixed dementia; 3 Unspecified

Check appropriate group:

<20/study group	20–50/study group	51–100/study group	101–149/study group	150–200/study group
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sample Characteristics Bias: *If no, explain.*

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

Yes

No difference were reported as existing between the intervention and the delayed intervention group

No

Were the reasons for the dropouts reported?

Yes

No

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

Group 1: Intervention Group

Brief Description	An intervention group and delayed intervention control group were randomly assigned following the collection of baseline data which assessed the physical and cognitive status of the client as well as their leisure interests. Following the assessment, the client was prescribed the level of therapeutic cooking required. The intervention was scheduled in the afternoon approximately one half hour following lunch since passive and agitated behaviors are greatest at this time. The intervention group was divided into groups of four and received two weeks of the cooking program five days a week.
Setting	The therapeutic kitchen facility within the locked special care unit of an assisted living centre in Florida
Who Delivered?	Recreational Therapist
Frequency?	5 days a week for one hour per day
Duration?	2 weeks

Group 2: Delayed Intervention Control Group

Brief Description	The delayed intervention group took part in the normal facility activities for two weeks followed by another two weeks in the therapeutic recreational cooking program
Setting	The therapeutic kitchen facility within the locked special care unit of an assisted living centre in Florida
Who Delivered?	Recreational Therapist
Frequency?	5 days a week for one hour per day
Duration?	2 weeks of normal recreational programming followed by 2 weeks of therapeutic cooking program

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 N/A. It was not indicated as to whether or not the same researcher(s) conducted all sessions for both the intervention and the delayed intervention control group

No

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

Name of measure:

Cohen-Mansfield Agitation Inventory (CMAI)

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

The CMAI is a 29-item caregiver-rating questionnaire for the assessment of agitation among elderly persons. It includes 29 agitated behaviors rated on a seven point scale of frequency.

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?

Facility caregivers assessed frequency of agitated behaviors using the CMAI on day five of baseline as well as day 14 of the intervention.

Measurement Biases

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

Yes

No Because the evaluators would witness the participants engaging in the cooking program they would be aware as to whether they were in the intervention or the control group.

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

Name of measure:

Passivity in Dementia Scale

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

The Passivity in Dementia Scale measures levels of passivity among elderly persons.

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?

Facility caregivers assessed frequency of passive behaviors using the Passivity in Dementia Scale on day five of baseline as well as day 14 of the intervention.

Measurement Biases

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

Yes

No Because the evaluators would witness the participants engaging in the cooking program they would be aware as to whether they were in the intervention or the control group.

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

Name of measure:

The Biograph System

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

The biograph system is used to measure blood pressure variability and 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?

Reading of blood pressure and heart rate were taken during three cooking sessions for each subject after a trusting relationship had been formed. The procedure involved attaching the device to the client, waiting two minutes, take a baseline, introduce the intervention, after 15 minutes has elapsed take a second reading.

Measurement Biases

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

Yes

No Because the evaluators would witness the participants engaging in the cooking program they would be aware as to whether they were in the intervention or the control group.

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 CMAI and passivity scores were analyzed for agitated behaviors using a t-test for non-independent samples with a two tailed significance at the .05 level.

Agitation: Control group pretest mean= 2.27; post-test= 2.30; no significant difference. The treatment pretest mean= 2.30 and the posttest= 1.46; $p < .000$. Between group differences not reported.

Passivity: Control group pretest mean= 1.33 and the posttest 1.29; no significant difference. Treatment group pretest= 1.29, posttest= 2.58; $p < .000$.

Biograph readings were taken only during the intervention, so comparisons can not be made to control participants. Chi-square analyses examined if calming attempts resulted in lower heart rate ($p < .000$), lower blood pressure variability ($p = .067$); and alerting attempts resulted in higher heart rate ($p = .077$) and higher blood pressure variability ($p = .975$). It is difficult to interpret these results.

Other observations reported during the intervention:

- the overall client engagement level was 90.4 percent
- during the interventions, participation by clients was active 119 times and passive one time
- restlessness was noted in one participant during two of the 120 intervention attempts
- mood during interventions was recorded as 118 enjoyed the activity, two were indifferent and none exhibited weeping or sadness

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

Yes

No The sample size is not justified based on power analysis; power is not calculated. Since between group differences were not tested, we assume the study was not adequately powered.

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.

The authors suggest that although this is a small study, the findings suggest that positive affect on behaviors could occur as a result of using cooking as a therapeutic intervention. The authors do not discuss the heart rate or blood pressure outcomes. They do acknowledge the small sample.

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 While within group differences were found in this study, between group statistics were not conducted. The behavioral results, although positive, need to be confirmed.

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.

The notion of engaging people with dementia in functional activities such as cooking has face validity. In the discussion, information is shared about the ways in which the cooking program was adapted for different levels; however the information is not provided in enough detail for it to be replicated. It appears that the program was individually tailored for each participant; it is not clear how this was done in small groups. It appears that the intervention had statistically significant impacts on behavioral outcomes when comparisons were made within each group. Between group differences are not reported. Statistically significant differences are not reported for the health outcomes (blood pressure and heart rate). While this may not be surprising, it is difficult to make conclusions about the outcomes of this study in light of the focused question.

This work is based on the evidence-based literature review completed by Lori Letts, PhD, OT Reg. (Ont.), Julie Berenyi, BSc (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.), Colleen O’Toole, MSc (OT), OT Reg. (Ont.), and Colleen McGrath, 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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