# Memory Intervention for Older Adults – A Pilot Study

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## Background

There are a plenitude of interventions that can be used to enhance memory for older adults; however, the evidence as to whether these interventions enhance memory for daily activities is equivocal [1, 2, 4].

The practical significance of memory training has not been firmly established and several authors have suggested that the general assumption that interventions are generalizable and will transfer to daily living is misguided.

## Objectives

The objectives of this study are to

- to examine the feasibility of the intervention (e.g., ease of use of materials provided); and,
- to gain preliminary evidence of the intervention's impact on recall of recent daily social events in healthy (not cognitively impaired) older adults.

## Memory Training Interventions

Many interventions involve a laboratory session that teach one or more memory techniques.

**Common approaches** [2, 4, 5]

**Table 1: Memory Training**

| Approach | Description |
|---|---|
| Memory Recall | Read words or stories. Test recall. |
| Mnemonics | Use strategies (i.e., acronyms) |
| Reality Orientation | Repeat teaching tasks during day |
| Spaced Retrieval | Repeat teaching at increasing intervals |
| Calendars | Log appointments and diary of events |

**Instruction Guidelines**

- short commands, repetition, few items

**Scoring** [3, 4, 6]
Some common ways of scoring in memory interventions can involve reviewing participants' responses and counting items such as

- **Names**: number of names in a response
- **Words**: number of words in response
- **Events**: number of events in a response

**Recommendations**
Literature recommends more use of

- **Diaries**: record daily events for recall
- **Calendars**: appointments, log of daily activities
- **Homework**: memory tasks
- **Generalizability**: tasks that correspond to daily activities

## Present Pilot Study

The present pilot study attempts to incorporate many of the recommendations from the literature. It utilizes: a) diaries; b) calendars; c) repetition; and d) activities that have potential for generalizability [3, 4, 6].

The findings from this pilot study will be used to develop more elaborate teaching methods for a master's thesis.

## Methods

**Sample**

- 12 cognitively healthy older adults
- Intervention group (n=7), Control group (n=5)

**Design**

- Experimental design with random assignment
- Mixed Methods (Quantitative, Qualitative)

**Procedure**
The study consisted of: a) a pre-training session; b) seven days of independent memory training; and c) a post-training session. The pre-training session involved a test that measures recall of daily social events from the previous week. This was followed by seven days of training for recall of daily social events. During the seven days, the intervention group performed daily memory tasks using self-instructional materials given to them by the researcher, whereas the control group used their own strategies for remembering social events that they were involved in during the week. The post-training session occurred after the seven days and involved the same test as the pre-training session that measures recall of social events from the previous week.

**Materials**

- **Demographics questionnaire.** (includes gender and age)
- **Memory recall test**. The questionnaire asks participants to describe social events they had during the previous week.
- **Memory Tasks Self-Instructional Manual** included a) instructions; b) forms for each day of social events; and c) example form that is filled out.
- **Self-report questionnaire**. The questionnaire ask participants about their thoughts regarding the format and usefulness of the instruction materials. Questions included:
  - ease of procedure
  - helpfulness for remembering
  - time and effort

**Memory Tasks Self-Instructional Manual for Intervention Group**
Everyday the participant

- Recorded social events in diary of manual
- Performed memory tasks of reviewing diary entries

example: form

Today's date: Friday May 2 Day 2 of 7

Morning Tasks:
☑Review social events for week
Afternoon Tasks:
☑Review social events for week
Evening Tasks:
☑Review social events for week

Contact today:

| Name | Description |
|---|---|
| Brenda | Talked on phone about her cat |
| Joey | Talked about going for lunch |

**Scoring**

- Total names in memory recall test (e.g., Fred, Betty)
- Total words in memory recall test (e.g., I have a cat = 4)
- Total events in memory recall test. An event was an event that was recorded for a day (i.e., usually a sentence or two). (e.g., I talked to Linda on the phone).

**Statistical Analyses**

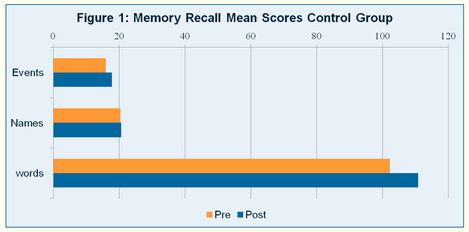
- Total counts for both pre and post test recall tests
- Independent t-tests for names, words, and events

## Results

**Hypotheses**

a) Recall of social events will be higher for the post-training test than in the pre-training test
b) Recall will be better for in the intervention group than the control group.

**Hypotheses confirmed**
Both groups improved from pre to post memory recall tests Intervention group was statistically significant. Control group was not statistically significant



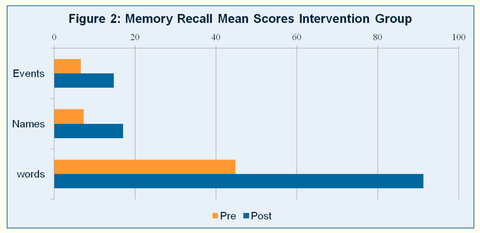




**Table 2: Paired t test compare Post to Pre test scores counts**

| Group | Events | Names | Words |
|---|---|---|---|
| Control | p=0.315 | p=0.482 | p=0.253 |
| Training | p=0.030 | p=0.023 | p=0.015 |

**Participants' post-tests for recall had**

- More events that had dates listed
- More sorting by date
- Quicker recall, quicker speed of writing test

**Self-report feedback included**

- Participants reported very positive ratings for all questions. Higher ratings for intervention group.
- All participants thought the intervention was helpful to improve memory
- Participants were very enthusiastic about the study

## Discussion

The control group improved from pre to post-test. Unlike in the pre-session, participants knew that in the post-session they would be tested before hand, so this probably positively influenced performance.

The training group improved more than the control group from pre to post-test. This suggests that the memory tasks they were given over the 7 days were helpful for them to utilize memory recall for social events.

A criticism of existing memory interventions are that many of them do not have generalizability to daily activities. This intervention provided a potential practical daily procedure for helping with memory recall.

A simple recall aid may help older adults improve their memory for daily events. A larger study is needed to more fully examine the effectiveness of the intervention with both cognitively healthy older adults and individuals with some cognitive impairment.

## Future Directions

The master's thesis will incorporate teaching methods for memory recall of social events, but it will also include other daily activities such as remembering directions and remembering to take medication. Analysis of performance of participants in this pilot study has provided positive preliminary results of the approach for developing the teaching methods for the master's thesis.

Future research could build upon ideas in this pilot study. For example, the participant may have quizzes during the day to test recall of social events. Other future research could also include events that are not necessarily social (e.g., exercise, leisure activities). A further study might also distinguish between learning that is needed for recall and learning that is needed for recognition (e.g., perhaps it is okay to have diary notes documented and information does not have to be memorized). Perhaps the procedure could be enhanced for long term memory (e.g., log important social events for each month).

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## Acknowledgements

Special thanks goes to Dr Verena Menec who was the advisor of this project.
Special thanks goes to the Centre of Aging for use of the participant database pool.