

Group External Memory Aid Treatment for Mild Cognitive Impairment



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Introduction

- Individuals with Mild Cognitive Impairment (MCI) experience cognitive deficits (e.g., memory impairments) that are greater than normal aging, but do not exceed dementia (Peterson, 2007).
- People with MCI typically live independently, but demonstrate a decline in speed and efficiency with which they complete daily activities.
- Half of these individuals will eventually be diagnosed with dementia and half will continue to experience greater than normal aging deficits (Doty, 2007).
- Interventions that teach the use of external memory aids (EMA) can help people compensate for memory impairments.
- Group treatment is one strategy for teaching people with MCI strategies to compensate for cognitive impairments (Bourgeois, 2013; Kinsella, 2009).

Study Purpose: To examine the effects of a MCI group treatment intervention on cognitive skills, functional EMA use, six-week maintenance of skills, and EMA preferences.

Methods

Participants

Participant	Group	Age (years)	Years of Education	MoCA Scores
P1	1	88	12	24
P2	1	72	14	24
P3	1	86	12	22
P4	2	74	12	21
P5	2	75	12	23
P6	2	75	14	24

- Six female participants ages 72-88 years old.
- Participants were randomly divided into two equal groups (MoCA mean score of 23).
- Scored between a 21-24 on the Montreal Cognitive Assessment (MoCA).
- Group 1 participants' mean age: 82 years.
- Group 2 participants' mean age: 75 years.
- Lived independently at a Senior Retirement Apartment Center.
- No previous dementia diagnosis.
- Passed vision, hearing and upper extremity screening.

External Memory Aids Used in Treatment



Procedures

Groups	Week 1	Weeks 2-7	Week 8	Weeks 9-15	Week 16
Group One	Pre-treatment Assessment	Group Treatment	Post-treatment Assessment	No Treatment	Follow up Assessment
Group Two	Pre-treatment Assessment	No Treatment	Second Pre-treatment Assessment	Group Treatment	Post-treatment Assessment

- The sessions occurred in a Senior Retirement Center meeting room.
- Each participant completed three individual assessment sessions and six consecutive group treatment sessions lasting 90-minutes each.
- All assessment sessions included:
 - *The Montreal Cognitive Assessment (MoCA)*
 - *Arizona Battery for Communication Disorders of Dementia (ABCD)*
 - *Immediate and Delayed Recall Subtests*
 - *Multifactorial Memory Questionnaire (MMQ)*
 - *Strategy Subtest*
 - *Role Play Activity (7 items)*
- A post-treatment questionnaire was also administered.
- Group 1 started treatment immediately following pre-treatment assessments and Group 2 was delayed 6 weeks.

Treatment Sessions Procedures

Session 1 included:

1. Introduction of the treatment approach
2. Introduction of the first category of external aids
3. Intensive and repetitive practice of aids
4. Explanation of home practice with new aids

Sessions 2-3 included:

1. Review of last week's category of external aids and home practice activity
2. Introduction of a new category of external aids
3. Intensive and repetitive practice of aids
4. Explanation of home practice with new aids

Sessions 4-6 will included:

1. Review of last week's category of external aids and home practice activity
2. Focus on each participants' preferred type of external aid within the category
3. During sessions 4-6 the participant chose the aid within the category she will focus on. Selection was based on comfort level, perceived benefit, and availability
4. Functional practice: Discussed how to establish a routine using the aid
5. Explanation of home practice with one aid

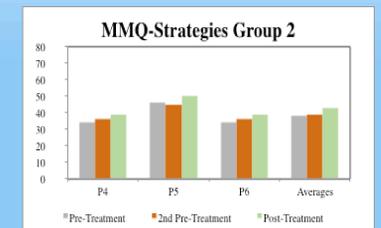
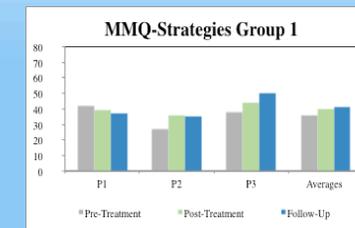
- Throughout the treatment sessions, three categories of EMAs were taught during two non-consecutive sessions.
- Within each category of EMA, three types were taught (i.e., no-tech to high-tech approaches).

Results

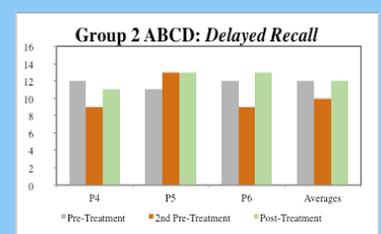
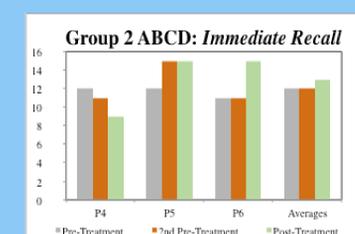
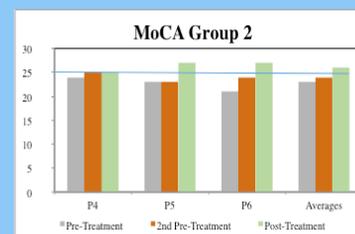
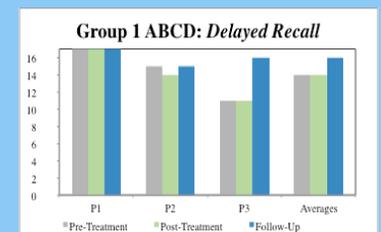
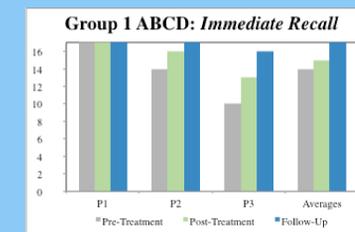
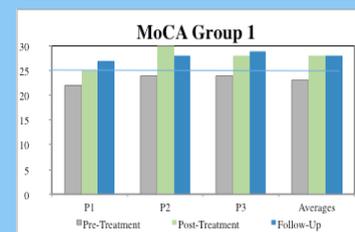
Functional EMA Use and Participants' Perceptions

Role Play Activity

	Group 1		Group 2	
	Pre-Intervention	Post-Intervention	Pre-Intervention	Post-Intervention
Success (7)	5	6	7	7
EMA type	None	Write	Write	Write
P1	5	6	7	7
P2	5	6	7	7
P3	0	6	3.5	None
P4	7	7	7	Write
P5	6	4	None	7
P6	4	None	4	iPad



Cognitive Skills



EMA Preferences



Discussion

Post-Treatment Findings

- Similar to other MCI intervention studies, the participants increased their use of EMAs (Bourgeois, 2013; Kinsella et al., 2009). The current study expanded these results to increased use during a functional activity.
- Another unique contribution of this study, are the findings related to increased cognitive skills post-intervention.
- Unexpectedly, all six participants increased their MoCA scores to be at or above the MCI criteria score of 25.
- The increase in cognitive skills may be due to the implementation of an intensive, single-strategy treatment (EMAs only) as compared to training of multiple strategies.
- Post-treatment, many participants increased their MoCA and ABCD delayed recall subtests scores. Without treatment, Group 2's average second pre-treatment score decreased on the ABCD *Delayed Recall* subtest. Results suggest that treatment had an indirect effect on delayed recall skills; however, future research should investigate this relationship further.

Maintenance Findings

- Group 1 participants were reassessed at six weeks post-treatment to measure maintenance of skills. Only two participants continued to increase their EMA use. Future studies should examine methods to encourage maintenance of EMA use.
- Group 1 participants' maintenance or gains on the ABCD at six week-follow up further support intensive, single-strategy group treatment for people with MCI.

EMA Preferences

- Previous research suggests that adults prefer electronic EMAs (Cohen-Mansfield et al., 2005). However, no current study participants preferred electronic EMAs. Participants preferred simple, portable EMAs.
- Individual participants preferred different types of EMAs (e.g., monthly versus daily calendar). Results highlight the importance of providing people with MCI with multiple opportunities to practice various types of EMA to ensure maximum success.