

Examining Omission Errors Made By Individuals With Mild Cognitive Impairment and Dementia When Completing Activities of Daily Living

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Introduction:

- As the US population ages, an increasing financial and social burden will fall on caregivers.
- There is a need to develop interventions that will assist individuals with mild cognitive impairment (MCI) and dementia to retain their autonomy and safely function in their home.
- To guide design of specific reminders that will keep people with cognitive impairment functioning independently in their home, the current study examined the types of steps that were left out (i.e., errors of omission) when individuals with MCI and dementia completed eight independent activities of daily living (IADL's) in a campus apartment.

Methods:

Participants:

- There were 130 participants classified as MCI (n=52), dementia (n=13), or without cognitive impairment (n=65).
- Dementia and MCI participants were matched with an individual of the same age and education level (i.e. healthy older adult).

Procedures and Analysis:

- All participants completed eight activities of daily living (e.g., sweeping, cooking, and operating a DVD).
- Performance was analyzed according to the sub-tasks not completed by participants in each activity (i.e., omissions).
- Omissions were broken down into three categories: preparation (i.e., retrieve dust pan), action (i.e., dust dining room), and concluding (i.e., return duster).
- To control for the differences across error categories in the number of possible omissions that could be made the number of omissions for each error category was divided by the total number of possible omissions for that category.

Task Example:

Medication:

- Participant retrieves materials from cupboard "A". (Preparatory)
- Participant reads instructions. (Preparatory)
- Participant fills dispenser with medication. (Action)
- Participant returns supplies to kitchen cupboard. (Concluding)

Table 1

Median Proportion of Omissions for the Three Error Categories for Individuals with Mild Cognitive Impairment (MCI) and Healthy Older Adults (HOA)

Category	Classification	Median	U	Z	p
Preparation					
	MCI (n=48)	.00	960.0	-1.60	.109
	HOA (n=48)	.00			
Action					
	MCI (n=51)	.11	691.0	-3.46	.001
	HOA (n=52)	.04			
Concluding					
	MCI (n=43)	.09	776.0	-1.36	.175
	HOA (n=43)	.09			

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	HOA (n=43)	.09			

Results for MCI participants:

- A Mann-Whitney analysis was used to compare MCI participants to healthy older adults matched on age and education.
- The data showed that the MCI participants committed more action omission errors than HOA (see Table 1)
- There were no significant differences between MCI and HOA in preparation and concluding omission errors (see Table 1).
- The data suggests that the MCI participants were having greater difficulty with the action steps of the everyday tasks.

Table 2

Median Proportion of Omissions for the Three Error Categories for Individuals with Dementia and Healthy Older Adults (HOA)

Category	Classification	Median	U	Z	p
Preparation					
	Dementia (n=11)	.15	26.5	-2.54	.013
	HOA (n=12)	.00			
Action					
	Dementia (n=10)	.34	14.5	-3.03	.002
	HOA (n=12)	.05			
Concluding					
	Dementia (n=10)	.32	14.0	-3.23	.001
	HOA (n=13)	.09			

Results for dementia participants:

- Dementia participants committed more omission errors in preparation, action, and concluding steps compared to matched HOA (see Table 2).
- The data suggests that individuals with dementia were experiencing difficulty completing all steps of the everyday tasks.

Discussion:

- The data indicate that as individuals progress from MCI to dementia, they continue to have difficulty with the action-oriented steps of everyday tasks and also begin to experience difficulty completing preparatory and concluding steps.
- MCI participants may have made more omissions errors in the action steps due to the action category being more cognitively demanding.
- Dementia participants made omissions at earlier stages, making it more difficult to continue on with the tasks.
- Dementia participants made more omissions in concluding steps.
- This research can assist in the development of more efficient reminders for cognitively impaired individuals.