

Insights: Financial Capability

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This issue brief summarizes the findings from a paper titled "Metamemory and financial decision making in older adults without dementia" recently published in [Neuropsychology](#). The corresponding author for this issue brief and the full paper is Lei Yu (lei_yu@rush.edu).

What You Don't Know *Can* Hurt You: Misjudging Memory Skills Can Adversely Impact Financial Decision Making in Old Age

Summary

Older adults without dementia are often actively engaged in their own financial matters. However, memory performance varies widely even among those without cognitive impairment, and many older adults are unaware of how good or bad their memory actually is. In this study, we examined whether self-perceptions of memory performance are associated with financial decision-making performance. We found that, among older adults, greater misperceptions of memory skills were tied to poorer scores on a financial decision-making measure. We also saw that improving financial literacy provided a buffer against the adverse effect of memory skill misperception on financial decision making.

Background

The ability to make sound financial decisions declines as people age [1, 2]. Older adults with poor financial decision-making skills can suffer significant and sometimes irrecoverable financial losses, posing a risk to themselves, their family and society as whole. Among older adults, cognitive deficits are known to cause poor decision making. However, it is unclear whether self-perceptions of cognitive performance play a role in decision making [3, 4]. Older adults who misperceive their memory skills are more likely to develop cognitive impairment or dementia [5, 6] and to experience greater financial losses than those who are more attuned to the state of their memory [7]. One possibility is that older adults who are unaware of their memory performance make poorer financial decisions, ultimately resulting in financial losses and other adverse outcomes.

This study examined the link between older adults' awareness of memory performance and financial decision making. The study included more than 500 community-dwelling older adults between the ages of 59 and 100. All were free of dementia throughout the duration of the study. These older adults are generally able to perform day-to-day activities and remain actively engaged in decision making, even though many struggle in the financial domain.

Methodology

The Rush Memory and Aging Project (MAP) began in 1997, enrolling older adults from across northeastern Illinois who live in continuous care retirement communities, Section 8 and Section 202 subsidized housing, and retirement homes. Since its inception, MAP participants have undergone yearly detailed clinical evaluations, including memory testing. In 2010, a measure of financial decision making was added to the evaluations.

In this study, participants were on average 82.8 years old and had obtained 15.2 years of education. A majority were female (76.5 percent).

Memory Skill Misperception

We estimated memory skill misperception by comparing participants' subjective memory rating with changes in their objective memory. We measured subjective memory at the point of the decision-making assessment using participants' responses to two questions: (1) Do you have trouble remembering things? and (2) How do you perceive your memory compared to 10 years ago? We measured objective memory through a standard neuropsychological testing battery that participants completed on a yearly basis. To determine changes in objective memory, we used participants' annual memory testing scores up until the decision-making assessment. We calculated a misperception score for each participant, with higher scores indicating a greater level of memory skill misperception.

Financial Decision Making

To assess financial decision making, we asked participants six questions that mimic real-world tasks of choosing mutual funds [8]. We showed participants tables with information about different mutual funds and asked three simple and three difficult questions. A simple question, for example, asked participants to identify the account management fee (Figure 1), while a difficult question asked them to choose a fund that meets a series of criteria (Figure 2). We tallied correct responses to individual questions to obtain a total score, ranging between 0 and 6. Higher scores indicate higher financial decision-making ability.

About a quarter of the participants were only able to answer two or fewer questions correctly; 22 percent answered three questions correctly; 30 percent answered four questions correctly; and 23 percent answered five or more questions correctly. Those who were older, female and had less education were more likely to demonstrate poor financial decision making.

Figure 1: Examples of simple questions in financial decision-making assessment.

Fund A	
Gross Annual Return	8%
Management Fee	0.75%
Minimum Investment	\$1,000
Years of Activity	10

What is the account management fee for this fund?

1. 8%
2. 0.75%
3. 0.10%
4. 10%

What is the gross annual return on the minimum investment?

1. \$8
2. \$80
3. \$800
4. \$1,000

Financial Literacy

To assess financial literacy, we used a 23-item instrument adapted from the Health and Retirement Study. In this instrument, 12 items assess financial knowledge, eight items assess numeracy and the remaining three items assess skills of projecting investment returns. We calculated a total score as the percentage of the items that participants answered correctly, with higher scores indicating higher financial literacy.

Figure 2: Example of difficult questions in financial decision-making assessment.

	Gross Annual Return	Management Fee	Minimum Investment	Years of Activity
Fund A	6.25%	0.60%	\$1,500	4
Fund B	7.30%	1.20%	\$2,500	10
Fund C	6.00%	0.80%	\$1,500	5
Fund D	7.00%	1.50%	\$2,000	4
Fund E	7.15%	0.75%	\$2,500	6
Fund F	5.85%	2.00%	\$1,000	15
Fund G	6.20%	1.25%	\$2,500	8
Fund H	4.00%	1.75%	\$500	7
Fund I	5.50%	0.90%	\$1,000	6

You have \$2,000 to invest. You want a mutual fund that has a management fee for less than 1.5% one that has been active for at least 5 years, and one that has a gross annual return of at least 6.0%. Based on the information in the table to the left, which fund should you choose?

1. Fund A
2. Fund B
3. Fund C
4. Fund D
5. Fund E
6. Fund F
7. Fund G
8. Fund H
9. Fund I

Study Findings

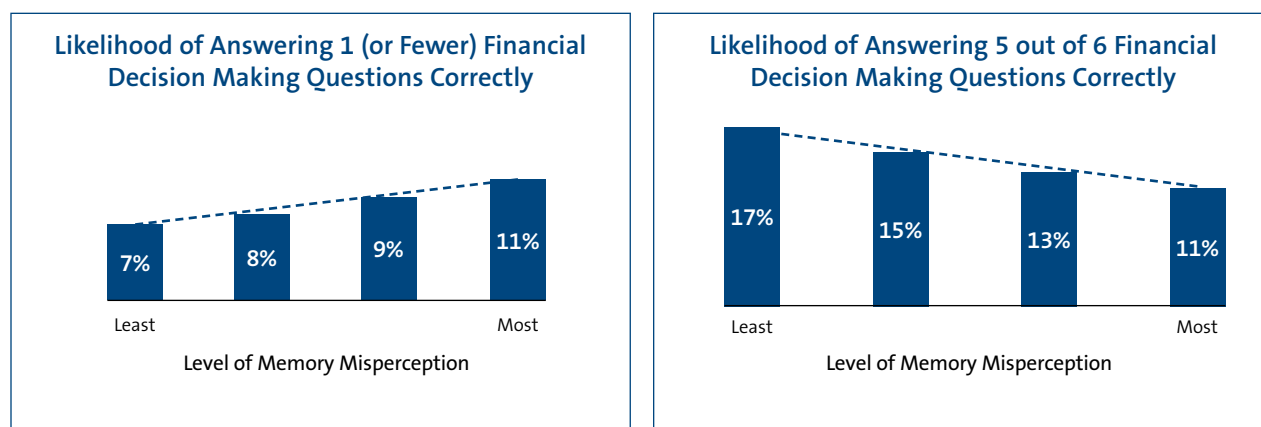
Misperceiving Memory Skills Tied to Poor Financial Decision Making

A greater misperception of memory skills was associated with poorer financial decision making among older adults. This effect remained even after controlling for age, sex, education and financial literacy.

To illustrate, we estimated how likely participants were to correctly answer financial decision-making questions with varying levels of memory skill misperception. As shown in Figure 3, the likelihood of answering merely one question correctly increases when participants experienced greater misperception of memory skills.

The likelihood of correctly answering all the questions correctly decreases when participants experienced a greater misperception of memory skills. The findings suggest that less accurate perceptions of memory performance were tied to poorer financial decision-making performance.

Figure 3: Memory skill misperception and financial decision making



Both Over- and Underestimating Memory Performance Were Related to Poor Financial Decision Making

Although we saw that misperceiving one's memory skills was related to poor financial decision making, the direction of this misperception did not seem to matter. Older adults who overestimated their memory skills scored no differently in the financial decision-making assessment from those who underestimated their memory skills. Both groups performed worse than older adults who could accurately estimate their memory skills.

Higher Financial Literacy, Better Financial Decision Making

Financial literacy was strongly tied to financial decision making, more so than memory misperception. In fact, high levels of financial literacy potentially buffered against the adverse effect of misperceived memory skills on financial decision making.

Discussion

In this study, we examined the association between awareness of memory performance and financial decision making among older adults without dementia. Our findings revealed that older adults with greater misperceptions of their memory skills performed more poorly on a financial decision-making measure. Below, we discuss the implications of our findings.

Older adults without dementia typically live independently and handle their own finances [9]. In the study, the majority of participants (about 85 percent) reported handling their money (*e.g.*, paying bills, writing checks and keeping track of income) by themselves. Our data showed that, even in the absence of dementia, many older adults are susceptible to poor decision making and lack adequate financial ability. This suggests that poor decision making among the aging population may be a widespread and important issue requiring attention.

Identifying early signs of impaired decision making is essential to facilitating interventions to protect older adults from adverse financial consequences. This study showed that, besides objective memory function, memory skill misperception is also an indicator of poor financial decision making. This finding could inform potential regulatory and policy efforts to address the growing challenge of poor financial decision making and vulnerability to fraud and scams among older adults.

It is noteworthy that, compared to older adults who could accurately estimate their memory, those who overestimated and those who underestimated their memory performance both showed poorer financial decision making. It is possible that misperceiving one's memory performance, whether reflected in an over- or underestimation of these skills, is indicative of an age-related accumulation of brain pathology (*e.g.*, Alzheimer's disease changes) that occurs in years, or even decades, prior to the onset of overt cognitive impairment. Although we can only speculate about the nature of the association between memory awareness and decision making, the finding that memory skill misperception is related to poor decision making has important policy implications. For example, it may provide guidance on when the use of trusted contacts or temporary holds on disbursements may be warranted if fraud is suspected. And separately, it highlights the importance for family and loved ones to check in on older adults' memory status and be aware of discrepancies between their objective and subjective memory skills.

Finally, our findings once again highlight the pivotal role of financial literacy in financial decision making among older adults. While memory skill misperception and financial literacy were both related to financial decision making, financial literacy appears to play a larger role in decision making than does memory awareness. Together, these findings suggest that improving financial literacy could provide a powerful buffer against the adverse impact of memory skill misperception on financial decision making. It also reaffirms the importance of educational programs that promote financial knowledge and numeracy skills among older adults.

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