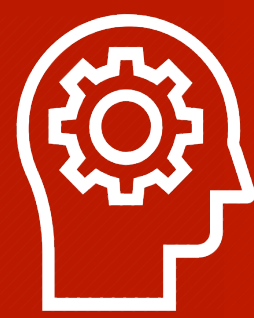


# Self-report Memory Measures and Outcomes of Performance Based Testing

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## INTRODUCTION

- Functional cognition** is the integration of cognition and performance skills<sup>2, 6</sup>
- Safety is a primary concern for older adults who with to live independently after a medical event<sup>5, 6</sup>
- Client awareness of cognitive decline (or lack thereof) often contradicts the outcomes of available performance-based measures<sup>3, 5</sup>
- There is weak evidence to support that self-report of cognitive abilities is predictive of actual performance on functional cognitive tasks (e.g. scheduling, medical management)<sup>1, 4</sup>
- Evidence supports **combining** self-report and performance-based measures to determine the cognitive abilities and overall safety of an older adult before medical discharge<sup>1, 2, 4, 6</sup>

### Purpose

To compare self reported memory scores and the performance on a validated screening measure of functional cognition

## METHODS

### Design & Participants

Observational, cross-sectional analysis of 87 health older adults living independently in the community

### Measures

Multifactorial Memory Questionnaire (MMQ)

- 3 MMQ scores:
  - Reported **satisfaction** with memory
  - Reported memory **mistakes**
  - Reported memory **strategies** regularly used

### The Menu Task

- “Fail” or “**impaired**” scores =  $\leq 7$
- “Pass” or “**unimpaired**” scores = 8-12

### Analyses

- Descriptive statistics
- Correlation to examine relationship between MMQ scores and The Menu Task performance
- Independent t-tests of MMQ scores between those who passed and failed The Menu Task

### The Menu Task Instruction and Scoring

Giles, G. M., Al-Heizan, M.O., Marks, T. S., Maloney, S. E., Spliers, M. J., Wolf, T. J., & Edwards, D. F.  
Version 1.1



### Menu

#### Breakfast

2 Eggs with Sausage, Hash Browns and Toast, 1000 calories  
Oatmeal with Raisins and Nuts, 300 calories  
Corned Beef Hash and Eggs, 1000 calories  
Waffles and Syrup, 800 calories  
Fresh Fruit Selection, 200 calories

Fruit Juice (8 ounces) Coffee/Tea (12 ounces) Milk (12 ounces)

#### Lunch

Grilled Chicken Salad, 800 calories  
Hamburger and French Fries, 1200 calories  
Southwest Salad, 350 calories  
Chicken Fried Steak, 1000 calories  
Cottage Cheese and Vegetable Medley, 400 calories

Fruit Juice (8 ounces) Coffee/Tea (12 ounces) Milk (12 ounces)  
Diet Soda (16 ounces)

### Menu

#### Dinner

Turkey Burger and Garden Salad, 800 calories  
Lasagna, 500 calories  
Grilled Salmon and Wild Rice, 400 calories  
Southwest Salad, 350 calories  
Chicken Fried Steak, 1000 calories

Fruit Juice (8 ounces) Coffee/Tea (12 ounces) Milk (12 ounces)  
Diet Soda (16 ounces)

#### Afternoon/Evening Snack

Yogurt Cup, 280 calories  
Fresh Fruit Selection, 150 calories  
Crackers, 200 calories  
Ice Cream, 500 calories  
Jell-O, 100 calories

## RESULTS

Table 1. Demographic and Assessment Scores

	Total Sample N=87		
	Mean	SD	Range
Age	70.36	8.24	55-93
# Chronic Health Conditions	1.18	1.28	0-7
Education (years)	15.11	3.04	8-27
MMQ Satisfaction	53.40	11.54	25-71
MMQ Mistakes	55.30	10.25	29-79
MMQ Strategies	32.74	10.59	0-61
The Menu Task Performance	8.77	2.13	3-12
N		%	
Female		58 67%	
White		69 79.3%	

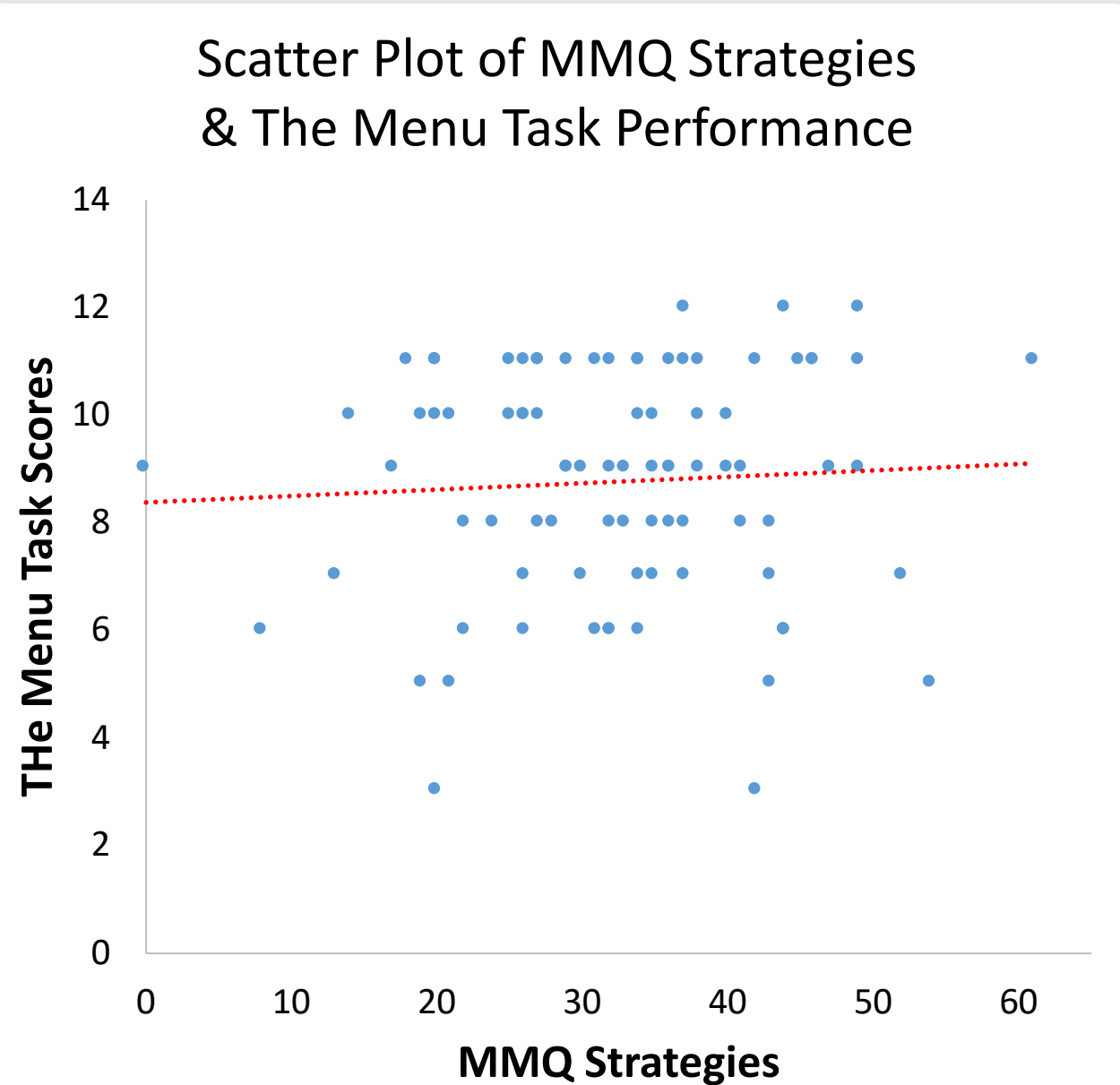
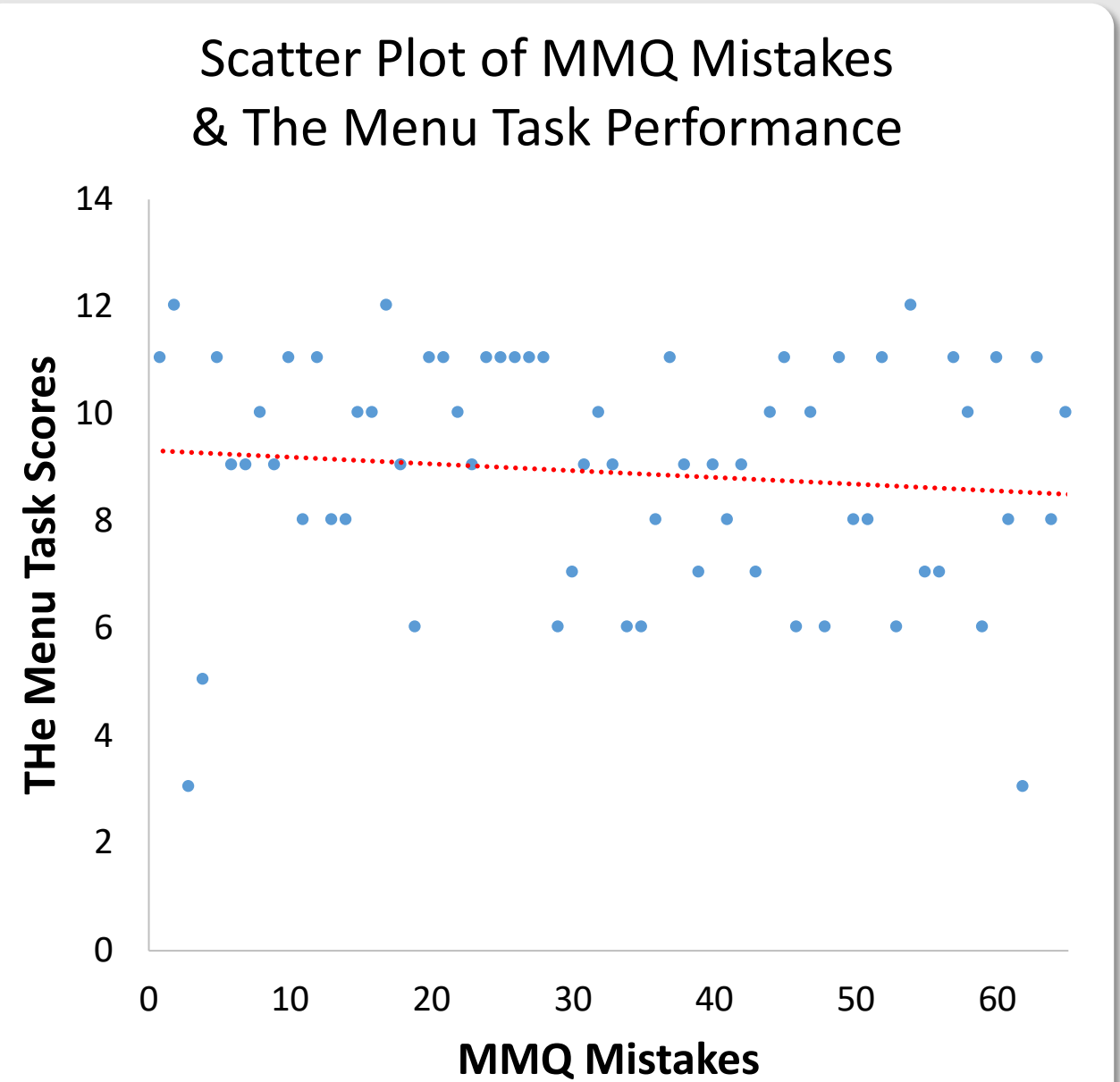
Table 2. Pearson Correlation of MMQ Scores and Scores on The Menu Task

		MMQ Satisfaction	MMQ Mistakes	MMQ Strategies
The Menu Task	Pearson Correlation	.018	.099	.059
	Sig. (2-tailed)	.868	.362	.587
	N	86	87	87

*Note.* Correlation considered significant at  $p < 0.05$

Table 3. Independent Samples T-Test of Menu Task Performance (Pass/Fail) Per MMQ Score

t-test for Equality of Means						95% Confidence Interval	
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
<b>MMQ Satisfaction</b>	.816	85	.417	2.605	3.191	-3.739	8.950
<b>MMQ Mistakes</b>	1.489	85	.140	3.635	2.441	-1.217	8.487
<b>MMQ Strategies</b>	-.008	85	.994	-.020	2.556	-5.102	5.062
<i>Note.</i> T-test considered significant at $p < 0.05$							



## CONCLUSIONS

- Participant self-reported MMQ scores were unrelated to their actual performance on the The Menu Task
- There was not a significant difference between participants' self-reported satisfaction about their memory, the mistakes they reportedly make, and the memory strategies they reportedly use – regardless of whether they passed or failed The Menu Task

## IMPLICATIONS FOR PRACTICE

- Healthcare professionals should not interpret self-report as a sole determinant of client functional cognition and safety
- Performance-based screenings should be used in conjunction with client self-report to detect the subtle signs of cognitive impairment that would warrant further testing and specialized service referrals.

## ACKNOWLEDGEMENTS

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## REFERENCES

- Burmester, B., Leatham, J., & Merrick, P. (2016). Subjective cognitive complaints and objective cognitive function in aging: A systematic review and meta-analysis of recent cross-sectional findings. *Neuropsychology Review*, 26(4), 376–393. <https://doi.org/10.1007/s11065-016-9332-2>
- Giles, G., Edwards, D., Baum, C., Furniss, J., Skidmore, E., Wolf, T., Leland, N. (2020). Making functional cognition a professional priority. *American Journal of Occupational Therapy*, 74(1). Retrieved from <https://ajot.aota.org/article.aspx?articleid=2760307&resultClick=3>
- Morrison, M. T., Edwards, D. F., & Giles, G. M. (2015). Performance-based testing in mild stroke: Identification of unmet opportunity for occupational therapy. *American Journal of Occupational Therapy*, 69, 6901360010. <https://doi.org/10.5014/ajot.2015.011528>
- Rotenberg Shpigelman, S., Sternberg, S., & Maeir, A. (2017). Beyond memory problems: Multiple obstacles to health and quality of life in older people seeking help for subjective memory complaints. *Disability and Rehabilitation*, 41(1), 19–25. <https://doi.org/10.1080/09638288.2017.1370729>
- Toglia, J., Rodger, S., Polatajko, H. (2012). Anatomy of cognitive strategies: A therapists' primer for enabling occupational performance. *Canadian Journal of Occupational Therapy*, 79, 225–236. doi: 10.2182/cjot.2012.79.4.4
- Wolf, T., Farrar Edwards, D., & Giles, G. (2019). *Functional cognition and occupational therapy: A practical approach to treating individuals with cognitive loss*. Bethesda, MD: AOTA Press.