



A Comparison of Performance-Based Measures of Functional Cognition

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Introduction

- To reduce unnecessary healthcare spending on preventable hospital readmissions, Centers for Medicare and Medicaid Services (CMS) issued a call for a standardized assessment of cognition and functional ability.
- Current cognitive assessments do not identify patients with mild cognitive impairment that can further impair functional ability. Patients with mild cognitive deficits will exhibit functional deficits in daily activities and are at a higher risk for hospital readmission^{1,3}.
- AOTA believes that the IMPACT Act provides an opportunity for occupational therapists to develop a new measure to identify functional cognition deficits to improve patient outcomes and reduce the risk of hospital readmission.
- Emerging evidence suggests that performance-based tests are more effective than neuropsychological measures in assessing the ability of adults to live independently in the community^{4,5}.
- The Menu Task is a performance-based assessment designed to screen for deficits in functional cognition using a familiar activity of a simulated hospital menu. CMS and the RAND Corporation have indicated that a medication management assessment may be a feasible performance-based measure of functional cognition.

Purpose: The purpose of this study was to examine the reliability and construct validity of the Menu Task. Additionally, we sought to compare the construct validity of the Menu Task with two medication management tasks to determine whether the Menu Task is an appropriate screening measure to be used by CMS.

Research Design Methods

Design

True exploratory descriptive design

Participants

100 participants over the age 55 living independently in the community (see Table 1)

Measures

Performance-based measures:

- The Menu Task
- The Performance Assessment of Self-Care Skills (PASS)
- The Medication Organizer task

Traditional neuropsychology measures of cognition:

- Montreal Cognitive Assessment (MoCA)
- Brief Interview of Mental Status (BIMS)
- Trails A
- Trails B

Self-report measure of functional ability:

- ADCS (IADL)

Procedures and Analysis

- Descriptive statistics for all participants analyzed and reported.
- Multitrait-multimethod matrix² used to determine construct validity of performance based measures.
- “Impaired” and “Unimpaired” groups established using criterion scores to determine the superior tool to screen for functional cognition.

Results

Figure 1. The Menu Task Assessment

Table 1. Participant Demographic Information and Assessment Scores

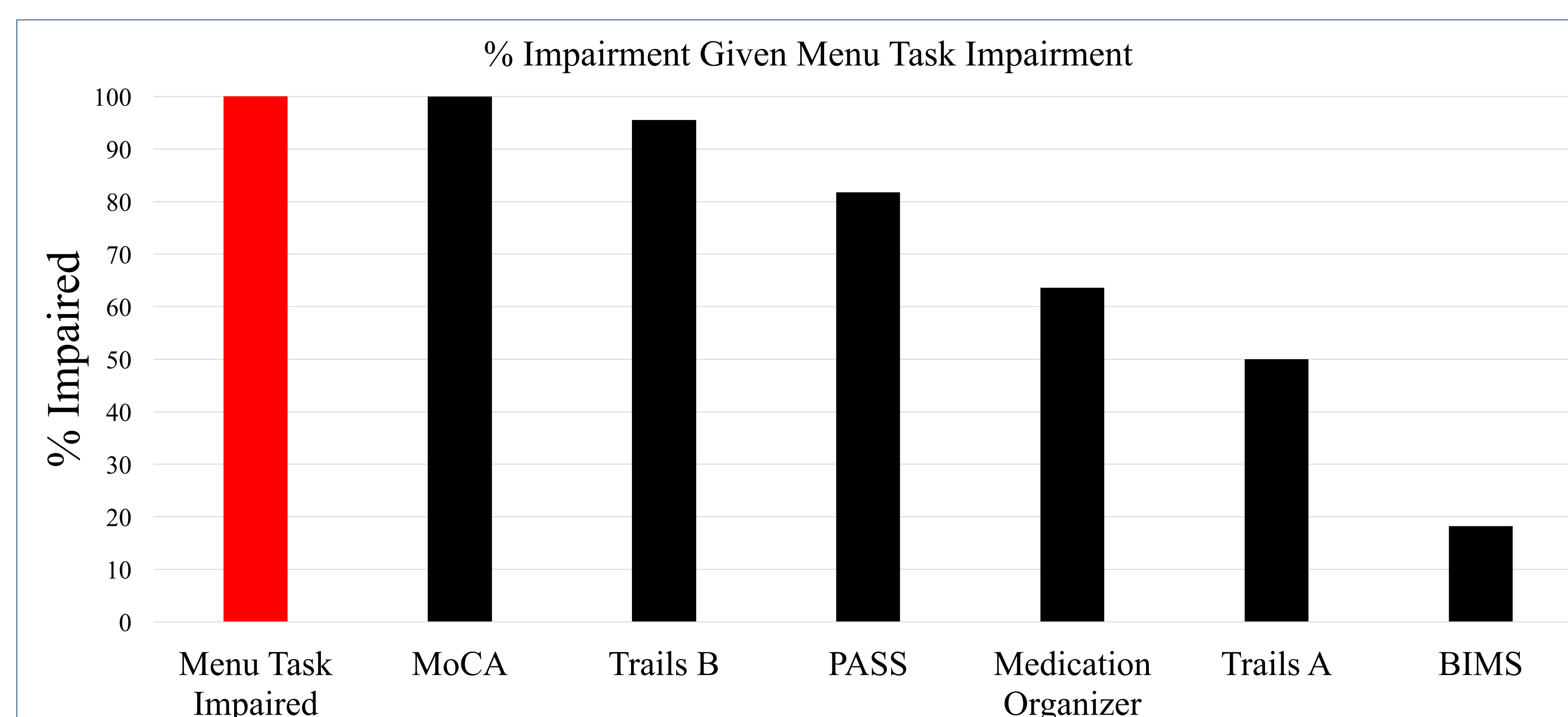
Demographics	N (%)	Mean (SD), Range
Age	100	68.59 (9.67), 55-95
Number of Chronic Health Conditions	100	.69 (.95), 0-5
Education	100	16.01 (2.83), 10-26
Menu Task	100	8.42 (2.03), 4-12
Medication Organizer	50	4.26 (.92), 2-5
PASS – Independence Score	50	2.78 (.31), 2-3
PASS – Safety Score	50	2.99 (.071), 3-3
MoCA	100	24.14 (3.47), 15-30
ADCS (IADLs)	100	52.70 (3.55), 38-56
BIMS	100	14.28 (1.30), 9-15
Trails A	100	34.09 (12.61), 13.27-91.22
Trails B	100	96.77 (44.29), 35-233.44
Female	69 (69%)	
White	84 (84%)	

Table 2. Multitrait-multimethod Matrix for Performance Based Tests and Paper/Pencil Tests

Methods	Traits	Performance Based Tests		
		Menu Task	PASS	Medication Organizer
Paper/Pencil Tests	MoCA	.56*	.63*	.43*
	Trails B	-.48*	-.43*	-.52*
	ADCS (IADL)	.37*	.31	.22
	BIMS	.24*	.19*	.62*
	Trails A	-.34*	-.51*	-.42*

Note: Bold values indicate a moderate correlation. Values with an asterisk were considered significant at the p < .001 level.

Figure 2. The Association of Being Impaired on the Menu Task with Being Impaired on Traditional Neuropsychology Tests



Conclusions

- The Menu Task better identifies functional cognition deficits than the PASS or the Medication Organizer task, perhaps due to the unique measures of inhibition and impulse control; aspects of executive function essential to independence in daily life.
- The Menu Task is a quick and easy screening tool for impairment in functional cognition. Our results suggest that the Menu Task has moderate construct validity and moderate internal consistency ($\alpha=.66$)
- Individuals impaired on the Menu Task were also impaired on other measures of executive function, indicating that the Menu Task is a sensitive measure in predicting executive function deficits in the context of daily life.
- The Menu Task may more accurately identify individuals at risk for hospital readmission within weeks of discharge from subacute care than the PASS or the Medication Organizer task.

Implications for Practice

- The ability to easily identify patients who require comprehensive evaluation will allow occupational therapists to provide services to individuals who may have previously gone unrecognized, thus decreasing rates of hospital readmission.
- Occupational scientists can answer CMS’s call for a standardized assessment of functional cognition for patients in subacute care settings.
- Occupational therapists’ expertise in performance-based assessments uniquely positions occupational therapy as an important contributor to changes in healthcare legislation, ultimately reducing unnecessary spending associated with hospital readmission and optimizing patient outcomes.

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