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Functional Performance of Older Adults with Dementia Participating in Adult Day Service Programs

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Introduction

Individuals with dementia are at a high risk of functional decline and falling. The aim of this study was to investigate the possible relationship between cognition and functional performance in older adults with dementia participating in Goodwill Easter Seals adult day service programs. This data may be helpful in understanding how cognition may impact functional performance and fall risk.

Purpose/Hypothesis

The purpose of this study was to identify the relationship between cognition and performance on several functional measures. We hypothesized that lower scores on the Montreal Cognitive Assessment (MoCA) would be associated with lower performance on all functional measures.

Subjects

19 individuals who attended Goodwill Easter Seals adult day services at three locations with a mean age of 74.4 ± 7.8 and mean MoCA score of 16.7 ± 7.72 participated in this study.

Methods

Participants were first administered the MoCA to determine cognitive function. Immediately following the MoCA, gait speed, Timed Up & Go, 30 sec sit-to-stand, and grip strength were measured. Spearman Rank-Order correlations were calculated between the MoCA and each functional measure.

Table 1. Functional Test Performance of Participants.

Functional Measure	Participant Values <i>Mean (±SD)</i>	Normative Values*	Impairment Cut-Off Values**
Gait Speed (m/s)	0.84 (0.40)	1.25	< 0.8
Timed Up and Go (s)	22.6 (30.9)	9	>13.5
30 sec Sit to Stand (reps)	8.3 (4.0)	10-17	< 10-12
Male Grip Strength (kg)	29 (8.7)	42.4	< 37
Female Grip Strength (kg)	16.3 (6.2)	23.7	< 21

*Known normative values for older adults without dementia in the same age group.

**Values associated with a risk for loss of independence and/or falls for older adults without dementia

Table 2. Correlation between Montreal Cognitive Assessment and Functional Measures

	Gait Speed	Timed Up & Go	30 sec Sit/Stand	Grip Strength
MoCA	0.560*	-0.328	0.196	0.040

*p < 0.05 for Spearman's rho



Results

- 1) Mean MoCA scores were 16.7, indicating at least moderate cognitive impairment of the participants.
- 2) Performance on each of the functional measures indicated that this is functionally vulnerable population. (Table 1)
- 3) The MoCA was found to be moderately and positively correlated with gait speed ($\rho = 0.560$, $p = .013$) but no other functional measures (Table 2)

Conclusion

Participants displayed impaired performance on all functional measures compared to known normative data. However, only gait speed was correlated with cognitive performance.

Clinical Relevance

The relationship between cognition and function is unclear. However, this data supports the continued use of gait speed as an important clinical performance measure for older adults including those with dementia. Individuals with dementia participating in adult day services would also benefit from interventions to reduce functional decline.