

Background

There is a need for time efficient, accurate, cognitive screening tests that can detect cognitive impairment.

Objective

To compare classification accuracy of the Quick Mild Cognitive Impairment (Qmci) screen to the Montreal Cognitive Assessment (MoCA) in a memory clinic setting.

Methods

Participants

- 52 older adults who were referred to the Comprehensive Memory Center for evaluation of cognitive concerns.
 - Average age: 74.1 years (SD=6.8)
 - 50% male
 - 79% non-Hispanic White

Measures

- The Qmci is examiner-administered and assesses six cognitive domains: (see Figure 1). Scores range from 0-100, and scores < 67 are indicative of MCI. Administration time is <5 minutes.
- The MoCA is also examiner-administered, with total scores ranging from 0-30. Administration time is 10-15 minutes.

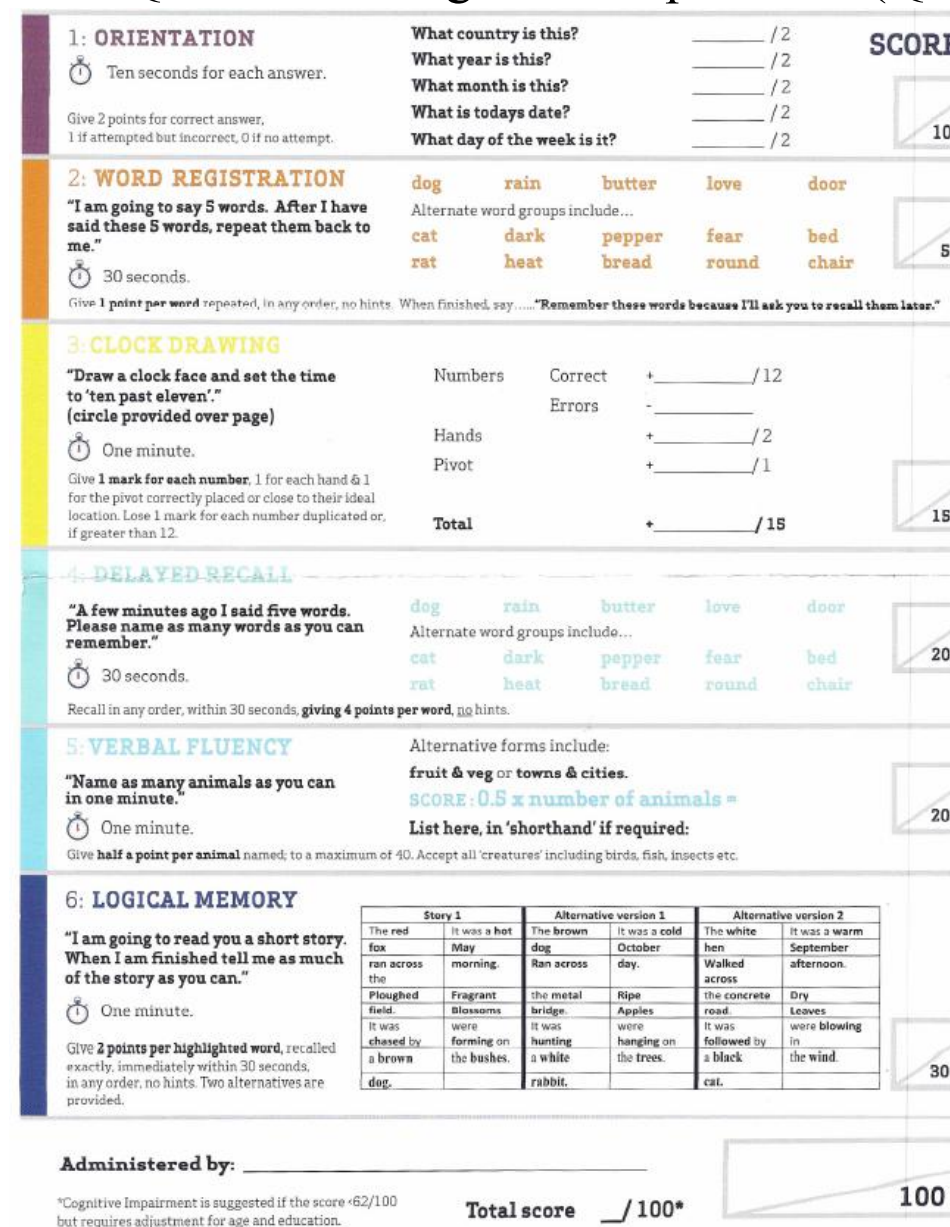
Procedures

- The Qmci was administered by clinic staff during the rooming process.
- The MoCA was administered by a neuropsychologist as part of an intake interview.
- After the intake interview, patients were given a preliminary diagnosis of cognitively normal (CN), mild cognitive impairment (MCI), or suspected dementia (Dem) by the neuropsychologist who was blinded to the results of the Qmci.
- 47 out of the 52 patients then completed a comprehensive neuropsychological evaluation.

Analysis

- A Pearson's r was computed to assess the relationship between the Qmci and MoCA.
- One-way ANOVAs were utilized to examine differences in Qmci and MoCA scores between diagnostic groups.
- Classification accuracy of the Qmci and MoCA were evaluated using area under the ROC curve analyses based on results from the neuropsychological evaluation, i.e., CN vs cognitively impaired (CI = MCI+Dem).

Figure 1: Quick Mild Cognitive Impairment (Qmci) Screen



Results

- The average QMCI and MoCA scores for the sample were 55.4 (SD=20.2) and 20.2 (SD=5.9), respectively.
- The two measures correlated significantly ($r=0.869$; $p < .001$).
- There were significant differences between diagnostic groups for both the Qmci and MoCA (CN>MCI>Dem; $F=10.7$ and 15.1, respectively; both p 's < .001) (see Table 1).

Table 1: Means (SDs) of Qmci and MoCA by Diagnostic Group

	CN (n=10)	MCI (n=24)	Dem (n=18)
Qmci	79.9 (9.2)	60.3 (15.7)	39.0 (18.8)
MoCA	25.5 (2.5)	21.6 (4.6)	15.4 (5.3)

Note: SD=standard deviation; Qmci=Quick Mild Cognitive Impairment screen; MoCA=Montreal Cognitive Assessment; CN=cognitively normal; MCI=mild cognitive impairment; Dem=dementia

Results (cont.)

- The area under the ROC curves were the same, 0.87, for both measures, indicating good classification accuracy (see Figures 1 and 2).

Figure 1: Area under the receiver operating curve for the Quick Mild Cognitive Impairment screen

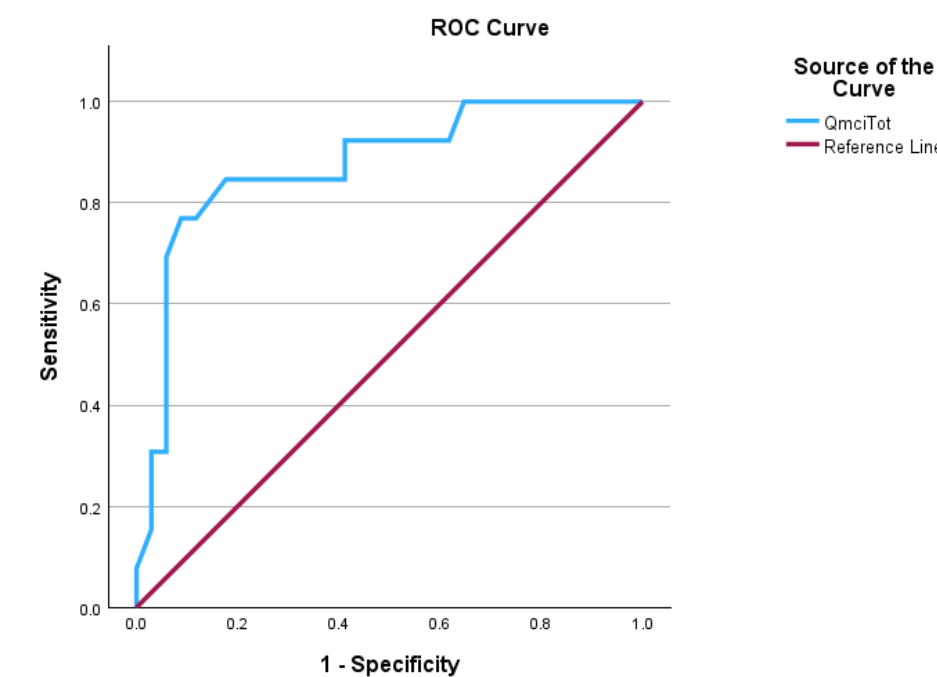
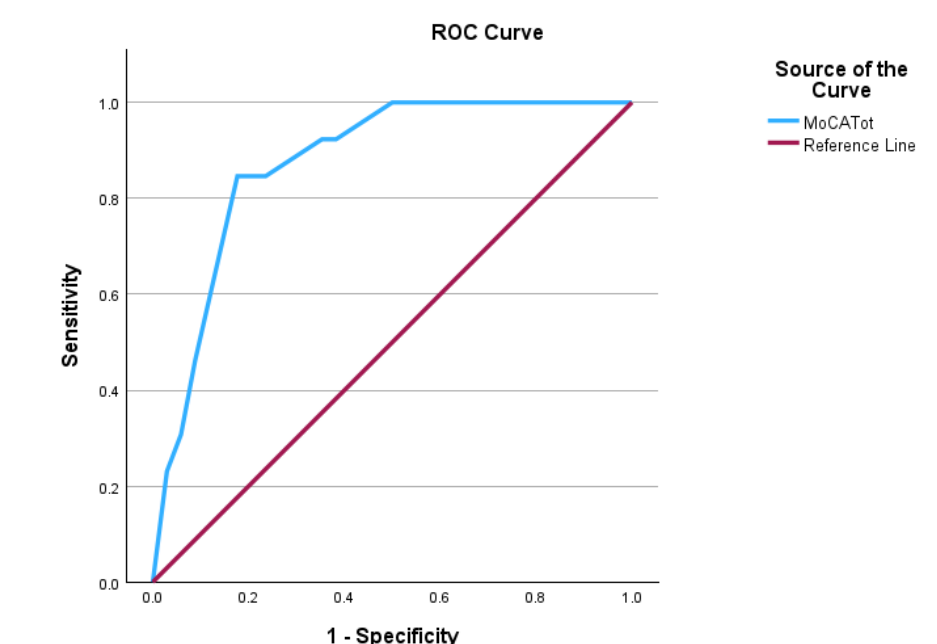


Figure 2: Area under the receiver operating curve for the Montreal Cognitive Assessment



Conclusions

- The Qmci performed similarly to the MoCA in a memory clinic sample, suggesting utility as a briefer alternative in busy clinic settings.
- Additional validation in larger, heterogeneous samples is needed to confirm these findings.

Acknowledgements

This research was supported in part by a gift from BrainCheck