

Comparing Acceptability of a Digital Cognitive Screening Tool to the Quick Mild Cognitive Impairment Screen in Primary Care

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BACKGROUND

There is growing consensus that digital cognitive assessments may facilitate earlier detection of cognitive impairment associated with Alzheimer disease and related dementias. In primary care settings in particular, cognitive screening remains underutilized due to time constraints and limited access to efficient screening tools, which are recommended to take 3-5 minutes to administer and score.

OBJECTIVE

The purpose of this study was to compare usability of a short, self-administered digital cognitive screening tool, Memory Check, to a traditional paper-and-pencil cognitive screening test, the Quick Mild Cognitive Impairment (Qmci) screen, in a real-world primary care cohort.

METHODS

PARTICIPANTS

- 314 participants completed Memory Check and Qmci as part of a regularly scheduled primary care visit.
 - Average age = 73.2 (SD=7.2)
 - 64% female
 - 30% Hispanic
 - Avg years of education = 16.3 (SD=2.5)

- No prior dementia diagnosis

MEASURES

- Memory Check is a self-administered digital cognitive assessment consisting of three components (see middle panel) that generates a probability score using machine learning techniques.
- The Qmci has six subtests: Orientation, Word Registration, Clock Drawing, Delayed Word Recall, Verbal Fluency, and Logical Memory. Scores range from 0 to 100, with scores <67 indicative of MCI.

PROCEDURES

- Participants completed Memory Check followed by the Qmci at their primary care visit.
- Participants completed a usability survey asking them to rate on a 5-point Likert scale how easy they found each measure, how confident they felt using each measure, and how anxious they felt while completing the measures.
- They were also asked which measure they preferred (or if they had no preference).

MEMORY CHECK APP COMPONENTS

Brief Dementia Screening Indicator

- Age
- Education
- Body mass index (BMI)
- History of type 2 diabetes
- History of stroke
- Need for assistance to manage money or medications
- Anti-depressant medication use or report that “everything was an effort” three or more days over the past week

Speeded Matching (SM)

●	↔	✱	■	★	💡	🔒	▶	⌚
1	2	3	4	5	6	7	8	9

1	8	9	7	6	5	4	3	2

- SM was the most important variable fo discriminating between cognitively normal (CN) and cognitively impaired (CI) in prior work (Hilsabeck et al., 2025)

Connected Speaking Tasks

Thinking back, can you tell a story about something important that happened to you in your life?

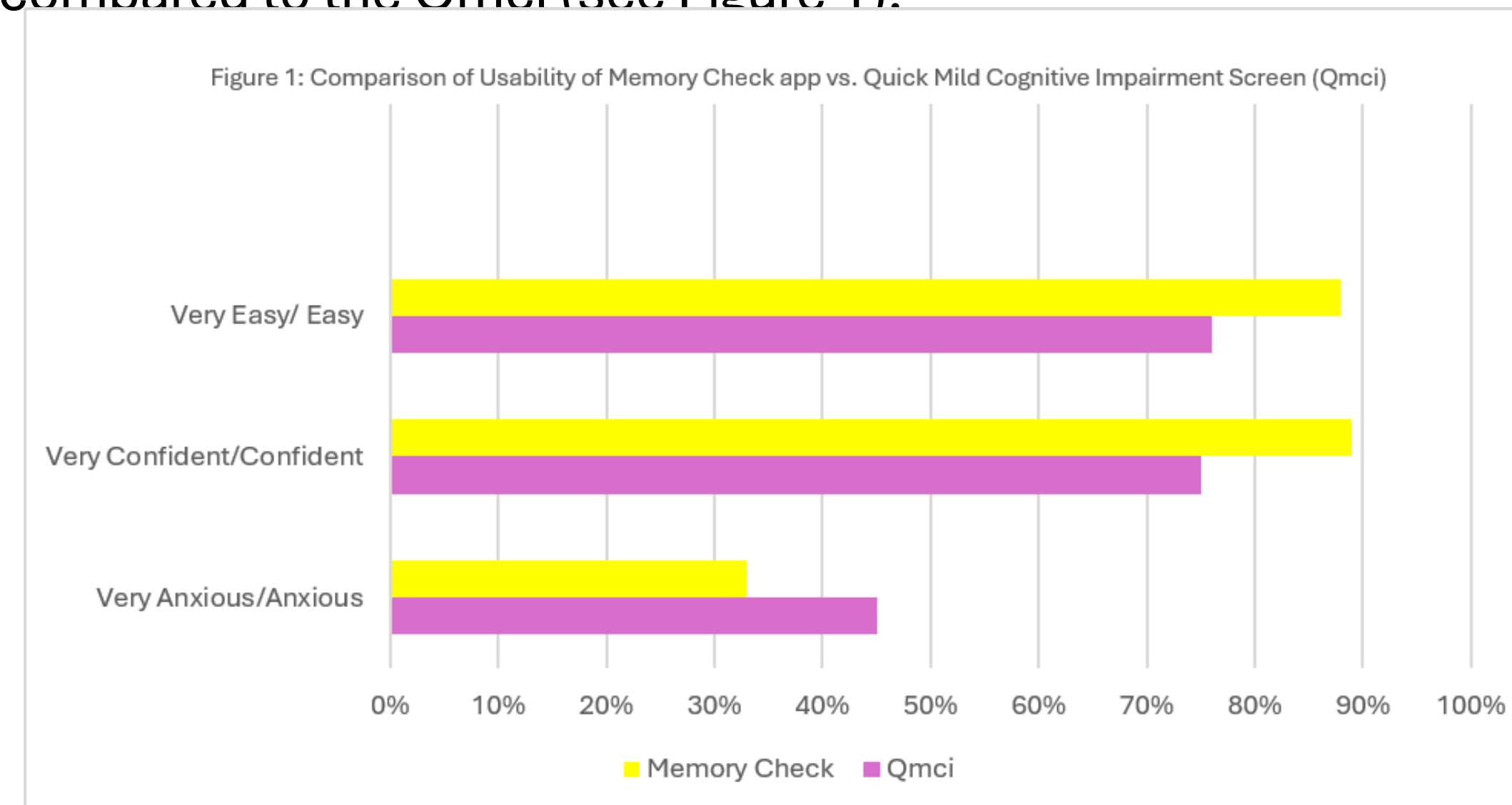
It could be happy or sad or from any time -- from when you were a kid or more recently. Something important...

For instance, you could talk about a trip you took or something about your family or your work -- anything.

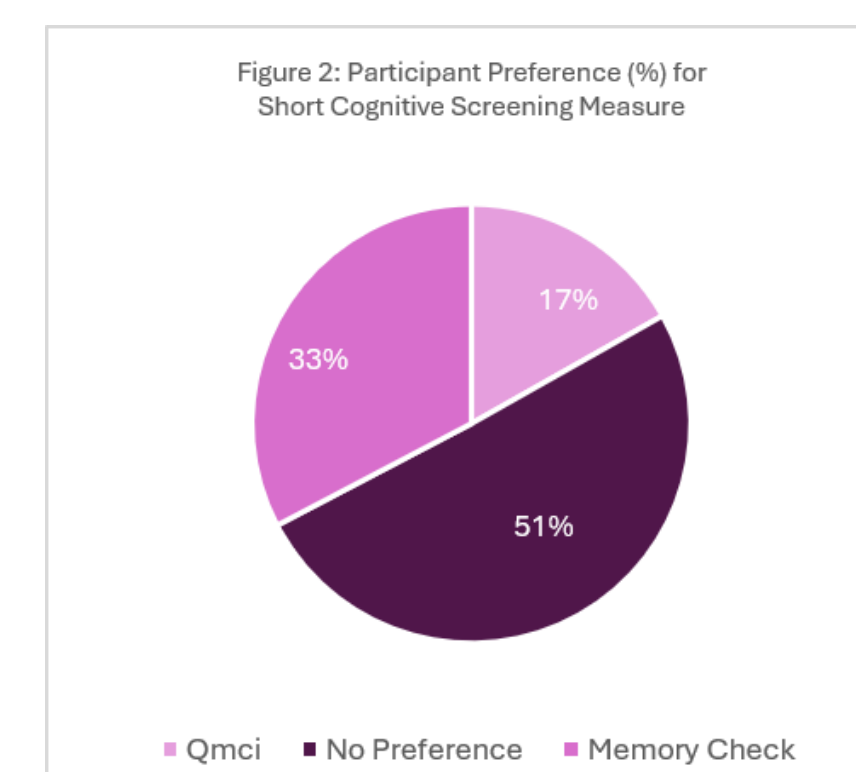
Tap here when you are finished speaking

RESULTS

Compared to the Qmci, significantly more participants rated Memory Check as very easy/easy to use and reported feeling very confident/confident while using the app. In addition, significantly fewer participants indicated feeling very anxious/anxious using Memory Check compared to the Omci (see Figure 1).



While the majority of participants had no preference between Memory Check and Qmci (51%), almost twice as many preferred Memory Check over the Qmci (see Figure 2).



CONCLUSIONS

- Memory Check was rated easier to use and less anxiety-provoking than the Qmci by patients in primary care.
- Primary care patients also felt more confident while using the app compared to completing the Qmci, and nearly twice as many preferred the app over the Qmci.
- Results suggest that a short digital screening tool is acceptable to patients in primary care settings.
- Further research should examine usability across different patient populations and implementation into clinic workflows, as well as assess provider acceptance and clinical outcomes following implementation.

REFERENCE:

- Hilsabeck RC, Keller JN, Henry ML, et al. Development and classification accuracy of an automated cognitive screening tool combining working memory and connected speech tasks for early detection of cognitive impairment in primary care. *Alzheimers Dement* (N Y). 2025;11(3):e70145. Published 2025 Aug 18. doi:10.1002/trc2.70145

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