

Feasibility and Acceptability of a Digital Multi-Day Cognitive Assessment in a Diverse Registry-Based Cohort: The Boston Remote Assessment of Neurocognitive Health (BRANCH)



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Multiday remote cognitive assessment is feasible and acceptable in a diverse older adult sample, with high adherence. Greater enjoyability, rather than perceived challenge, was associated with higher adherence, supporting the role of user experience in sustained engagement.

BACKGROUND

Diminished learning across repeated cognitive assessments over multiple days may signal early Alzheimer's disease processes and predict future cognitive decline. Digital cognitive assessments (DCAs) offer an accessible approach to detect subtle cognitive changes and support longitudinal monitoring.

However, feasibility of multiday testing depends on participants' sustained engagement. Subjective experiences (i.e., perceived enjoyability and challenge) may provide insight into acceptability of DCAs across demographic groups. Previously, we demonstrated the validity and reliability of the Multiday BRANCH assessment in an observational study cohort¹.

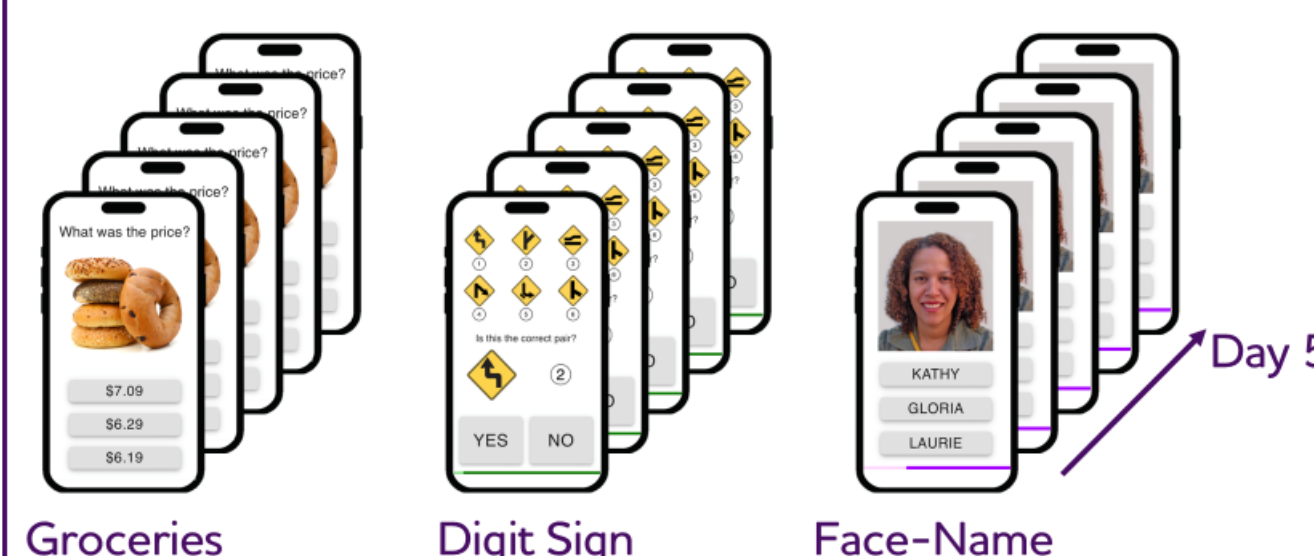
We extended this work to a remote, ethnoracially diverse sample to evaluate adherence to a five-day BRANCH paradigm, examine subjective experiences, explore learning curves across test components, and assess motivations for retaking DCAs.

METHODS

Of 769 approached, 225 APT Webstudy² participants completed the Multiday BRANCH assessment.

Sex	
Female	100 (44.4%)
Age (range 50 – 90)	
	67.6 (7.8)
Race	
American Indian/Alaska Native	4 (1.8%)
Asian	43 (19.1%)
Hispanic/Latino	50 (22.2%)
Black/African American	18 (8.0%)
White	110 (48.9%)
Education	
≥ College	196 (87.4%)
Employment Status	
Retired/Not Working	139 (62.3%)

Participants completed BRANCH once daily for five consecutive days (10-15 mins/day) to capture multiday learning curve scores. Following each session, they rated enjoyability, challenge, and willingness to retake assessments every six months.



RESULTS

Adherence was high (>99% Day 1; 96% ≥3 days; 80% all 5 days). Ratings of enjoyability increased and ratings of challenge decreased over repeated testing. Within-person and between-person changes in enjoyability and challenge were not related.

Figure 1. Adherence was lowest among adults 75+, but was not associated with sex, education, or employment status

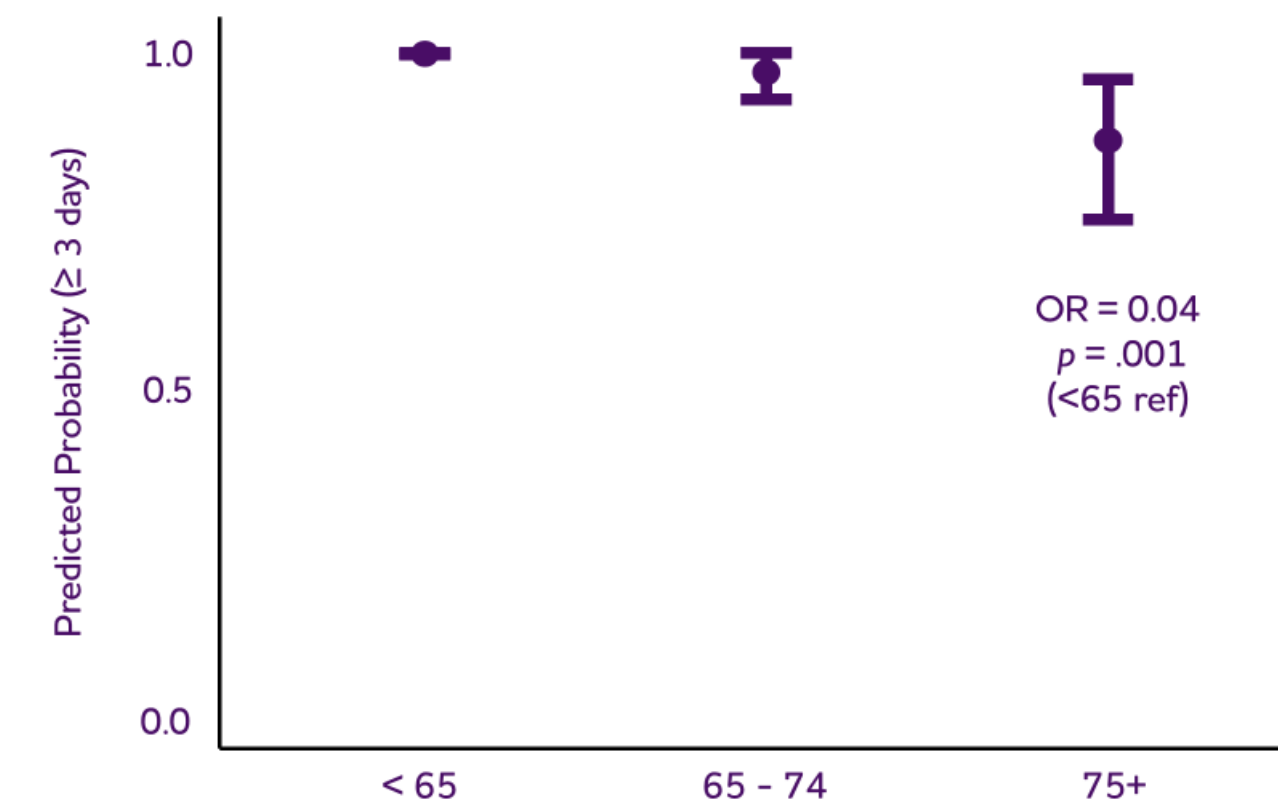


Figure 2. Enjoyability was lowest among adults 75+, but was not associated with sex, education, or employment status

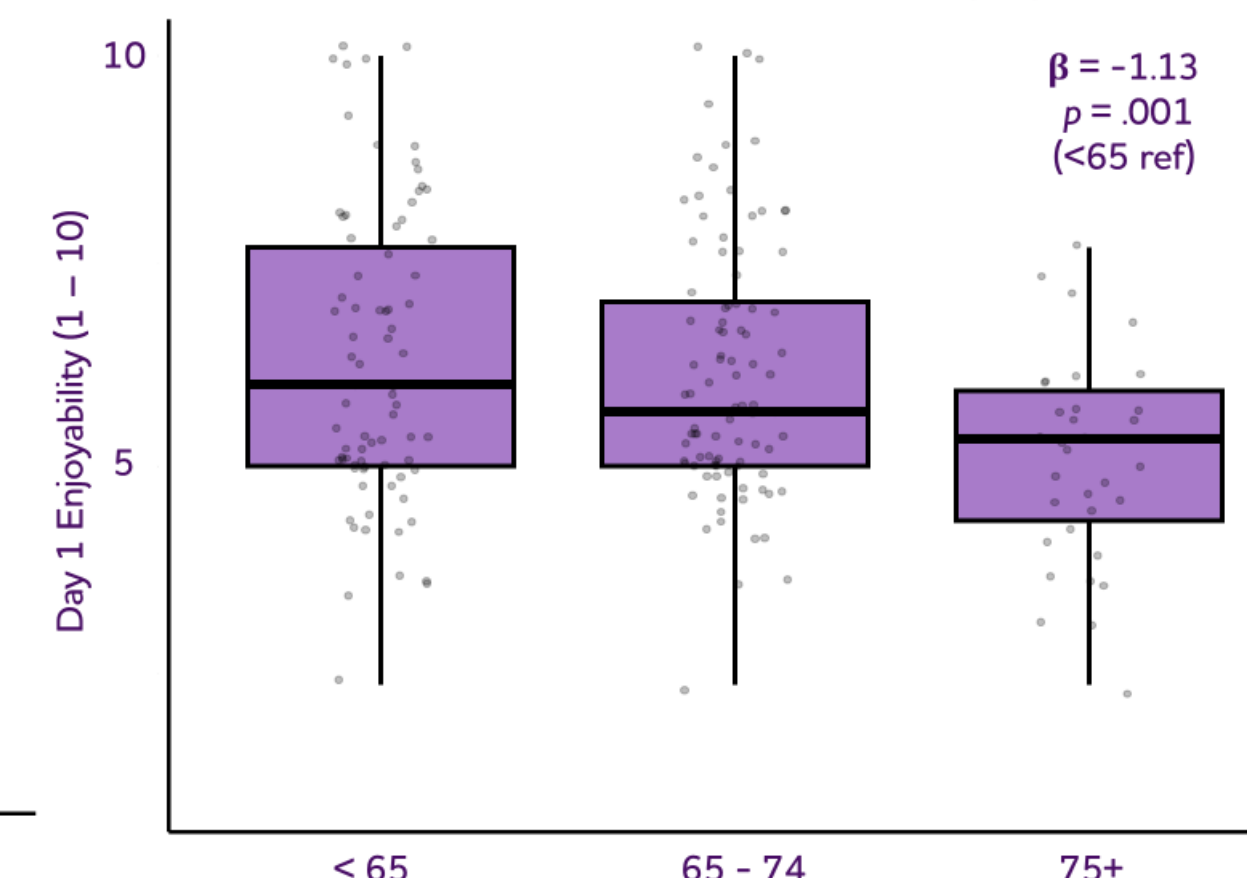


Figure 3. Greater enjoyability was associated with greater adherence; challenge was not associated with adherence

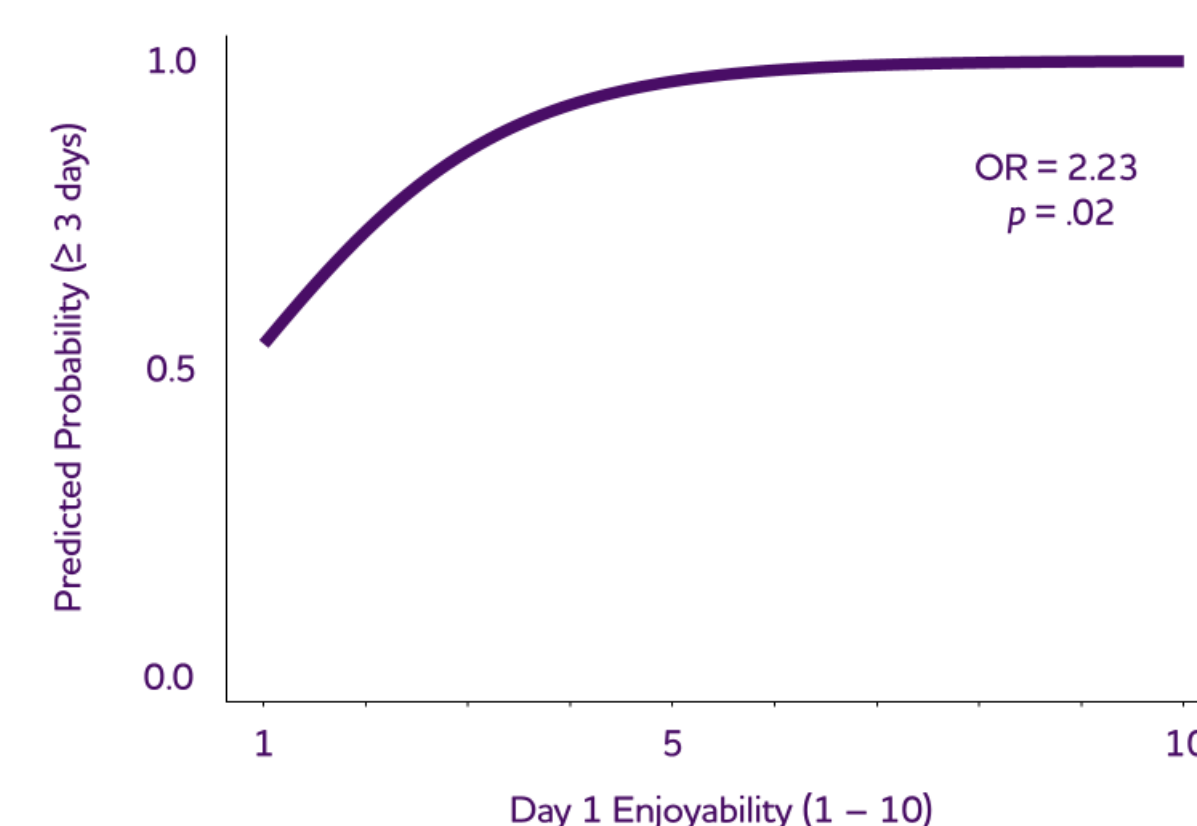
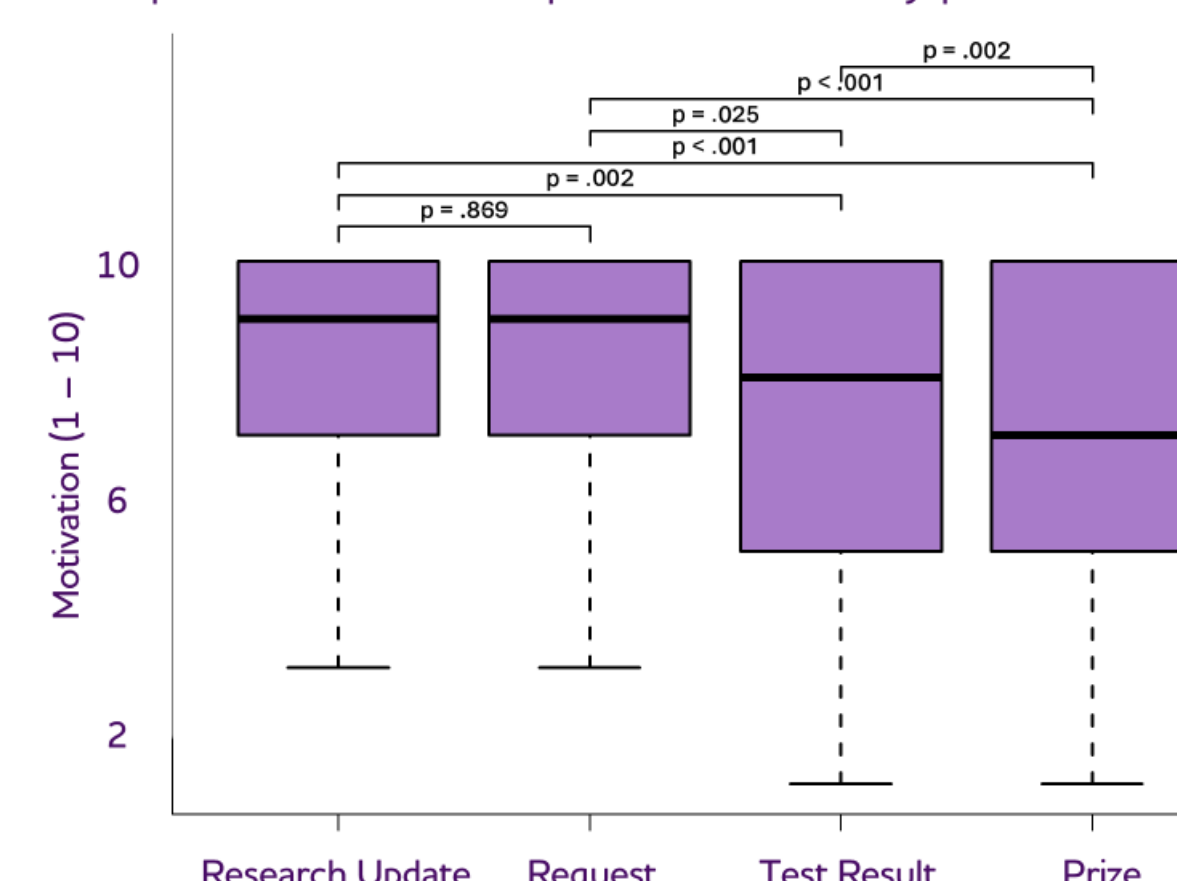


Figure 4. Participants were most motivated by research updates and staff requests, and least by prizes



CONCLUSIONS

Findings suggest multiday DCAs are feasible and acceptable among adults over 50 in an ethnoracially diverse sample.

High adherence support their use for longitudinal monitoring. Enjoyability may be particularly salient for sustaining engagement, with implications for test design and motivation strategies.

Demographic differences in engagement highlight the need to further identify barriers to sustained participation in diverse populations.

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