

English and Spanish monolinguals and bilingual older adults from two ethnic groups (EA; European Americans and HA; Hispanic American) with typical and atypical aging. An IRT model was used to identify 24 MINT Items assessed across ethnicity and language testing groups (Spanish and English). We analyzed the discriminant and predictive validity of the 32-item and 24-item scales across diagnostic groups (cognitively normal [CN], mild cognitive impairment [MCI], and dementia [AD]). Diagnostic accuracy was then assessed with both versions applying ROC (Receiver Operating Characteristics) curve reporting using AUC (Area Under the Curve). We expected the MINT to distinguish between the CN and AD groups but not between CN and MCI and the MCI and AD. We conducted IRT analyses to evaluate the cross-language validity of the items from the 32-item MINT in English and Spanish through Rasch Analysis across our two ethnic groups. Finally, we tested the association between MINT scores and MRI volumetric measures of language-related areas in both cerebral hemispheres' temporal and frontal lobes.

**Participants and Methods:** The sample comprised 281 participants (178 females) enrolled in the 1Florida Alzheimer's Disease Research Center (ADRC), with 175 participants self-identified as HA (51 tested in English and 124 in Spanish) and 106 EA, all of them monolingual English speakers. The participants were classified into three diagnostic groups: 1. CN ( $n = 94$ ); 2. MCI ( $n = 148$ ); and 3. AD ( $n = 39$ ). Participants are evaluated yearly through a comprehensive neuropsychological battery, including the MINT is a standard CN task that requires patients to retrieve words upon presentation of a line drawing.

**Results:** We obtained a ceiling effect in four items (Butterfly, Glove, Watch, and Candle). Four items were easier in English (Blind, Gauge, Porthole, and Pestle) and four in Spanish (Dustpan, Funnel, Anvil, and Mortar). In the 32-item version of the MINT, EA scored significantly higher than HA, but when removing those eight items, the ethnic difference was attenuated and no longer statistically significant (controlling for education). The ROC curves showed that both versions of the MINT had poor accuracy when identifying CN participants and were acceptable in identifying dementia participants but unacceptable for classifying MCI participants. The 32-item MINT in English and Spanish and the 24-item MINT in Spanish were significantly

correlated with the bilateral MTG. However, the 24-item MINT in English was only correlated with this area's volume in the right hemisphere. The left FG correlated with MINT scores regardless of language and MINT version. We also found some differential correlations depending on the language of administration. The bilateral hippocampi, STG, MTG and FG, and right ITG were significantly correlated only with MINT Spanish scores, while the left ITG was significant only when either version of the MINT was administered in English.

**Conclusions:** Our results highlight the importance of analyzing cross-cultural samples when implementing neuropsychological tests.

**Categories:** Aging

**Keyword 1:** dementia - Alzheimer's disease

**Keyword 2:** assessment

**Keyword 3:** language: second/foreign

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## 6 Depressive Symptoms are Associated With Decline Over Time in Verbal Fluency Performance in Female but not Male Community-Dwelling Older Adults

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**Objective:** Late-life depression is prevalent among older adults and the presence of depressive symptoms has been shown to be associated cross-sectionally with worse verbal fluency performance. There is limited and mixed evidence as to whether depressive symptoms impact change in verbal fluency performance over time, and whether gender impacts this relationship.

**Participants and Methods:** Participants were community-dwelling older adults who were dementia-free at baseline ( $N = 522$ ;  $M$  age = 75.96,  $SD \pm 6.46$  years). Baseline depressive symptoms were measured using the Geriatric Depression Scale. Category fluency and letter fluency performance, using the Controlled Oral Word Association Test (COWAT), were examined annually. Linear mixed effects models stratified by gender examined whether associations between baseline depressive

symptoms and changes in fluency performance over five years were different in female ( $n = 289$ ) as compared to male ( $n = 233$ ) participants. Sensitivity analyses excluding participants with prevalent or incident mild cognitive impairment (MCI) ( $n = 141$ ), excluding participants with incident dementia ( $n = 28$ ), and excluding participants with prevalent or incident MCI or incident dementia ( $n = 169$ ) were run. All analyses were adjusted for age, years of education, estimated premorbid functioning, and health comorbidities.

**Results:** Depression was minimal across participants ( $M = 4.72$ ,  $SD \pm 3.96$ ). A subset of participants ( $n = 44$ ) reported “possible depression,” namely levels suggestive of subclinical depression, according to clinical cut-offs. The “possible depression” group included 31 females (10.73% of females) and 13 males (5.58% of males), and the “no depression” group included 258 females (89.27% of females) and 220 males (94.42% of males). Baseline levels of depressive symptoms suggestive of subclinical depression were associated with worse decline in category fluency performance during longitudinal follow-up in females (estimate =  $-0.16$ ,  $p = .002$ ) but not males (estimate =  $-0.03$ ,  $p = .658$ ). Results remained the same when excluding prevalent and incident MCI cases (estimate =  $-0.19$ ,  $p = .005$ ), excluding incident dementia cases (estimate =  $-0.12$ ,  $p = .017$ ), and excluding prevalent and incident MCI and incident dementia cases (estimate =  $-0.20$ ,  $p = .004$ ). Letter fluency performance did not decline over time and was not influenced by levels of depressive symptoms in females (estimate =  $-0.03$ ,  $p = .502$ ) or males (estimate =  $0.05$ ,  $p = .452$ ).

**Conclusions:** Baseline presence of depressive symptoms suggestive of subclinical depression was associated with worse decline in category fluency performance during longitudinal follow-up in female but not male participants. Letter fluency performance did not decline and was not impacted by levels of depressive symptoms. Results remained significant when accounting for covariates and potential confounders. The present study elucidated the combined influence of gender and depressive symptoms on change in fluency performance in older adults and can aid in identifying individuals who may be at a greater risk of cognitive decline.

**Categories:** Aging

**Keyword 1:** aging (normal)

**Keyword 2:** depression

**Keyword 3:** fluency

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## 7 P-Tau and Education as Moderators of the Relation between APOE4 and Memory Performance in Older Adults with Varying Cognitive Status

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**Objective:** White matter microstructure (WMM) potentially mediates the relation between APOE4 and memory performance. This study’s purpose was to understand whether p-tau effects this mediation model and whether education level differentially impacts the relations between these genetic and biological biomarkers’ influence on memory.

**Participants and Methods:** Participants included 161 older adults ( $M=74$  years, 40.4% female, 92% White, 74 e4 non-carriers, 87 e4 carriers) with subjective and objective cognitive impairment from the Alzheimer’s Disease Neuroimaging Initiative (ADNI). A composite memory score created by ADNI was used as the outcome variable. Mean fractional anisotropy (FA) and radial diffusivity (RD) values of white matter tracts within regions of interest (i.e., fornix (FX), hippocampal cingulum (CGH)) were individually used as the measures of WMM. A moderated mediation was run to examine whether p-tau was a moderator of the mediation between APOE4, white matter microstructure, and memory. An exploratory dual moderated mediation analysis examined education as a moderator of the moderated mediation. Indirect effects were tested using bootstrapping procedures.

**Results:** In the FA moderated mediation model, APOE4 was significantly related to FA of the fornix and memory performance. FA of the CGH and FX were also related to memory performance. With FA of the fornix as the