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CLINICAL MANIFESTATIONS

POSTER PRESENTATION

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NEUROPSYCHOLOGY

Executive Functions in Latin American Older Adults: Exploring the Concept Shifting Test and Its Relationship with the *APOE Gene* in a Cross-Sectional Sample from the LatAm-FINGERS Study

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Abstract

Background: Latin America (LA) faces high vulnerability to dementia risk factors. Early detection of cognitive decline, particularly in executive functions (EF), is crucial. The Trail Making Test (TMT) has limitations, while the Concept Shifting Test (CST) offers potential advantages but lacks LA adaptation. This study examines CST's correlation with other EF tests and its relationship with APOE-ε4 in older adults.

Methods: Cross-sectional analysis of LatAm-FINGERS baseline data, including TMT, CST, Stroop Test, and fluency tasks. APOE genotyping used PCR-RFLP analysis. Jamovi software (v2.3) analyzed correlations ($p < 0.05$).

Results: Sample: 1,143 individuals from 11 LA countries. Mean age = 67.4 years (±4.7), education = 13.2 years (±3.5), 73.9% women, 57.3% mixed-race. 21.4% carried APOE-ε4 allele. Mean CST shifting score: 16.0 (±19.3). Significant correlations with age (ρ=0.085; $p = 0.009$) and education (ρ = -0.201; p <0.001). No sex differences ($p = 0.172$). CST shifting score showed moderate correlation with TMT-flexibility (ρ=0.372; p <0.001), weak correlations with Stroop (ρ=-0.175; p <0.001), semantic (ρ=-0.133; p <0.001) and phonemic fluency (ρ=-0.184; p <0.001). No significant

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differences in CST shifting ($p = 0.951$) or TMT-flexibility ($p = 0.767$) between APOE-ε4 groups.

Conclusions: Weak correlations between CST shifting, Stroop-flexibility, and fluency tasks suggest they assess different EF aspects. The moderate CST-TMT correlation may indicate refined cognitive flexibility measurement in CST. While useful for EF assessment in LA, CST doesn't replace TMT. Diverse tools are crucial for early dementia detection. The lack of association between APOE-ε4 and cognitive scores emphasizes the importance of assessment regardless of genetic risk.