

DEMENTIA CARE RESEARCH

Baseline Results Investigate APOE-Memory Connection in
Latin-American Population at Risk for Dementia -
LatAm-FINGERS Initial Insights

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Abstract

Background: Latin America (LA) faces heightened vulnerability to modifiable dementia risk factors. Early identification of at-risk individuals is crucial for implementing effective preventive strategies. The Free and Cued Selective Reminding Test with Immediate Recall (FCSRT-IR) is promising in early detection of mnemonic impairment, with high sensitivity and specificity for Alzheimer's Disease (AD) risk. While sociodemographic and genetic factors, including APOE ε4 genotype, are associated with elevated dementia risk, their influence on cognitive performance in LA populations remains unclear. We aim to investigate sociodemographic factors and APOE ε4 genotype influence on mnemonic performance in high-risk LA individuals.

Method: Cross-sectional analysis of LatAm-FINGERS baseline data, a randomized, multicenter trial evaluating non-pharmacological interventions for cognitive decline prevention in LA. Inclusion criteria: age 60-77 years; CAIDE ≥ 6; $-1.5 \leq z \text{ score} \leq 0$ on MMSE or CERAD word list. Exclusion criteria: MMSE < 20; dementia; illiteracy. Participants from Argentina, Brazil, Chile, and Uruguay were included. Memory assessment used FCSRT-IR and SOMI (Stages of Objective Memory Impairment)

classification. APOE genotyping was performed on blood samples using PCR-RFLP analysis. Jamovi software (v2.3) analyzed correlations and associations ($p < 0.05$).

Result: Sample ($N = 358$ participants): age 67.75 ± 4.86 years; education 13.41 ± 3.14 years; 72.3% female; 61.2% white; 22.3% APOE $\epsilon 4$ carriers. FCSRT-IR scores correlated significantly with sociodemographics ($p < .001$) and varied among countries ($p < .001$). SOMI distribution: 58% SOMI-0 (preserved memory), 27.6% SOMI-1/2 (mild impairment). Argentina showed 36% in SOMI-3/4 (severe impairment); Uruguay 75% in SOMI-0. No significant sociodemographic differences were found between APOE $\epsilon 4$ carriers/non-carriers. Non-carriers performed better on FCSRT-IR, significant only for identification score ($p = .017$). No significant APOE $\epsilon 4$ -SOMI association.

Conclusion: Sociodemographic profile significantly influences memory performance, while APOE $\epsilon 4$ genotype shows limited association. This suggests environmental and social factors may play a more central role in cognitive performance than genetic predisposition in LA populations.