

Gene-environment Associations With Cognitive Performance: APOE ε4 And Cardiovascular Risk Factors In The Latam-fingers Cohort



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APOE ε4 was not associated with cognitive performance in cognitively unimpaired Latin American adults, emphasizing the potential role of modifiable lifestyle factors in shaping early cognitive trajectories.

BACKGROUND

APOE ε4 is considered the strongest genetic risk factor for late-onset Alzheimer’s Disease and may influence cognitive performance in cognitively unimpaired adults. Evidence on its impact on global cognition and its interaction with cardiovascular and lifestyle factors remains inconsistent.

OBJECTIVE
To evaluate whether APOE ε4 modifies the association between cardiovascular risk factors and cognitive performance, and to explore the potential interaction with smoking in cognitively unimpaired adults.

METHODS

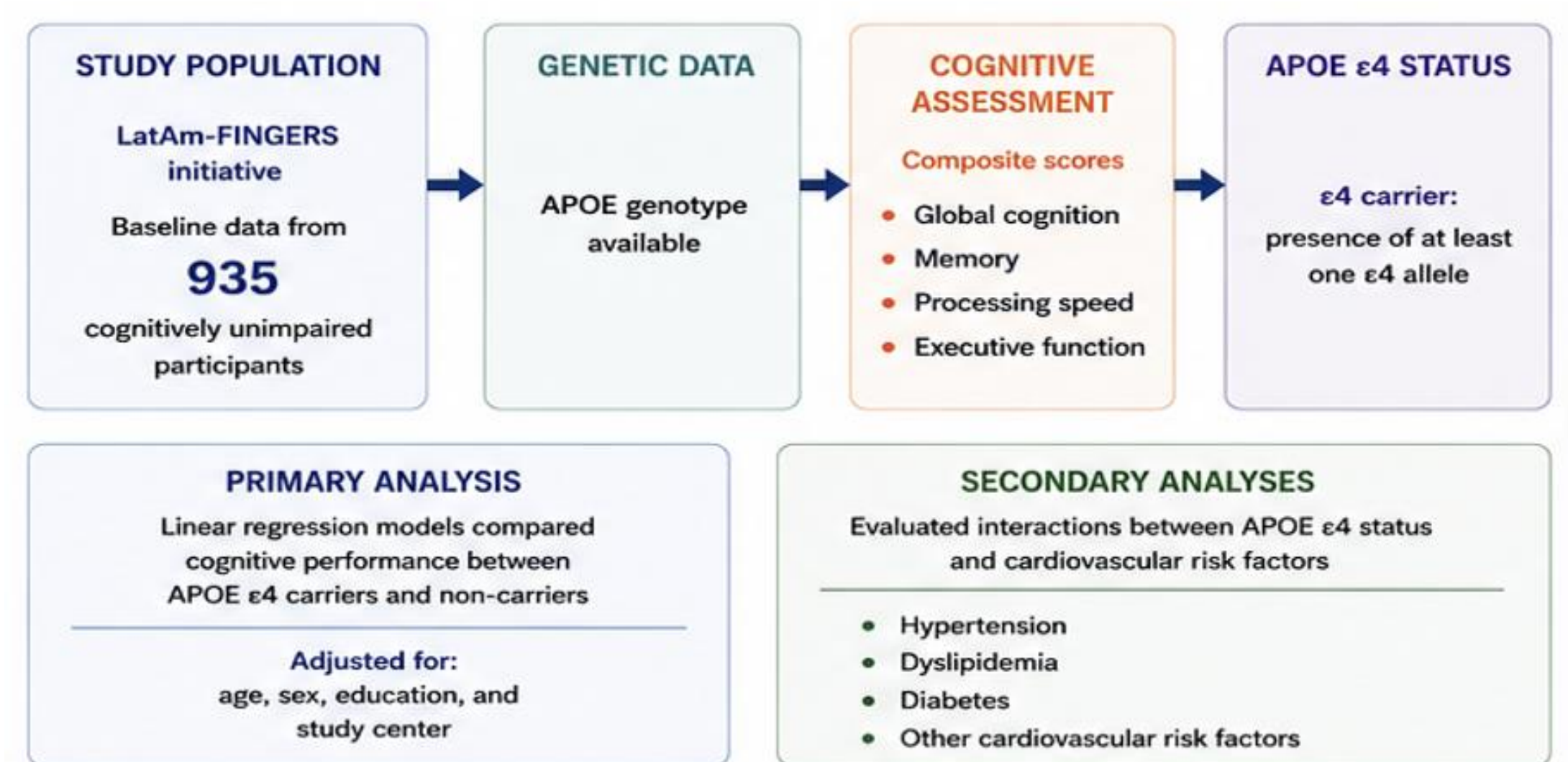
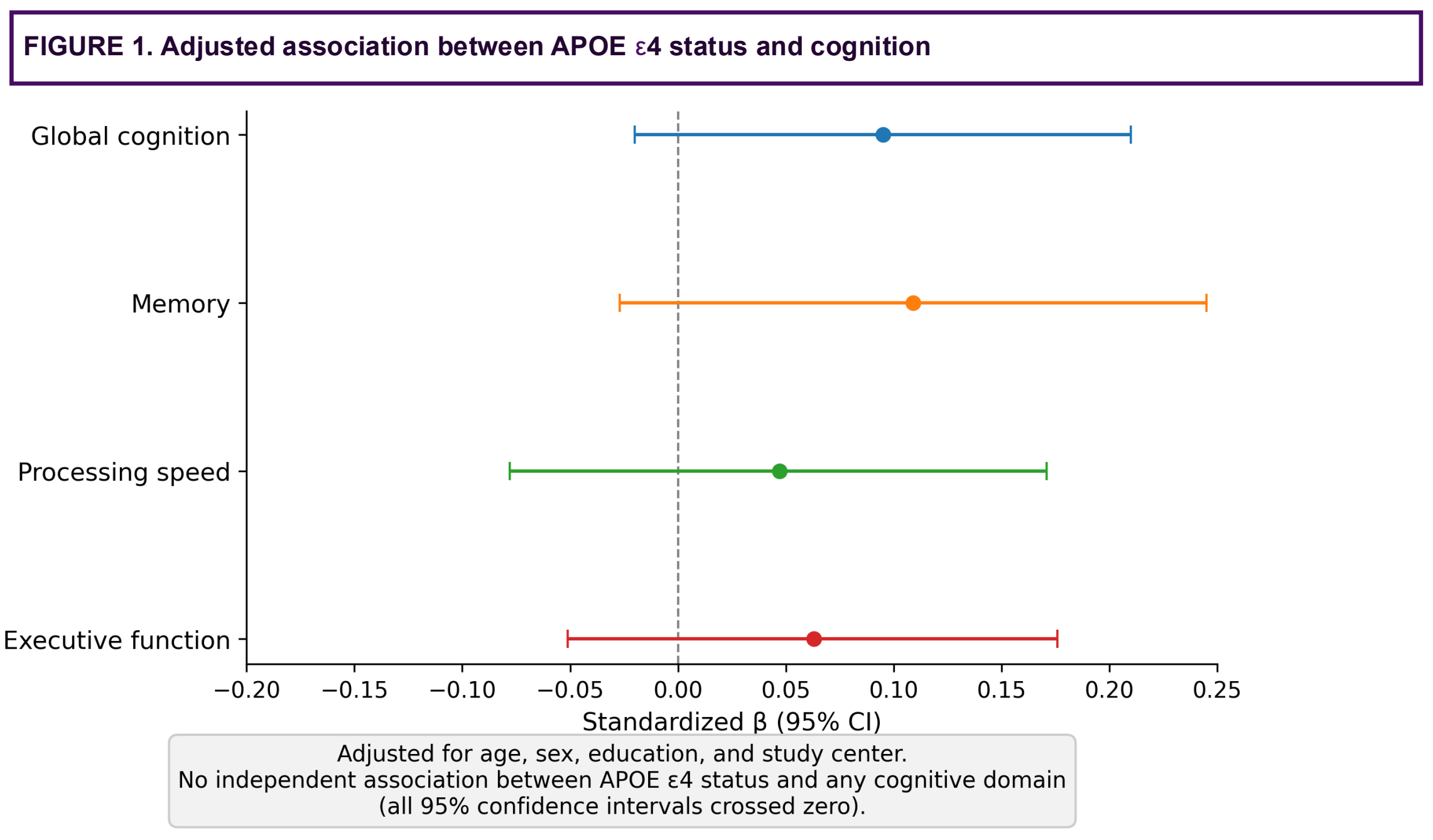
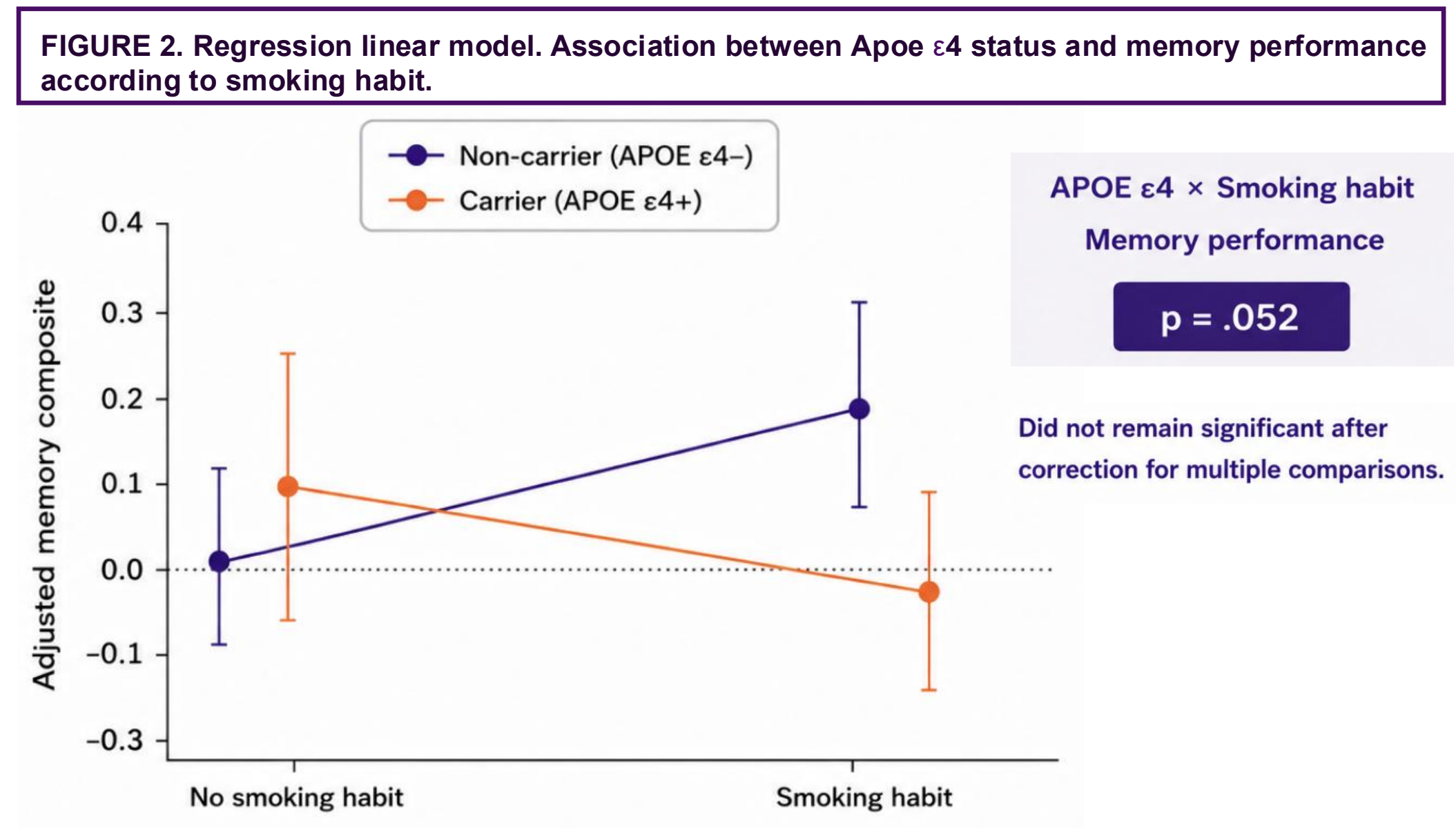


Table 1. Sociodemographic Data (n=935)			
	APOE ε4		P value
	Carriers	Non - Carriers	
N (%)	205 (21.9%)	730 (78.1 %)	-
Age (years), Mean (SD)	67.36 (4.76)	67.34 (4.63)	.565
Education (years), Mean (SD)	13.42 (4.68)	14.11 (4.36)	.527
Women, n (%)	148 (72.2%)	545 (74.7%)	.477
Diabetes, n (%)	19 (9.3 %)	76 (10.4%)	.628
Dyslipidemia, n (%)	59 (28.8%)	232 (31.8%)	.600
Smoking Habit, n (%)	87 (42.4%)	345 (47.3%)	.120

RESULTS



CONCLUSIONS

APOE ε4 status wasn’t independently associated with global cognitive performance. The memory-specific interaction observed between APOE ε4 status and smoking habit suggests an increased vulnerability among APOE ε4 carriers. These findings support the importance of gene-environment interactions in early cognitive aging and reinforce the potential value of targeting modifiable lifestyle factors.