

One- and Two-Year Cognitive Change among a Community-Based Latino Cohort: Preliminary Findings from the Skills-based Educational Strategies to Reduce Vascular Events in Orange County (SERVE OC)

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Introduction

- Behavioral interventions to preserve or improve cognitive health are increasingly emphasized in research and community-based settings, particularly as modifiable risk factors for dementia gain attention.^{1,2}
- Cardiovascular health (CVH) is a key determinant of cognitive aging, with hypertension, diabetes, physical inactivity, and poor diet associated with accelerated cognitive decline and increased dementia risk.^{3,4}
- Community-based cardiovascular risk reduction programs represent a promising, scalable approach for supporting brain health, especially in populations disproportionately affected by cardiometabolic disease.⁵
- However, the extent to which participation in such interventions is associated with short-term changes in cognition remains underexplored.⁶
- The Skills based Educational strategies to Reduce Vascular Events in Orange County (SERVE OC) study (NIMHD P50MD017366) is a community-based two-arm randomized control trial testing the efficacy of a community health worker led, family-based intervention versus standard self-management to improve CVH.⁷

Study Aim:

To examine 12- and 24-month changes in global cognition, measured by the Montreal Cognitive Assessment (MoCA), by intervention exposure.

Methods

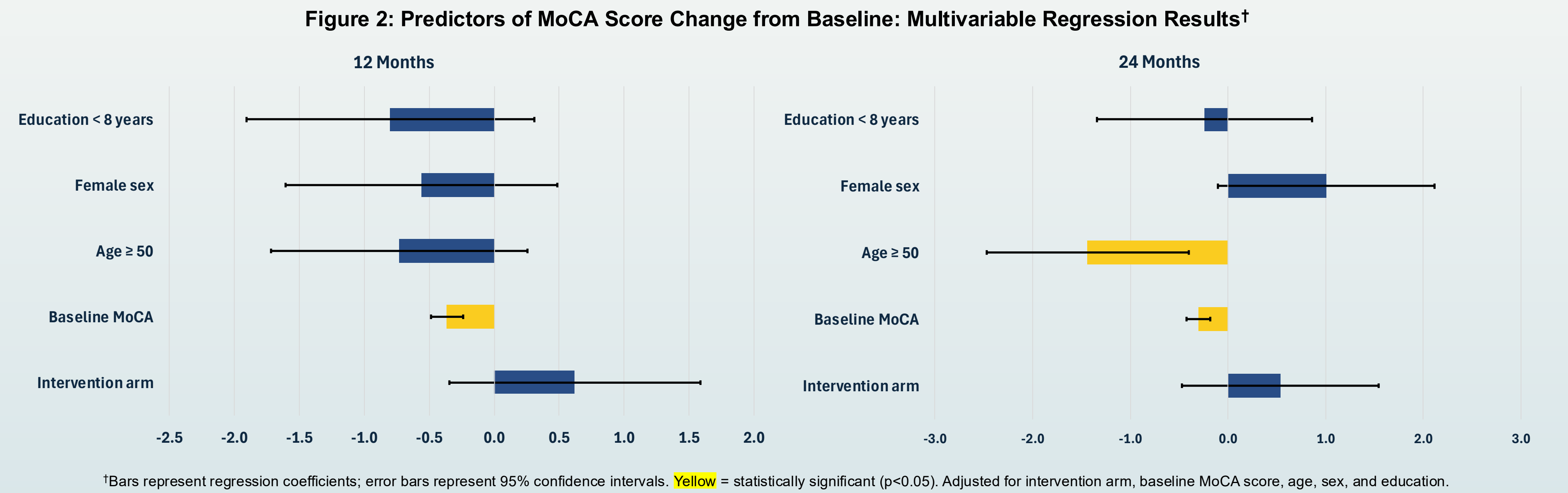
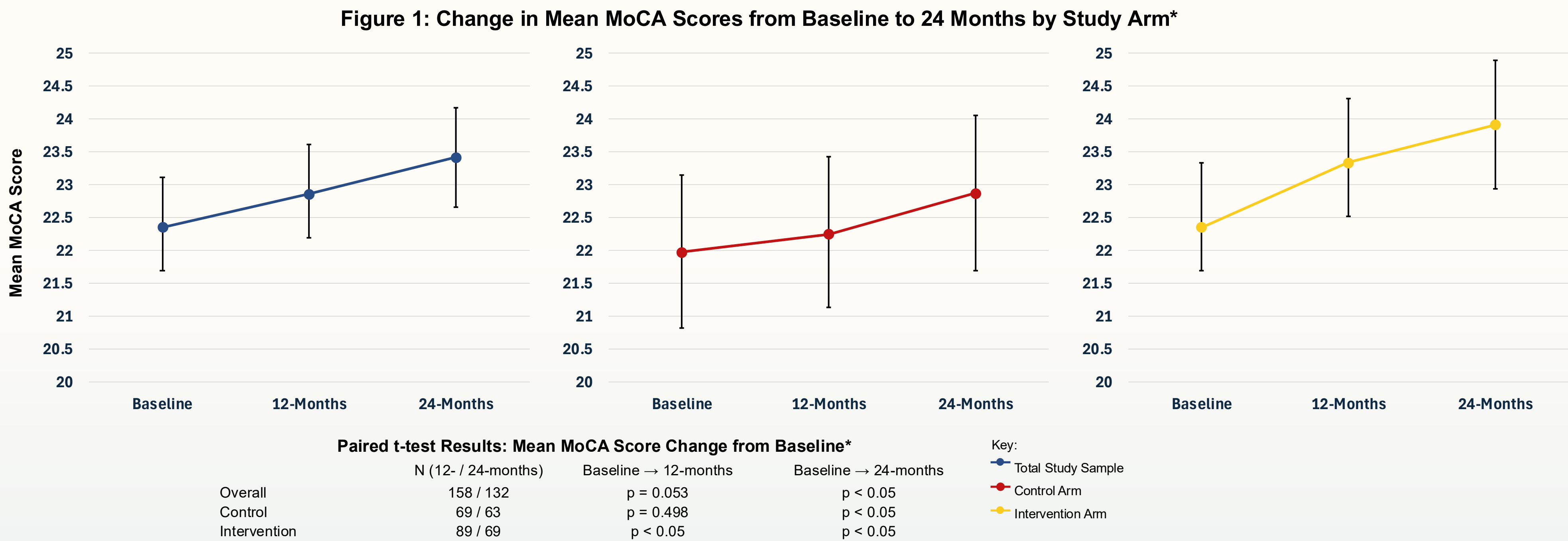
- Data from the Skills Based Education strategies for Reduction of Vascular Events in Orange County (SERVE OC) RCT were used ([Grant: P50MD017366](#)).
- Study participants were restricted to randomized Latino individuals who were ≥18 years and completed the MoCA at baseline and 12-month follow-up time periods (N=153), as well as 24-month time period (N=132).
- Descriptive statistics summarized participant characteristics and cognitive performance; paired t-tests evaluated within-person changes in mean MoCA scores from baseline to 12-month follow-up as well as baseline to 24-month follow-up.
- Multivariable linear regression models examined associations between intervention exposure and 12-month change in MoCA score, as well as intervention exposure and 24-month change in MoCA score, adjusting for baseline MoCA score and demographic characteristics: age (<50 v. ≥50 years), sex at birth (male v. female), education (>8 years v. ≤8 years), and language of MoCA (English v. Spanish).

Results

- Among the study sample at baseline (N=158), 67.72% were female, with a mean age of 47.35 (SD=12.67) years.
- Mean MoCA scores at baseline were 22.35 for all participants. At 12-month (N=158) and 24-month (N=132) follow-up, mean MoCA scores were 22.86 and 23.41, respectively. Mean MoCA scores changed significantly at 24-month follow-up (mean difference=1.08; 95% CI 0.53, 1.64; p<0.05).
- After adjusting for intervention status, baseline cognition, and demographics, each one-unit increase in baseline MoCA score was associated with a 0.36-point decline in MoCA change at 12 months (β = -0.36, p<0.05) and a 0.30-point decline in MoCA change at 24 months (β = -0.30, p<0.05).
- Being aged 50 or older was associated with significantly less cognitive improvement at 24 months (β = -1.44, p<0.05).
- Intervention exposure was not significantly associated with cognitive change at 12 months (β = 0.67, p=0.16) or 24 months (β = 0.54, p=0.29).

Table 1: Baseline Demographic Characteristics of SERVE-OC Sample Participants, Ages 18 and Older (N=158)	N (%)
Age, Mean (SD)	47.35 (12.67)
<50 years	84 (53.16)
≥50 years	74 (46.84)
Sex	
Male	51 (32.28)
Female	107 (67.72)
Education	
8th grade or less	91 (57.59)
More than 8 th grade	67 (42.41)
Preferred language	
English	22 (13.92)
Spanish	136 (86.08)
Born in the United States	
Yes	21 (13.29)
No	133 (84.18)
Years lived in the United States, Mean (SD)	26.48 (13.57)
Study Arm	
Control	69 (43.67)
Intervention	89 (56.33)

*N (%) does not include missing data



Discussion / Conclusion

- Cognitive scores improved significantly from baseline to 24-months in the total sample, while 12-month change was minimal and non-significant; this is consistent with expected cognitive stability over brief follow-up in non-clinical populations.⁸
- Participant baseline MoCA scores was a strong negative predictor of change at both timepoints, a pattern consistent with regression to the mean in repeated cognitive assessments.
- Intervention arm participants showed earlier and more consistent cognitive gains, with significant improvement at both 12 and 24 months, supporting the potential benefit of targeted CVH intervention on cognitive trajectories.
- However, effect sizes remained modest and below the MoCA's minimally important difference,⁹ underscoring the need for longer follow-up periods and potentially more sensitive cognitive outcomes to fully capture intervention-level change in this population
- These findings underscore the need for extended follow-up in community-based cognitive intervention trials and support continued investment in cardiovascular health approaches to dementia prevention in Latino adults.

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