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Memory concerns and cognitive decline in a multi-ethnic cohort of oldest-old individuals: The LifeAfter90 study

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Abstract

Background: Subjective memory concerns are relatively easy to assess and are useful if they can identify people with cognitive deficits or can predict cognitive decline. In a multiethnic cohort of oldest-old individuals, we studied whether baseline cognitive performance and cognitive decline differ between individuals who report memory concerns and those who do not.

Method: *LifeAfter90* participants are long-time members of the Kaiser Permanente Northern California Health Care System without a dementia diagnosis in their medical record at recruitment. Evaluations are every six months and include the Spanish and English Neuropsychological Assessment Scales (SENAS), which assesses episodic memory, semantic memory, and executive function domains. At baseline, participants answered the question 'Are you concerned that you have a memory or other thinking problem?' Using linear mixed models with random intercepts, we estimated the baseline and longitudinal association of memory concerns with each SENAS domain. The models used years since baseline as the time variable, and adjusted for baseline age, sex, race/ethnicity, education, and practice effects. Potential differences in cognitive decline by presence or absence of memory concerns were assessed with an interaction term (memory concerns*time).

Result: At baseline, the 665 participants were on average 92.8 years of age, 62% were women, 34% were college graduates, 69% were racial/ethnic minorities, and 40% reported memory concerns (Table 1). The average follow-up was 0.9 years (range: 0-1.9). Memory concerns were associated with worse baseline performance in episodic memory (ß=-0.21) and executive function (ß=-0.12) but not semantic memory (ß=-0.01) (Figure & Table 2). Although cognitive scores decreased over time for semantic memory (ß=-0.31) and executive function (ß=-0.10), the decline did not differ between people with and without memory concerns (Figure & Table 2).

Conclusion: In this multi-ethnic oldest-old cohort, individuals with memory concerns have worse baseline cognitive performance in executive function and episodic memory, but their rate of decline is similar to individuals without memory concerns. Although memory concerns appear to identify individuals with objective cognitive impairment, it does not identify those who may decline faster. With additional follow-up, we will continue to explore the utility of memory concerns in predicting future cognitive performance.

TABLE 1

Table 1. Baseline Characteristics of Participants by Self-reported Memory Concerns			
Characteristic	**Overall (N=665)**	**No Memory concerns (N=398)**	**Memory concerns (N=267)**
Average Age, y (range)	92.8 (90-105)	92.8 (90-105)	92.8 (90-103)
Female	415 (62.4)	241 (60.6)	174 (65.2)
Education, N (%)			
≤High School	243 (36.5)	148 (37.2)	95 (35.6)
Some College	196 (29.5)	121 (30.4)	75 (28.1)
≥College graduate	226 (34.0)	129 (32.4)	97 (36.3)
Race/ethnicity, N (%)			
White	206 (31.0)	120 (30.2)	86 (32.2)
Asian	146 (22.0)	88 (22.1)	58 (21.7)
Black	144 (21.7)	85 (21.4)	59 (22.1)
Latino	113 (17.0)	66 (16.6)	47 (17.6)
Other/Multiracial	56 (8.4)	39 (9.8)	17 (6.4)
SENAS score, mean (range)			
Episodic memory	-0.91 (-2.69, 0.89)	-0.85 (-2.69, 0.89)	-1.01 (-2.52, 0.83)
Semantic memory	-0.83 (-4.26, 1.62)	-0.83 (-4.26, 1.62)	-0.82 (-3.86, 1.07)
Executive function	-0.54 (-2.30, 1.87)	-0.50 (-2.30, 1.87)	-0.61 (-2.28, 1.39)

Abbreviations: SENAS = Spanish and English Neuropsychological Assessment Scales

TABLE 2

Table 2. Association between Memory Concerns and SENAS Cognitive Scores						
	Episodic Memory		**Semantic Memory**		**Executive Function**	
	ß	**95%CI**	**ß**	**95%CI**	**ß**	**95%CI**
Memory concerns	-0.21	(-0.32, -0.11)	-0.01	(-0.15, 0.13)	-0.12	(-0.22, -0.02)
Time (years from baseline)	-0.03	(-0.11, 0.06)	-0.31	(-0.42, -0.20)	-0.10	(-0.16, -0.05)
Memory concerns* time	-0.07	(-0.17, 0.02)	0.07	(-0.03, 0.18)	0.01	(-0.06, 0.07)

Estimates are from linear mixed models adjusting for age at baseline, sex, education (≤HS, some college, ≥college graduate), race/ethnicity (White, Asian, Black, Latino, other/multiracial), and practice effects (indicator variable for first visit)
Abbreviations: SENAS = Spanish and English Neuropsychological Assessment Scales

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Figure. Predicted value of SENAS Scores by Memory Concerns at Baseline

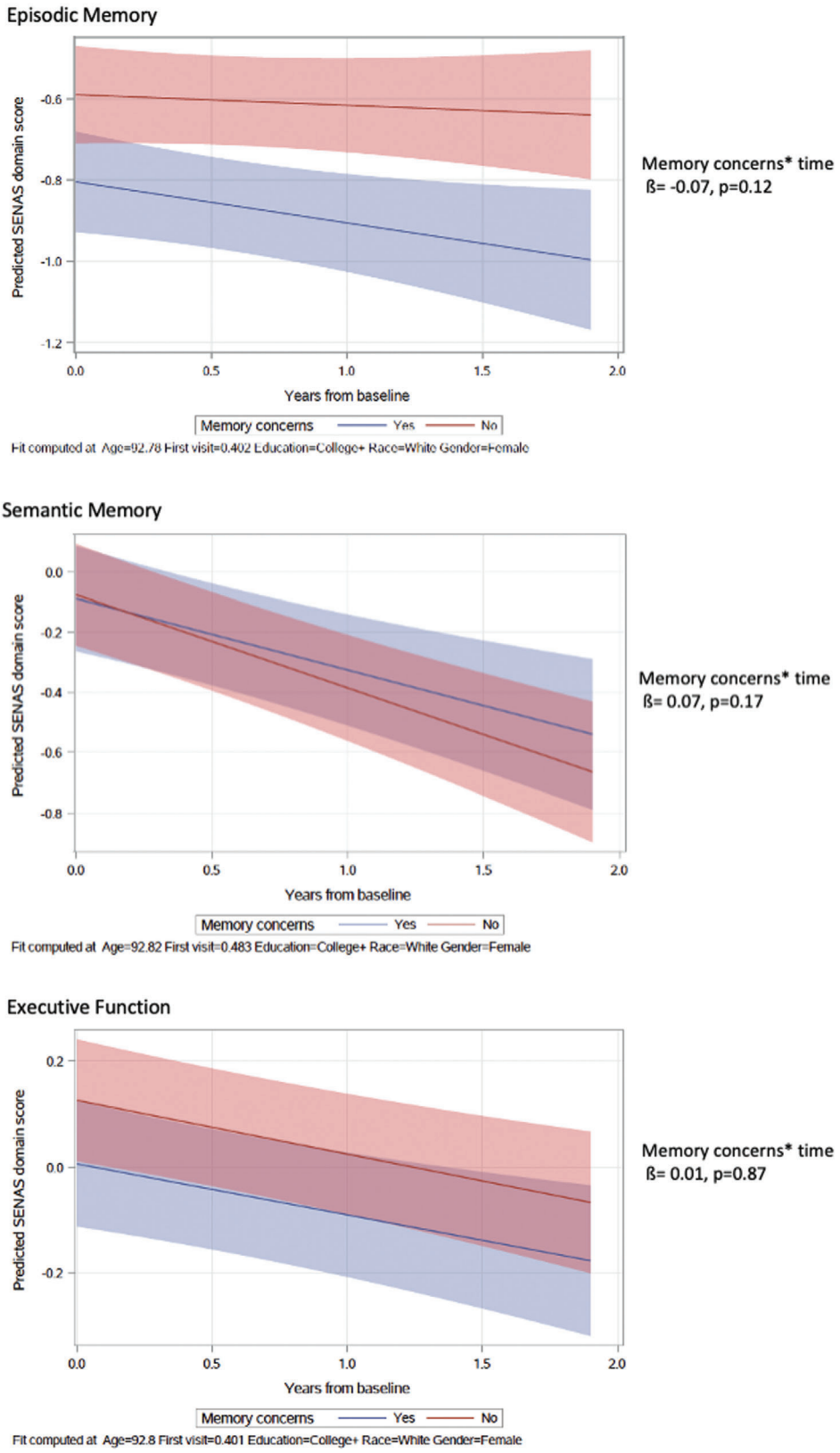

FIGURE 1