

Do Subjective Cognitive Complaints In Healthy Ageing Reflect Current And Future Cognitive Performance?

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BACKGROUND & AIM

Subjective cognitive complaints (SCCs) are frequently reported by older adults and have been postulated as an early indicator of increased risk for Alzheimer's disease¹. However, their usefulness as a marker of the asymptomatic stage remains debated, due to inconsistent associations with objective cognitive performance and stronger links with depressive symptoms²⁻⁴.

This study examined the associations between SCCs and a clinical battery of cognitive and mood measures in cognitively healthy older adults, both at the time the complaints were reported and at a follow-up on average five years later. The aim was to evaluate the potential predictive value of SCCs for age-related cognitive decline while accounting for the influence of mood on this relationship.

TAKE-HOME MESSAGE



In healthy older adults, both poorer cognitive performance across multiple domains assessed using clinical measures (particularly episodic memory) and mood each independently contribute to a greater burden of subjective cognitive complaints (SCCs). Over a five-year period, episodic memory performance and SCCs exhibit a reciprocal relationship, suggesting a feedback loop between overt memory decline and subjective cognitive concerns. Furthermore, baseline mood is significantly associated with the subsequent burden of SCCs.

RESULTS

Table 1. Demographic and cognitive profile of the cross-sectional and longitudinal sample at baseline.
CDR: Clinical Dementia Rating, CES-D: Center for Epidemiologic Studies Depression Scale, CI: confidence interval, GAF: Global Assessment of Functioning and MMSE: Mini-Mental State Examination.

	Cross-sectional sample N = 1,277 ¹	Longitudinal sample N = 685 ¹	Drop-out sample N = 592 ¹	Cohen's d [95% CI] Longitudinal vs. Drop-out sample	p (FDR) ²
Gender (% women)	767 (60%)	418 (61%)	349 (59%)		0.5
Age (years)	70.52 ± 4.44	69.98 ± 4.04	71.14 ± 4.78	-0.26 [-0.38 to -0.15]	<0.001
Years of education	13.26 ± 3.68	13.42 ± 3.62	13.08 ± 3.73	0.09 [-0.02 to 0.2]	0.11
MMSE score	29.35 ± 1.04	29.51 ± 0.88	29.17 ± 1.18	0.33 [0.22 to 0.44]	<0.001
CDR score					<0.001
0	635 (50%)	376 (55%)	259 (44%)		
0.5	642 (50%)	309 (45%)	333 (56%)		
Subjective cognitive complaints	1.08 ± 1.48	0.96 ± 1.35	1.22 ± 1.61	-0.18 [-0.29 to -0.07]	0.004
Episodic memory	11.65 ± 2.70	11.96 ± 2.48	11.29 ± 2.89	0.25 [0.14 to 0.36]	<0.001
Inhibitory control	2.12 ± 0.69	2.08 ± 0.65	2.16 ± 0.72	-0.11 [-0.22 to 0]	0.09
Semantic fluency	29.59 ± 7.92	30.51 ± 7.99	28.54 ± 7.72	0.25 [0.14 to 0.36]	<0.001
Lexical fluency	20.98 ± 7.37	21.57 ± 7.32	20.30 ± 7.38	0.17 [0.06 to 0.28]	0.004
Cognitive flexibility	7.18 ± 2.47	7.47 ± 2.40	6.83 ± 2.50	0.26 [0.15 to 0.37]	<0.001
GAF current score	83.34 ± 11.70	83.87 ± 11.04	82.72 ± 12.40	0.1 [-0.01 to 0.21]	0.1
GAF worse score	73.50 ± 17.51	73.92 ± 17.39	73.03 ± 17.65	0.05 [-0.06 to 0.16]	0.4
GAF lifetime score	81.10 ± 11.44	81.65 ± 11.10	80.46 ± 11.80	0.1 [-0.01 to 0.21]	0.09
CES-D	9.75 ± 7.85	9.12 ± 7.61	10.54 ± 8.08	-0.18 [-0.3 to -0.06]	0.005

¹ n (%); Mean ± standard deviation

² p-values (p) are adjusted for multiple comparisons using the False Discovery Rate (FDR) method.

Figure 2. Associations between subjective cognitive complaints and cognitive and mood outcomes.

Details of the cognitive measures are presented in Table 3. SCC: subjective cognitive complaints, T1/T2: time point 1 and 2.

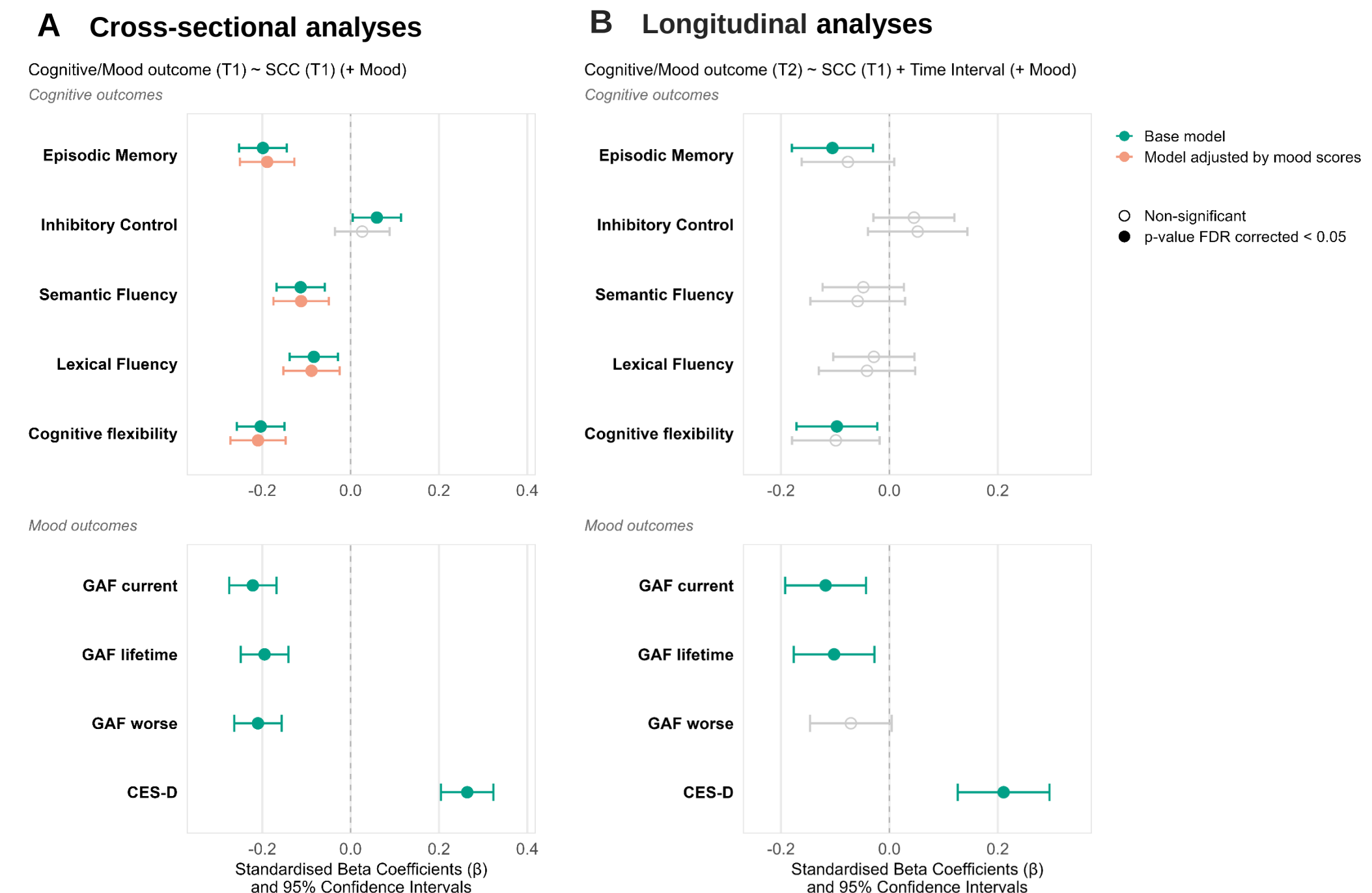
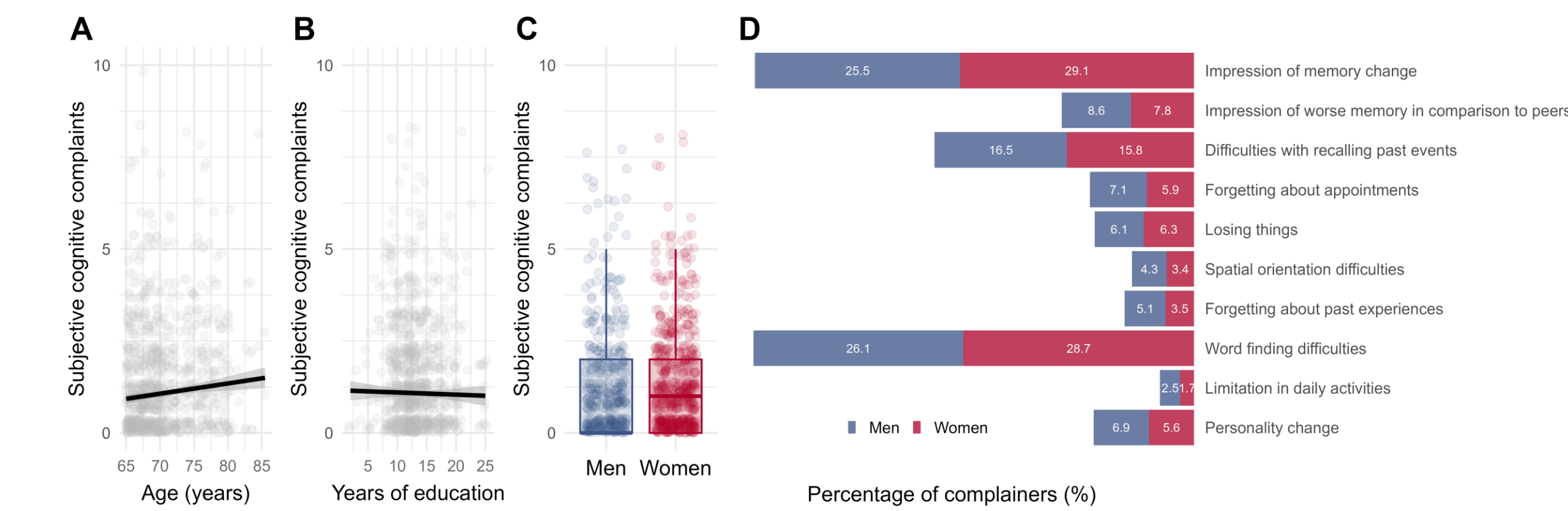


Figure 1. Associations between subjective cognitive complaints and demographic characteristics (cross-sectional sample).



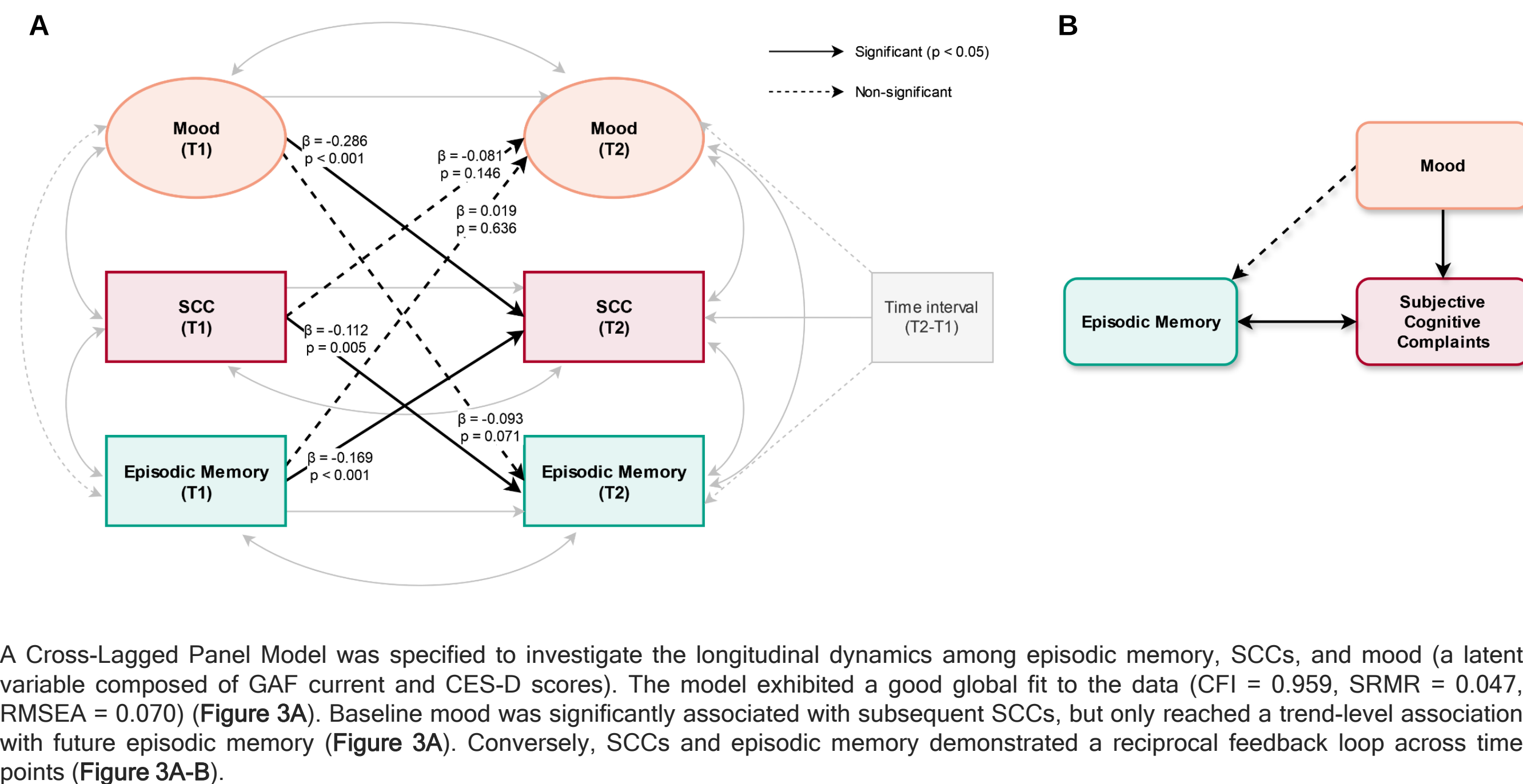
The cross-sectional sample comprised 1,277 cognitively healthy adults with a mean number of subjective cognitive complaints (SCCs) of 1.08 ± 1.48 (Table 1). The three most prevalent complaints were 'Impression of memory change' (28%), 'Word-finding difficulties' (28%), and 'Difficulties with recalling past events' (16%). The number of SCCs significantly increased with advancing age (β (SD) = 0.028 (0.009); p = 0.003) (Figure 1A), but showed no association with years of education (β (SD) = -0.006 (0.011); p = 0.6) (Figure 1B) or gender ($t(1024)$ = 0.108; p = 0.9) (Figure 1C). Furthermore, item-by-item analysis revealed no gender-specific distribution of complaints (Figure 1D).

A longitudinal subsample (n = 685, 53.6%) completed a follow-up assessment an average of 4.83 ± 0.75 years later. Compared with the drop-out sample (n = 592), the longitudinal cohort was significantly younger, reported fewer SCCs, and demonstrated better baseline global cognitive status (Table 1). Years of education and gender distribution did not differ significantly between samples.

Cross-sectional regression analyses revealed that a higher number of SCCs was associated with poorer cognitive performance across all domains, even after adjusting for mood, except for inhibitory control (Figure 2A). Number of complaints were also associated with current mood scores (Figure 2A). Longitudinal analyses showed, however, that SCCs were only associated with future performance in episodic memory and cognitive flexibility prior to adjusting for mood. In contrast, SCCs were associated with most mood scores at a future time point (Figure 2B).

Figure 3. Reciprocal longitudinal dynamics between subjective cognitive complaints, episodic memory, and mood.

β : beta coefficient, p : p-value, SCC: subjective cognitive complaints, T1/T2: time point 1 and 2.



A Cross-Lagged Panel Model was specified to investigate the longitudinal dynamics among episodic memory, SCCs, and mood (a latent variable composed of GAF current and CES-D scores). The model exhibited a good global fit to the data (CFI = 0.959, SRMR = 0.047, RMSEA = 0.070) (Figure 3A). Baseline mood was significantly associated with subsequent SCCs, but only reached a trend-level association with future episodic memory (Figure 3A). Conversely, SCCs and episodic memory demonstrated a reciprocal feedback loop across time points (Figure 3A-B).

METHODS

Participants selection. Cognitively healthy, community-dwelling adults aged ≥65 years were selected from the CoLausPsyCoLaus cohort study (Lausanne, Switzerland). At baseline, participants were required to have a Mini-Mental State Examination (MMSE) of ≥ 25 and a Clinical Dementia Rating (CDR) ≤ 0.5.

Cognitive assessment. SCCs were self-reported using the Questionnaire of Cognitive Complaints (QPC, *Questionnaire de Plainte Cognitive*⁸, Table 2), and a composite was calculated from its 10 items. The cognitive domains assessed included episodic memory, inhibitory control, semantic and lexical fluency, and cognitive flexibility (Table 3).

Table 2. Questionnaire of Cognitive Complaints.

Questions are related to the last six months.

A. Have you experienced any memory change during the last six months?	Impression of memory change
B. Do you feel like your memory is worse in comparison to your peers?	Impression of worse memory in comparison to peers
1. Do you feel like you are getting worse in remembering recent events and/or you hear your family say more often "I have already told you"?	Difficulties with recalling past events
2. Have you forgotten about an important appointment?	Forgetting about appointments
3. Do you lose things more often than in the past, or do you take longer to find them than usual?	Losing things
4. Have you experienced any difficulties with spatial orientation or failed to recognise a place you were previously familiar with?	Spatial orientation difficulties
5. Have you completely forgotten about an event and were unable to recall it even when your close relatives/friends were talking about it or when you saw photos from the event?	Forgetting about past experiences
6. Do you have difficulties finding words (this does not apply to names) and have you felt like the word was on the tip of your tongue, but you could not recall it, forcing you to say "this" or "that" more frequently?	Word finding difficulties
7. Have you limited your activities (or asked for help) because of concerns that you will make a mistake? (such as filling tax declaration, paying bills etc.)	Limitation in daily activities
8. Have you noticed any changes in your personality? (such as turning inward, reducing contacts with others or being less interested in things)	Personality change

Table 3. Cognitive measures.

Cognitive domain	Task
Episodic memory	Free delayed recall score of the Free and Cued Selective Reminding Test
Inhibitory control	High interference ratio Victoria Stroop test
Semantic fluency	Animal fluency test
Lexical fluency	Letter "P" fluency test
Cognitive flexibility	Animal/fruits fluency test

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