

The Relationship Between Subjective Age and Three Measures of Episodic Memory

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Background

- Subjective age, defined as felt age in comparison to chronological age, is an independent predictor of cognitive decline (Stephan et al., 2017).
- Youthful subjective age has been associated with better episodic memory and executive functioning (Stephan et al., 2014, 2016).
- Previous research only used one measure of episodic memory (word list learning; Stephan et al., 2014, 2016, 2017).
- Given the importance and complexity of episodic memory, subjective age should be examined using multiple episodic memory measures.

Aims

1. Explore the relationship between subjective age and episodic memory.
2. Investigate whether the previously identified relationship between subjective age and list-learning extends to story memory and visual episodic memory

Method

Participants

N = 281 older adults living in Wayne or Washtenaw counties who, at the time of enrollment, have not been diagnosed with dementia

Table 1. Participant Characteristics

	M or %	SD
Age (55-83)	64.02	2.90
% Female	56.23	-
% Non-Hispanic White	45.55	-
% Non-Hispanic Black	46.26	-
% Other Race/Ethnicity	7.47	-
Subjective Age (-.53 - .81)	.21	.19
Education (7 - 24)	14.31	2.94
Chronic Health Conditions (0 - 9)	3.11	1.86
Depressive Symptoms (0 - 2.7)	.79	.62

Predictor: Subjective Age

- Self reported age they felt relative to their chronological age.
- Calculated according to Stephan et al. 2014 :

$$\text{Subjective Age} = \frac{(\text{Chronological Age} - \text{Felt Age})}{\text{Chronological Age}}$$

- A positive score signals a youthful subjective age

Covariates: chronological age, sex/gender, race/ethnicity, education, depressive symptoms, and chronic health conditions

Measures

Benson Complex Figure: visuospatial test that asks participants to replicate a visual stimulus and recall it from memory 10-15 min later

Craft Story 21: participants listen to a brief story recalling it immediately and 20 min later

CERAD word-list: 10-word list learning task comprised of 3 learning trials and one delay trial 10-15 min later

Statistical Analyses

Aim 1: Linear regression with episodic memory composite score as the outcome variable

Aim 2: Three separate linear regression models with Benson, CERAD, and Craft Story 21 as the outcome variables

Results

Table 2. Aims 1 and 2 Results.

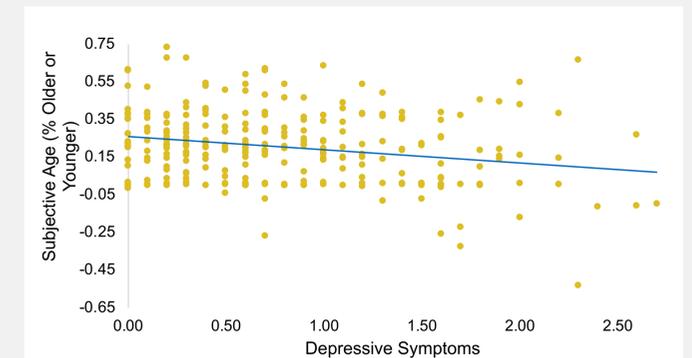
	Memory Composite		CERAD (List Learning)		Benson (Visual Memory)		Craft Story (Story Memory)	
	β	p	β	p	β	p	β	p
Subjective Age	.029	.604	.030	.578	.037	.528	.016	.801
Chron. Age	-.059	.308	-.103	.061	-.079	.195	.050	.438
Depressive Symptoms	-.141	.017*	-.220	.000**	-.074	.232	-.062	.335
Chronic Health Conditions	-.044	.462	-.040	.467	.057	.357	-.108	.102

Notes. * $p < .05$; ** $p < .01$

- Subjective age was not significantly associated with the episodic memory composite or any individual episodic memory tests.
- More depressive symptoms significantly predicted worse performance in the domain composite of episodic memory and CERAD (list learning memory).

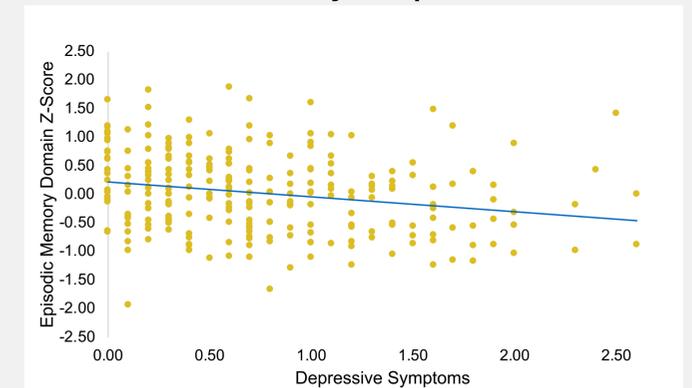
Results Continued

Figure 1: Relationship between Depressive Symptoms and Subjective Age



- Negative association between depressive symptoms and subjective age ($r = -.220$, $p < .01$)

Figure 2: Relationship between Depressive Symptoms and Episodic Memory Composite



- Negative association between depressive symptoms and episodic memory composite ($r = -.225$, $p < .01$)

Discussion

- Subjective age did not predict episodic memory in this study independent of depressive symptoms, which contradicts previous findings (Stephan et al., 2014, 2016, 2017)
- The smaller standardized beta for story memory suggests that subjective age is a weaker predictor of story memory than list learning and visual memory.
- Depressive symptoms may represent a mediator of associations between subjective age and episodic memory (specifically verbal memory). This should be tested by mediation models and longitudinal research.
- Limitations of this study include cross-sectional analyses and small sample size. Strength of this study include a well-characterized, diverse, sample with important covariates such as chronic health and sociodemographic factors.