

Introduction

- Psychological well-being is associated with cognitive function and reduced risk for Alzheimer’s disease (AD), suggesting that it may be an important modifiable protective factor.^{1,2}
- Less is known about whether well-being is associated with cognitive performance using ecologically valid, smartphone-based measures.

Research Aim

- Examine associations between well-being and ambulatory cognitive performance and test whether amyloid beta (A β) status moderated these associations

Methods

Participants

- 202 individuals (58 A β positive & 144 A β negative) from the Ambulatory Research in Cognition (ARC)³ cohort from the Knight Alzheimer’s Disease Research Center

Measures

- Ryff Psychological Wellbeing 18-item measure (mean composite)
- ARC smartphone cognitive assessments measuring processing speed (Symbols), episodic memory (Prices), and visual working memory (Grids)
- A β testing (CSF or PET) within 5 years of ARC assessment

Analyses

- Partial correlations accounting for age were conducted between a well-being composite and cognitive performance
- Moderation by A β status

Results

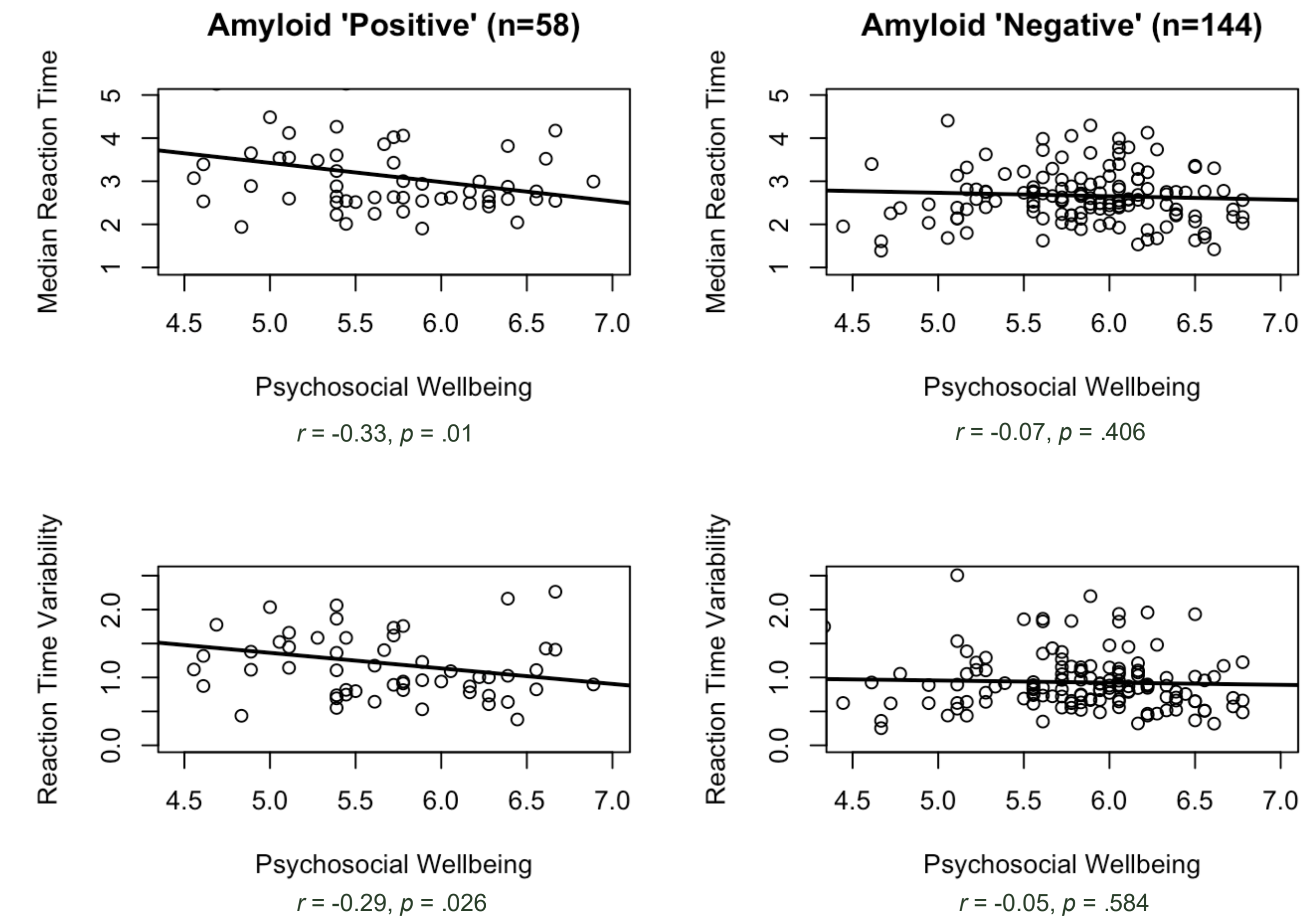
Among individuals who were A β positive, well-being was associated with faster and more stable processing speed on a smartphone-based cognitive assessment.

Table 2. Associations between well-being and cognition and interactions between well-being X amyloid predicting cognition

Outcome	Partial correlation		Moderation	
	<i>r</i>	<i>p</i>	β	<i>p</i>
Symbols median RT	-0.15	.029*	-0.37	.042*
Symbols RT variability	-0.12	.079	-0.20	.071
Prices	0.03	.661	0.02	.338
Grids	-0.08	.285	-0.03	.619

Note. RT = reaction time; *r* = partial correlation; *p* = p-value; β = beta
* *p* < 0.05

Figure 1. Well-being and processing speed by amyloid status



Discussion

- These results support prior work suggesting that well-being may act as a cognitive resilience factor, possibly important for maintaining cognitive function even in the presence of AD pathology.
- Well-being may preferentially support cognitive processes associated with how quick one can understand and respond to information in cognitively normal older adults.

Limitations & Future Research

- This sample predominately consisted of White, highly educated individuals from the U.S. **Future research** should include individuals from diverse sociocultural groups in their recruitment efforts to work toward generalizability of these results.
- Longitudinal research is needed to determine whether well-being predicts trajectories of cognitive decline and trajectories of intraindividual cognitive variability.

References

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- Nicosia, J., Aschenbrenner, A. J., Balota, D. A., Sliwinski, M. J., Tahan, M., Adams, S., Stout, S. S., Wilks, H., Gordon, B. A., Benzinger, T. L., Fagan, A. M., Xiong, C., Bateman, R. J., Morris, J. C., & Hassenstab, J. (2022). Unsupervised high-frequency smartphone-based cognitive assessments are reliable, valid, and feasible in older adults at risk for Alzheimer's disease. *Journal of the International Neuropsychological Society*, 29(5), 459–471.

Table 1. Sample Demographics

	M (SD) or N (%)
Age	74.67 (5.44)
Sex (Female)	106 (52.48)
Race (White)	179 (88.61)
Race (Black)	22 (10.89)
Race (Asian)	1 (.50)