

Cognitive Risk In The Canadian Longitudinal Study On Aging: A Comparison Of Three Risk Scores

P4-13

Alexandra Grady (Presenter), Arne Stinchcombe, Ph.D.
School of Psychology, University of Ottawa, Ottawa, ON, Canada



All cognitive risk scores (ANU-ADRI, CAIDE, and LIBRA) were significantly associated with objective cognition, with higher risk corresponding to poorer performance. Adding sociodemographic and sensory covariates significantly improved model fit, suggesting that these tools may not fully capture social and structural influences on cognitive aging.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES																								
- Identifying individuals at elevated risk for cognitive decline and dementia is a public health priority - Cognitive risk scores estimate future dementia risk using combinations of modifiable lifestyle, health, and sociodemographic factors^{1,2,3} - These tools vary in their conceptual foundations and included risk factors, and limited research has directly compared their performance with objective cognitive outcomes - This study examined the association between cognition and risk using three different scoring methods	- We used baseline data from the Comprehensive cohort of the Canadian Longitudinal Study on Aging (CLSA). Risk scores were calculated for each participant using 3 indices (ANU-ADRI, LIBRA, CAIDE) - First, we conducted linear regressions with standardized cognitive risk score as the predictor and objective cognition as the outcome - Next, we added covariates not included in the risk tools that are associated with cognitive aging, including household income, race/ethnicity, hearing loss, vision loss, and sexual orientation	Table 1. Linear Regression Models <table><tr><th rowspan="2">Score</th><th colspan="2">Crude</th><th colspan="2">Adjusted</th></tr><tr><th>β</th><th>R²</th><th>β</th><th>R²</th></tr><tr><td>ANU-ADRI</td><td>-0.22***</td><td>0.021</td><td>-0.15***</td><td>0.045</td></tr><tr><td>LIBRA</td><td>-1.20***</td><td>0.037</td><td>-1.02***</td><td>0.061</td></tr><tr><td>CAIDE</td><td>-0.32***</td><td>0.001</td><td>0.01</td><td>0.037</td></tr></table> Note. Regression coefficient per 1-SD increase in risk score. ***p<.001. Fig.1. Model Fit Improvement After Adding Covariates	Score	Crude		Adjusted		β	R ²	β	R ²	ANU-ADRI	-0.22***	0.021	-0.15***	0.045	LIBRA	-1.20***	0.037	-1.02***	0.061	CAIDE	-0.32***	0.001	0.01	0.037	- The LIBRA showed the strongest alignment with objective cognition - The consistent improvement in model fit after adding sociodemographic variables (i.e., household income, race/ethnicity, sexual orientation) and sensory factors (i.e., hearing loss, vision loss) indicates that cognitive risk tools may not fully capture social and structural influences on cognitive aging - These findings invite closer consideration of cognitive risk scores and support the development of more inclusive models that reflect social inequalities in dementia risk	1. Anstey, K. J., Cherbuin, N., & Herath, P. M. (2013). Development of a new method for assessing global risk of Alzheimer's disease for use in population health approaches to prevention. <i>Prevention Science</i>, 14(4), 411–421. https://doi.org/10.1007/s11121-012-0313-2 2. Kivipelto, M., Ngandu, T., Laatikainen, T., Winblad, B., Soininen, H., & Tuomilehto, J. (2006). Risk score for the prediction of dementia risk in 20 years among middle aged people: A longitudinal, population-based study. <i>The Lancet Neurology</i>, 5(9), 735–741. https://doi.org/10.1016/S1473-4422(06)70537-3 3. Schiepers, O. J. G., Köhler, S., Deckers, K., Irving, K., O'Donnell, C. A., van den Akker, M., Verhey, F. R. J., Vos, S. J. B., de Vugt, M. E., & van Bortel, M. P. J. (2018). Lifestyle for Brain Health (LIBRA): A new model for dementia prevention. <i>International Journal of Geriatric Psychiatry</i>, 33(1), 167–175. https://doi.org/10.1002/gps.4700 ANU-ADRI = Australian National University Alzheimer's Disease Risk Index LIBRA = Lifestyle for Brain Health CAIDE = Cardiovascular Risk Factors, Aging, and Dementia
Score	Crude			Adjusted																								
	β	R ²	β	R ²																								
ANU-ADRI	-0.22***	0.021	-0.15***	0.045																								
LIBRA	-1.20***	0.037	-1.02***	0.061																								
CAIDE	-0.32***	0.001	0.01	0.037																								



Alexandra Grady
PhD Candidate,
Clinical Psychology,
University of Ottawa
agrad080@uottawa.ca

