

Disentangling Social Isolation and Loneliness in Aging: Implications for Cognitive and Functional Health

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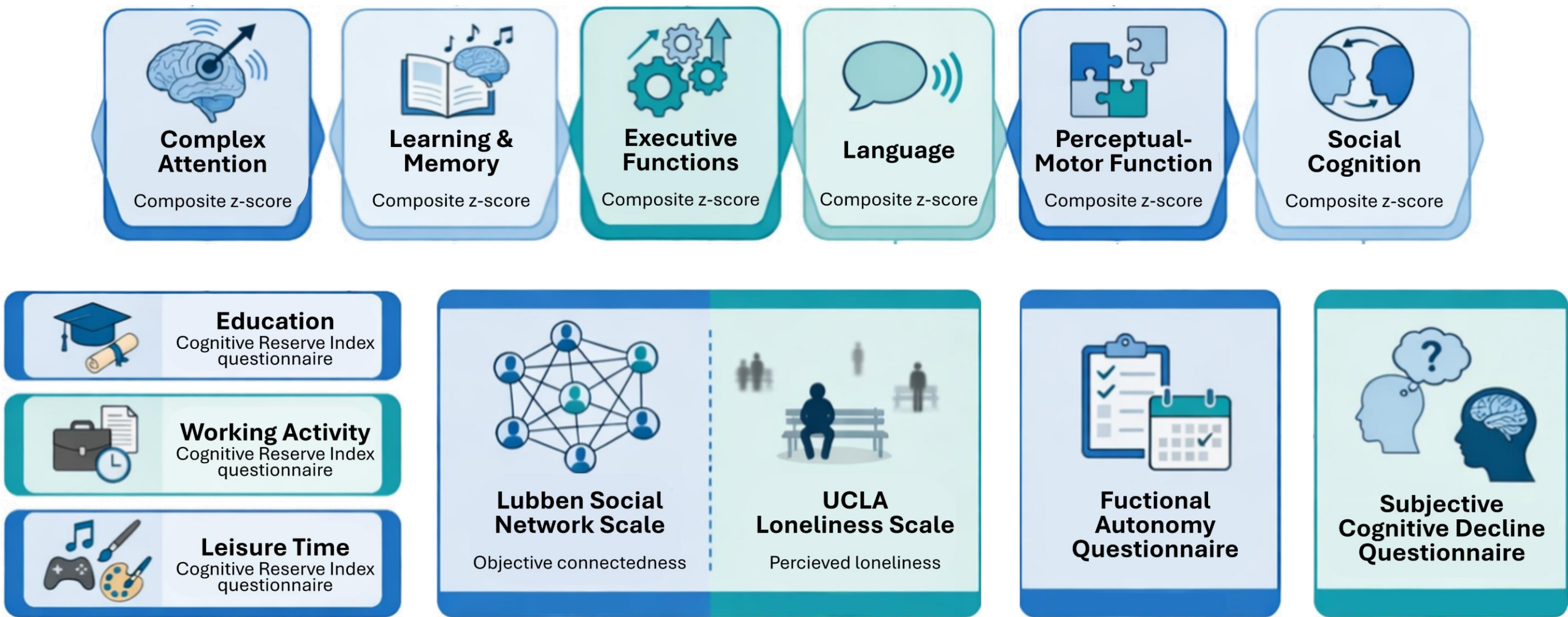
INTRODUCTION

The rising incidence of Alzheimer's Disease intensified research interest in **modifiable factors** capable of attenuating cognitive decline before clinical onset. Two broad constructs have attracted particular attention: **cognitive reserve (CR)**, the brain's capacity to cope with neuropathological burden through education, occupational complexity, and cognitively stimulating leisure activities; and **social connectedness**, encompassing both the objective size of one's social network and the subjective experience of loneliness. Whether these dimensions exert domain-specific effects **on cognition, functional autonomy, and subjective cognitive decline**, and whether they operate through distinct mechanisms, remains poorly characterized.

This study examines domain-specific associations of CR components and social connectedness measures with functional autonomy, subjective cognitive complaints, and cognitive status.

METHODS

A sample of **168 community-dwelling older adults** ($F = 118$; $M_{age} = 64.59$, $SD_{age} = 10.40$) underwent extensive neuropsychological evaluation and were classified, based on the DSM-5 criteria for Mild Neurocognitive Disorder and Petersen's criteria (APA, 2013; Petersen et al., 1998), as **Cognitively Healthy (CH = 83)** and **Cognitively Impaired (CI = 85)**.



DOMAIN-SPECIFIC PREDICTORS OF COGNITIVE AND FUNCTIONAL AGING

Linear regressions on cognitive domains were all significant. Age negatively predicted all domains.

- CRIq Leisure Time was the most consistent protective factor**, significantly associated with every cognitive domain but Social Cognition. **CRIq Education** contributed selectively to Language, Complex Attention, and Social Cognition.
- LSNS** predicted Executive Functions, Language, and Learning & Memory, while **UCLA-LS** reached significance only for Language.

Functional autonomy (FAQ) was jointly predicted by LSNS, UCLA-LS, CRIq Leisure Time, and age. **Subjective cognitive decline (SCD-Q)** was predicted exclusively by depressive symptoms (HADS), with no contribution from social connectedness measures.

The **logistic regression on cognitive status** (CH vs CI) yielded a significant model ($\chi^2 = 32.02$, $p < .001$; pseudo- $R^2 = .14-.23$). Beyond age, **CRIq Working Activity and Leisure Time, and LSNS** each independently increased the probability of belonging to the cognitively healthy group, with the risk of cognitive impairment declining as scores on each **protective factor** increased.



CLINICAL IMPLICATIONS

Social engagement benefits memory, language, and executive functions through **cognitive stimulation**, while **loneliness** more strongly impairs **functional independence** than discrete cognitive capacities. **Subjective cognitive decline** is driven exclusively by **mood**, indicating an affective pathway independent of social engagement. Among **CR components**, **Leisure Time** shows the broadest domain coverage, whereas **Working Activity** predicts cognitive status classification rather than continuous performance.

Dementia-risk profiling should integrate multidimensional social measures alongside CR indices, treating social network maintenance, leisure enrichment, and affective symptom management as **complementary prevention targets**.

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