

Heritability of subjective cognitive decline in Older Australian Twins

Vibeke S. Catts, Anbupalam Thalamuthu, Teresa Lee, John Crawford, and Perminder Sachdev
University of New South Wales

Subjective cognitive decline (SCD) has been promoted as a preclinical stage of dementia, being pre-mild cognitive impairment (MCI). However, little or no heritability for SCD, derived from the TELE cognition screen, was found in the Swedish HARMONY twin study.

We examined the heritability of SCD in the Older Australian Twins Study. Participants completed the self-report Memory Complaint Questionnaire (MAC-Q). In parallel, participant-nominated informants completed the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE, short version). Inclusion criteria: twin pairs > 65 years. Exclusion criteria: current or recent (<1 year) active cancer, self-report history of head trauma, diagnosis of Parkinson's disease or dementia, expert consensus diagnosis of MCI or dementia based on neuropsychological assessment.

The contributing sample consisted of 77 MZ and 57 DZ twin pairs with an average age of 71 years (range: 65-90 years). The average years of education were 11 years (range: 6-22 years) and 65% of the sample were female. Genetic heritability for MACQ scores (n=134 twin pairs) estimated under AE model was found to be $h^2=0.59$ (95% CI: 0.44-0.70) and no significant effects observed for the covariates age and sex, but education had a significant effect (p-value = 0.02). The informant assessment of cognitive decline (n=133 twin pairs) had no suggestion of genetic heritability ($h^2=0.13$, 95% CI: 0-0.34).

Having established moderate genetic heritability with data from the MACQ, future work will examine heritability of SCD determined by other scales as well as the contribution of influencing factors, such as personality traits.