

Childhood social class as a moderator of late-life cognitive abilities

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Abstract

Genetic influences on cognitive ability vary across socioeconomic groups; the heritability of cognitive ability is attenuated in poor childhood environments compared to more advantaged environments where genetic influences seem to have a greater influence [1]. The objective of this study was to investigate whether the moderation by socioeconomic environment on cognitive ability persists into late life. We investigated if increases in genetic variance with increasing social class are maintained in advancing age, as the distance from childhood and education increases. We used data from 3 sub studies in the Swedish Twin Registry: SATSA, GENDER and OCTO-twin with longitudinal cognitive data. The total sample consisted of 2059 individuals aged 50-96. We utilized data from all time points using the mean value at the centering age 75. Cognitive ability was measured via 4 cognitive tests Synonyms, Block Design, Thurstone's Picture Memory Task, and Symbol Digit. A general ability score was derived through principal component analysis. Empirical Bayes (EB) estimates from growth models were saved out and used in the statistical models. Childhood social class, parental education, own attained education and attained social class were self-reported and tested separately in the models. The results from the moderator models for both the four socioeconomic indicators showed similar patterns. Moderation by all socioeconomic indicators was statistically significant only for Synonyms. A decreased by higher level socioeconomic indicator and C increased with higher childhood socioeconomic measures.