

## **Life course socioeconomic circumstances, social mobility and dementia prevalence: Evidence from the English Longitudinal Study of Ageing**

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### **Background:**

Dementia represents a major public health impact. Previous work showed that higher socioeconomic status (SES) is protective against dementia, through mentally engaging and socially interactive occupations and activities. However, the associations with childhood SES and social mobility are not well understood. We examined four SES indicators (father's social class, own education, occupational class and wealth) as well as social mobility across life, in relation to dementia prevalence.

### **Methods:**

The data used are from 2,032 men and women aged  $\geq 65$  years at recruitment, from the English Longitudinal Study of Ageing (ELSA), an ongoing, representative prospective cohort study. Seven waves of data between 2002/03 (wave 1) and 2014/15 (wave 7) were analysed. Dementia was determined by doctor-diagnosis combined with a score above the threshold of 3.38 on the Informant Questionnaire on Cognitive Decline in the Elderly. Education has been grouped into university degree, A-levels and no education, and occupation into professional, intermediate, routine and manual. Wealth (property, savings, or other financial assets) was divided in quintiles, while social mobility was derived by combining childhood SES and adult occupational class into three stable SES levels (low, medium, high), and upwards or downwards trends. The highest SES indicator or stable-high were used as reference groups. Multivariable logistic regressions were employed to estimate the associations between each baseline SES indicator and dementia prevalence by wave 7 while controlling for age, sex, marital status, long-standing limiting illness, and subsequent gradual adjustment for all other SES markers.

### **Results:**

During the 12-year follow-up, 25% of sample developed dementia. Lower childhood SES was associated with a higher dementia risk (Odds Ratio (OR)=1.39 (95% Confidence Intervals (CI) 1.02-1.89), but explained by education. Education did not show a protective effect, but the lower occupational class was associated with higher dementia risk (OR=1.39 (95% CI) 1.02-1.89). However, this association was subsequently explained by wealth. Lowest wealth was a strong predictor of dementia, independent of other SES markers (OR=2.81 (95% CI) 1.83-4.32) in contrast to the wealthiest counterparts. Those in the stable-low category across life showed a higher risk (OR=1.65 (95% CI) 1.01-2.68) in contrast with those in stable-high SES. Upward or downward SES mobility trends did not show an impact.

### **Conclusions:**

In an English, nationally representative sample, the incidence of dementia appeared to be socioeconomically patterned, primarily by the level of wealth and long-term SES disadvantage.

Public health strategies for dementia prevention should target the socioeconomic gap to reduce health disparities and protect those who are particularly disadvantaged.

Keywords: Dementia, socio-economic status, social mobility