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Associations between socio-economic status in childhood and cardiovascular disease risk in adulthood

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Cardiovascular disease (CVD) is a major national and international public health problem⁽¹⁾. Many factors contribute to the development of CVD including low socioeconomic status (SES), poor diet and obesity. Previous studies indicate that childhood SES may influence the development of CVD risk factors in adulthood⁽²⁾. Therefore, the aim of this study was to explore associations between SES, as measured by area of residence, occupation group and population dietary quality during childhood, and CVD risk in older adults in Ireland, and to illustrate how the mapping of data from previous studies based on SES information can offer insights into health outcomes.

The most recent clinical grandparent data from the Lifeways Cross-Generational Cohort Study (2001–2013)⁽³⁾ were used. SES (area of residence and occupation group) data from the Lifeways grandparent data were mapped to population dietary quality from the 1948 National Nutrition Survey (NNS)⁽⁴⁾, using the assumption that the grandparent's current area of residence was the same as in 1948. The 1948 NNS included the assessment of individual nutritional status by a trained clinician. Clinical signs related to inadequate nutrition were recorded. Dietary quality, based on the assessment of dietary signs by the clinician, was categorised into poor, fair or good and was presented as the percentage of the population with poor, fair or good dietary quality for a given combination of occupation group and geographical area. The CVD risk variables [BMI, waist-to-hip ratio (WHR) and waist-to-height ratio (WHtR)] in the Lifeways data were categorised based on World Health Organisation cut-offs. Blood pressure (BP) was categorised based on European Society of Hypertension/European Society of Cardiology guidelines. Relationships between the percentage of the population with poor, fair or good dietary quality in childhood and CVD risk factors were explored using Pearson's or Spearman's correlation as determined by the normality of data distribution. Chi-squared tests were used to investigate associations between age group, occupation group, area of residence and CVD risk factors. Binary logistic regression was used to test the predictive value of occupation group and area of residence independently on CVD risk factors.

Some CVD risk factors (elevated or raised BP, a diagnosis of diabetes and/or being prescribed diabetes medications) were significantly associated with area of residence ($p = <0.05$).

Grandparents in the Lifeways cohort from an unskilled manual background in childhood were more likely to be overweight/obese in adulthood (OR 4.67, 95% CI 1.41–15.54, $p = 0.012$). Inverse associations were observed between good population dietary quality in childhood and all CVD risk factors in adulthood ($p < 0.05$).

This secondary analysis of Lifeways grandparent data mapped to the 1948 NNS highlights the role childhood SES and dietary quality play in the development of CVD risk factors in adulthood and older age.

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