



ASSOCIATIONS BETWEEN SOCIO-ECONOMIC STATUS IN CHILDHOOD AND CARDIOVASCULAR DISEASE RISK IN ADULthood

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Introduction

Cardiovascular disease (CVD) is a major public health problem both nationally and internationally (1). Previous studies indicate that childhood SES may influence the development of CVD risk factors in adulthood. Evidence shows that low childhood family income and low parental occupation (unskilled) is associated with weight gain, abdominal obesity, and hypertension in later life (2).

Aim

Little research has been done on on this topic in Ireland; therefore, the aim is to explore associations between SES (occupation group and area of residence) during childhood and diet quality, and CVD risk in older adults in Ireland.

Methods

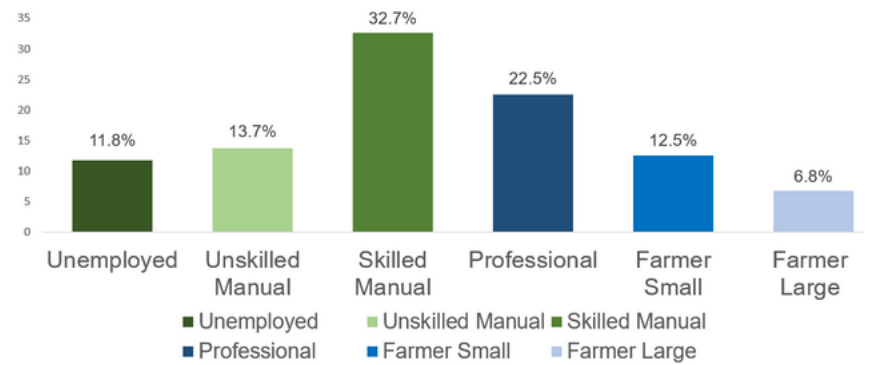
- Data from the Lifeways Cross-Generation Cohort Study (Lifeways) (3) and the 1948 National Nutrition Survey (NNS) (4) were used.
- Grandparents from Lifeways underwent a clinical examination including measures of CVD risk e.g., blood pressure, height, weight, and waist and hip circumference.
- Area recorded in Lifeways, was assigned according to the geographical area categories in the NNS i.e., Dublin, Large Towns, Small Towns, Rural and Congested areas (current area of residence was assumed to be in the same area as they had been living in 1948).
- Occupational group was categorised based on the longest held occupation based on answers to the Lifeways baseline questionnaires.
- Dietary quality was categorised into poor, fair, and good population dietary quality by a medical examiner (from the NNS), each representing a percentage of the population’s dietary quality within a given geographical area. Population dietary quality was then mapped onto the Lifeways grandparents according to their occupational group, area and sex.
- We mapped SES data from the NNS to the Lifeways grandparental data, assuming that their current addresses were the same in 1948.
- Relationships between dietary quality and CVD risk variables were assessed using Pearson’s or Spearman’s correlation.
- Binary logistic regression was used to test the predictive value of occupational group and area independently on CVD risk factors.

Results

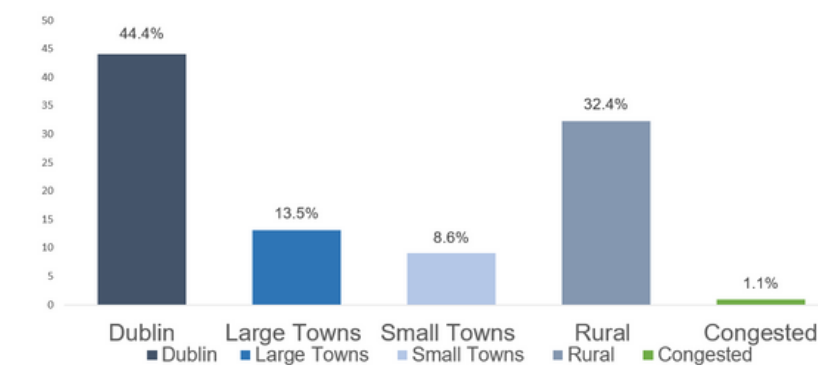
Characteristics of the cohort

- 59% female and 41% male.
- 47% aged between 60-70 years.
- Over 50% of the population were skilled manual and professional workers in each area with the exception of rural areas.
- 78% were overweight/obese.
- 30% had normal, 42% had elevated blood pressure, and 28% had hypertension.

Occupational Group



Geographical Area of Residence



Associations between dietary quality and CVD risk factors

Table 3a. Associations between dietary quality (good, fair, poor) and CVD risk factors for the full cohort (n = 655) and stratified by sex.																		
Full cohort (n = 655)							Female (n = 384)						Males (n = 271)					
Good			Fair		Poor		Good		Fair		Poor		Good		Fair		Poor	
CVD RF	r ^s	p	r ^s	p	r ^s	p	r ^s	p	r ^s	p	r ^s	p	r ^s	p	r ^s	p	r ^s	p
BMI	-0.094	0.018*	0.089	0.025*	0.091	0.021*	-0.082	0.115	0.071	0.170	0.099	0.055	-0.135	0.028*	0.129	0.036*	0.095	0.126
WHtR	-0.106	0.007**	0.099	0.012*	0.126	0.001*	-0.086	0.094	0.076	0.141	0.104	0.044*	-0.114	0.065	0.106	0.086	0.119	0.054
HC	-0.094	0.018*	0.092	0.021*	0.064	0.110	-0.107	0.040*	0.096	0.068	0.117	0.025*	-0.132	0.033*	0.136	0.028*	0.011	0.861
WC ^a	-0.198 ^b	<0.001***	0.185 ^b	<0.001***	0.179 ^b	<0.001***	-0.106 ^b	0.041*	0.098	0.058	0.115 ^b	0.027*	-0.112	0.073	0.114	0.069	0.071	0.254
BP	-0.086	0.028*	0.078	0.047*	0.003	0.936	-0.28	0.586	0.029	0.578	-0.045	0.383	-0.134	0.029*	0.137	0.025*	0.049	0.425
WHR	-0.205	<0.001***	0.194	<0.001***	0.243	<0.001***	-0.015	0.772	0.004	0.944	0.050	0.343	-0.082	0.192	0.078	0.226	0.136	0.031*

- An **inverse association** was observed between good population dietary quality, and all CVD risk factors (p <0.05).
- As the percentage of the population with **good dietary quality increased**, CVD risk factors **decreased**.
- Those in the normal weight BMI category, had a significantly **higher** median percentage of **good population dietary quality (83%)**, compared to those who were in the overweight or obese category (**77%**), (p = 0.002)

Predictors of CVD Risk Variables

- Grandparents from an **unskilled manual occupation** background in childhood were **more likely to be in the overweight/obese BMI category** in adulthood. (OR 4.67, 95% CI 1.41-15.54, p = 0.012). Area was not found to be a predictor of BMI (Table 5a).

Table 5a. Associations between CVD risk factors by Area and Occupation Group for the full cohort (n = 655) – adjusted for age and sex.

Occupation Group	BMI				Blood Pressure				WHtR			
	B	p-value	OR	95% CI	B	p-value	OR	95% CI	B	p-value	OR	95% CI
Farmer Large*												
Unemployed	0.689	0.201	1.991	0.693 5.719	-0.667	0.225	0.513	0.175 1.508	-0.211	0.789	0.809	0.17 3.81
Unskilled Manual	1.542	0.012	4.672	1.405 15.539	-0.677	0.214	0.508	0.174 1.480	0.508	0.547	1.662	0.32 8.68
Skilled Manual	0.444	0.341	1.558	0.626 3.880	-0.498	0.323	0.608	0.226 1.633	-0.198	0.779	0.820	0.21 3.27
Professional	-0.106	0.819	0.899	0.362 2.232	-0.717	0.158	0.488	0.180 1.322	-0.463	0.517	0.629	0.15 2.55
Farmer Small	0.574	0.275	1.775	0.634 4.968	-0.572	0.278	0.559	0.196 1.598	0.416	0.608	1.516	0.31 7.45
Area												
Congested*												
Dublin	-0.171	0.885	0.843	0.083 8.544	-1.041	0.349	0.353	0.040 3.111	-19.349	0.999	0.000	0.000
Large Towns	-0.138	0.909	0.872	0.082 9.239	-0.374	0.743	0.688	0.074 6.424	-19.007	0.999	0.000	0.000
Small Towns	0.489	0.695	1.631	0.141 18.811	-1.153	0.315	0.316	0.033 2.997	-19.154	0.999	0.000	0.000
Rural	0.355	0.767	1.427	0.136 14.979	-0.580	0.599	0.555	0.061 5.005	-19.556	0.999	0.000	0.000
Age	-0.019	0.262	0.981	0.949 1.014	-0.003	0.860	0.997	0.968 1.028	0.075	0.004	1.078	1.02 1.13
Sex												
Males*												
Females	-0.346	0.134	0.707	0.450 1.112	0.147	0.468	1.158	0.779 1.722	-0.845	0.021	0.430	0.21 0.88

P-value, determined by binary logistic regression; BMI, body mass index (normal ≤24.9 kg/m² and high ≥25 kg/m²); BP, blood pressure: normal (<129 mmHg systolic and/or <84 mmHg diastolic BP), and elevated/hypertension (≥130 mmHg systolic and/or ≥85 mmHg diastolic BP); WHtR (low risk, ≤0.5 cm and high risk, ≥0.5 cm); Area, geographical area of residence; B, beta; OR, odds ratio; 95% CI, 95% confidence interval; *,reference category.

Conclusions

- Good population dietary quality in childhood was associated with decreased CVD risk factors in older age.
- Older adults had an increased risk of being overweight/obese, if from an unskilled manual background during childhood.
- This highlights the potential role of childhood SES in the development of CVD risk factors in adulthood/older age, suggesting that the implementation and of targeted interventions to improve SES in childhood may improve CVD health in adulthood and older age.

Acknowledgements

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