



Geographical area, and dietary quality of children from COSI mapped from the 1948 NNS to explore growth outcomes in primary school children

¹Laura Murphy,¹Clare Corish,¹Alexander Douglass,¹Cecily Kelleher

¹School of Public Health, Physiotherapy and Sports Science, University College Dublin

Introduction

- Childhood obesity is a major public health issue nationally and internationally.
- Adverse effects of childhood obesity include high blood pressure, insulin resistance, and cardiovascular disease.
- Societal factors which contribute to childhood obesity include food environment, socioeconomic status, maternal education and geographical area (rural vs urban).
- The plateau in childhood obesity in Ireland is seen in higher socio-economic status in children.
- More research on dietary habits and food environments is needed.

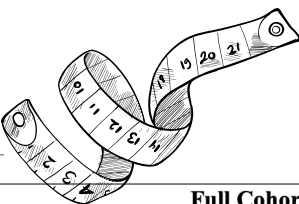
Results

- Primary school children in Dublin had higher birthweight than children in small towns.
- Children attending school in Dublin had larger waist circumferences z-scores than children in rural areas.
- Children who attended disadvantaged schools had smaller birthweight z-scores than non-disadvantaged children.
- Good dietary quality was associated with lower body mass index. Adequate intakes of all nutrients were associated with taller children.

	Cohort (n=1003)				P value
	Dublin	LTown	STown	Rural	
BMIZ	.094 ± 1.01	.190 ± 1.07	.196 ± 1.12	.245 ± 1.10	.055 ¹
WAZ	.59 (-.08-1.27)	.56 (-.16-1.33)	.64 (-.13-1.41)	.45 (-.40-1.29)	.003 ^{2,4}
WGTZ	.309 ± 1.01	.355 ± 1.01	.366 ± 1.05	.420 ± 1.03	.195 ¹
HGTZ	.444 ± 1.04	.386 ± .94	.406 ± 1.03	.450 ± 1.06	.710 ¹
BWGTZ	.096 ± 1.18	-.062 ± 1.13	-.239 ± 1.38	.044 ± 1.25	.043 ^{1,3}



	Cohort (n=1024)		P value
	DEIS	Non-DEIS	
BMIZ	.303 ± 1.14	.167 ± 1.06	.018 ¹
WAZ	.63 (-.32-1.47)	.51 (-.20-1.27)	.153 ²
WGTZ	.417 ± 1.10	.364 ± 1.03	.331 ¹
HGTZ	.371 ± 1.07	.444 ± 1.03	.180 ¹
BWGTZ	-.248 ± 1.51	.041 ± 1.19	.010 ¹



	Cohort (n=2552)					
	Good		Fair		Poor	
	r (p)	P value	r (p)	P value	r (p)	P value
BMIZ	-.064	.001 ¹	.063	.002 ¹	.044	.025 ¹
WAZ	.022	.270 ²	-.016	.416 ²	-.015	.456 ²
WGTZ	-.073	<.001 ¹	.068	<.001 ¹	.062	.002 ¹
HGTZ	-.033	.092 ¹	.028	.158 ¹	.041	.037 ¹
BWGTZ	.050	.116 ¹	-.045	.151 ¹	-.046	.142 ¹



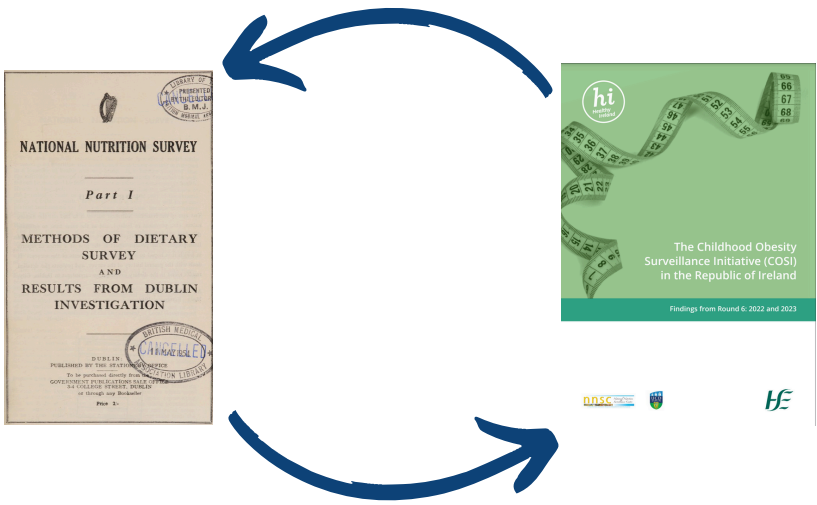
	Full Cohort (n=2592)							
	Weight z-score	Height z-score	Waist z-score	BMI z-score	Weight z-score	Height z-score	Waist z-score	BMI z-score
	r (p)	P Value	r (p)	P Value	r (p)	P Value	r (p)	P Value
Protein	-.029	.137 ¹	.054	.006 ¹	-.047	.017 ²	-.085	<.001 ¹
Calcium	-.007	.719 ¹	.044	.024 ¹	-.073	<.001 ²	-.046	.019 ¹
Iron	-.028	.160 ¹	.050	.011 ¹	-.035	.078 ²	-.080	<.001 ¹
Vitamin A	-.047	.016 ¹	.029	.135 ¹	.016	.406 ²	-.088	<.001 ¹
Vitamin	-.005	.780 ¹	.045	.021 ¹	-.083	<.001 ²	-.045	.021 ¹
B1								
Riboflavin	-.022	.268 ¹	.048	.015 ¹	-.073	<.001 ²	-.071	<.001 ¹
Niacin	-.041	.039 ¹	.030	.122 ¹	.002	.921 ²	-.081	<.001 ¹
Vitamin C	.012	.546 ¹	.042	.034 ¹	-.078	<.001 ²	-.020	.313 ¹

Aims & Objectives

- To analyse the associations between population dietary quality data from the 1948 National Nutrition Survey (NNS) study mapped onto the Childhood Obesity Surveillance Initiative (COSI) Round 6 (R6) childhood obesity data.

Research Design

- Geographical area, sex and dietary quality of primary school COSI children, aged between six and nine years, were analysed by mapping geographical area, sex, and dietary quality as defined by the NNS to those COSI children.



Conclusion

- The present study highlighted the trajectory of childhood obesity rates based on population dietary quality, and geographical area
- This research may inform future public health policies and initiatives that aim to target childhood obesity

Key References

Kilduff O, Slattery J, Lee C, O'Brien S, Murrin C, Kelleher C. (2024). The Childhood Obesity Surveillance Initiative (COSI) in the Republic of Ireland – Findings from 2022 and 2023. Available from: <https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/heal/childhood-obesity-surveillance-initiative/cosi/the-childhood-obesity-surveillance-initiative-report-round-6.pdf>

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