



Measured parental weight status and familial socio-economic status correlates with childhood overweight and obesity at age 9

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Background

- Parental obesity is a predominant risk factor for childhood obesity
- Parents and children live in a shared family environment & the relationship between parent and child weight is complex owing to a combination of genetic and environmental factors



Background

- Socio-economic status (SES) is an important determinant of the shared family environment
- The relationship between adult obesity & SES is well established
- Evidence of a relationship between childhood obesity and SES remains equivocal



Aims

- 1.** To estimate the prevalence of childhood overweight and obesity by measured parental weight status and a range of SES indicators
- 2.** To investigate the association between parental weight status, familial SES characteristics and the risk of childhood obesity



GUI – sample design

- Participants: N=8,568
- Probability Proportionate to Size (PPS) sampling methods were used with schools as the primary sampling unit
- 910 schools were selected for inclusion (RR 82%) and age appropriate children (RR 57%) were invited to participate
- Parents and children had anthropometric measurements taken by a trained professional
- Data was weighted in order for it to be nationally representative



Variables used for analysis

The dependent variable

Child body mass index (BMI)

Age (9.5 years) and sex specific International Obesity Taskforce cut-off points

	Boys	Girls
Overweight	19.46	19.45
Obese	23.39	23.46



Independent variables

- Study child's gender (Male/Female)
- Family type (Single parent/Two parent)
- Study child has siblings (Yes/No)
- Mother's age (<30, 30-39, 40-49, 50+)
- Father's BMI (Normal, overweight, obese)
- Mother's BMI (Normal, overweight, obese)
- Parental BMI (Combined single index variable)
- SES indicators (Maternal education, Household income, Household class)



The socio-economic indicators

Mothers highest level of education

Four categories: lower secondary or less, higher secondary, post secondary, third level

Household income

This variable was imputed and is presented in quintiles

Household class

Based on the Irish CSO classification



Analysis plan

- Statistics package used: STATA 12 IC
- Weighted data
- Prevalence estimates
- Unadjusted and forward stepwise multinomial logistic regression (four models) were used:

Model 1: Social demographics & household class

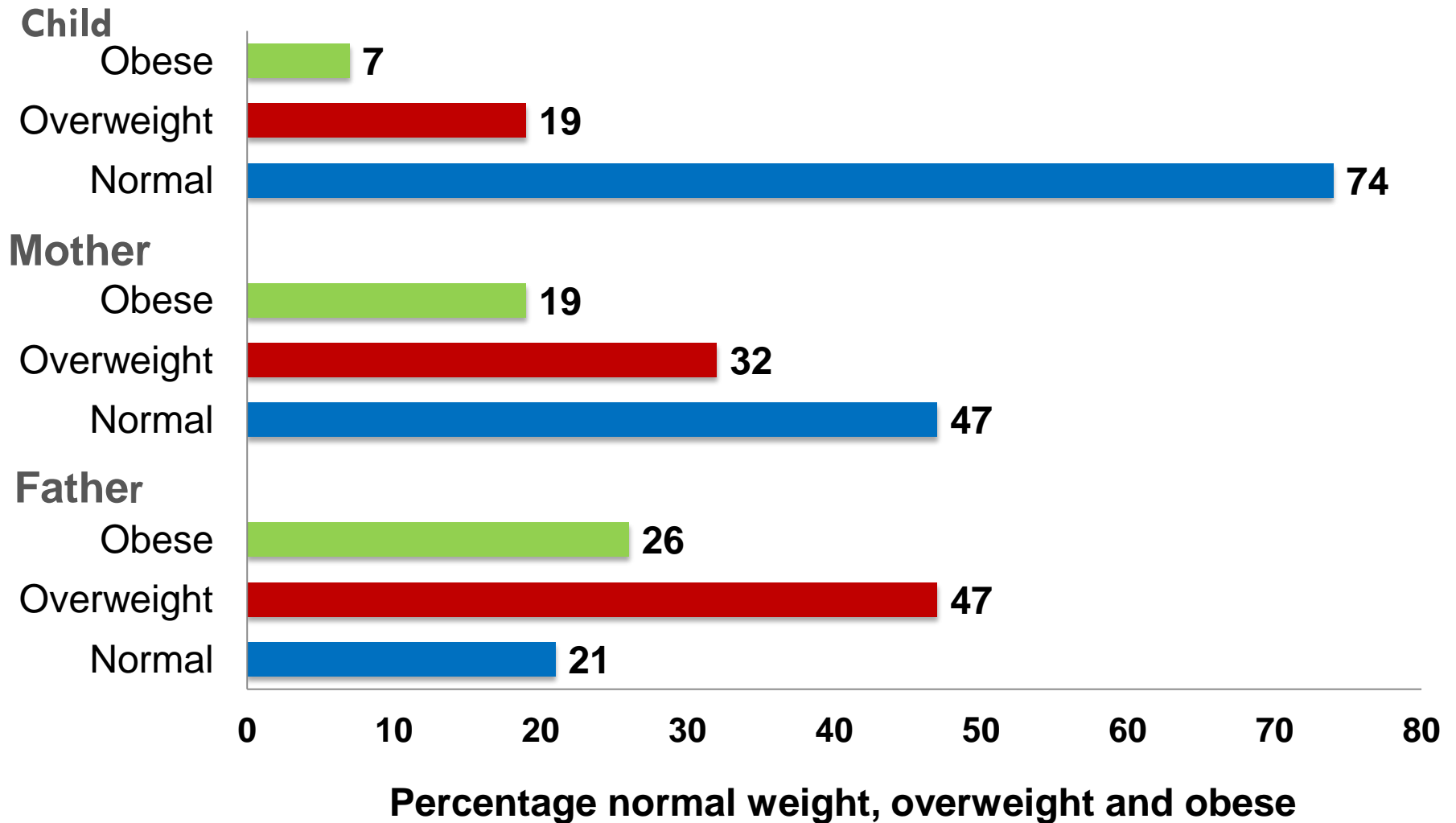
Model 2: Maternal education

Model 3: Household income

Model 4: Parental BMI



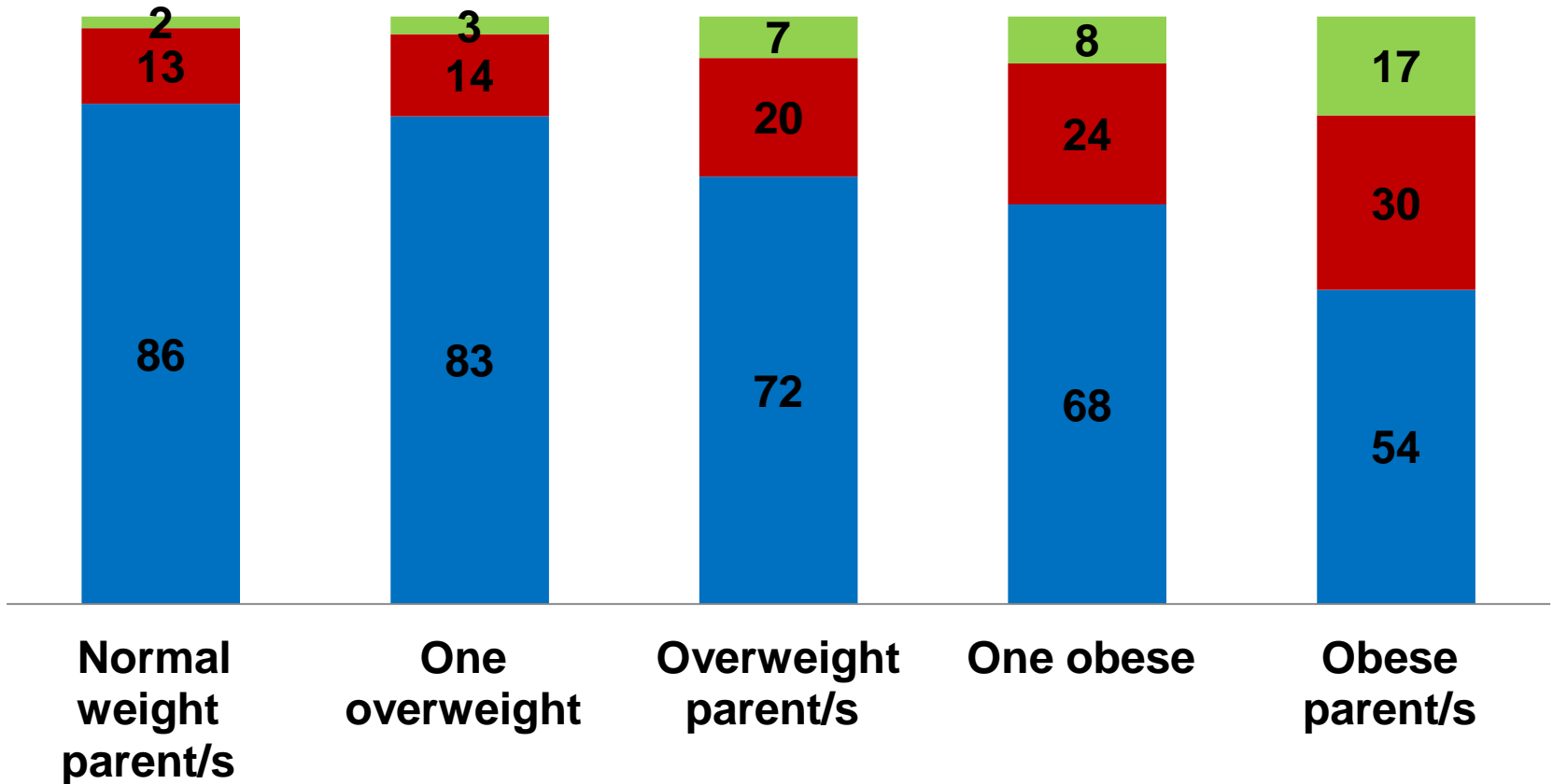
Prevalence of overweight and obesity in children (N=8,136) and their parents





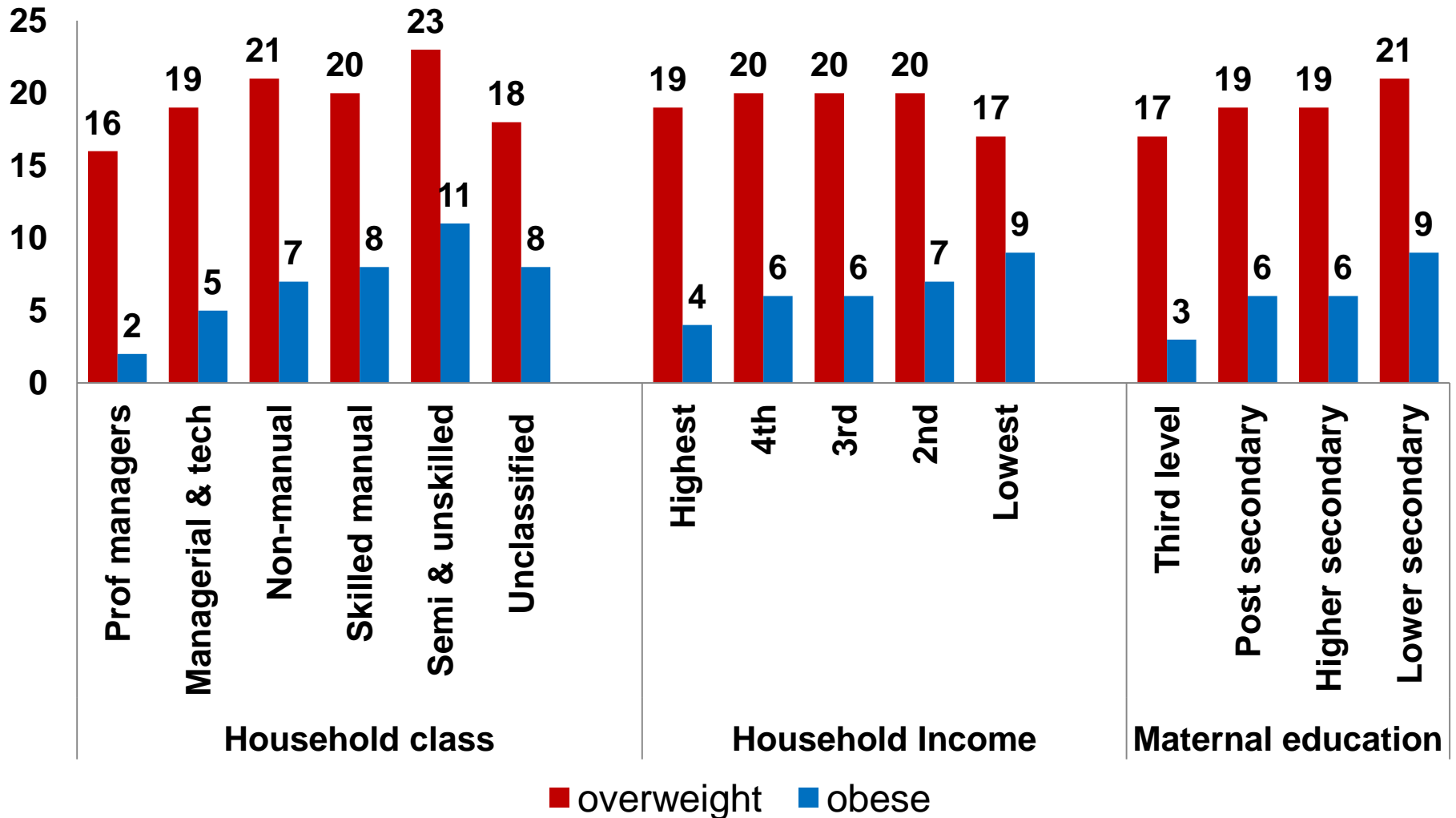
Prevalence of childhood overweight and obesity by parent weight status

■ Normal ■ Overweight ■ Obese





Prevalence of childhood overweight and obesity by familial socio-economic indicators





Multinomial regression (Final model)

What are the predictors of childhood overweight?

1. Female gender (OR 1.5, 95% CI 1.2 - 1.7)
2. One parent family (OR 1.5, 95% CI 1.1 - 2.0)
3. Parental BMI

	OR 95% CI
Single parent/both parents normal weight	1
One overweight [2 parent family]	1.3 (0.99-1.8)
Single parent/both parents overweight	2.1 (1.6-2.8)
One obese [2 parent family]	2.7 (2.0-3.6)
Single parent/both parents obese	3.9 (2.8-5.6)



What are the predictors of childhood obesity? (final adjusted model)

	OR (95% CI)
Female gender	1.5 (1.2 - 2.0)
One parent family	1.8 (1.2 - 2.9)
Household class	
Managerial & tech	2.9 (1.6 - 5.4)
Non-manual	3.3 (1.7 - 6.3)
Skilled manual	4.0 (2.0 - 7.8)
Semi & unskilled	4.8 (2.3 - 9.9)
Unclassified	2.1 (1.0 - 4.8)

	OR (95% CI)
Maternal education	
Post secondary	2.3 (1.5 - 3.6)
Higher secondary	2.1 (1.4 - 3.1)
Lower secondary	2.7 (1.7 - 4.2)
Parental BMI	
One overweight (two parent family)	2.2 (1.2 - 4.2)
Overweight parent(s)	5.4 (3.0 - 9.7)
One obese (two parent family)	6.9 (3.8 - 12.6)
Obese parent(s)	15.3 (8.4 - 27.7)



Primary conclusions

- Parental obesity appears to be the most significant independent predictor of childhood obesity in Ireland
- Household class and maternal education are better predictors of childhood obesity than household income



Conclusions continued

- 81% of children were from a family where at least one parent was overweight
- Having normal weight parents appears to have a protective effect against childhood obesity
- Broadly based population level interventions are required targeting the social, economic and cultural dimensions of overweight and obesity



Further research is needed

- Further research is needed to understand how each SES indicator predicts behaviours and choices that impact weight gain
- Further research is needed to assess how behaviours that affect energy balance vary between families with normal weight parents v obese parents



Publication details

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Any questions?