The role of adiposity in perceived ability within Ireland's education system

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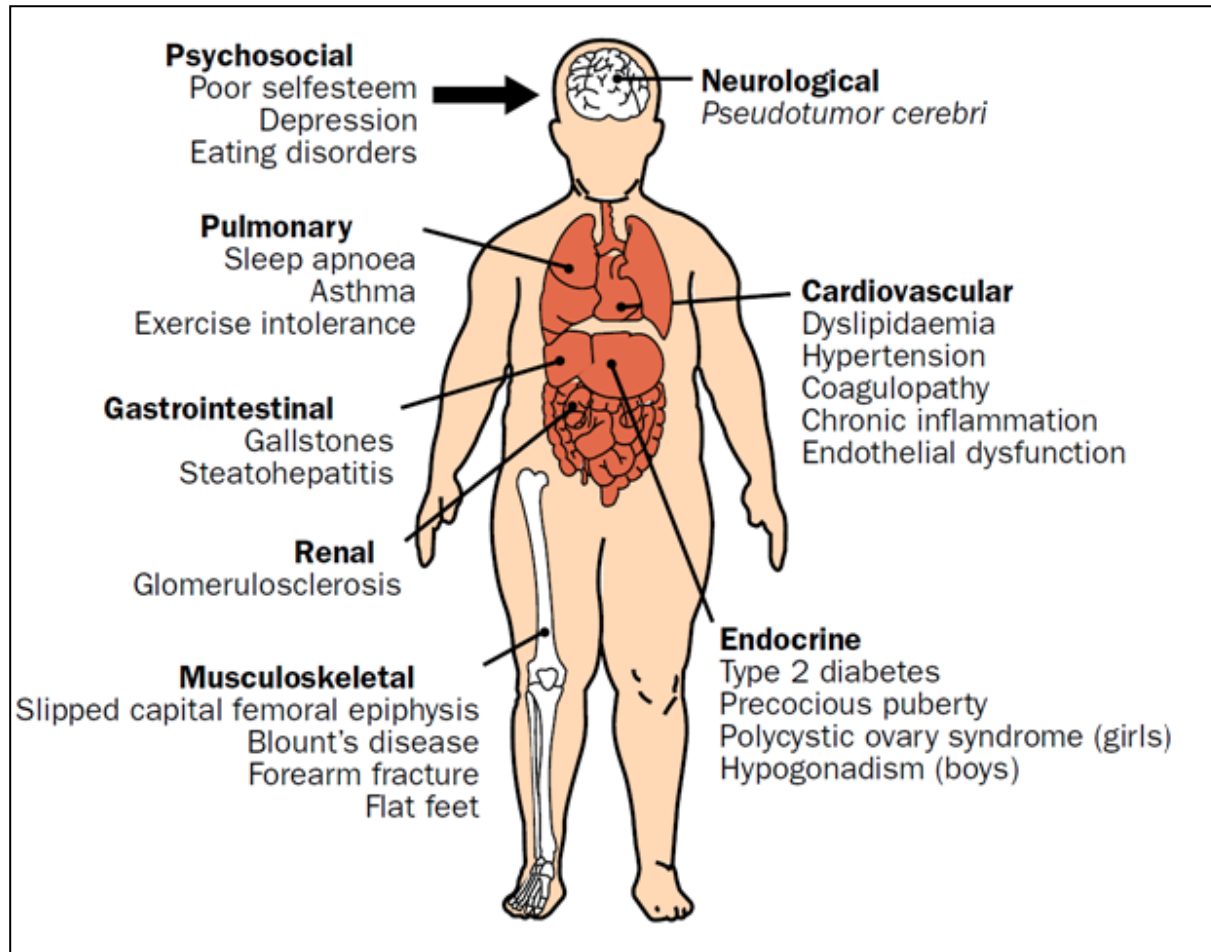
Childhood obesity

- **Classification**

Normal weight: BMI of <19.46 (for boys) and 19.45 (for girls)

Overweight: BMI of 19.46 to <23.38 (for boys) or 19.45 to< 23.46 (for girls)

Obese: BMI of 23.38 or over (for boys) and 23.46 or over (for girls)

- **GUI study 2011: Child cohort found 26% of 9 year olds were overweight/obese (19% were overweight, 7% were obese)**

Costs of childhood obesity

- **Recommended use of an estimate of $19 000 as the incremental lifetime medical cost of an obese child relative to a normal weight child who maintains normal weight throughout adulthood (Finkelstein et al 2014)**

Obesity stigma in education

- **Tendency to discount the ability and/or achievements of overweight or obese students or to extend active discrimination in terms of giving less attention to obese children or lower marks in exams (Puhl and Latner, 2007)**

Aim of study

- **Examine if there is an association between teachers perceptions of students and their weight status**

- **Examine if there is an association between teachers perceptions of students and student's primary care giver's weight status**

Teachers expectations

- **When teachers interact with students they develop expectations for students' academic performance and social skills (Dusek and Joseph, 1983)**

- **Teachers have lower expectations of children who have a lower socioeconomic status or those minority children (Dusek and Joseph, 1983, Hinnant et al., 2009, Auwarter and Aruguete, 2008, De Boer et al., 2010, Jussim et al., 2009, Jussim and Harber, 2005)**

Implications of teachers expectations

- **When teachers expect more from students they may allocate more personal resources to their teaching, which, in turn, facilitates greater student learning and achievement – vice versa**

- **The Pygmalion effect, or Rosenthal effect** ("intellectual bloomers")

Methods

Regression

- **Dependent variable:**

    Teachers expectations for test scores

- **Explanatory variable:**

    child gender, child BMI, primary caregiver's BMI, education, marital status, income, late year and actual test score, school ID

Findings

- **Those children whose parent/primary caregiver is overweight or obese are more likely to be predicted in the average/below average quintile for maths and reading**

- **Those children are overweight or obese are more likely to be predicted in the average/below average quintile for maths**

Maths

Predicted average maths test score	dy/dx (St. error)	z	P>|z|	[95% Conf. Interval]	
Females	-.0427499 (.0139154)	-3.07	0.002	-.0700236	-.0154763
Primary caregiver BMI (reference case is normal weight)					
Overweight and obese	-.0341358 (.0139212)	-2.45	0.014	-.0614208	-.0068508
Child BMI (reference case is normal weight)					
Overweight and obese	-.0291721 (.0152513)	-1.91	0.056	-.059064	.0007199
Marital status (reference case is married and living with husband/ wife)					
Never married	-.0591558 (.022716)	-2.60	0.009	-.1036784	-.0146332
Actual maths test score	.0110725 (.0004271)	25.92	0.000	.0102354	.0119097
Education (no education is reference)					
Primary Degree	.0835663 (.0415711)	2.01	0.044	.0020884	.1650442
Postgrad	.0958629 (.0459054)	2.09	0.037	.0058899	.1858359
late year	.0144845 (.0137826)	1.05	0.293	-.0125289	.0414979

Overall preliminary finding

- **There is evidence that teachers exhibit altered judgements of pupils according to child's primary caregiver's body shape and according to the child's own body shape for predicted ability in maths**

Other findings…

- **Socioeconomic factors**

- **Educational attainment of parent/ primary caregiver** (more educated parents provide an environment, which improves their children's opportunities and decision processes (Chevalier, 2004))

- **Marital status of parent/ primary caregiver**

Preliminary conclusion

- **Obesity should not be understood solely as a health issue but rather one that may have far-reaching implications for a child's education and economic future**

- **There is evidence of obesity prejudice among teachers albeit this may work indirectly through a stereotyping of parents and through that to the pupils that they teach**

- **True bias ?Unmeasured confounders that may explain further but up to now we haven't been aware of this association… this issue warrants closer examination**

Thank you for listening

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FRANK RICHARDS

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Child BMI (reference case is normal weight)					
Overweight and obese	-.0291721 (.0152513)	-1.91	0.056	-.059064	.0007199
Marital status (reference case is married and living with husband / wife)					
Married and separated from husband / wife	.0463302 (.0318374)	1.46	0.146	-.0160699	.1087304
Divorced	.0888232 (.0613137)	1.45	0.147	-.0313495	.208996
widowed	-.1193694 (.0852793)	-1.40	0.162	-.2865137	.0477749
Never married	-.0591558 (.022716)	-2.60	0.009	-.1036784	-.0146332

Equivalised Household Annual Income Quintiles Reference case is lowest quintile (€503.7783- €10530.65)					
1st €10534.48 - €14610.27	.035614 (.0249744)	1.43	0.154	-.013335	.0845629
2nd €14637.58 - €18797.37	.0152204 (.0245511)	0.62	0.535	-.0328989	.0633397
3rd €18814.07 - €25046.98	.0525994 (.0264342)	1.99	0.047	.0007892	.1044096
Highest €25060.24- €223115.6	.0496485 (.0258165)	1.92	0.054	-.0009509	.100248
Actual maths test score	.0110725 (.0004271)	25.92	0.000	.0102354	.0119097
Education					
Lower Sec	-.0208334 (.0423329)	-0.49	0.623	-.1038044	.0621376
Hi Sec/TechVoc/UppSec+Tech/Voc	.0094794 (.0392951)	0.24	0.809	-.0675377	.0864964
Non Degree	.0362997 (.0405424)	0.90	0.371	-.0431619	.1157614
Primary Degree	.0835663 (.0415711)	2.01	0.044	.0020884	.1650442
Postgrad	.0958629	2.09	0.037	.0058800	.1858350

Reading

Predicted average reading test score	dy/dx (St. error)	z	P>|z|	[95% Conf. Interval]	
Females	.0554114 (.015258)	3.63	0.000	.0255064	.0853164
Parents BMI	-.0311632 (.0145143)	-2.15	0.032	-.0596107	-.0027157
Marital status (Married and living with husband / wife is reference)					
Married and separated from husband / wife	-.0348775 (.0337591)	-1.03	0.302	-.1010441	.0312891
Divorced	.0349216 (.0555242)	0.63	0.529	-.0739039	.143747
Widowed	-.014784 (.0944401)	-0.16	0.876	-.1998831	.1703152
Never married	-.0654167 (.0248573)	-2.63	0.008	-.1141361	-.0166972

Reading ctd…

Equivalised Household Income					
1st €10534.48 - €14610.27	.0347492 (.0275037)	1.26	0.206	-.019157	.0886553
2nd €14637.58 - €18797.37	.0131473 (.0252196)	0.52	0.602	-.0362823	.0625768
3rd €18814.07 - €25046.98	.0637355 (.026704)	2.39	0.017	.0113967	.1160744
Highest €25060.24- €223115.6	.0536915 (.0268422)	2.00	0.045	.0010817	.1063013
Actual reading test score	.0144612 (.000542)	26.68	0.000	.013399	.0155234
PCG Education					
Lower Sec	-.0308171 (.0477458)	-0.65	0.519	-.1243972	.062763
Hi Sec/TechVoc/UppSec+Tech/Voc	-.0324028 (.0447661)	-0.72	0.469	-.1201427	.055337
Non Degree	-.0092803 (.0465919)	-0.20	0.842	-.1005988	.0820382
Primary Degree	.0405578 (.0473218)	0.86	0.391	-.0521913	.1333069
Postgrad	.0666657 (.0508272)	1.31	0.190	-.0329538	.1662851