Reviewer's report

Title: Effects of neighbourhood income on body mass index: an eight year longitudinal study of Canadian children

Version: 2 Date: 24 August 2007

Reviewer: Kylie Hesketh

Reviewer's report:

General

This is an important paper which progresses our knowledge of the influences of neighbourhood income over time on children's BMI.

Major compulsory revisions

1) Background – the authors state their primary goal is to “assess the impact of the family and neighbourhood environments….” (pg 4) however, there is no discussion of family environments in the introduction to justify its inclusion. Further, there is no mention of family environments in the hypothesis or title of the paper. As family environment variables are included in the analyses, a case needs to be made for the relevance of family environments.

2) Discussion 3rd para – the changes in neighbourhood category across the study is an important issue which needs to be discussed in more detail. Is it possible to include a “dose” variable as a covariate in the models to assess impact of staying in the same neighbourhood category across the study compared with moving at some point in the study? At a minimum the possible effects on your reported outcomes of not accounting for this occurrence should be discussed.

Minor essential revisions

1) Background - 1st sentence requires a reference(s)
2) Background 2nd para - 1st sentence requires justification and reference(s)
3) Background 4th para – this doesn’t fit/flow with the rest of the background. It needs to be better integrated with more explanation of how this is relevant to the neighbourhood income discussion.
4) Methods 1st para – “Data used were from…”
5) Methods 1st para – include age of participants at Cycle 5
6) Statistical analysis 1st para – do you mean “…each child contributed an average of 3.8 out of 5 measurements.”?
7) Results 1st para – some statistical analysis to support the trends observed in Figures 1 and 2, and indicate the strength of these trends, would be useful.
8) Pg 8, 3rd para – presentation of the results for PMK education seem
unnecessarily detailed, given these were not statistically significant. I would suggest substantially merely stating that while in the expected direction, there was no significant relationship between PMK education and BMI. Readers can look to the table for the direction and actual estimates and CIs.

9) Pg 9, 2nd para – estimate reported to 3 decimal places (1.358) should be reduced to 2 for consistency.

10) Discussion 1st para – further discussion of the point made in the final sentence (re. supporting hypothesis of great influence as children age) is required to illuminate why this might be the case.

11) Figure and Table headings – please move the methodological detail (“aged 2-3 in 1994, assessed bi-annually from 1994-2002] to a footnote rather than in heading.

12) Table 1 heading – it would be clearer to remove the reference to 2002 and instead state “…aged 2-3 in NLSCY at baseline (1994)"

13) Figure 1 – replacing %s with y-axis label “% overweight” would be clarer

14) Figure 2 – y-axis requires a label

Discretionary revisions

1) Pg 6 para 4 – would fit better under “sample” above

2) Results 1st para – second sentence is unnecessary and could be removed.

3) Pg 11 para 2 – is there any evidence to support differential access to food and physical activity opportunities for urban vs rural residents also?

4) Table 1 – it would be clearer to divide the data in the table using subheadings for “Baseline (1994)” and “Across cycles (1994-2002)”. 

**What next?:** Accept after minor essential revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests