Reviewer's report

Title: Healthy-Lifestyle Behaviors Associated with Overweight and Obesity in US Rural Children

Version: 2 Date: 21 November 2011

Reviewer: Maria Inês Varela-Silva

Reviewer's report:

This version has improved but still needs some revisions. See my suggestions here:

Major Compulsory Revisions

1. The main issue of this paper is that it studies children from 4 states in the US assuming that the biocultural environment is similar just because they are all rural and poor. This may not be the case and I would like to see the results analysed by state and see if some major differences would appear.

2. Also there is considerable ethnic variation that requires a deeper study into the differences between ethnic groups within each state. Who are more likely to be overweight/obese? The African/American, the Hispanics? These are questions that can be easily addressed and would improve the quality of the research a great deal.

3. In the abstract the reader doesn’t know that the results were gathered as part of the CHANGE programme and the Save the Children initiative - which most of the international readers are not familiarised with and don’t know what they are. The description of these initiatives/programmes should also be better explained in the methods.

4. In the methods state the age of the children. People from other countries don’t know at what age a child goes to first grade in the US.

5. Make a clear distinction between “soda” and “sugar-Sweetened beverages”. Non-American readers are not acquainted with this terminology.

6. The results should explore in much greater detail the differences between states, ethnic groups and educational level of the families. The authors have 4 subsamples that need to be analysed separately before being clustered together and addressed only as “poor” and “rural”.

7. A greater deal of detail is required in the discussion to point out the reasons why the obese children are showing the “healthiest” behaviours”. It doesn’t make biological, behavioural or epidemiological sense, despite the existence of a statistical significance. This reinforces the idea that the 4 sub-samples (by state) should be analysed independently and see also how ethnicity will play a role.

8. The remaining discussion should be redone after these concerns are addressed.

Minor essential revisions
1. In the abstract, methods, state the range the children's age. The reader must know exactly what group the paper is addressing.
2. At the end of the “Background Section” please formulate specific research questions.
3. In the methods explain what is “Save the Children”
4. In the methods explain the CHANGE programme
5. On the results, page 7 the sentence that starts with “The prevalence of overweight and/or obesity (defined as a BMI zscore above the 85th…) is confusing. Please rephrase.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

No