Reviewer's report

Title: Dietary patterns and nutrient intake vary among low-income Hispanic and Black preschool children in Atlanta: A cross sectional study

Version: 1 Date: 21 April 2012

Reviewer: Stefanie Vandevijvere

Reviewer's report:

Major compulsory revisions

It is not clear how the children were selected and whether they are representative for this minority children population in Atlanta. It is also unclear why they were selected from a study which was carried out already; this introduces additional bias. In addition the sample size is really very low for a dietary survey. Why was it not possible to include more children?

Sample size calculation: calculating a sample size for a clinical study (blood parameters) is not the same as for food/nutrient intake...! Please provide a new sample size calculation for food/nutrient intake. You will see that the sample size needed for the objectives of your study will be much larger.

You did not measure or control for physical activity, education and social influences. So how do you know that your study population is a low-income group?

How come there were so many dietary records which were not of sufficient quality to be included in the analysis?

The authors speak about dietary patterns but they only analyze single foods and nutrients in their paper. Dietary pattern analysis includes for example dietary quality indices or factor or cluster analyses.....Otherwise the authors simply need to speak about food and nutrient intake and not about dietary pattern analysis

It would be more interesting to compare the food and nutrient intake of these minority children with food and nutrient intake of the general preschool population in the U.S, than to compare food and nutrient intake among Hispanic and Black preschool children. Are their dietary habits worse or better than the general US population of preschool children? How do the dietary habits of those minority children compare with adult Black and Hispanic population which are included and oversampled in the NHANES study?

You have to complete the statistical methods section. You compared the data using ttests? I cannot image that the food and nutrient intakes were normally distributed. Please use appropriate statistical tests.

How were underreporters characterised? Were they excluded from the study? Why/why not?
Please calculate food intake in grams per day (instead of assessing number of servings of food groups a day) and use appropriate software to calculate usual daily food and nutrient intakes.

There are spelling errors in the manuscript. The manuscript needs to be proofread by an English native speaker.

Minor essential comments

Abstract
- Page 2 line 6: change to: Food and Nutrient intake of low income Hispanic and Black preschool children are not well documented.
- Page 2 line 9: change to: explore how macronutrient and micronutrient intake compare to the Recommended Dietary Allowances (RDA)
- Page 2 line 10: mention which dietary software was used
- Page 2 line 15: The mean percentage of intake: energy percentage?? Unclear

Introduction
The first paragraph of the introduction is irrelevant if no dietary pattern analysis is performed. Moreover appropriate references are lacking.

In the second paragraph you state that there are no data on dietary habits of preschool children of the US. Are there no data from NHANES available? With regard to the recommendations, state the recommendations existing in the US for preschool children (micronutrient and macronutrient intake)

In the objectives, mention the micronutrients assessed and add rationale for assessing those micronutrients

Methods
Define clearly target and study population.

Explain better the sampling and recruitment of the children. Is the study population representative for Hispanic and Black Children in Atlanta? Why was it not possible to collect at least some general characteristics of the non-participating children?

Food records: 3 consecutive or non-consecutive days?
Food records: The instructors were they dieticians? Did the instructors speak the languages of the minority groups? Who did check the diaries and when? How was quality of the food records assessed and which were the criteria for inclusion of exclusion of certain diaries?

Page 6 line 18: unclear what you mean by prompts
Statistical analyses: did you use a method to calculate long-term food/nutrient intake?

Statistical analyses: it is not explained which statistical tests you used to compare both groups. Some details are lacking. In addition the software used is not mentioned.

Descriptive analysis by food group: please calculate food intake instead of number of food servings a day

Descriptive analysis by food group: I do not see fish or legumes?

What is the rationale for including the chosen micronutrients?

Page 7 line 9: mean percentage? Energy percentage?

Stratification: I think the sample size is really too low to stratify also by sex and age.

Page 8 line 7: complementary analysis

RDA compliance: The recommendations can be put in a table

It is not mentioned whether weight and height of the children were measured?

Results

Mention also the % overweight children in the text.

Page 9, line 12-14; isn’t it because of a lack of power that no significant difference was found for the Hispanic children?

Discussion

Page 12 line 14-16: explain the influences of social and cultural practices which you refer to. In particular a comparison with intakes among the general population is strongly encouraged.

Line 16-17: I would drop everything on vitamin D because intake of foods is not the only source. The major source is sun exposure.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:
I declare not having any conflict of interest with regard to this study