Reviewer's report

Title: Effects of maternal education on diet, anemia and iron deficiency in school-aged children in Korea

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Reviewer: Cho-il Kim

Reviewer's report:

Although this is an interesting paper, authors need to provide more detailed information on various parts. For example, in the methods section, it is not quite clear how children were recruited, which or how many cities were included in ‘urban areas’, if any of those 10 year old girls had menarche, what was the content of the ‘structured questionnaire’, etc.

Also, I would like to add following comments for this paper.

* Major Compulsory Revisions

A. Methods section need to be described or explained better:

1. What is the justification to set the cutoff for ‘low income’ at 4,000,000 Korean Won per month when a family of middle class makes 3,400,000 Korean Won per month?

2. Under the anthropometric assessment, ‘…data from the 2007 Korean…’ needs to be replaced by a sentence noting the appropriate reference published by KCDC for the growth chart

3. Whether or not the venous blood was collected after overnight fasting and for how many hours of fasting

4. How the blood specimens were handled at the field and laboratory (or laboratories?), and time elapsed after collection till the analyses

5. Why iron deficiency was defined by serum iron concentration only after getting so many different kinds of relevant indicators? – Group by Cook JD has shown better indicator of iron status using sTfR and serum ferritin ratio (Blood, 1990;75:1870-6) and please refer to a recent editorial on AJCN 2011; 93:1188-9

6. How the parents could assess children’s diet for 3 days (consecutive or non-consecutive?) including lunches which were served at school, if parents were interviewed or asked to make a food record, if there was any difference in terms of the quality of ‘assessment by parents’, etc.

7. The term ‘Korean Nutrient Database’ is not appropriate because that is listed in that reference as a part of content only

8. Why only BMI was used to look for relationship with hematological variables when heights and weights would give better information on growth status or physique of 10 year-old children
B. In Results section, following points need authors’ attention:

9. In the 1st paragraph, the 7th sentence is not supported by data.

10. At the 2nd paragraph, energy intake of children needs to be compared in terms of % EER instead of the absolute numbers to avoid any possible bias due to sex of children.

11. For the difference in energy intake between 2 groups in Table 2, it will be very useful to see if there was any difference in physique (with height & weight) of children in those groups.

12. Was there any specific reason to leave out some nutrient intake information such as sodium, potassium, niacin, etc. especially when these are automatically calculated by CAN-Pro 3.0?

13. Mention on fiber intake needs more caution because numbers in CAN-Pro 3.0 are from crude fiber not dietary fiber.

14. The 1st sentence of the 3rd paragraph needs to be rephrased: EAR means estimated average requirement and is not equal to ‘the daily recommended amount’ as authors said.

15. The criteria used in Table 3 for the frequency of consumption of certain food groups are disturbing. ‘No’ versus ‘#once a week’ are not in continuum. Was there any other category of frequency? If these 2 were used, they should be presented as ‘Yes vs. No’ although it is hard to believe a half of children never consume fast food..

C. In Discussion section, following points need authors' attention:

16. Anemia prevalence based on hemoglobin values shown in this paper is almost twice higher than what is known from Korea National Health and Nutrition Examination Survey (KNHANES) of the same year. So, this difference as well as some interesting results such as higher WBC, glucose, ALT, SBP, DBP in the group of lower maternal education need to be looked at and discussed further for a possible implication.

17. The sentence referring to reference 30 in the 4th paragraph is not appropriate for this paper. ‘Over 700 children from urban areas…’ does not seem to have anything to do with a community.

18. The 2nd sentence from the last in the 5th paragraph is not supported by the result in this paper.

19. Most part of the 7th paragraph is not relevant to this study or does not make sense. Please read carefully and concentrate on interpreting results.

* Minor essential revisions

20. Reference No. 20 is not traceable

21. There are numerous parts with typographical and/or grammar errors

22. Numbers on vegetable intake given in the 4th paragraph of Results section and corresponding sentence are wrong.
23. In Table 4, the variable on BMI should be expressed as ‘overweight’ to avoid any possible confusion
24. ‘Complementary foods..’ in the 2nd sentence from the last in the 4th paragraph of Discussion section needs more explanation
25. Reference 32 is not correct for the title and authorship.

Level of interest: An article whose findings are important to those with closely related research interests

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

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.