Author's response to reviews

Title: Energy and Macronutrient Intake among School Children in Bahrain

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Author's response to reviews: see over
Dear Editor,

As per the reviewer’s comment, we have made the following changes to our article. Changes have been highlighted in red color.

1. Energy is expressed as K Calories throughout the paper.
2. The title changed to incorporate “Dietary pattern” and the design of the study.
3. **Abstract:** Background: The word “Bahraini” added before “children” in Background (Abstract)
4. Abstract: Methods: “the 3-day food record” removed as it was an error in writing.
5. **Introduction:** 2nd paragraph: The references are now 12, 15-20 (Page 3, Last paragraph) which include studies on food intake and other nutritional status components. The food intake studies in the past were related to food pattern (qualitative) but none of them have evaluated the energy and macronutrient intake (quantitative). In fact this is the first study to estimate energy and macronutrient intake in Bahraini school children—mentioned in Discussion.
6. The word “qualitative” and “quantitative” removed from the paper.
7. The sentence on “..deficiencies and excess in diet…” changed, Page 3, last paragraph.

**Methods:**

8. **Statistician’s comment:** Power of the study or power analysis is an important aspect of experimental studies, but this is not the case for observational (or prevalence) studies such as the study submitted. Hence the formula used for sample size determination in this study gave no consideration to the power calculation. To compute the sample size using the standard formula, it was assumed that p=0.5 (so 1-p = 0.5) since there was no prior information available at the time of the study design.

9. Details of number of schools chosen, distribution of schools between districts, method of selection of children, number of children selected for the food frequency data (larger sample—2594 and the response rate) and number selected for the energy and macronutrient study (500 and response rate) mentioned in detail on page 4, last paragraph and page 5, 1st paragraph. A flow chart was hard to make for schools and children of the 11 regions of Bahrain, hence a Table to this effect (given on the last page) has been made and could be appendix 1, if the editors decide to keep it.

10. Response rate for the self-administered questionnaire (Food frequency)—was 98.7%. 500 children were chosen for the energy and macronutrient component of the study and 4 students declined to participate during the interview (Response rate 99%). Page 4-5.

11. Ethical approval for the study was taken---- Page 5 “Ethical Considerations”

12. Place of interview, description of interviewers, week-days as interview days, interviews with the mother and child together, timing of 24 hour recall, and knowledge of mothers/children about 24-hour recall prior to study is mentioned on Pages 5-6

13. There may have been some misreporting of data for boys ≤10 years old whose mothers did not participate in the interview --- mentioned in discussion Page 11.
14. The expression of “E%” is now used throughout the paper instead of “nutrient density”, as suggested.

15. The reference intakes for energy is DRV (Dietary Recommended Value-reference No. 22). The values are different according to age and gender but not physical activity level in this standard. The energy intake of the students is given as a percentage of the EAR (Table 1 and text). Actual figures of EAR by age and sex have been inserted in Table 1 also.

16. Reference value has been set for P:S ratio and its importance (Ref. 23). Page 7, lines 7-9. CSI was removed as its importance in children has not been adequately studied.

17. Food frequency data did not include the 24 hour recall information. Information was collected on different days.

18. If children ate something more than once per day, it was not recorded. The information on food frequency reflected a general eating pattern (qualitative rather than quantitative) of children in a week. All major healthy food groups should preferably be consumed on a daily basis. This data shows the proportion of children who did not eat certain food groups on a daily basis.

19. Fizzy drinks, tea, coffee were considered food with empty calories.

20. The foods were categorized as described in Table 3 and text, page 7 for the sake of some details specially for the purpose of advising. Another analysis was done by combining the fruits and vegetables together in one group to see any differences in the intake of major food groups—Fig 1.


22. Deletions done for “…Mann-Whitney test……decimal point”

23. **Results:** As suggested, Table 4 is deleted. We would however like to keep Table 2 if possible, because there are so many figures in that Table which show a nice trend between the various fat dense diets and it is hard to describe the details in the text.

24. Figure 1 is also deleted, as requested.

25. The headings and sub-headings are as per suggestion.

26. The paragraph on nutrient density has been integrated with the macronutrients and comparisons made with recommendations in this section.

27. The major food groups analyzed as suggested and shown in figure 1.

28. **Discussion:** Validity of the study mentioned—page 8 and also in discussion (1st paragraph). Quality control to improve reliability and validity mentioned on page 8. Limitation of study data, possible misreporting by younger boys also mentioned in discussion (2nd paragraph).

29. Figure 2 (now Fig 1) changed, as requested.

We have tried to address all the queries of the reviewer as best as possible. Waiting for your kind response.

Thanking you,

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