Author’s response to reviews

Title: Development and validation of a food frequency questionnaire (FFQ) for assessing dietary macronutrients and calcium intake in Cambodian school-aged children

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Version: 1 Date: 14 Dec 2018

Author’s response to reviews:

Revised Title: Development and validation of a food frequency questionnaire (FFQ) for assessing dietary macronutrients and calcium intake in Cambodian school-aged children

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Version 1: Date: 14 Dec. 2018
Camille Lassale,
The Editor-in-Chief,
Nutrition Journal

Dear Professor Camille Lassale,

Thank you for your consideration of our manuscript entitled “Development and validation of a food frequency questionnaire for school-aged children in Cambodia” (NUTJ-D-18-00236) for publication in Nutrition Journal.

We are delighted to learn that the reviewers found our manuscript to be of value and interesting. In response to the helpful reviewers’ comments, we are pleased to submit a revised version of this manuscript as well as the point-by-point responses to the reviewers’ comments.

We have had our manuscript checked by a professional English editing service.

We sincerely hope that we have adequately addressed the concerns of the reviewers and look forward to a favorable decision in regard to our modified manuscript.

With kind regards,

Yoko Horiuchi
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Reviewer #1

Comment 1: Why do not you compare the validity of 168-item FFQ which is routine for estimating food intake and used 24-h dietary recall?

Response 1:

We thank the reviewer for this insightful comment and assume that the reviewer is referring to the 78 food items. We apologize for not being clear.

To improve the identification of foods relevant to school-aged children in Cambodia, the 78 items on the food list, selected at the second stage of the three selection stages, was checked at the third stage. This has been addressed in the manuscript as follows: (Methods section, ‘Development of the FFQ’ subsection, pages 5-6, lines 115-123) and modified (lines 121-123).

“Third, before and after the regression analysis, we classified all food items into 15 large, 31 medium, and 85 small groups based on their nutritional content; food items with similar nutritional content were grouped together as one food item. Taking into account the dietary habits of children in Cambodia, we also added five items (green banana, pork blood, oil, salt, and snacks). In addition, cheese and yogurt were added because of their calcium content, although they do not make a significant contribution to the dietary calcium intake in this population. Finally, a total of 56 food items were determined with 14 food groups (Table 2). This number of items is similar to other FFQ’s designed for schoolchildren [11].

In addition, it was necessary to reduce the numbers of food items in consideration of the ability of children to provide appropriate responses; as we addressed in the limitation. (Discussion section, ‘Limitations and advantages’ subsection, page 11, lines 255-258)

“Using the FFQ to assess the diet of school-aged children can also present greater methodological difficulties due to unfamiliarity of children with portion sizes, their limited knowledge of food names, their limited experience with food preparation, and their shorter attention span.”
Comment 2: Why did you evaluate the validity of the questionnaire for only calcium not other micro nutrients?

Response 2:

Thank you for pointing this out.

We focused on calcium because of the results obtained at the based survey, which was:

“…..86.1% of children did not meet the recommended dietary allowance in Cambodia [2] for calcium.” We added the sentence to the revised manuscript to clarify about the development of the FFQ for calcium and other micronutrients (Background section, page 3, lines 64-65).

Furthermore, we agree with your suggestion on the need to evaluate other nutrients. However, evaluating many nutrients would have increased the number of food items in the FFQ considerably; thus, we had to focus on few nutrients.

Comment 3: As types of bread, grains, oil, etc were not considered as the items of the questionnaire, the present FFQ cannot show real nutrient intake and the association with CVD risk factors or other parameters related to health cannot be identified. Please explain this point in the discussion section.

Response 3:

Thank for your suggestion, and we apologize for not being clear.

We agree with the reviewer that the association with CVD should be considered for the FFQ food items. We have included “Boiled rice, rice noodle, bread, wheat noodle, corn, sweet potato, and oil” in the FFQ shown in Table 2 (Table 2 was modified for clarity).

Additionally, from the based survey [2], the overall prevalence of stunting was high (33.2%), whereas that of overweight and obesity was low (3.1%). We therefore focused more on undernutrition resulting especially from inadequate intake of macronutrients and calcium, which will directly affect the body frame in the growing period. Of course, we also understand the importance of dietary assessment, especially with respect to CVD risks from overnutrition, which should be focused on, more in the near future among children in Cambodia, especially in urban areas.
Reviewer #2:

Comment 1: This article entitled "Development and validation of a FFQ for school aged children in Cambodia" aims to create and validate an FFQ dedicated to assess calcium intakes among school aged children in Cambodia as specified in the method "78 food items included that make up 0.399 of calcium intake … were considered as eligible". Authors should emphasize this in Title and Abstract objective.

The introduction is clear and well-written.

Response 1:

We agree with the reviewers’ suggestion that the objective should be emphasized in the Title and Abstract.

Therefore, we have changed the title according to your suggestion as follows

“Development and validation of a food frequency questionnaire (FFQ) for assessing dietary macronutrients and calcium intake in Cambodian school-aged children” (page 1, lines 3-4).

In addition, we revised the Abstract in accordance with the reviewer’s comments as follows

“Thus, we aimed to devise and validate a food frequency questionnaire (FFQ) that is suitable for and dedicated to assessing the dietary intake of macronutrients and calcium in school-aged children in Cambodia.” (Page 2, lines 28-31)

Comment 2: Methods -data collection

Why authors selected a sample with a wide range of age. What is the rationale of doing so and the limits? Authors need to develop these points.

Response 2: Thank you for pointing this out.

Age is an important determinant of dietary habit (Lucy J. Cook and Jane Wardle “Age and gender differences in children’s food preferences” British Journal of Nutrition (2005), 93, 741-6); however, an FFQ was developed for school-aged children based on the survey [2] among children aged 6 to 17 years.
Therefore, to validate this FFQ, we selected subjects with the age range of 6 to 17 years. We agree that the examination of children within a specified period is worthwhile, but it was beyond the scope of this research project.

Comment 3: Stat Analyses

Do authors adjust their analyses on sex and age? How the weight and height were considered in the analyses? Do authors collected more information like SES. Do authors take into account the hierarchical nature of their data (children recruited from 4 schools).

Response 3:

We thank the reviewer for these astute questions.

We agree that age, sex, weight, and height should be considered. However, since we aimed to develop an FFQ based on the nationwide survey, with a focus on its validation, we did not adjust for sex and age. The information about SES was not included because the interview was only for children; however, those were reported in the based survey, in reference number 2 (FIDR’s report).

Regarding the recruitment of subjects, we selected 4 schools in Phnom Penh to eliminate the regional differences.

As recommended by the reviewer, the examination of the effect of these participants’ characteristics would be useful in our future studies.

Comment 4: In methods

I did not understand how authors jump from the 78 items to 56 items. Please clarify.

Response 4:

We thank the reviewer for this insightful comment and assume that the reviewer is referring to the 78 food items. We apologize for not being clear.

To improve the identification of foods relevant to school-aged children in Cambodia, the 78 items on the food list selected at the second stage of the three selection stages, was checked at
the third stage; this has been addressed in the manuscript as follows. (Methods section, ‘Development of the FFQ’ subsection, pages 5-6, lines 115-123) and modified (lines 121-123).

“Third, before and after the regression analysis, we classified all food items into 15 large, 31 medium, and 85 small groups based on their nutritional content; food items with similar nutritional content were grouped together as one food item. Taking into account the dietary habits of children in Cambodia, we also added five items (green banana, pork blood, oil, salt, and snacks). In addition, cheese and yogurt were added because of their calcium content, although they do not make a significant contribution to the dietary calcium intake in this population. Finally, a total of 56 food items were determined with 14 food groups (Table 2). This number of items is similar to other FFQ’s designed for schoolchildren [11].

In addition, it was necessary to reduce the numbers of food items with consideration to the ability of children to provide appropriate response, as we addressed in the limitation. (Discussion section, ‘Limitations and advantages’ subsection, page 11, line 255-258)

“Using the FFQ to assess the diet of school-aged children can also present greater methodological difficulties due to unfamiliarity of children with portion sizes, their limited knowledge of food names, their limited experience with food preparation, and their shorter attention span.”

Comment 5: Tables and Results
For more clarity Authors should provide legends and explain briefly the model they performed for each table.

Response 5:
We apologize for not being clear.
We modified the legends and provided explanations for the tables (Table 3-6).

Comment 6: Table 2 for specific items there are several portion size while for other one portion size is indicated. Please clarify.
Response 6: Thank you for pointing this out.

Because of unclear expression of Table 2, we have addressed the portion size in the manuscript and changed the sentence (Methods section, ‘Development of the FFQ’ subsection, page 6, lines 121-123 and 132-134), and modified Table 2, which provided more information about the FFQ food groups.

Comment 7: Discussion

Regarding the Vitamin D, the reason might be an important variable to take into account.

Why authors cannot derived from their FFQ some nutrients estimation derivation using the FIDR?

Response 7:

We apologize for not being clear.

We could not find the Vitamin D data in the FIDR report [2], because the nutrient analysis in the report was performed using the FIDR Nutrition Calculation Database 2013 (Methods section, ‘Development of the FFQ’ subsection, page 5, lines 103-104) which lacked these data.

We modified the sentences for clarity. (Discussion section, ‘Limitations and advantages’ subsection, page 11, lines 262-264)

Others

We are sorry for our mistake concerning the previous paper included as reference No. 21; we have now changed it. (References, page 16, lines 372-374)


In addition, SK was an ex-staff member of the FIDR and recently moved to a new affiliation and corrected the address in the revised paper (Line 12-14).
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