Author's response to reviews

Title: Nutrient estimation from an FFQ developed for a Black Zimbabwean population.

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Version: 2 **Date:** 15 November 2005

Author's response to reviews: see over

Comment's from Reviewers
Reviewer 1,

Major problem

1. Procedure of development of FFQ was generally not reasonable and different with those of other FFQs. Standardized protocol for development of FFQ was well established by Willet WC et al.(In Nutritional Epidemiology. New York: Oxford Univ. Press, 1998). Please conform the protocol.

Willett describes in his text that there are 2 components of the FFQ: the food list and a frequency response section (1) (please see page 75). The considerations in choosing foods to be on the list are that the foods are nutrient rich, used reasonably often, and vary in intake from person to person. He describes, in the same section in the book, that there are several potential methods of arriving at a food list. One of them is to use a food composition table, information from other studies, and an open-ended method such as a 24-hour dietary recall. Indeed he goes on to describe that the 24-hour dietary recall has the advantage of being able to pick up those foods that are actually eaten by the population (1). We chose to use this approach in the initial development of the food list.

The food list prepared at this stage is long and he describes two methods of shortening it. The first is to use stepwise regression, which is the method used in the development of the Health Professionals FFQ (2). The other method he describes in the book is to pilot test the long version of the questionnaire and eliminate infrequently consumed foods (1) (please see page 76). We chose to use the latter approach in our study.

We organized the questions, and made the response categories similar to manner that is described in the Willett text. Thus, although we did not follow exactly the method used in the development of the Health Professionals FFQ, we used acceptable alternative methods that are described in the Willett text.

2. Procedure of development of food composition table using Zimbabwean's and USDA nutrient database was not reasonable and not understandable, especially for procedure of choosing food items from the USDA DB. And authors did not explain the imputation procedure when the content of specific nutrients was totally different between two DB.

We apologize for not being clear. Because the Zimbabwean food composition database was old, not updated with limited number of foods, we decided to use the USDA nutrient database instead. However, the USDA nutrient database has many different entries for the same food with widely different nutrient compositions. If we arbitrarily chose any one of those foods its nutrient composition might have been different from that of the same food used in Zimbabwe. We therefore used the

Zimbabwean food composition database to help us choose the same food item from the USDA nutrient database that was most similar in nutrient composition to the one used in Zimbabwe. We have clarified this in the text (page 7). Because the method and accuracy of techniques differs between two food composition tables we did not use any imputation. If a food in the USDA nutrient database was similar to the same food in the Zimbabwean food composition table with respect to its main nutrient contents, we used all the nutrient estimates of that food as they appeared in the USDA table.

3. P. 7 line 13-15. Authors described the procedure of picking food from USDA DB using Apple as an example. But there were no apples in Table 4.
4. There were no options for portion size in your questionnaire. If you want to use one standardized portion size, you should explain the procedure of determination of standardized portion size. Was different cooking method within one foods item considered in the calculation program?

We apologize for the lack in clarity. We have added Table 1 (describing the different types of apples), and have renumbered Table 4 so that it is now Table 2.

We used the most commonly reported portion in the 24-hour recalls as the standard portion size (page 6). We took cooking method into account in our estimation of the nutrient content of mixed dishes and have elaborated upon it in the text (pages 7-8).

5. P. 7 line 15-19 & P8 line 6-15. Recipe database was described. As I understand, only food items, not dish, is composed in the FFQ. Most food items are just food, not dish, except for beef, pork, goat, lamb etc.

The reviewer is correct that the FFQ is composed mostly of individual foods. However, mixed dishes such as sadza, porridge, homemade cake, etc. are consumed several times a day in Zimbabwe, and it is therefore necessary to evaluate these. We have, however, attempted to keep the number of mixed dishes to a minimum in the FFQ.

6. Table 1 is not easily understandable. Number of subjects is not equal in each variable.

The participants responded to some items but not to others. That is the reason the numbers vary in Table 1. We have added a footnote to the table to explain that (Table 3).

7. The paper is written in English that is not understandable even for reviewer. Please have the paper edited by a professional scientific editor.

We have tried to make the manuscript more readable by editing.

Minor Revisions

1. Number of tables is not sequentially appeared in the text. For example, table 4 is first appeared (P.7).

This has been done.

2. P.7 line 22: Is reference number #6 correct? That is computer program, isn't it?

Yes, it is correct. ESHA is a computer program contains a nutrient content databases as part of it.

3. How many days did you collect for 24HR-DR? In P5 line 14, you collected multiple 24HR-DR, but only one-day 24HR-DR was collected as in other site of the text.

We conducted 200 24-hour recalls (100 each in urban and rural areas) in November 2003. The goal here was to develop a food list and frequency of consumption for the FFQ.

Reviewer 2,
The FFQ developed by the author is considered to be useful for nutrient estimation for Zimbabwean population. However, there are some concerns which should be addressed in the revised manuscript.

1. *The major problem is that the new food composition database for Zimbabwe is not included in this manuscript or an additional file. The benefit of this manuscript becomes small if it is not shown.*

We thank the reviewer for this suggestion. We have added this file as an appendix (Appendix 2) to the manuscript.

2. The reader cannot understand how you made a food composition database for Zimbabwe. You wrote that it was made from the Zimbabwe and USDA nutrient databases while the Zimbabwean food composition database was not useful in p7, lines 6-7.

We have substantially revised the text to explain more clearly what we did, and hope that the explanation is satisfactory.

3. Although you wrote about mixed dishes in p7, lines 15-19, there are no items of the mixed dishes in Final FFQ (additional file). Please explain how to calculate the nutrients for the mixed dishes from Final FFQ table.

We have elaborated on this in the text (pages 7, 8)

4. The sentence in p9, line 22-23 is not understandable.

We have rephrased that sentence.

5. The abbreviation in the abstract should be preceded by the full-spelled term (ICC).

This has been done.

Reference List

1. Willett W. Food Frequency Methods. In: Willett W, ed. Nutritional epidemiology. New York: Oxford University Press 1998:74-100.

2. Rimm EB, Giovannucci EL, Stampfer MJ, Colditz GA, Litin LB, Willett WC. Reproducibility and validity of an expanded self-administered semiquantitative food frequency questionnaire among male health professionals. Am.J.Epidemiol. 1992;135:1114-26.