Author's response to reviews

Title: Validation of digital photographs as a tool in 24-h recall, for the improvement of dietary assessment among rural populations in developing countries

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Author's response to reviews: see over
Dear Nutrition Journal Editorial Team,

Dear Reviewers

Thanks, for the comments and feedback from the reviewers on the manuscript “Validation of digital photographs as a tool in 24-h recall, for improvement of dietary assessment among rural populations in developing countries”, that my co-authors and I have submitted to be considered for publication in the Nutrition Journal.

We have taken into account all the comments and suggestions, please find below a point-by-point response to the concerns.

Sincerely

Claudia Lazarte

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Reviewer's report

Validation of digital photographs as a tool in 24-h recall, for improvement of dietary assessment among rural populations in developing countries

Reviewer: Emma Foster

Reviewer's report:

Minor Essential Revisions:

1.-The English needs some attention
The English has been reviewed.

2.-I feel there is too much detail given on the process of the weighed intake and nutrient calculations.
The description of the WFR (weighed intake) has been rewritten for better understanding and some details were reduced.
The description of nutrient calculation was also rewritten, and some important information about the selection of food categories and nutrient intake was added, as it was requested by another reviewer, and we consider those details are important to be mentioned.

3. I am not sure of the value of including the correlation and t-test data. The FP 24-hR could consistently give values 3 times higher than the WFR and there would be perfect correlation but the methods certainly would not be in agreement. I suggest decreasing the discussion around the correlation and t-test data (or removing it all together) and focusing on the Bland Altman statistics.

We agree that the correlation is not the best parameter to compare two methods, but even so, it was calculated for comparing the results with other studies where correlations are mainly used. I took into account your recommendation to reduce the discussion about correlations and focus on the Bland Altman analysis. The results for nutrient intake are discussed now in the way that you suggested, with the width of the limits of agreement (lines 465-474). The results for food categories are shown and discussed as the geometric means because the data are not normally distributed, (lines 457-463) About the limits of agreement of vitamin A it was a print mistake, those limits corresponded to β-carotene and for the vitamin A are those placed in β-carotene. All the results were reviewed.

4. Table 3 is very full. I would suggest losing the columns with ES, 95% CI and correlation.

Yes, the columns of 95% CI and t-paired test (as these results are described in the text) and some rows of nutrients were deleted, leaving only nutrients from the most representative food groups and nutrients of importance from the viewpoint of possible deficiencies in rural areas in developing countries.

Reviewer 2: Janine Higgins

Reviewer's report:

MAJOR COMPULSORY REVISIONS

1. The English expression of this manuscript is poor and many sections need to be rewritten.

The English has been reviewed and some sections rewritten.

2. The correlation coefficients for this study were very high. A brief explanation for this is given in lines 428-430 but a direct comparison to data from previous studies using weighed food records and more comprehensive discussion of this should be added to the manuscript.
The current comparison of this data with previous reports is vague and not clearly described (lines 419-425).

It has been done (line 424 - 445)

3. The correlation coefficients compared from this study vs previous reports are presumably for total calories only? This is not specified and the manuscript needs to be rewritten to detail what is actually being compared. In addition, several nutrients of interest were chosen for analysis in this manuscript so the accuracy of the novel 24h recall methods for these nutrients should also be compared to previous reports.

It has been done (lines 424 - 439)

MINOR COMPULSORY REVISIONS

4. Lines 205-229 can be deleted and a reference for the standard multiple pass approach for conducting 24h food recalls can be inserted.

It has been done

5. In lines 162-165, it is stated that photographs were arranged in ascending order but, in Fig.2, foods are shown in descending order. Please use an actual, unaltered photograph from the atlas in ascending order or change the text to correctly reflect what was actually depicted in the atlas.

In the photo atlas, the photos are arranged in descending order, was a printing mistake in the text, it has been changed now (line 164). The photos and legends are the same as on the atlas but the size have been reduced to a single page because, for example the photos of noodles in the album occupy two pages due to their size, which were arranged to fit in a single page in the manuscript.

6. The Methods section states that “4 macronutrients, 7 minerals and 12 vitamins are reported”. This should be altered to read “3 macronutrients,…”. Also, the authors should specify which nutrients were chosen and why.

Right, it was modified, now the macro and micronutrients are listed (lines 259-262), and an explanation for the selection of nutrients was added (line 262-266)

7. Justification for breaking the data into food groups and how these were chosen and defined should be included.

It has been included (246-255)

DISCRETIONARY REVISIONS

8. Data in Tables and 3 are expressed as mean +/- SD but mean +/- SEM would be more appropriate.

It has been done.
9. The authors have included background information and discussed the results with reference to selected previous publications on this topic. A more comprehensive inclusion of previous publications could strengthen this manuscript. Some more references to support the findings were included.

**Reviewer 3: Yue Cheng**

**Reviewer's report:**

**Major Compulsory Revisions**

1. How did authors measure and evaluate the compliance (line 195, page8)?
   What’s the percentage of women agreed to participate the study?
   Certainly we did not have any procedure to measure the compliance of the method, but we rely on the voluntary participation of the women and the quality of pictures they took, to say that the compliance with the method was good. In has been written the percentage of women who accepted to participate (lines 198-199).

2. The authors should describe the education level of participants in the result.
   Unfortunately we did not measure the education level of the participants, during this study. But we have included information on literacy in rural areas of Bolivia (lines 67-68), to get an idea of the level of education of the population under study.

3. Regarding the amounts of food group, geometric means should be presented if they are normally distributed after log transformation. Alternately, quartiles (p25, P50, p75) can be used.
   The results for the food groups (now called food categories) are now presented as the median and quartiles (P25th, P75th) (Table 2), and a discussion of the results of Bland Altman analysis which show the geometric mean of the limits of agreement (data back transformed, antilog) has been included (lines 457-463).

4. In the discussion, the authors should comment on possible factors which may impact on good agreement between two methods, i.e. participants were volunteers; all participants were women and females might have more patience than males.
   It has been added (lines 476-485)

**Minor Essential Revisions**

5. It would be helpful if both percentages and absolute numbers were presented in Table 1.
   Values of mean and SD of each category of BMI have been added, the BMI classification according WHO is described in the legend of the table. And the absolute numbers in each category are presented in table 1.
6. In tables, for means and SDs, the number of digits after decimal point should be same, eg two significant figures after decimal point. (The third and fifth column in Table 2)

   It has been done, and SD now was changed by SEM as suggested by another reviewer.

Discretionary Revisions

   It would be helpful if the authors can provide information of total time of each participant spent on taking photographs of all their meals consumed on the test day.

   It has been added (lines 483-485)

Reviewer 4: DA-HONG WANG

Reviewer's report:

Major Compulsory Revisions

1) In comparison with the WFR method, FP 24-hR significantly underestimated the intakes of rice, potatoes, eggs, and most of the nutrients. A discussion on the possible reasons that might cause such underestimation would help the readers to understand the weak points of FP 24-hR.

   The significant differences are mostly due to the wide variation within each group as each individual consumption is different to the others, then even though the medians and means are very close they are significant different, this explanation and the possible reason for underestimation was added (lines 408-414)

2) All participants in this study are women, and the sample size might not big enough to conclude the usefulness of FP 24-hR for assessing the dietary intake of rural populations in developing countries. The authors need to state the limitation of the study results in the Discussion.

   Possible limitations of the FP 24-hR has been added (lines 514-522)

3) The Conclusions seem too long. It might be better to reduce some unnecessary details.

   It was reduced a bit