

Author's response to reviews

Title: Validity of a self-administered food frequency questionnaire (FFQ) and its generalizability to the estimation of dietary folate intake in Japan

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Author's response to reviews: see over

Dear editors of the Nutrition Journal

I am sending a manuscript entitled "Validity of a self-administered food frequency questionnaire (FFQ) and its generalizability to estimate dietary folate in Japan ", which we are resubmitting for publication as an original research article in the NUTRITION JOURNAL. The changes from previous version were made and explained point-by-point according to the reviewers' comments in following pages (The bold italic sentences are the explanation to the reviewers' comments).

We are confident that our paper would make a great contribution on your journal and research of nutrition epidemiology by precisely clarifying the relation between the food and nutrient intake. No portion of the work has been or is currently under consideration for publication elsewhere, and no portion of it other than the abstract has been published.

Thank you for your considering our article for publication in your journal.

Sincerely yours,

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Comments to the authors

Reviewer 1,

I have reviewed the manuscript by Ishihara et al. and found it to be a good paper. It is a good contribution to the literature on the dietary assessment of folate, a nutrient of great interest to nutritional epidemiologists. Although similar work is available, especially from the US, this paper is a good addition to the knowledge on dietary assessment methods in general. I noted the following:

1. The title is too long and could be shortened without losing the central message. I suggest that “: Japan Public Health Center-based prospective (JPHC) FFQ Validation Study” be deleted from the title. This is could be transferred to the methods section.

The title was changed as the reviewer suggested.

2. Abstract

Page 3 lines 2-4, I suggest that the first two sentences be revised to read as follows “Background: In an epidemiological study, it is essential to test the validity of the food frequency questionnaire (FFQ) for its ability to estimate dietary intake. The objectives of our study were to 1) validate a FFQ for estimating folate intake, and to identify the foods that contribute to inter-individual variation of folate intake in the Japanese population; . . .”

The sentences were changed as the reviewer suggested (Page 3 lines 3-5).

Page 3 line 7: The sentence could read as follows “In the group for which the FFQ was developed, validity was evaluated by Spearman’s correlation coefficients (CCs), and linear regression analysis was used to identify foods with large inter-individual variation.

The sentences were changed as the reviewer suggested (Page 3 lines 7).

Page 3 line 19: Running head could be: Internal and external validity of the FFQ.

The running head was changed as the reviewer suggested (Page 4 lines 2).

3. Introduction

Page 4 line 2: please remove “a” between “by” and “means”.

Page 4 line 3: please insert “the” between “limitation of” and “FFQ”.

Page 4 line 8: please insert “the” between “by” and “FFQ.”

Page 5 line 9: Between (DRs) and a gold, please replace “for” with “as”.

Page 5 line 16-18: The second objective could be rewritten as “and 2) to determine whether the FFQ designed for the study cohort is valid for estimating intake of folate and identification foods that predict inter-individual variation in folate in the general Japanese population”.

All above in Introduction section were changed as the reviewer suggested.

4. Materials and methods

Page 6 line 4: the sentence could be “. . . which was a large population-based prospective study that involved medical examination of the study participants”.

Page 6 line 7-8: Could read as follows “Despite the small size of Japan, there is considerable regional variation in diet. Thus, the study sites were selected to be representative of the whole country.”

Page 7 lines 16-17: Could read as follows “The self-administered semi-quantitative FFQ consisted of 138 food items and 14 supplementary questions on dietary habits and use of supplements.”

All above in Materials and methods section were changed as the reviewer suggested.

5. Results

Page 9 lines 6-8: Sentence could read “Daily folate intake assessed by DRs and FFQ and the Spearman’s rank CCs between the two measurements by cohort group and sex are shown in Table 1. Mean daily intake of folate based on FFQ in Cohort I was overestimated compared to the DR data [ARE THESE DIFFERENCES STATISTICALLY SIGNIFICANT?]. Both crude and adjusted CCs in Cohort I were higher in men than women while they were similar in Cohort II (Table 1).

I suggest that the section beginning with “The Spearman’s CCs . . .” To “. . .both sexes (0.63 in both sexes)” be deleted.

Page 9 line 19: Please remove “to” between “contributed” and “55.2%”.

All above in Results section were changed as the reviewer suggested.

Page 10 the first two lines are not clear. Please clarify “. . . difference in coding of the food in DR?”

This part of the results was deleted because it was irrelevant and confusing.

6. Discussion

Page 11 line 14: Although folate intake could have been high in the current study compared to some, it is important to note that about 50% of the population still had an intake <400 mcg/d (considered low intake). This point should be pointed out for public health reasons.

Some of the foods listed as major sources of folate (e.g., green tea, well milled rice) are questionable! I suggest that the food composition database be checked for these foods e.g., green tea.

Folate content of green tea and well milled rice is 16 and 12 microg per 100g based on the Standard Tables of Food Composition in Japan, the fifth revised edition (reference 14), whereas folate content of black tea is about 3 micrograms. According to the USDA National Nutrient Database for Standard Reference Release 18 Consumption, folate content of black tea is about 5 microg per 100g (no green tea is available in the USDA). Those 2 foods are not necessarily very high in folate, but are consumed very high amount, which is the reason they were the major source of folate among Japanese population.

Page 12 line 10-12: Sentence could read as follows “For example, we might hypothesize that folate is one of the factors that could explain the protective effect of green tea on gastric cancer in the recent report of the JPHC study.”

Page 12 line 14-16: These two sentences are not clear? Please clarify.

The sentences were changed as following (Page 13 line 10-13): ”However the association between green tea and gastric cancer are inconsistent in the prospective studies. We speculated that the association between green tea and gastric cancer is strong in Japanese population because green tea contributes greatly to the variation of folate intake which is unique compared to other population.”

7. Conclusions

As a public health message you may indicate that a large number of people (about 50% of the population) have an intake of folate <400 mcg/d. A comment of food fortification with folate could be good.

We agree with reviewers' comment that it is very important send a public health message that a large number of people need to take more folate. However, our study participants were not randomly selected, and the fact that 50% of our participants take less than <400 mcg/d of folate may not be the truth for our population. Moreover it is not the purpose of our study, at least at this moment, to investigate the benefits of food fortification.

8. Table 1 footnote 3: Could read as follows "Folate was adjusted for total energy intake using the residual method".

This footnote was e changed as the reviewer suggested.

Table 1 last footnote: "For n=102, $r>0.20 = p<0.05$. For n=113, $r>0.19 = p<0.05$. For n=174, $r>0.15=p<0.05$. For n=176, $r>0.15=p<0.05$." What do these r and p-values mean?

r represented correlation coefficients, and p-value was the significance of the correlation coefficients, however this footnote was eliminated because the significance of the correlation coefficients are irrelevant.

Table 2: Please check the food composition tables to determine whether the foods listed are indeed rich in folate or are consumed in very high amounts to become major sources.

This footnote was e changed as the reviewer suggested.

Table 2 heading could be "Table 2. Foods that contribute to folate intake and their cumulative percentage contribution to total intake as assessed by dietary records".

This heading was e changed as the reviewer suggested.

Table 3 last footnote: change base to based.

The wording was changed as the reviewer suggested.

Reviewer 2,

This study is interesting, but there are some flaws that should be addressed in the revised manuscript.

1. The author should clearly indicate in Abstract and Conclusions that the FFQ with 138 foods is valid for the estimation of folate intake, and that the 33-foods FFQ might be useful only for estimating the inter-individual variation and the ranking of individual folate intake.

We included the context in Abstract and Conclusion as the reviewer suggested.

2. Bland-Altman plot is better suited for examining the identity of two methods, DR and FFQ, than the correlation analysis. The author is recommended to show some representative Bland-Altman plots in the data of Table 1.

Bland-Altman plot is relatively new approach to evaluate the validity of FFQs. Only 3 studies used this method in conjunction with correlation coefficients to evaluate the validity of FFQs previously (Thompson 1993, Ambrosini 2001, Flood 2004), and it may be too early to say it is better than correlation analysis when the majority of validation of the FFQ still is evaluated using Spearman's correlation coefficients. We strongly agree that making effort to find better approaches to assess the validity is important, and it definitely will be the future interest of our research. However, the issue in the present study is quite a complex, and adding another measurement to the results does not provide readers much more information but confusion.

3. The reader might not be familiar with the attenuating effect of intra-individual error. Please explain the detailed method for deattenuation.

The formula for deattenuation was included in the text (Page 9 line 8-9).

4. There are many grammatical and typographic errors. The manuscript should be reviewed by native English speaker.

After all the correction according to the reviewers' comments, the paper was reviewed by Dr. Guy Harris, President of Digital Medical Communications Corp. which is a very reliable English editing company in Japan. We have a confirmation letter from him that we can send you if necessary.