Reviewer’s report

Title: Validation of a food frequency questionnaire as a tool for assessing dietary intake in cardiovascular disease research and surveillance in Bangladesh

Version: 0 Date: 12 Feb 2019

Reviewer: Aurelie Affret

Reviewer's report:

This article is about the adaptation of an existing FFQ from Bangladesh and its validation against 3 24-hour recalls and biomarkers. The objective of designing a new FFQ in that context is to be able to monitor relevant nutrients for CVD prevention.

Currently, there is no FFQ in Bangladesh to monitor total diet at large scale. The current article is therefore relevant. However, at this stage, some precisions still could be added to the article.

Please find below some comments:

L 106-111: Can the authors justify the recruitment method for rural participants in the methods section and/or discuss it. When validating a tool, there is an interest to have a large variability into the selected population. In terms of SES, was there such variability in the rural sample?

L 123-139: Can the authors give more details in the food frequency questionnaire section: How many items does the arsenic study FFQ have? How many items were added to the new FFQ? How those added items were chosen? Especially, the arsenic FFQ was designed for rural participants and the new FFQ is designed for both rural and urban participants. How was it taken into account?

Can the authors mention the nutrients that are specifically relevant to monitor for CVD risk monitoring and/or the nutrients they were interested in monitoring.

It would be interesting to have access to the FFQ items (in an appendix for example).

It is not clear if the FFQ is self-administered or not. It may be assumed that not, as some participants were illiterate. That point may be discussed because there may be therefore a limit to use that FFQ at large scale if it is not self-administered. And if it is, how did the authors deal with illiterate participants?

« All completed questionnaires were checked by a nutritionist for accuracy and completeness ». Please, can the authors discuss that point and/or give more details. Did the nutritionist have to face large levels of inconsistency or missing data? As before, can the authors please discuss that point in relation to the use of the FFQ at large scale.
L 148-173: A large number of biomarkers were studied. Can the authors justify the choice of those biomarkers.

Results section:

Reproducibility results were not reported. Can the authors add a sentence in the results section.

Discussion section:

L 429-430: How do the sampling methods ensure that urban residents from all SES were included?

Can the authors discuss the sampling methods and the potential impact of it on the results. Also, urban residents had higher correlation between the two dietary methods than rural residents. Can the authors discuss those results.

To monitor CVD risk, some authors use dietary patterns (with food intakes only or with a mix of food/nutrients intakes). Why were the authors only interested in monitoring nutrients? Did they conduct validity analyses with food intakes information?

Can the authors discuss the future use of the FFQ in the future study. Will they use it to obtain a nutrient score for CVD risk? Or will they use it to classify participants according to some relevant nutrients for CVD risk? Other? The results for some relevant nutrients for CVD risks may not be optimal. Can the authors discuss it in relation to the future use of the FFQ. How will they deal with it?

Some authors used the method of triads when analyzing their data obtained from 3 types of dietary collection method. Can the authors discuss that point.

« Continued research to enhance its validity with recovery biomarkers to reflect usual intake is suggested ». Biomarkers may not be the best validity method to reflect usual intake. They are really precise, but only at a given time. (Abstract and conclusion)

"This validation study demonstrated good agreement": Regarding results, "acceptable" agreement may be more adapted (Abstract and conclusion).

Minor comments

Abstract: Can the authors add the number of FFQ items.

L98: "those who had no chronic medical conditions which require dietary restriction, intellectual disability and pregnant women were excluded ». Can the authors rephrase.
L138: Can the authors add the reference

**Level of interest**
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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