Author’s response to reviews

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

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1. We previously requested that the implications of differences in the estimates of absolute intakes (and degree of overestimation by the FFQ) be made explicit – including comment in the Abstract. Comment has been added to the Discussion, but the degree of overestimation needs to be clearer (eg apparent two- to four-fold differences in estimates for most micronutrients) in the Results, Conclusions and Abstract. This is apart from comment on the Bland-Altman analysis of trends (showing greater differences between methods with higher average intake). In terms of practical implications – can this FFQ be used for the assessment of absolute intakes (eg to monitor intake, line 543)?

We have now included the Goldberg equation and cut points to demonstrate over-reporting in 36% of FFQ and only 3% in 24 hour recall. As a result the macronutrients estimate may be higher by 1.5 fold and micronutrients by 1.07 to 26 fold.

Despite this, the percentage energy from macronutrients is the same and ranking of micronutrient intakes is fair to good. So, we recommend the FFQ can be used in epidemiological studies to find associations with disease but not to estimate the usual nutrient intakes by the population especially for comparison to recommended intakes.

P 4, 15-16, 20, 25-26;

line 56-59, 65-70, 323-328, 436-439, 564-572
Comment is made on the comparison of the performance of the FFQ, with lower correlations for rural vs urban groups. The abstract states ‘in subgroup analysis, urban residents had higher correlation between the two dietary methods than rural residents’ (line 56). However the groups differ in size and in background characteristics, such as level of education (line 302). As far as I can see, there were no formal tests to compare groups or adjustment for these background characteristics. Importantly, the pattern is not always the same: for some nutrients the data are comparable and for others (eg carbohydrate) correlations appear higher in the rural group. Overall, for the reader, it is not clear how informative these comparisons are, and should be given less emphasis.

Thank you, Editor, for your suggestion. This line is removed from the abstract.

Line 50 – correlation for vitamin A is incorrect Thank you. Now it is corrected. P 3; line 50

Line 83 - stroke Thank you. Corrected. P 5; line 85

FFQ- estimates of zinc intakes in table 1 still appear to be incorrect (average 378 mg/day)

The average column is removed as this is not used in the study

Line 373 – please rephrase ‘negative correlation turned to positive Thank you. The line is rephrased. P 18; line 391-392

Line 378-9 – please clarify meaning of sentence This sentence is rephrased now. P 18; line 397-398

Line 381 – please clarify this is in relation to urinary sodium concentration This line is modified now. P 18-19; line 400-402

Line 392 – please clarify which sets of analyses support the statement as some correlations changed markedly with different analysis approaches

In the statistical analysis section, we have clearly mentioned when we did weighted kappa we categorized data into quartile (P 14; Line 280-284). In the line 392 (now 410) we also mentioned about quartile data. Thus, we believe mentioning analyses is not necessary in this line.

Line 397 please explain the statement ‘the energy-adjusted correlation hugely differed between men and women’ This line is removed from the paragraph.

Line 417 – please comment on degree of over-reporting – and apparent differences between energy and macronutrients vs micronutrients Goldberg cut-off was applied to see overestimation of energy in the participants by methods. P 20; line 436-439
Line 542 – whilst ranking may be acceptable, comment is needed on the size of differences in estimates of intake between the FFQ and 24-hour recalls and implications for future use to monitor diet

Conclusion is modified. P 25-26; line 564-572