Reviewer's report

Title: Reproducibility and validity of a Food Frequency Questionnaire among pregnant women in a Mediterranean area

Version: 1 Date: 30 November 2012

Reviewer: Joan D. D Fernandez-Ballart

Reviewer's report:

• Minor Essential Revisions

1) The term “calibration” is used twice in the manuscript but possibly in an inappropriate sense. According to Willett (reference 3 of the manuscript, page 101): “calibration refers to a process in which values from one method are quantitatively related to values from a superior, standard method”. Please change line 37 in the Abstract “The aim of this study was to examine the reproducibility and validity (biochemical calibration) of a … ” for “The aim of this study was to examine the reproducibility and relative validity (against biochemical biomarkers) of a …”. Change line 266 in the Discussion “The use of biochemical measures for calibration of the questionnaire” for “The use of biochemical measures for validation of the questionnaire”.

2) Please introduce the word “for” between “found” and “major” in line 37 (Abstract): “Significant correlations for reproducibility were found for major food groups and …”.

3) Please provide a better explanation as to why “the frequent use of dietary supplements” might be a limitation in the use of food records and 24-hour recall methods during pregnancy. When using food records and 24-hour recall it is also possible to ask women about the use of supplements with the same tools as in the FFQ. This argument appears twice in the manuscript: lines 74-75 and lines 342-344.

4) It is clear that the FFQ was completed by the pregnant women on two occasions but sometimes these are referred to as “… weeks 12 and 32 of pregnancy …” (as in line 96 or Table 3) and others as “between weeks 10-13th ...” and “between weeks 28-32th ...” (as in Table 2). Please use the same terminology for this topic throughout the text.

5) In line 156 add “between weeks 10-13th of pregnancy” after “… during the first visit” to improve clarity.

6) In line 106: change the position of the dot from “… the British classification system (I+II, III, IV+V). [13]” to “… the British classification system (I+II, III, IV+V) [13].”

7) How “weekly maternal weight gain” is calculated needs to be explained (lines 108-110). Without this explanation the calculation of gestational weight gain can’t be reproduced.
8) In line 110: please insert “prepregnancy” between “Both” and “BMI”.

9) An explanation of how supplement use information was collected is provided in lines 114-116, lines 136-138 and lines 144-147. However, it is not clear whether one method or two different methods were used. In the case of one method, maintain consistency in the description and place it in the “covariates” section of Methods. If two different methods were used (as well as information from both), make it clear(er). In this case, which data are added to dietary intake in the analysis?

10) Should a minimum time of use of supplements (such as minimum number of days) not be defined before combining the average daily dose of the micronutrient from supplements with the mean daily intake?

11) Please, verify whether “all” should be included in line 207 between “during” and “pregnancy”?

12) Please, verify the percentage of women that smoked throughout pregnancy. In line 207 the authors say that there are 23% and in Table 1 that there are 23.4%.

13) Please verify in line 212, the percentage reported for lycopene (can it be 13.5%?)

14) In line 222, in the list of food groups with intake in the second FFQ lower than in the first, nuts are not included. This was forgotten or intentionally omitted?

15) It is not clear what is meant by “animal fat” in lines 225 and 229. The same term should be used in the text and the tables.

16) In line 225, change “and” for “to” in order to say “from r=0.22 … to r=0.61 …”.

17) In line 231, revise percentages because they appear incorrect; 57.7 instead of 52.8% and 80.5 instead of 80.1% for lycopene and iodine respectively.

18) In line 233, revise percentages because they appear incorrect; 59.3 instead of 58.5% and 70.8 instead of 72.2% for fruits and seafood respectively.

19) In line 233, the highest percentage of agreement is for eggs (96.2%), not for seafood.

20) In line 233, use the term Agreement (used in table 2) in addition to the description provided (“classified in the same or adjacent quintiles by both FFQ”).

21) Please define “extreme misclassification” in the Methods section. This term is used for the first time in line 234 (results section), without any prior explanation.

22) In line 239, please introduce “slightly” between “were” and “higher”.

23) In line 282, please change “… duration of administration between …” for “… time between the administrations of”.

24) The paragraph that starts with line 317 “In fact, …” and finishes in line 323 with “data not shown” would be more appropriate in the Results section.

25) In line 331, please change “Vitamin” for “vitamin” and “(0.12)” for “(from r=0.08 to r=0.12)”.

26) In line 332, please change “(0.20)” for “(from r=0.18 to r=0.20)”. 
27) In reference number 10, the volume and pages are missing. Please complete it.

28) Please change the order of references 18 and 19 to match with the text.

29) In Table 1, the heading of column 2 “(Subjects (%))” can’t be applied to “Gestational age (weeks)”. Please specify this.

30) In Table 1, specify the units (years) after “Maternal age”. This saves repeating “years” after each category. Repeat this idea for “Pre-pregnancy body mass index”.

31) In Table 1, the categories are not well defined. In fact there is not a category for 35 year-old women and there are two categories for a woman with exactly 30 kg/m2 of BMI.

32) The “Smoking during pregnancy” categories in Table 1 don’t correspond with the text in lines 111-112.

33) The “Gestational weight gain” categories should be better defined in the table or in text.

34) Is not possible to have 702 woman using folic acid supplements, 38 not using these supplements and 32 missing if the total sample size is 740 as indicated.

35) The lines “No” can be deleted for “Medical problems …”, “Folic acid …”, “Vitamin C …” and “Vitamin B12 …”.

36) Please verify if the description of variables “Folic acid …”, “Vitamin C …” and “Vitamin B12 …” could be improved by indicating time, perhaps “in the first trimester”?

37) In Table 2, use “Nutrients (units/day)” in the heading rather than repeating “/day” for each nutrient.

38) In Table 2, use “Food groups (g/day)” rather than repeating “g/day” for each food group.

39) In Table 2, change “Vegetable Fat” to “Vegetable fat” in the last row.

40) In Table 2, specify the units of cholesterol.

41) In Table 2, change “Folato” to “Folate”.

42) In Table 2, the heading “Pearson correlations …” can be used for columns “Unadjusted” and “Adjusted” but not for the column “Agreement”.

43) In Table 2, indicate that Agreement is in %.

44) The footnote to Table 2 requires careful revision. It seems that “f” refers to “e” and vice versa. Change “proportion” to “percentage”.

45) In Table 3, there is no obvious reason to change the order of nutrients from that of Table 1.

46) In Table 3, for consistency use the same terminology to refer to correlation coefficients as in Table 2.

47) In Table 3, there is no need to repeat means (SD) of nutrient intakes that are exactly the same as in table 2 (except for folate. Is this a mistake?).
vegetables” data are necessary include them in Table 2 and delete this column from table 3.

48) In the foot of Table 3 change “Acid” for “acid”.

49) What time periods did FFQ1 and FFQ2 refer to? The written instructions for FFQ2 states that women should refer to “the last months of pregnancy”; were they given oral instructions on how many months (perhaps since FFQ1)? And what about FFQ1?

• Discretionary Revisions

1) In line 258, the authors emphasize that they are able to declare “statistically significant even small correlation coefficients”. They might consider commenting that validity is more based on the magnitude of the correlation coefficient than on its significance.

2) In Table 2, mean and standard deviation are used to describe log-transformed data on nutrient and food group intake. Mean and standard deviation are not the most appropriate descriptive statistics in the reporting of non-normal data. Median and IQR or others might be suitable alternatives.

3) In Appendix 1, is the number of foods included in each food group indicated in parentheses? It would be useful to specify the number of items included in each food group (for example: Dairy products (1-11) or White meat (13-15), and so on …).

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.