Author's response to reviews

Title: Effect of changes in a food frequency questionnaire: comparing data from two national dietary survey instruments among 12-month-old infants

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Author's response to reviews: see over
Dear Editor,

Thank you for the comments on the revised manuscript. Our replies to the questions/comments are marked with red.

We think that many of the comments from the reviewers may be based on a misinterpretation of the aim of the study. It seems as if the reviewers consider the study as a validity study. However, our intention has been to explore the comparability of the data collected with the SFFQ-1999 and the SFFQ-2007. This could be used to assess dietary trends among Norwegian infants in this period of time. Hence, the main objective is comparability between the questionnaires, not the validity.

Comments from Mohammad Rouhani

1. Did authors collect any information regarding divorcement? It may affect on filling questionnaires.

   No, we did not ask about divorcement. However, we asked about marital status. At both time points n 84 reported that their marital status was married/cohabitant, while n 4 reported that they lived alone with the child. Therefore there is no reason to believe that marital status has affected the reporting of the dietary data.

2. Researchers cannot use SFFQ-2007 based on this study because the validity of SFFQ-2007 did not assessed. Furthermore, authors mentioned that SFFQ-1999 overestimated energy intake and the reported data in Table 3 did not reveal any difference between SFFQ-2007 and SFFQ-1999 for estimated energy intake. On the other hand, authors mentioned “To be able to compare daily intake of energy in the two questionnaires, results from the SFFQ-2007 are presented as energy intake (kJ) minus fiber intake (g) x 8 kJ”. So total energy intake obtained from SFFQ-2007 may over than estimated energy by SFFQ-1999!!! Indeed, the revised version of SFFQ-1999 (SFFQ-2007) cannot correct misleading points.

   The present study is not a validity study; however we have mentioned the validity study of the SFFQ-1999 for background information. In the present paper we seek to explore the comparability of the data collected with the SFFQ-1999 and the SFFQ-2007.

   When comparing energy intake between the questionnaires, both were calculated without energy contribution from fiber, this is explained at page 4 (under Nutrient calculations). We did not find any significant differences between the energy intakes reported with the SFFQ-1999 compared to the SFFQ-2007, hence the energy intake from the two questionnaires can be compared.

3. Authors should report the correlation coefficients for fat intake in validation of SFFQ-1999, because significantly higher intake of E% and absolute intake of fat was reported in the SFFQ-2007 compared to the SFFQ-1999.

   This is a comparability study; it is not a study to analyze whether the results reported by the two questionnaires are correct (which would be the aim of a validity study). Therefore, the correlation coefficient for absolute intake of total fat in the validation study of the SFFQ-1999 is of no interest in the present study.
4. Did you have any evidence to show that your washout period duration is sufficient?

We think that the cross-over design would minimize changes between the questionnaires. We also assume that one month between reporting the data in the questionnaires is sufficient so that the participants would not remember their answers from the first questionnaire when reporting in the second questionnaire. On the other hand it is important that the time period is not too long as changes in the diet around the age of 12 months might happen quickly (as seen for intake of milk).

5. In this study, non-parametric tests were used. You should attempt to normalize the distribution of your variables and for impossible cases, you can use non-parametric tests.

As this study is a comparability study, the goal of the study is not to measure actual dietary intakes. The point of interest is whether the two questionnaires give similar results for each participant with both questionnaires.

Generally, Pearson and Spearman correlation coefficients for nutrients were equivalent. Moreover, interpreting results from a log transformation and a back-transformation is challenging, therefore we prefer to use non-parametric tests.

Comments from Fahimeh Haghighatdoost

1. Provide more details regarding the importance and practical aspects of national dietary survey among 12-old-infant.

More details are included in the Background (page 1).

2. Did author select participants randomly? How did they do participants allocation in cross-over design? Was it randomly? If yes, which method was used for random allocation?

The participants were selected by the Norwegian Population Register and included all eligible Norwegian infants born in the period from 18 April to 28 April 2007. The participants were randomly assigned to two groups by the Norwegian Population Register.

3. Did authors try to normalize nutrient distribution using log transform? It should be addressed and clarified that data found normal distribution after log transformation or not.

See reply to question number 5 from Mohammad Rouhani.

4. Is the sample size adequate for this study?

We assumed that a sample size of about 100 participants would be sufficient to detect differences between the reported answers. This is in line with the recommendation by Walter Willet\\(^{[1]}\\) with regard to number of participants to be included in a validation or calibration survey. However due to previous surveys we know that only a limited number of the invited participants would like to participate in a survey like this, therefore 300
participants were invited. Still, we would have liked the sample size to be higher than 93 participants.

5. How authors define the completed questionnaire? What was the enough response rate for including the questionnaire in analysis?

In this study ‘completed questionnaires’ refer to the return of both questionnaires. Moreover, as daily intake of energy was computed, those with very low or very high energy intakes would have been considered not to be included in the analyses. However, no such cases were found.

6. Why the variables of table 3 limited to macronutrients, ca, fe and vitamin D? Clarify its reason by more details.

A comparison of all nutrients available would have been too much for a single paper. Therefore, we chose to focus on macronutrients, Ca, Fe and vitamin D as they all are important markers of the diet quality among Norwegian infants and young children.

7. Which supplements were assessed in these FFQs? Do authors consider them in analysis like vitamin D? It should be addressed in manuscript.

In Norway, a daily supplement of vitamin D (preferably as cod liver oil) is recommended to infants. This is the main supplement used among children of this age. The use of cod liver oil and vitamin/mineral supplements is included in the nutrient calculations (page 4 under Nutrient calculations).

8. Report more details regarding the characteristics in table 1, such as the BMI value of mother (normal, overweight or obese), the birth weight of infant and socioeconomic status.

The birth weight of the infants is now included in Table 2. We do not have information about maternal BMI. In this paper maternal education is used as a marker of socioeconomic status.