Reviewer's report

**Title:** Using Multiple Household Food Inventories To Measure Food Availability In The Home

**Version:** 1  **Date:** 20 August 2009

**Reviewer:** Maria Bryant

**Reviewer's report:**

This study describes the feasibility of the method to record foods in the home and the variability of home food availability. The subject of research is an important and immerging field that requires further investigation and the manuscript is generally well-written. However, I have some comments that I believe should be addressed. These are shown below as Major compulsory, Minor essential and Discretionary revisions:

-Major compulsory revisions

One of my biggest reservations with this paper is that it describes the methodology and the variability. It is not clear whether the level of detail described is limited by the manuscript size, but this has resulted in an inadequate report of each part. Thus, I would recommend that this was 2 rather than 1 paper; with the first being a methodology paper. This would allow the authors to provide more detail. For example, how long did each inventory take? What was acceptability like (participants and staff). It would also allow them to provide more information about the method itself, which presently lacks depth. For example, what exactly does the inventory involve?; how was quality determined?; what did you do if fresh was purchased as portions (e.g. half a melon)? Feasibility could also look at multiple visit data (i.e. comparing the above across visits).

While I suggest that the second paper could describe the variability, I do not think that the present data is sufficient to support the claims being made, primarily because of the sample size. Our own sample size calculations for a very similar study showed that we would need at least 80 households to enable the reporting of within and between household variation. Whilst this is based on fewer visits (3), it is highly unlikely that 9 participants would be adequate. Importantly, the rationale for determining variation is to provide researchers with an indication of the minimum number of inventories that would be required to collect reliable data. With only 9 households, this study is not able to provide this information. I would advise the authors to use the important lessons that they have learned as a means to develop a further adequately powered study to examine this with more confidence, and to treat this study as a pilot.

-Minor essential revisions

Methods: Were standard, validated questionnaires used to assess food accessibility and affordability? If not, this is a major limitation that needs to be
Data analysis: The analysis section lacks detail. According to this, the authors only calculated frequencies. This is insufficient analysis to answer the research question.

Results: Since 1 family inventory was not completed in the time frame and the whole study is related to variability, I would say that you actually have 8 rather than 9 participants.

Tables: The tables are essentially raw data. This is a great way to explore pilot data, but not appropriate for a journal reader.

Discussion: If most of your sample shopped once per week, you will see greater variation in a shorter period of time. Therefore, usual shopping frequency is a major factor to consider with variation.

It is too bold a statement to say “... this study verified the inadequacy of a single assessment”, since you were not adequately statistically powered. A smaller sample size may have greater or less variability.

P17. You’ve parenthesised (presence and amount) here but have not previously described how you assessed amount. Presumably, it is the total number of items. The importance laid on the number of items is based on the food item and size. For example, is 1 apple the same as 1 bag of grapes? It would probably be better to look at the number of portions, which will vary according to each food.

-Discretionary revisions

Background:

P4. We can not be certain that food availability influences food intake because we are not confident in the measures. There is actually quite a debate…not “little debate”.

P4. UPC scanners are tools that can be used in a number of methods (including household inventories).

P8. Text “Most studies use a single…….foods in the home” is unnecessarily repeated.

Methods:

P9. What do you mean by “prospective participants”?

P10. What you have described as Food accessibility is usually referred to as food purchase behaviours (food accessibility in home inventory studies usually refers to how accessible it is to eat the foods in the home, like cut fruit on a counter).

P12. Did researchers perform the kitchen appliance inventory?

P.13. No need to include the text “Household food inventory…..displayed by participant”.

Results:

P13. What is a ‘minor cancellation’?
P.14. Text describing each demographic is not needed as it has already been written.

P.15. There is a lot of subjective and/or non-specific text here. Be specific and avoid phrases like, “several households”, “did not have much”, “most homes”, “the majority of homes”, unless you are providing the numbers too.

Discussion:
Avoid bold statements about your results. You are not adequately powered to generalise that your data is transferable. This has been thrown in as a passing comment in P19.

P18. Reference where the criticism came from for “provided snapshot”.

P.19. You’ve said that the average time to complete was 30 minutes. If you write a feasibility paper, you should give the exact numbers for each visit (e.g. average time for 1st visit, average time for 2nd visit etc.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I am also developing a method to measure home food availability, but would encourage other researchers to add to this field of research. For all other points, I declare that I have no other competing interests.