Author's response to reviews

Title: Using Direct Observations on Multiple Occasions to Measure Household Food Availability among Low-Income Mexicano Residents in Texas Colonias

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Author's response to reviews: see over
Response to Reviewers

We thank the reviewers for taking their time to review our manuscript and providing insightful comments and suggestions for improving our article. We will address the comments by reviewer.

Reviewer: Mary Ann Johnson

Discretionary revisions:

Major compulsory revisions

1. None

Minor essential revisions

1. None

Discretionary revisions

1. Add information on the number of people that were asked to participate, but declined to participate.

   RESPONSE: We have added information to indicate that the women who were recruited had previously participated in a research project. Our promotoras contacted eight women and six women agreed to participate in this project. All six who agreed to participate completed all aspects of the project.

2. Add a sentence or two concerning the key points that were emphasized in the training of the interviewers.

   RESPONSE: The following information was included at the suggestion of this reviewer: “The training sessions included information on research with human subjects, maintaining confidentiality, and practice sessions in administering questionnaires and documenting the presence and amount of foods present during household food inventories.”
**Reviewer:** Michelle Kegler

**Major Compulsory Revisions**

1. The data are presented in great detail, with 11 tables listing each participant, each food item, and whether it was available at each of 5 visits. It is easy enough to see variation visually, but some type of summary measure is necessary to make the data more digestible. Below are a few suggestions:
   
   a. The main research question could be altered to compare a one-time measurement to multiple measurements. The first inventory could be compared to remaining inventories, ideally summarized across participants.

   **RESPONSE:** We have modified our research question to include a comparison of a one-time measure with multiple measures as suggested by this reviewer.

   b. Alternatively, an analysis of how many data collection points are needed to capture variation would also be valuable. For example, are 3 observations adequate? What is added by a 5th observation point? The authors also have sufficient data to explore the timing of data collection—what do weekly observations add beyond measuring every two weeks? These analyses will require collapsing data logically such as reporting the number of fresh fruits available in the home rather than listing each item.

   **RESPONSE:** We plan on evaluating 2 vs. 3 vs. 5 data collection points in future work with a larger sample size. Since we are also interested in the meaning of availability when considering the number and composition of the household, we believe that there is limited value in knowing the number of different types of fresh fruit, compared with the amount available.

   c. It would also be useful to compare self-reported inventories to more objective inventories, but it appears that participants were not asked household food inventory questions in the baseline questionnaire.

   **RESPONSE:** That is correct; participants were not asked to report on household food inventory. Since we were interested in the presence and amount of food and beverages present, it was
more appropriate and less respondent burden to collect the data using trained researchers.

Minor Essential Revisions

1. The authors conclude that multiple observations are feasible. However, they only collected data from 6 families. A fairer discussion would acknowledge the resource-intensity of this approach.

   RESPONSE: We now acknowledge the resource-intensity of this approach. In the second paragraph in the discussion section, we added the following: “However, we must acknowledge the resource-intensity of this approach. In addition to time necessary for scheduling in-home appointments and driving to each participant’s home on five occasions, the household food inventory itself required the work of a two-person team of *promotoras* and 30-60 minutes for each data collection episode.”

2. A related issue is the feasibility of recruitment for this intense level of data collection. How many eligible families were approached to participate? Can a response rate be calculated?

   RESPONSE: We have added information to indicate that the women who were recruited had previously participated in a research project. Our *promotoras* contacted eight women and six women agreed to participate in this project. All six who agreed to participate completed all aspects of the project.

3. The authors should also discuss the lack of generalizability of these results since the families were low-income and food insecure.

   RESPONSE: We added a sentence to the limitations on the lack of generalizability.

4. How were the questionnaires administered—via interview?

   RESPONSE: In the section on the baseline interview, we mention that the questionnaires were administered in the home by the *promotora*-interviewers. The follow-up questionnaires at visits 2-5 were similarly administered.
5. The following sentence needs additional explanation: “the fact that all households in the study were low-income, had at least two adults...reinforces the importance of multiple household food inventories.”

RESPONSE: This sentence has been deleted.

**Discretionary Revisions**

1. Are the results of the photographs and in-depth findings reported elsewhere? Since the photos aren’t discussed analytically, perhaps they don’t need to be included with this paper.

RESPONSE: Reference to in-depth interviews has been removed from the manuscript. We have included three figures of photographs which visually illustrate the week-to-week changes in refrigerator and cabinet food contents.
Reviewer: Inge Huybrechts

General Comments

1. Although the methods (questionnaires used ...) are well described, participation rate is missing (reader does not know how many families that were contacted for recruitment). Furthermore is the number of only 6 families very low for performing statistical analyses.

RESPONSE: We have added information on the number of women contacted and recruited for this project. In addition, we added a Biostatistician to our team and completed small sample testing of consistency of food presence or absence (see section in methods on data analysis).

2. Are limitations of the work clearly stated? Insufficiently (limitations of small sample size should be elaborated).

RESPONSE: The following was added to the limitations paragraph in the discussion section: “... the small sample limited our ability to examine factors associated with presence and change in household food resources. The small sample may bias the feasibility of multiple HFIs; this will need to be evaluated in larger studies.”

Major Compulsory Revisions

1. Why did the authors only include 6 participants? How many families did they need to contact to remain those 6 participants? Wasn’t it feasible to recruit more families? How much time took 1 single visit? All those answers should give an indication of the feasibility to use this method in large scale surveys.

RESPONSE: We have added the following in response to the reviewer’s comments: 1) 1st paragraph of methods – “Since this was a pilot project and little data existed on feasibility of conducting five in-home food inventories during a 30-day period, the decision was made a priori to recruit and retain three participants from each of two areas of colonias.” 2) also in 1st paragraph of methods – “Three women were contacted and were recruited from colonias in the eastern part of Hidalgo County and five were contacted and three recruited from colonias in the western part of the county.” 3) We believe that we could have recruited more families; however, we were unaware of the time needed or participant response to “strangers” coming into the home on five occasions to observe their food supplies. 4) 3rd paragraph of results section – “The first household food
inventory required 45 minutes to 1 hour to complete; the time required for the remaining four HFIs ranged from 30-45 minutes.” We also added the following to the 2nd paragraph of the discussion section: “However, we must acknowledge the resource-intensity of this approach. In addition to time necessary for scheduling in-home appointments and driving to each participant’s home on five occasions, the household food inventory itself required the work of a two-person team of promotoras and 30-60 minutes for each data collection episode.”

Discretionary Revisions

1. It could be useful to refer to the Barker theory in the introduction. (Barker 2002): Fetal origins of adult disease: strength of effects and biological basis.

   RESPONSE: Barker citation added to the first and second paragraphs of the introduction.

2. It would be nice to see the dietary reference intake in the figure 2 so that it is clear how low or high they are in comparison with the reference.

   RESPONSE: Figure 2 was originally pictures of food supplies taken in several homes. I am unclear what the reviewer is asking us to do.

Minor Essential Revisions

1. In the methods section you say that the study was completed between July & August, while in the discussion it is written that also the beginning of September was included. Please, try to make this consistent.

   RESPONSE: This has been corrected to indicate July-September.

2. In the methods section (under the section ‘Food availability and affordability’, a typing error should be corrected in the sentence “Participants were asked to similarly respond to five statements about the store where they buy most of their groceries.” Please check the following sentence which is hard to interpret: “Response categories were collapsed into strongly agree/agree versus neither/disagree/strongly disagree.” Are those categories aggregated during analyses or already in the questionnaire # this is very unclear.

   RESPONSE: We have eliminated Food Availability and Affordability section since we are not reporting on that data.
3. The following sentence under the section ‘Food security’ is also very difficult to read and interpret: “During the 12 months prior to the first home visit, food security status was operationalized from the following food security risk situations...”

RESPONSE: This has been rewritten as follows: “Food security status was determined from the occurrence of the following food security risk situations during the 12 months prior to the first home visit:”

4. The last part of your methods section (The promotoras were all fluent Spanish speakers from the local community who shared a common cultural background... each approximately one half-page in length.) does not well fit under the data analyses and should be placed above this section.

RESPONSE: This has been moved at the suggestion of the reviewer.

5. Are the analyses of the photographs reported somewhere else or what are they meant to be used for?

RESPONSE: The photographs are now used in Figures 1-3 to visually depict the week-to-week change in food contents in refrigerator and cabinets.

6. On the 4th page of the results section you use the sentence “In data not shown...”, please adapt this sentence and write ‘data not shown’ between brackets at the end of the sentence.

RESPONSE: We have corrected this as suggested by this reviewer.

7. On the third page of the discussion (in the third last sentence: “A husband or other members of a family ... elsewhere for a proportion of the year ...”) you better can replace proportion by part of the year.

RESPONSE: Since we are not reporting on the field notes, we deleted this paragraph.

8. In the discussion you mention that participants changed their behaviors because of the survey and you are giving some examples. However, I missed the example that they probably change their food availability at home. When looking at the household availability of participant 2 (table 7) I got the impression that this person started buying more vegetables after the second home visit for instance ... so this could also be integrated in the discussion section.
RESPONSE: Since we are not reporting on field notes, we deleted this paragraph.

9. Table 1 & 2: please make the categories in this table more straightforward and include the units (e.g. mention in the title that all those characteristics (age ...) are for the mother in the family).

RESPONSE: Suggested changes made in Tables 1 and 2 to identify the six participants as mothers.

10. In table 2 for instance I was wondering in what currency the amount spent during last food shopping was expressed.

RESPONSE: Suggested change made to identify the currency as U.S. dollars.
Reviewer: Katrina Giskes

Revisions

Introduction

1. The research questions posed by the Authors are not well defined- the research questions or hypotheses driving this research is not clearly articulated.

RESPONSE: We revised the last paragraph of the Introduction as follows: “...the primary objective of this pilot study was to examine the feasibility and value of conducting weekly in-home assessments of household food resources over the course of one month among low-income *Mexicano* families in Texas *colonias*. Specifically, we conducted five in-home household food inventories over a thirty-day period in a small convenience sample; determined the frequency that food items were present in the participating households; and compared a one-time measurement with multiple measurements.”

2. Further to the point above, the reasons for adding some aspects of the data collection to the manuscript (measures of the perceptions of the environment, cooking/preparation tools) are not mentioned in this section.

RESPONSE: We have eliminated the reference to measures of perceptions of the food environment and cooking/preparation tools.

3. In second paragraph of the Background a statement is made, “Especially among limited resource families, neighbourhood and household access to healthy foods may be a key factor. A statement is missing explaining why this may be so.

RESPONSE: The sentence above has been deleted. The following sentence was inserted earlier in the same paragraph: “Access to community and neighborhood food resources may exert a greater influence for limited resource families.”

Methods

1. Food accessibility/availability/affordability are measured in the study- the items that assess this mainly relate to the external food environment. What was the rationale for including the external food environment?
RESPONSE: This section has been deleted.

2. Further, the rationale for the kitchen appliance inventory is not provided. It would help if a conceptualisation of what constitutes the household food environment would be defined in the study.

RESPONSE: We have removed reference to the kitchen appliance inventory. Our focus was on food resources that were available in the home.

3. The rationale for multiple measures of the same households is currently weak. Quantitative researchers would argue that with adequate sample size, we would get adequate representation of people in different ‘cycles’ of household food availability in studies, so a global picture of the household food environment can be derived from this.

RESPONSE: We respectfully disagree with this reviewer. Similar to the need for multiple 24-hour dietary recalls in order to capture variability and serve as a measure for usual dietary intake, multiple household food inventories would capture the same variability at the level of the “individual” household.

Results

1. There are many detailed results relating to individuals in the study and individual food items- the number of tables exceeds that conventionally presented in a manuscript. It is therefore difficult for the reader to get the ‘main message’ from the results. It may be an idea to condense the results into an index of availability across the food items (rather than individual foods) and present summary statistics across the respondents.

RESPONSE: We have reduced the number of tables and have revised to tables to show a summary of food availability by the number of household food inventories instead by individual participants. This was in response to a suggestion by one of the reviewers.

2. The conceptual diagram is a little simplistic and could be removed from the paper- it also does not have a title.

RESPONSE: The conceptual model has been deleted.
3. The photographs are not titled and are also not alluded to in the Results.

   RESPONSE: Photographs are no longer presented in this paper.

Discussion

1. The issue of the implications of this research in terms of the measurement of the household food environment is missed in the Discussion. Further the implication of using multiple measures is missing.

   RESPONSE: Implications are addressed in the last paragraph of the discussion.