Author's response to reviews

Title: Associations of food group and nutrient intake, diet quality, and meal sizes between adults and children in the same household: a cross-sectional analysis of U.S. households

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Version: 2 Date: 2 September 2011

Author's response to reviews: see over
September 1, 2011

Nehme Gabriel
Editor-in-Chief
Nutrition Journal

Attached please find the revised manuscript "Associations of food group and nutrient intake, diet quality, and meal sizes between adults and children in the same household: a cross-sectional analysis of U.S. households," co-authored by Jennifer Zuercher, David Wagstaff, and Sibylle Kranz for continued consideration for publication in Nutrition Journal.

We thank the reviewers for their insightful comments. We have addressed each comment in the subsequent pages. The editor’s additional comments have been addressed as well. We hope that our responses have provided the needed clarification for acceptance into the Journal.

We look forward to your response.

Sincerely,

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Editor’s additional formatting requests:

1. Please include a list of abbreviations used in the manuscript and their meanings.

Response: A list of abbreviations has been added to the manuscript.

2. As your research involves humans please include a statement of ethical approval in the Methods section of the manuscript, including the name of the body which gave approval, with a reference number where appropriate. Any experimental research on humans must be in compliance with the Helsinki Declaration.

Response: A statement regarding ethical use of the data has been added to the manuscript.

3. If applicable, please include an author's information section for any relevant information about the author(s) that may aid the reader's interpretation of the article, and understand the standpoint of the author(s). This may include details about the authors' qualifications, current positions they hold at institutions or societies, or any other relevant background information. Please refer to authors using their initials. Note this section should not be used to describe any competing interests.

Response: Thank you for prompting us to include author’s information. It has been added to the manuscript.

Reviewer 1’s Comments

1. The authors address an interesting research question, which I agree has not received adequate attention. However, a major limitation is the lack of accounting for/discussion of day-to-day variation in intakes. Also do not know the exact requirements for an individual. Methods and interpretation of results need to account for these issues in order for this paper to spark interest in this area, as the authors intend.

Response: We thank the reviewer for her thoughtful comments. Using the 2-day average (2 24-hour recalls) from the CSFII is a standard method for assessing usual intake in large populations when the data are presented in a population-based data set. How the 2-day average affects the interpretation of the results is a limitation. Discussion of this limitation has been added to the manuscript.

Major Compulsory Revisions

2. Estimating usual intakes of individuals with one or two days of intake data remains a challenge, but more appropriate methods have been proposed – e.g., see DRI assessment report.

Response: We appreciate the reviewer’s thoughtful comment. Since the data are more than 10 years old, it would be inappropriate to apply new methods to this data set.
3. The literature review should include the numerous studies that have examined associations between the home food environment (including parental attitudes, behaviors, etc.) and children’s intakes.

Response: This study was not designed to evaluate the home environment because the necessary data were not available in the CSFII data set.

4. The literature review could also be improved by specifying more carefully what the limitations of the existing studies are – this is alluded to in the discussion but in the background it is not clear whether studies were cross-sectional, what the sample sizes were, where they were conducted (US or elsewhere), etc.

Response: We have carefully considered this comment and have added additional detail in this area.

5. More justification is needed for the use of data that are 15 years old. While I understand that more current data do not enable examination of intrahousehold associations, it seems quite likely that eating patterns (e.g., children eating out of the home, increasing number of snacking occasions, etc.) have changed over this time and possibly that parents have less influence over what their kids eat compared to the mid-90s.

Response: We agree with this criticism. However, the only available nationally representative data set that has information on parent-child dyads is the CSFII. The NHANES only collects data on one individual per household and is therefore not suited for this type of analysis.

6. More information is needed on the CSFII data – were all members of the household sampled, etc.

Response: Thank you for this comment. A more appropriate reference for the design and methods used with the CSFII data has been added. In short, interviewers recorded the responses from one adult in each sampled household. The survey respondent provided the information for all individuals (adults and children) in the household with one exception. Dietary data was collected on each individual via 24-hour recalls. The diets of children, ages 2-5 year old, were reported by a caretaker; the diets of children, ages 6-11 year old, were reported by the child with the assistance of an adult (if requested by the child). Finally, the diets of children, ages 12-19, were reported by the child.

7. Methods section is somewhat difficult to follow.

Response: We have revised this section so that, and hope that it is now easier to follow.

8. Some parts of the discussion are repetitive of the methods and results sections while the relevance of other sections is unclear – e.g., physiologic responses to food ingestion, etc.

Response: We have thoughtfully considered this comment and have revised the discussion to address this concern.

9. What is the rationale for the age groupings for children?

Response: The selected age groupings are based on CSFII-defined age groups. Additional explanation has been added to the manuscript.
10. Values deemed to be implausible are not necessarily so for a given day. Excluding individuals from the sample can create a bias by distorting the weighting. This is potentially true for other exclusions as well.

**Response:** We thank the reviewer for this valuable comment. Recently, the awareness of the diluting effect of including individuals with unreasonably low or high reported dietary intakes in data analysis has been raised. We decided to use the most simplified method to address this issue by excluding only individuals whose reported extreme energy intakes. Alternatively, a method to discern the plausibility of dietary intake data, such as by Huang et al., would have been used. Due to the ad hoc design of the present study, which requires categorization of individuals by their intake level, we elected to exclude individuals who would have skewed intakes within the low or high consumer categories. We have added a better explanation to this effect to the method section.

11. Does estimation of standard errors account for survey design?

**Response:** Survey design is accounted for. As stated in the last sentence of the methods section, “All statistical methods were executed in Stata Statistical Software: Release 9.0 (STATA Corporation, College Station, TX, USA) using complex sample survey routines to maintain the nationally representative character of the data.”

12. Need rationale for covariates included in models.

**Response:** The covariates used in the models are known factors associated with the dietary intakes of the various food groups and nutrients. More importantly, the chosen covariates are usually considered in this type of analysis. We added more information to this effect, as well as the modeling method we used.

13. Writing could be improved - sometimes the points are not clear. This is especially true of the discussion section.

**Response:** We appreciated the reviewer’s careful consideration of this manuscript. The manuscript has been reviewed and amended to improve readability.

**Minor Essential Revisions**

14. Unclear what the authors are referring to when they note possible genetic effects on diet (background section).

**Response:** We appreciate your comment and have clarified this statement.

15. Unclear what version of MyPyramid is referred to. More complete referencing needed.

**Response:** The CSFII provides food group information based upon The Food Guide Pyramid. These findings needed to be converted in order to report findings that correspond to the new MyPlate serving sizes.
Discretionary Revisions

16. Would be helpful to put this study in the context of the obesity epidemic in terms of rationale and implications.

Response: We appreciate this comment. While discussion of obesity would be relevant in light of the current epidemic, we are not able to provide data on the issue, since the CSFII only includes self-reported body weights, which is missing in most children. Further, the association between dietary intake levels of food groups and nutrients as well as portion sizes could be associated with body weight status in children, however, at this point no data available to substantiate that statement. We are currently in the planning stages to conduct a study that allows the examination of the effect of parent-child eating patterns on the development of childhood obesity.

Reviewer #2 Comments

General comments:

The topic of family meals is a very important aspect of understanding food and nutrition behaviours (and thus childhood obesity and related public health issues) and therefore this paper contributes to the literature in this area. This paper has many strengths, including its large sample size and methodology. Additionally, the authors examined the role of male heads of households, which is an area where limited research has been conducted. The paper is well organized and provides sufficient detail and interpretation for the reader.

Major compulsory revisions:

Methods:

1. Were “grains” combined for portions of the analysis? If so, please indicate and provide rationale (p7).

Response: Thank you for noting that this point was confusing. Yes, grains were combined for portions of this analysis. Based on the small proportion of children and/or adults meeting certain recommendations for the data presented, the authors chose to combine groups in certain instances. If additional explanation appears to be necessary, we will happily provide it.

Minor essential revisions:

Abstract:

2. Background: while I would make the assumption that individuals living in the same household would have similar dietary intakes of food groups; nutrient intakes would still vary tremendously. Please revise to indicate the similarities in intake is in regards to food groups and meeting recommendations given the focus of the paper.
Response: Thank you for identifying this ambiguity. We have revised the abstract to address this concern.

Background:

3. Please reference the government recommendation for food group intakes and the IOM for DRIs (p4).

Response: Thank you for pointing out that we needed to include references for these recommendations earlier in the manuscript than we had originally done.

4. If “familial issues” only include behaviours and not other contextual factors such as income and education, please revise to “…familial behaviours regarding…”

Response: “Familial issues” include do include factors beyond behaviors, such as cultural values. The manuscript has been modified to imply this concept.

5. See comment #11 below regarding the discussion.

Response: We are not sure how “visual cues” relate to the literature reviewed for this paper. We would appreciate further guidance and would be happy to address this point upon clarification.

Methods:

6. I find the term “eating occasion” (p5) confusing since it has not yet been defined. It makes it seem as if the parent and child consumed the meal at the same time. It is important to clarify this here.

Response: We appreciate this comment and added text to improve the clarity of the concept.

7. The rationalization for utilizing only the first 24--hour recall is sufficient, however I find the use of the term “usual intake” confusing when referring to meal patterns. “Usual intake” generally includes multiple days of intake and is a term often used to assess nutrient inadequacy. Please clarify (p6).

Response: Again, thank you for pointing out this point of ambiguity. The manuscript has been modified to address this concern.

8. Please revise “Average Macronutrient intake Range” to “Acceptable Macronutrient Distribution Ranges” (p8).

Response: This error has been corrected in the manuscript.
9. Was “Adequate Intake” also used? If so, please indicate (p8).

Response: “Adequate intake” was used as appropriate (i.e. dietary fiber and calcium). The manuscript has been modified to clarify this point.

Discussion:

10. In the last paragraph of p14, the rationale for studying parents and children that have the highest 20% of food consumption is linked to increased portion sizes. However, in the introduction, the rationale is linked to fried foods and visible fat. Since there are no data in this study to determine whether parents ate everything on their plates, and the results did not explore linking higher intakes with certain food behaviours (serving fried foods), I would be cautious in linking to these types of studies. Please remain consistent throughout (p4 and p14).

Response: Thank you for your thoughtful consideration of this point. We have modified the manuscript to remain consistent throughout.

11. Be cautious when discussing visual cues, as this study was not able to determine whether or not the families ate together (p14—15). As such, the statement on page 14 indicating that “We sought to explore this concept…” is not accurate. Please revise, as eating in the presence of a parent who consumes large amounts is a different concept than the relationship of parent and child eating large amounts regardless of eating at the same meal.

Response: We appreciate the need to clarify and restate this point. We have modified the manuscript to address this reviewer’s comment.

12. Please include in the limitations that it could not be determined whether or not the child and parent consumed their meals simultaneously (p15).

Response: This is a very important limitation. We thank you for pointing it out and have added a statement to the manuscript to address this point.

Discretionary revisions:

Abstract:

13. Methods: State that multiple 24-hour recalls were used.

Response: Thank you for pointing out the need to include this point. The abstract has been modified accordingly.
Background:

14. I find the word “adequate” a bit confusing. Instead consider focusing on “meeting recommendations” (e.g., “A diet that meets recommendations for both food groups and nutrients as per…”) (p4).

Response: We appreciate your concern on this point and have made the modification as suggested.

Methods:

15. On page 8 when listing the six food groups, considering separating the “grains” to remain consistent with the rest of the manuscript.

Response: Thank you for pointing out this inconsistency. We have modified the manuscript as suggested.

Discussion:

16. Please indicate if “adult role models” (p12) include all adult role models, or just those that are in the same household.

Response: Thank you for pointing out the need to clarify this point. The manuscript has been modified accordingly.

17. Please clarify what is meant by “feeding style” (p12).

Response: We appreciate the need for clarification of this point and added examples for “feeding style” in the manuscript.

18. Consider changing “parenting feeding style” to “parental feeding style” (p14).

Response: Thank you for addressing this point. The manuscript has been modified to address this point.