Author’s response to reviews

Title: Examination of Dietary Habits Among the Indigenous Kuna Indians of Panama

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Author’s response to reviews:

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Dear Editor,

Thank you for the opportunity to provide modifications to our paper based on comments made by the reviewers. We addressed all concerns in the manuscript, highlighted the changes in the updated manuscript, and have responded to each below. We hope that these changes are acceptable and look forward to the publication of the manuscript.

Manuscript: NUTJ-D-19-00083
Reviewer #1:

• The result - mentioned the income wrongly.
  • Response: The full manuscript has been reviewed and discussion of income has been made consistent and accurate throughout.

• Conclusion must limit to what was studied and not assumptions.
  • Response: The conclusion section has been revised to remove any assumptions and only focuses on the results of the study and recommendations based on these results. See page 12.

• Reference was not properly assigned - ex after the 1st reference 5th reference is appearing in the text
  • Response: References have been reordered to be consecutive.

Methods

• First two paragraph could be moved under funding and admin details at the end of the article.
  • Response: The first two paragraphs describing the collaborations and study approval process have been moved under the funding section at the end of this manuscript. See pages 13-14.

• An attempt should be made to describe the selection of study population and sample size calculation and the failure to achieve the target could be described in the discussion and limitations.
  • Response: The recruitment section has been re-written and titled Participants and Recruitment. Description of study population and selection of study sample has been included. Additionally, sample size has been addressed. See page 5.

• The development of the study questionnaire was not described. Ideally it should be based on the available validated standard questionnaires. The experts input in modify the questionnaire.
• Response: The Data Collection section has been updated to describe that the questionnaire was developed based on available validated questionnaires. Citations of this questionnaire is included. See pages 4-5.

• The details of the response option of each question/food categories could be removed from the text and included as annexure.

• Response: This section has been modified and updated. See pages 5-6.

• The fast food is wrongly categorized to the shop type. This may lead to wrongly grouping any health food consumed in those food outlets. - Ex Mac-Rice is not a fast food.

• Response: We appreciate this important point. The categories are based on the validated questionnaire administered to in Panamanian national surveys for nutrition and were not created by the authors. The authors agree with the point raised by the reviewer and have therefore modified the outcomes section of the manuscript to make this clear and have included the categorization as a potential limitation. See pages 5-6, and 11-12.

• The description of the income category was not clear.

• Response: Income categories have been clarified and consistently documented throughout this manuscript.

Results

• The sample size is very low and may affect the power of the findings. Male participant is very low.

• Response: We appreciate the concern raised by the reviewer, however, this was a cross-sectional study of a community sample in Panama. We invited participants during the one week while in the community to participate and had a 90% response rate. This was the sample that was feasible for the team to complete during this time and had adequate power to provide reliable estimates of prevalence. The Participant and Recruitment section of this manuscript has been updated to reflect this information and it has been added as a limitation in the Discussion. Please see pages 5 and 11-12.
• Fried food and junk food were low but the fast food is high - this could be wrong categorization of the fast food types.

• Response: We investigated the categorization, however, this was correct based on responses. Similar to revisions specific to the methods, we have clarified categorization included the limitation of categories based on the Panamanian developed survey in the limitations section of this manuscript. See pages 5-6 and 11-12.

• Why fruit consumption is very high and vegetable is very low? Vegetable category may be missing some important local vegetable consumed by the community.

• Response: Similar to above, we confirmed appropriate categorization and included in the limitations section of this manuscript that though this survey was deemed the most appropriate validated survey it may not have captured all food types. Based on interaction with the community there are few vegetables grown, whereas there is quite high access to fruit so this is not completely unexpected given the particular context of this study. We have noted this in the discussion on page 11.

Tables
• Better to include the frequency also in all tables.

• Response: Table 1 has been updated to include frequencies, and a legend explaining educational levels and monthly income. See Page 17.

Reviewer #2:

Summary: This study aimed to describe the dietary intake of Indigenous Kuna Indians of Panama, which has not been done since the 1990s. The authors found that while a high proportion of Kuna Indians daily consume nutritious food groups, like fruits, cacao, and fish, a high proportion also daily consume fast food, sodas, and fried food. Furthermore, consumption of nutritious versus non-nutritious foods varied by demographic characteristics.

Ethics: present and adequate
Title:

- The title does not fully capture the aims of the manuscript. Also, 'dietary patterns' can be a bit misleading, as most of the peer-reviewed diet and nutrition literature refer to dietary patterns as those taking a whole-diet (and not single-nutrient or food studies) approach characterized by dietary scores derived either a priori or through data-driven approaches. This does not appear to be the focus of this paper, so I suggest that authors revise the title accordingly.

- Response: The title has been revised to ‘Examination of Dietary Habits’ to more appropriately describe the purpose of the study.

Abstract:

- The aim listed in the Background section needs to be updated to better reflect the aims of the study, which go beyond reporting diet practices and also look at sociodemographic differences.

- Response: The aims have been updated to better reflect the aims of the study in 1) providing information on dietary habits and 2) investigating sociodemographic correlates. We have also updated the aim in the introduction to match. Please see pages 2 and 4.

- Authors should include at least some details as to the type of food consumption data collection methods (e.g. FFQ, 24 hour-recall, etc.) they used, and what types of foods were the focus for these analyses (e.g. away-from-home foods, food groups, macronutrients, etc.)

- Response: Details of types of food have been included. See page 2.

- The last line in the Methods section of the abstract describes the study population and location and should be moved to the beginning of the paragraph (and include a total sample size).

- Response: These changes have been incorporated. See page 2.

- Unclear why the authors are referencing cacao in the conclusion paragraph when no reference has been made prior in the abstract.

- Response: The background and conclusions section have been reconciled to clarify that prior work has focused primarily on cacao, whereas this study provides information on the broader diet of the population. See page 2.
Introduction:

- The introduction is well written but would benefit from additional information about the current environments, lifestyles, and health outcomes of Kuna Indian communities, which may better justify the need to conduct a dietary assessment in these communities. Kuna-specific information seems to be lacking; the authors refer to trends among indigenous communities worldwide, which is okay but does not help the reader understand, specifically, the livelihoods of the Kuna Indians today.

- Response: The lack of Kuna-specific information in the introduction is due to the lack of literature describing the current environment, lifestyles, and health outcomes of the Kuna Indians. The purpose for the current study is to provide insight and empirical baseline information on food intake among the Kuna Indians. Our ongoing work with the community aims to collect and report on additional community-level characteristics and health outcomes; however, that information is not available in the published literature at this time.

- The authors should also revise their sentence on their study aims (lines 25-29) to include looking at differences by sociodemographics.

- Response: This sentence has been revised to include sociodemographic differences. See page 4.

Methods:

- Overall, readers need much more information regarding the methods for this study and the analyses in order to determine the quality of the study. Notably, I have not seen the sample size listed in the manuscript, which should be done in the abstract and methods sections. The study design should also be stated in the methods section.

- Response: The methods section has been updated to reflect more detail on data collection and study design as well as recruitment strategies. There is no census information on the population, and therefore a detailed sampling frame or sample size could not be determined. This study was the initial effort to begin a more rigorous collection of data in the indigenous populations of Panama. See page 5 for edited section.

- Data collection: Authors need to provide more details about data collection methods, and not only a reference to a previously-published paper. Notably, readers will need to know the type and description of the paper-based survey (and if it was a valid and reliable tool), how long the survey took to complete, how it was administered (read aloud or the participant completed it),


and specifically what psychosocial, demographic, and health outcome measures were collected. Response: The data collection section has been updated to include details of the paper based survey, also updated in the outcomes section, and how long the survey took to complete. Additional variables collected are also specified. Please see pages 4-5.

Recruitment

• What clinic? This is the first time this is referenced in the manuscript and needs to be explained.

• Response: There is one local clinic within the community. This has been specified and the recruitment section has been updated to include details of recruitment method and recruitment sites. See page 5.

• Did participants receive incentives to participate?

• Response: Participants did not receive incentives to participate. This has been included in the recruitment section of this manuscript. See page 5.

• This is the first mention of biological measures being collected, which should be explained in the data collection section above.

• Response: Biological measures were collected for other aspects of the overall research, but were not specific to this study so have been removed from the manuscript.

Outcomes

• I presume that total caloric intake was not collected?

• Response: This is correct, caloric intake was not collected.

Statistical analysis

• I would like to see the authors engage in a more rigorous statistical approach, particularly covariate-adjusted models. Currently, the results are strictly descriptive and there is an opportunity to observe some of the relationships of sociodemographic factors with diet intake in adjusted models.
• Response: Adjusted models were analyzed and additional methods were added to the last paragraph of the statistical analysis section. The results are presented in the last paragraph of the results section and Table 4. See pages 8, 9 and 20.

• Likewise, there are additional nuanced ways to present this data that may provide more meaningful results, especially for developing interventions/programming. For example, Table 1 could present characteristics by sex, as the authors later note that men often travel off the island for work and would, therefore, be differentially influenced when it comes to dietary intake.

• Response: We agree that additional work will provide more information for developing interventions, however, at this time our goal was to provide information on overall effects and we did not hypothesize any specific differences that would suggest tests for interactions or stratification by sex.

Results:

• I am not sure it is necessary to repeat data in the manuscript that is already reported in Table 1. Instead, I suggest the authors summarize Table 1.

• Response: The first paragraph of the results has been updated to provide a summary of the data rather than all information. See page 8.

• For the paragraph describing Table 3 (and throughout the manuscript where appropriate), I suggest the authors switch the order in which they talk about the associations/correlations (e.g. 'age was correlated with vegetable consumption'), so that the outcome (food group) is reported after the predictor (sociodemographics), which is more intuitive. I have found that this writing practice makes comprehension easier for the reader. The report of findings from Table 3 needs to be presented in a more organized way, and without repeating what is already reported in the table.

• Response: We have revised the presentation of Table 3 to summarize results rather than present all information and present the outcome after the predictor. See page 8-9.
Discussion:

- The authors need to incorporate more discussion about potential reasons that intake of Western foods is high among Kuna Indians, including but not limited to secular trends in the island areas where they live, lifestyle changes, environmental changes, etc.

- Response: At present, there is no Kuna-specific literature that can be used to help explain the potential reasons for the uptake of Western foods. We hope to add to this literature based and better understand potential reasons through our ongoing work. We have added this as recommendations for future work in the conclusions. See page 12.

Tables/Figures:

- Table 1:
  - Please include the sample size in the title and corresponding sample sizes for the table cells.
  - Response: This has been added. Please see page 17.
  - Educational attainment and monthly income need to be defined in a footnote.
  - Response: This has been added. Please see page 17.
  - Physical activity can be added to this table, as it was discussed as a covariate. Are there other available variables to describe the population, like health status, etc.?
  - Response: We do not have information on health status, however, we do have information on regular physical activity, use of alcohol, and use of tobacco, which has been added to Table 1. See page 17.

- Table 2:
  - Results would be better represented in a bar graph.
  - Response: We have added a Figure 2 presenting results from Table 2 in a bar graph. See page 22.
Also, I presume the authors are reporting daily consumption of each of the food categories? This needs to be reflected in the title.

Response: This has been added to the individual category names. Please see pages 17 and 22.

Sincerely,

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