Author’s response to reviews

Title: Planning dietary improvements without additional costs for low-income individuals in Brazil: linear programming optimization as a tool for public policy in nutrition and health

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Author’s response to reviews:

Reviewer #1: The reviewer thanks the authors for their responses and for adding Figure 1 to the paper as the information included on Figure 1 is very helpful.

The reviewer has no further comments but advises the authors to thoroughly proofread the paper as it still contains some typos (which should be fixed), and may contain other typos not caught by the reviewer:

A: Thanks for the review, I am sorry that the previous submitted version still had some typos. This version went through a comprehensive revision by proper professional English editing service (Scribbr.com).

Line 27: There is a typo. It should be "programming" instead of "programing".
A: Thanks. It was fixed.

Lines 88-89: The reviewer is not sure whether the word "detailed" should be included in the following sentence: "Data collection procedures are detailed described elsewhere".
A: Thanks. It was removed.
Line 270: There is a typo. It should be "optimized" instead of "optimizes".
A: Thanks. It was fixed.

Line 398: This typo was not previously corrected. It should be "United States Dollars" instead of "United State Dollars".
A: Thanks. It was fixed.

Table 3: This typo was not previously corrected. If the authors look at the last values in the last row and last column, there is the number "524" that is overwritten by the numbers "472 (74)". Also, if the authors look at the left margin, there are the numbers "525", "526", "527", "528", "529", and "530" which are overwritten by the line numbers.
A: Thanks. I couldn't fix it because it seems that it happens after files processing by the submition system. I included a file containing the tables 3 and 4 without line numbering.

Figure 1: There is a typo on all boxes in the 3rd column: it should be "Geographic-strata" instead of "Geographic-strata".
A: Thanks. It was fixed.

Figure 2: There is a typo. It should be "Thiamin" instead of "Thiamine".
A: Thanks. It was fixed.

Reviewer #2: Thank you for making changes to the paper - the design of the study is much clearer.

However, this remains quite a challenging paper for the non-expert reader and some further amendments could help to clarify.
A: Thanks for the review.
The key challenges are:

1. There are six combinations of cost constraints (yes/no) and food acceptability (3 levels) - but the results are reported in general in relation to these two criteria as well as for different cost/acceptability combinations. It is not obvious why some comparisons are emphasised and not others and therefore confusing. This applies particularly in the Abstract.

A: Thanks. We made some modifications in the results on the abstract. Unfortunately, there is no enough number of words allowed to clearly describe the results. Thus, we opted to selected the most important ones and describe them superficially. Please note that in the abstract we present results for both cost-constrained and cost-free models, and according to the acceptability levels, when necessary and possible, so it summarizes what the readers will find in the result section in the manuscript.

2. At first review I commented on the labelling of the 'food acceptability' groups. I'm afraid I still don't think that the terms 'rigorous' (for least change) and 'flexible' (for greatest change) are clear in their meaning and other labels that are more explicit in terms of what the categorisations represent would be more useful. In particular - without explanation, they aren't meaningful to the reader as reported in the Abstract.

A: Thanks for this comment. We included, in the abstract, a brief definition for these terms so that readers can get their meaning without reading the whole manuscript. We also modified this sentence bellow in order to clarify the terminology:

Line 204: “This acceptability terminology reflects flexibility in the modification of food quantities relative to the usual food patterns allowed in optimized models. That is, rigorous constraints allowed a smaller difference from the usual intake than did moderate constraints, which in turn allowed a smaller difference than flexible constraints.”

3. The paper needs review to ensure correct use of English.

This version went through a comprehensive revision by proper professional English editing service (Scribbr.com).
Specific points:

Lines 71 and 139: explanation of food acceptability is needed
A: Thanks: Line 71: we replaced by “food preferences”. It makes the sentence clear without change its meaning.

Line 141: We modified the sentence: “We performed six sets of optimization models: cost-free and cost-constrained, each with three levels of food acceptability. Food acceptability referred to the maximum theoretically acceptable changes in food quantities, compared with the current observed diet.”

Line 263 - are vitamin B12 and copper intakes increased in Figure 2?
A: Thanks. It was fixed: we kept copper in the sentence because there was indeed a small increment in the flexible model.