Author's response to reviews

Title: Could giardiasis be a risk factor for low zinc status in schoolchildren from northwestern Mexico? A cross-sectional study with longitudinal follow-up

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Author's response to reviews:

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Dear Editor
BMC Public Health
Present

This is the list of changes have been made on the basis of the suggestions and comments from the reviewers. Every change in the manuscript is described as follows:

Point-by-point description of the changes made in the manuscript

1 We included the term “Both” to state the giardiasis and zinc deficiency are public health problems in the line 1 of the section of Background, Abstract.
2 The word “national” was removed from the line 2 of the Background Abstract section.
3 The word “later” was replaced by the word “after” in the line 2 of the Methods section in the Abstract.
4 The paragraph in the lines from 1 to 3 was re-written in the Results section of the Abstract (“higher mean serum zinc level in the Giardia-infected group six months following treatment”, “no difference between the groups”).
5 The term “(p = 0.67)” was replaced by “(p < 0.05)” in the line 5 in the section of “Results” of the Abstract.
6 All numbers of the references in brackets were replaced by theirs corresponding predecessors from the “Background section” to the end of the manuscript because the reference 2 in the “Reference section” was removed.
7 A sub-section “Study design” was included in the Section of “Methods” of the manuscript.
8 The terms “twenty six” and “43” were replaced by the terms “fourteen” and “39” in the line 12 of the sub-section “Study population” of the Methods section.

9 The sentence “and 12 (4%) did not complete the study” was included in the lines 17-18 of the sub-section “Study population” of the Methods section.

10 The number in brackets “[35]” was replaced by “[39]” in the line 8 in the sub section “Statistical analysis” of the Methods section.

11 The paragraph in the lines from 13-16 was rewritten “In the longitudinal analysis, paired t-test was used to compare the means of the serum zinc levels of the Giardia-infected group before and after treatment. The same analysis was applied to compare the serum zinc levels of the Giardia-free group. All analyses were considered significant at $p \leq 0.05$” in the sub section “Statistical analysis” of the Methods section.

12 The number in the parenthesis (“126”), the term “Sixty two”, and the number in the parenthesis (62%) were replaced by (“114”), “Fifty-four” and “(54%)” respectively in the lines from 1 to 2 in the “Results” section.

13 The percentages “31%” and “44%” were replaced by “7%” and “16.7%” respectively in the lines from 2-3 of the “Results” section.

14 The previous means for the Z-scores were replaced by “–0.05 (1.3), –0.9 (1.1) and 1.0 (1.6)” in the line 4 of the “Results” section.

15 The number in the parenthesis ($p = 0.26$) was replaced by “30” in the line 9 of the “Results” section.

16 The paragraph in the lines from 11-15 was removed and replaced by “In the Giardia-infected group no significant differences were found between values before and values six months after treatment for the mean daily zinc intakes (8.3 mg vs. 6.0 mg respectively) ($p = 0.2$), in the “Results” section.

17 The numbers in the parenthesis “(n = 104) and (n = 32)” were included in the line 16 of the “Results” section.

18 The paragraph from the lines 23-27 was replaced by “At baseline, independent t-test showed no difference ($p = 0.67$) in the geometric means (±SE) of the serum zinc levels 14.4 (1.4) and 13.8 (1.9) µmol/L between the Giardia-free (n = 65), and Giardia-infected children (n = 49) respectively. When controlling for region, sex, age and daily zinc intake using ANCOVA analyses the same result was found ($p = 0.98$) (Fig. 1).” in the “Results” section.

19 The paragraph from the lines 29-34 was replaced by “However, six months after treatment, a significant increase in the geometric mean of serum zinc was found in the Giardia-infected group (13.9 vs. 19.2 µmol/L) ($p = 0.001$ from paired t-test analyses) (Fig. 2). After treatment, no children showed a serum zinc concentration below the cut-off value. Conversely, in the Giardia-free group, no significant difference was found between the mean serum zinc levels at baseline and six months following treatment (14.4 µmol/L vs. 16.9 µmol/L respectively; $p = 0.08$).” in the “Results” section.
The term “Forty” and the percentage “30%” were replaced by “Thirty five” and “29” respectively in the line 1 of the “Discussion” section.

The paragraph “However, it is noteworthy that the Giardia-free children were living in slightly better household conditions, and had much better access to clean drinking water supply than children with giardiasis” was removed from the lines 11-13 of the “Discussion” section.

The paragraph in the lines from 34-37 was rewritten and replaced by “In the present study, the parasitic treatment evidenced association between giardiasis and serum zinc levels in the Giardia-infected group. This finding is supported by the non-significant increase in the mean serum zinc levels from baseline to six months after in the Giardia-free group.”

The term “three months” was included in the line 45 of the “Discussion” section.

The word “Although” was replaced by “However” in the line 55 of the “Discussion” section.

The sentence in the line 56 was replaced by “differences between the Giardia-free and the Giardia-infected groups in this study.”

The word “However” was replaced by “Although” in the line 57 of the “Discussion” section.

The paragraph in the lines from 65 “Validity is enhanced by the fact that this study……increased serum zinc levels” was replaced by “Despite this, the validity of this study was supported by the findings of the longitudinal data analysis in the Giardia-infected and Giardia-free groups.” In the “Discussion” section.

The section “Competing interests” was included after the “Discussion” section.

The section “Author’s contributions” was rewritten.


The data shown in the “Table 1” was replaced by the new results from the development of the suggested statistical method by the reviewer 2.

The “Fig 1” was replaced by other using the new descriptive data when sample size was changed on the basis of analyzing only those children who stayed at the end of the study. Also, the term “Cross-sectional analysis” was included in its legend.

The “Fig 2” was replaced by other using the new data resulted from the development of the suggested statistical method by the reviewer 2. Also, the term “Longitudinal analysis” was included in its legend.

Thanks in advance for all your attentions.

Sincerely
Luis Quihui-Cota PhD
1 Reviewer’s report
Title: Could giardiasis be a risk factor for low zinc status in schoolchildren from northwestern Mexico? A cross-sectional study with longitudinal follow-up
Version: 1 Date: 16 December 2008
Reviewer: Ali Çeliksöz
Reviewer’s report:
Discretionary Revisions
1. In section of Background, Abstract:
Giardisis and zinc deficiency are serious helth problems worldwidw.....
Question 1: This knowledge is not clear (separately or together).
Answer: We included the term “Both” to state the giardiasis and zinc deficiency are public health problems in the section of Background, Abstract.
Suggestion: The national prevalence...."national" can be removed
Answer: The word “national” was removed from the Background Abstract section
Question 2.In section of methods: I couldn’t see "six months after parasite treatment"
Answer: A sub-section “Study design” was included in the Section of “Methods” of the manuscript where you will be able to read the mentioned statement.
Question 3: and I did not understand why six month later
Answer: The Spanish study found no change in the mean serum zinc levels before and three months after treatment in 25 Giardia-infected children from 6 to 9 years old of age. Because of the initial means of serum zinc levels in the Spanish children were similar to those found in our study children, we decided to repeat our study protocol six months later to ensure any significant change.

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
'I declare that I have no competing interests'

2 Reviewer’s report
Title: Could giardiasis be a risk factor for low zinc status in schoolchildren from
northwestern Mexico? A cross-sectional study with longitudinal follow-up

Version: 1 Date: 1 June 2009

Reviewer: Paul Kelly

Reviewer’s report:

This is an interesting manuscript which seeks to clarify the relationship of giardiasis to a specific micronutrient deficiency, that of zinc. However, I think the manuscript suffers from several significant shortcomings and some major revisions are necessary. These are:

Major Compulsory Revisions

Comment and suggestion 1: There is a problem with the analysis. The paper hangs on two analyses. First, the association of zinc and giardia at baseline. Second, and much more important, the changes in zinc following treatment. It is the second analysis with which I have a problem. The statistical test which has been carried out is an unpaired t test which is inappropriate. From Fig 2 I can see that 56 data are included from before treatment and 49 after. The only data which are admissible here are samples from children who gave blood both before and after treatment, and a paired test should be used. The paired data from the uninfected children should also be presented as these are in effect a control group to ensure that the difference seen is not attributable to some other secular trend.

Answer to comment and suggestion 1: Statistical analysis were developed again using paired t test as you suggested. The lines 28-33 in the section of “Results” are stating the results for the mean serum zinc levels provided by the paired analysis in the infected children and non-infected children before and six months after, considering only those children who finished the study.

The Fig 2 is showing the values provided by the paired test for the mean serum zinc levels in the infected children before and six months following treatment. Number of children at baseline (56) was replaced by the number 49 and the term “longitudinal analysis” was added in parenthesis in the legend of this figure.

Comment and suggestion 2: It is misleading to say that 14.7 mmol/l is higher than 13.8 mmol/l (P=0.70). These are not statistically different and no inference should be drawn from them. 22-24

Answer to comment and suggestion 2: You are right. The paragraph mentioned was removed from the lines 22-24 in the section of “Results”.

Comment and suggestion 3: The Results section of the Abstract is confusing. It is not clear what 13.9 and 19 refer to. It does not set out clearly the results and omits completely the most interesting result of all as set out above.

Answer to comment and suggestion 3: The sentence in the lines 1-3 in the “Results” section of the Abstract was again redacted to remark that the mean serum zinc levels increased significantly following treatment in the infected
Minor Essential Revisions

Question 1: What was the "anthropological software" used? It is not stated.
Answer: You want to say “anthropometrical” instead of “anthropological”. The Z scores were estimated using the anthropometrical software, version 1.01, with data from the National Center for Health and Statistics as recommended by the World Health Organization (ref 34). This is stated in the section “Statistical Analysis” and clearly explained in the reference 35.

Question 2: The legend to Fig 2 is the same as Fig 1 and is incorrect.
Answer: To avoid confusion, legends will include “Cross-sectional analysis” and “Longitudinal analysis” for the Fig 1 (between the free and Giardia-infected groups) and Fig 2 (before and after treatment in the infected group) respectively.

Question 3 The Fig in the supplementary file is the same as Table 1. Was there supposed to be something else?
Answer: I am assuming that you mean the Fig 1. The Table 1 is giving information about the mean daily zinc intakes between the free and Giardia-infected groups at baseline. The Fig 1 is giving information about the mean serum zinc levels between these groups.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:
I declare that I have no competing interests