Author's response to reviews

Title: Prevalence of asthma, rhinitis and eczema symptoms in rural and urban school-aged children from Oropeza Province - Bolivia: a cross-sectional study

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Author's response to reviews: see over
The Managing Editor

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Dear Editor,

Please find attached in the journal page the revised version (second round) of the manuscript entitled “Prevalence of asthma, rhinitis and eczema symptoms in rural and urban school-aged children from Oropeza Province - Bolivia: a cross-sectional study”. Next we present the point-by-point response of the comments in the second revision of the paper:

Leila D Amorim

**Reviewer's report:**

Major Compulsory Revision:
1. Statistical methods and study design
   (i) Even though the authors included information about limitation of study for having computing sample size based on a random sampling scheme while having used a cluster sampling scheme, this is not sufficient reason for not having used the appropriate methods for data analysis. The methods for analysis of correlated data are available in almost all statistical software, being already routinely applied in data analysis. It has been proven that even very small values of the intraclass correlation coefficient (ICC) are capable of having a large impact on analysis results. The authors have to estimate and present the ICC for their study as well as apply the appropriate extensions of chi-square test and logistic regression model to analyze their data. The limitation of not having used such methodology is not lack of power, but the possibility of reporting significant effects when they do not exist, which is caused by the inflation of type I error.

Thanks for the suggestion. In the revised paper we explored and reported the results considering cluster effects. In overall we observed a slight modification in the confidence interval in the crude and adjusted Odds Ratio when urban and rural areas were compared. The intraclass correlation coefficient was smaller in the outcomes reported by written questionnaire (median 4%; range 0.67% - 4.5%) in comparison with the outcomes reported by video questionnaire (median 20%; range (19%-26%).

Abstract, statistical analysis, results and discussion sections were modified to clarify these aspects.
(ii) The authors categorized type of school (private versus urban). However, as already pointed out in the text there are no private schools in rural areas. In Table 2, results comparing rural and urban schools are presented adjusted by type of school. What is the justification for adjusting by this variable when all schools are of the same type in rural areas?

Type of school was considered, specially, because of socio economic differences in each type. Considering your observation we explore the differences categorizing type of school in two categories Public and Public with private Infrastructure/Private. When cluster effect was considered, urban and rural difference lost statistical significance. For that reason the adjusted model only included “Age” the only variable that showed statistical significance (p value ≤ 0.05) in the bivariate analysis.

Reviewer: Donna Rennie

Reviewer's report:

• Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)
Authors have included information requested in the introduction regarding ISAAC results from other Latin American countries as requested
• Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
I think this is addressed sufficiently
• Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)
Major revisions have been addressed. I am satisfied with their revisions.
Thank you. No more comments were addressed.

We are looking forward to your response and the comments of reviewers.
Yours sincerely,

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