Author's response to reviews

Title: The family as a determinant of stunting in children living in conditions of extreme poverty: a case-control study.

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Version: 2 Date: 2 July 2004

Author's response to reviews: see over
BioMed Central Editorial Team
BMC Public Health

Dear Editors:

Enclosed you will find the revised manuscript entitled: The family as a determinant of stunting in children living in conditions of extreme poverty: a case-control study, MS ID: 159658656311770.

This new version has been modified according to the reviewers’ requests. We have included in this letter the point-by-point response report, including where and how the modifications were done.

We hope that the revised manuscript is suitable to be published by BMC Public Health.

Our submission comprises original, unpublished material and is not under consideration for publication elsewhere. All authors approved the final version of the article.

Sincerely,

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Journal: BMC Public Health

Authors’ response to Reviewers’ report

Reviewer: Ann Hill

Major Compulsory Revisions

Reviewer:
1. Interpretation of the data. The Discussion is weak, confusing and conflicting.
a) p12. Family income is stated as having important effect in the rural area. This conflicts with Table 4 (no significant association in the rural area)
Response: page 13. We clarified the conflict regarding family income and modified the text: “father’s income has an important effect” in the following way: “within the family income dimension, the variable father’s occupation (farming) was found to be a risk factor for child’s stunting.”. This is consistent with Tables 4 and 5, in which this variable shows risk for rural area (OR 1.68, CI95% 1.00-2.83, and OR 1.87, CI95% 1.05-3.32, respectively).

Reviewer:
b) p12. In the urban area, the variable “worked in same place for less than 2 years” is interpreted as reflecting instability of employment and low income. This seems inconsistent with the finding that neither income nor unemployment are risk factors
Response: Data were re-analysed and the paragraph was modified to provide a coherent interpretation (page 13, paragraph 3): “In the urban area the instability of the father’s employment (worked in the same place for less than 2 years) was found to be a risk factor. Lack of stable employment is a common problem among unskilled workers; their income is low and irregular, affecting their capacity to purchase goods and food, which in turn affects child nutrition [33]. Nevertheless, the other important variable included in this dimension, per capita family income, which was statistically significant in the bivariate analysis, did not show significance in the multivariate analysis. This finding could be interpreted as the ability of the family to cope with a difficult environment. Analysis of microeconomic variables shows the need of further studies to confirm plausibility of our findings and its association with malnutrition”.

Reviewer:
c) p14. Migrant status is described as no risk. This conflicts with the data in Tables 4 and 5 where migrant status is a risk factor in the urban area.
Response. The confusion was rectified; we clarified these findings in Tables 4 and 5 and in the discussion section, in which was written that migration as a risk factor refers to
Migration from rural to urban area (page 15, last paragraph): “Migration was also explored. In the final explanatory model addressing the urban area, parents’ migration from rural to urban area was found to be a risk factor for stunting. Migration from rural to urban settings is frequent among young people looking for improving their living conditions. However, families’ adaptation to the new situation is a long process, given that such families live in a hostile environment and they have limited access to information regarding how to care for the child. In contrast, migration of one member of the family from one urban setting to another did not show a relationship with nutritional status of children. Men of the family, principally the heads of households, migrate to other states in Mexico or to the U. S. in search of better incomes”.

Reviewer:
2. Limitations of the study: The discussion needs to include weakness in the design
Response: We have included the limitations of the study according to the suggestions of the reviewer (Page 15, 2nd paragraph): “The study has some limitations. Firstly, the study groups were of unequal size; this is a consequence of including all children aged from six to twenty-three months of age identified by the census. Additionally, since children of the control group were significantly younger than cases, some of them could have become stunted by the time they were of comparable age to the cases. To solve this limitation, the covariate age was adjusted in the multivariate analysis. However, it is possible that an age-matched cases-control design would have been preferable. Secondly, the fact that almost 25% of eligible children in the rural area were not included due to migration of their families could have led to selection bias. Another limitation is the lack of precise information regarding food practices among participating families”.

Minor Essential Revisions

Reviewer: 1. Page 8: explain what is meant by “integration of family”
Response: This phrase was removed; it was replaced by: “presence of both parents (complete or incomplete family)”

Reviewer: 2. Define “weaning”.
Response: Definition of weaning is stated on page 8, 1st paragraph: “…also, this is the average age in which children are weaning (this is defined as the time when mothers begin to introduce food other than milk into the child’s diet)”.

Reviewer: Table 2: Remove decimals from SD of birthweight
Response: Decimals were removed.

Reviewer: Table 2: Change “dirty floor” to “dirt floor”
Response: The change was done

Discretionary Revisions:

Reviewer: 1. For the supervisory visits, indicate the degree of reliability of the data
Response: It was included on Page 9: “To assure accuracy and reliability, one of the researchers (HR or RC) visited 10% of the households within the following week to confirm
the data. There were not inconsistencies in data or anthropometric measures that could affect the results”

Reviewer:
2. In table 2, add sewerage
Response: Sewerage data were added

Reviewer:
3. In Table 2, report the housing characteristics in a consistent “direction” (i.e. dirt floor, no indoor plumbing, no separate kitchen, overcrowded).
Response: The inconsistency was rectified

Reviewer:
4. In the text of the Results, present the comparisons in a consistent order (e.g. cases always first) to help the reader assimilate the findings
Response: Corrections were done

Reviewer: Anwar Merchant

Reviewer:
General. The study addresses an important issue, data were carefully collected, and it is likely to give important information about poor populations in Mexico. It therefore deserves to be published. My main concern was the approach taken for the analysis. Although it was not explicitly stated, it seems as if a stepwise method was used because only significant variables are included in the final models. This is reasonable if the goal of the study is prediction of the outcome without considering other potentially confounding factors. But this approach would limit the study’s generalizability.
Response: A stepwise approach was not selected as the method for modelling data in the multivariate analysis. Instead, a process of modelling starting from full model was used, and during the process of modelling, it was possible to test all possible confounders, keeping those that showed to be confounding factors, and removing those variables that did not modify the significance of the model. We have included the method of modelling in the section of Statistical Analysis (Page 10, 1st paragraph).

Reviewer:
I would suggest that the authors repeat the analyses adjusting for established risk factors like age of child, sex, maternal literacy, and family income in all models, and evaluate the other factors after adjustment for these variables. This analysis would answer the question: what is the role of the family networks or visits to the clinic for example, after accounting for the child’s age, sex, mother’s literacy and household family income? This may be much more interesting than simply giving the predictors of malnutrition in that population.
Response: The logistic regression analysis included all variables statistically significant in the bivariate analysis (Table 4), and some variables conceptually significant; most of them, except child’s age, did not show to be confounders, and they did not change the significance
of the model when removed. Therefore, those variables were not included in the final model. Table 5 shows that the model was adjusted for age in both areas.

Minor Essential Revisions

**Reviewer:**
Please state in the methods how the variables were defined. In the case of categorical variables please stated which were the reference groups. If a stepwise approach is still used (after keeping the major confounders in the model), please state what the criteria were for the selection. For example backward, forward, or stepwise and the entry and staying criteria.

**Response:** In the section of variables, we indicate in brackets the categories of variables; we also added the reference category on table 4. We previously explained the approach used for the analysis.

**Reviewer:**
In Table 3, was mother’s age a median or a mean?
Both mother’s and father’s age was measured as median (min-max). It is stated on Table 3

**Reviewer:**
In Table 4, were characteristics of the child (age, sex, birthweight not examined?)
**Response:** We have included information regarding age and sex, which showed significance in the crude analysis, in the text of Section of Results (Page 11, 2nd paragraph).