Author’s response to reviews

Title: Nationwide shifts in the double burden of overweight and underweight in Vietnamese adults in the period 2000 - 2005: two national nutrition surveys.

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Author’s response to reviews: see over
Hanoi, September 16, 2010

Dear Editor,

With this letter we would like to submit our revised manuscript entitled “Nationwide shifts in the double burden of overweight and underweight in Vietnamese adults in 2000 - 2005: two national nutrition surveys” (MS: 1440701337388786) for your journal, BMC Public Health upon your first request of revision.

The manuscript has been revised extensively upon comments by three reviewers. Each revision made upon each reviewer’s comments has been addressed as followings:

**Rebuttal to Reviewer 1**

**Major Compulsory Revisions**

**Background:**
The section is inadequate and is not well-structured. For instance, some more texts are necessary to highlight public health consequences of underweight, overweight and obesity.

Rebuttal: We revised the introduction upon the reviewer’s comments and suggestions.

**Methods:**
1. This section is short and should be elaborated.
Rebuttal: We extended this section by including on the sampling, exclusions, statistical analysis and ethical considerations as suggested by the reviewer.

2. Some essential information is missing. For instance, the response rate is missing for both surveys. How many subjects were excluded e.g. for pregnancy, and extreme BMI?
Rebuttal: Number of excluded subjects is now added.

3. How did they select variables? Why are variables like education, marital status, number of children, and income/wealth index missing? Why they did not consider the techniques of multivariable analysis (e.g. multivariable multinomial logistic regression analysis)? P-values are also missing which give us the idea whether the difference between male-female, rural-urban, age groups and ecological regions are significant or not.
Rebuttal: We agree with the review that additional information on income and food expenditure is very relevant. The multivariable logistic regression analysis is now added to investigate the association of several socio-economic factors with overweight and underweight.

4. Ethical issues are ignored.
Rebuttal: We now indicate ethical considerations on page 7. The study was approved by the Ethical committee of the National Institute of Nutrition of the Vietnam Ministry of Health.

Results:
I already mentioned that stratified analysis in a descriptive manner is not enough. For instance, the association of some variables with underweight and overweight might be insignificant in multivariable analysis. Therefore, this section should add some more results based on multivariable statistical analysis.
Rebuttal: We have added the results on multiple logistic regression analyses in Table 2 (new). This way the independent impact of the factors can be shown.

Discussion:
1. Some findings need to be discussed more. For instance, why women have more underweight prevalence than men? Is there any role of gender discrimination? Why is the prevalence of overweight higher in urban areas as compared to rural areas? Is this scenario related to overall development strategies, lifestyle strategies, and income? Is there any influence of social perceptions and cultural practices on BMI?
Rebuttal: Indeed, women have both more underweight and overweight than men. We have now added some more discussion on this issue. Also, discussion on the higher prevalence of overweight in urban area as compared to rural area is now added.

2. Nothing is written about intervention/prevention strategies to control/reduce the rising prevalence of overweight and obesity among adults in Vietnam. Although the situation of double burden of nutrition makes the intervention strategies difficult, at least some of the suitable strategies should be mentioned.
Rebuttal: We agree with this comments and have now added a discussion on relevant intervention/prevention strategies in the discussion section.

3. Authors reported the estimated number of overweight cases (page 8 in discussion section) and underweight cases (page 10). Are the estimated overweight cases for the age group of 25-64 years? Are these cases for the whole country? I am also concerned about the methodologies of estimation. Particularly the method of estimation should be written clearly somewhere in the method section.
Rebuttal: Yes, the estimated cases are for the age group of 25-64 years nationwide. The estimated number of overweight = the prevalence of overweight x the total population aged 25-64 years. We have now added this issue in the method section.
4. Limitations of the study and results are not written.
Rebuttal: We agree with this comments, and have now added discussion on the limitations of the study.

Minor Essential Revisions
1. Some grammatical mistakes are found and therefore should be checked carefully to improve the quality of English and readability.
Rebuttal: The paper has been edited extensively.

2. References are written in two styles. Some references are written as superscripts (please check reference 15 in page 6 and 21 in page 11).
Rebuttal: This has been revised.

3. The 2nd paragraph of page 10 which explains regional disparities of poverty need to be referenced.
Rebuttal: This has been added.

Rebuttal to Reviewer 2
Methods:
1- Since the sampling included all household members clarify if household clustering was accounted in analysis.
Rebuttal: In the National Nutrition Survey in 2000, all household members participated in the survey. In this study, only the adults aged 25-64 years were selected for analysis. The sampling was accounted for in data analysis using information on ecological region, area of residence, age group and gender. Household clustering was not accounted for in the analysis.

2- For both surveys the selected subjects who were not able to participate were replaced by other randomly selected subjects with the same gender, age group of the same cluster. Clarify how this process was done because the reference suggested [14] is not easily available.
Rebuttal: Clarification is added.

3- How many persons were replaced by sex and rural urban situation?
Rebuttal: We do not have exact data on this issue. The total replacement rate was about 1-2% of total sample size.

4- Include the number of subjects with extreme and/or implausible height, weight or BMI excluded from analysis in each survey.
Rebuttal: These numbers are now added.

5- Analysis included the weighing factors, but the authors did not refer whether complex sampling design was accounted for.
Rebuttal: Yes, complex sample design was accounted for in the data analysis.

6- There is no information about ethics committee or informed consent of the
participants.
Rebuttal: Ethical consideration is added. The survey protocols were approved by the Ethics committee of the National Institute of Nutrition of the Vietnam Ministry of Health. Participants were asked for their agreement to participate in the surveys prior to the data collection.

Discussion and conclusions:
1) Authors emphasis the increasing in prevalence of overweight (BMI ≥ 25 kg/m²) and obesity (BMI ≥ 30 kg/m²), which almost doubled in the period 2000-2005, but the main finding is a very high prevalence of underweight in all regions. The prevalence was 20% in the most developed region.
Rebuttal: We now add more discussion on the reduction of underweight and the resistance of high prevalence of underweight.

2) The nutrition transition stage is overstated. The rapid economic growth reported by authors have not reduced undernutrition. This should be the main focus in the discussion.
Rebuttal: The undernutrition was reduced from 25.0% in 2000 to 20.9% in 2005, with average reduction rate of 0.8%/year. The rapid economic growth did happen however the poverty rate was still high, particularly in rural area where lived by 70% of total population. More discussion on this issue is added.

Minor
Chronic energy deficiency (CED) – in tables and text could be changed to underweight as in the title.
Rebuttal: We agree and changed the term “Chronic energy deficiency” to “underweight”.

Rebuttal to Reviewer 3
Major Compulsory Revisions
1. Abstract and introduction: The author should clarify the statements regarding to the study period in the abstract and the introduction sections. It would be better to describe that the data was collected in two cross-sectional periods (2000 and 2005) instead of “in the period 2000 to 2005”.
Rebuttal: We agree and this has now been revised.

2. Methods: The author never mentioned about the prevalence of some comorbidities that are more frequent among older people, as cancer, chronic illness which are associated with lower BMI, even in a pre-clinical stage. Further, the author did not consider the additional adjustments by cigarette smoking, physical activity and educational level as well as he did not perform separate analyses after excluding participants who were current or former smokers.
Rebuttal:
- The prevalence of some co-morbidities that are more frequent among older people and are associated with lower BMI is added in the introduction.
- Additional adjustments for educational level is done.
- Data on cigarette smoking and physical activity are not available for both datasets. This issue is now mentioned when discussing the limitations of the study in the discussion section.

3. Results: the results are limited to age and sex-stratified analyses. It would be very informative adding some information regarding to educational level, diet, physical activity and smoking habits.
Rebuttal: Additional analysis with educational level and food expenditure has been added. Data on diet, physical activity and smoking habits is not available for analysis.

- Minor Essential Revisions
There are some track-changes in the references section that need to be accepted by the author.
Rebuttal: We apologize, this track-changes have now been accepted.

- Discretionary Revisions
The author should consider analyzing the national shifts in the double burden of obesity and overweight according to educational level.
Rebuttal: We agree with this suggestion, and data on the national shifts in double burden of underweight and overweight according to educational level is now added.

We have tried our best to improve the manuscript as commented by the reviewers and the editor. We do expect to receive the responses from the editor and reviewers for further completion of this manuscript.

Thank you very much for giving our manuscript an opportunity to be reviewed and revised.

I am looking forward to your response.

With kind regards, and on behalf of the authors,

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