Reviewer's report

Title: Predictors of overweight and obesity in five to seven year old children in Germany: results from cross-sectional studies

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Reviewer: Francisco B Ortega

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Predictors of overweight and obesity in five to seven year old children in Germany: results from cross-sectional studies

MAJOR COMPULSORY REVISIONS

1) The manuscript is in general well written and interesting. The fact that more than thirty five thousands of young children have been assessed in relation to overweight and obesity needs to be recognised. In addition a substantial number of potential factors have been studied. Some strengths and limitations can be highlighted in this study.

2) The terms "normal-weight" or "normo-weight" are commonly used in the literature, however there not strictly correct, since this group includes also to those individuals with an undesirable low weight, underweight people. Cole has recently published the international sex- and age- specific cut-offs for defining under-weight in children. Given the large sample size included in this study, as well as, the number of determinant factors studied, the paper could substantially increase in interest and originality if three weight status categories were compared with a real normo-weight group: underweight, overweight and obesity. It will be one of the first papers reporting this valuable and novel information. This is just a possibility, leave this for another paper is the alternative option. The editor responsible for this manuscript will decide if this major modification should be or should not be made.

In case that the editorial decision is make it, the main changes to be performed would be:

- Potential title: Underweight, overweight and obesity in five to seven year old children in Germany.
- Table 1 should include a line with the prevalences for underweight.
- A new table should be added showing the same information than table 2 and 3, but for underweight.
- And a new column should be included in table 4.
Introduction and discussion should be adjusted to the new approach.

Strengths:
- The substantial sample size allowed to the authors to perform the analyses for overweight and obesity separately. Being the statistical power for the obesity analysis big enough to draw important conclusion in this regards. This analysis also allows examining if overweight and obesity status ##behaves## in a parallel way in relation with predisposing factors, or by contrast, the associations differ substantially.
- The statistical analysis is appropriate and well-described.
- Since obesity is multi-factorial dependent, many factors should be taken into account. Even when the main aim is focused in a single factor, many other should be accounted for, to get a clear picture of its independent association with obesity. The authors have studied more than fifteen factors what is of note.

Limitations:
- Although the aetiology of obesity is rather complex, a simple physiological factor is the main responsible for: the energy balance. Energy intake and energy expenditure are therefore, two key elements when studying obesity. Although the authors indicate this limitation in their paper, that does not solve the problem. It would be very interesting to see which factors remain significantly associated with obesity, after controlling for dietary factors and/or physical activity. Unfortunately, I guess that these data are not or could not be available, and then there is nothing to do with.
- From my point of view, introduction and discussion are too focussed in German studies. The authors should attempt to transfer a bit these sections from a national to a more international approach. For instance, if breast feeding has shown to be associated to overweight/obesity, it does not really matter were the data are from, since are biological associations. I suggest comparing their own results with the most relevant studies in the field, including comparison with data from different countries.

MINOR COMPULSORY REVISIONS

Abstract:
It contains the relevant information and is well-structured.

Background:
- As mentioned above, a more international perspective should be used.
- The second paragraph of the introduction, specially the first sentence it is strangely written, I suggest to re-writing it and to include some references supporting the statement. In the second sentence, it is indicated ##previous studies##, do you mean the two mentioned above or in general? At any case, please, include here which studies you are referring.
- The last sentence of the third paragraph. Please, give some references of the
studies that have shown these contradictory results concerning breast feeding.
- The last part of the introduction is fine, and clearly state the rationale of the study.

Methods:
- First section. The sentence “Height was measured | underwear” should be placed in the following section.
- I find unnecessary the whole explanation about the Cole cut-offs. I suggest to just indicate that “the international cut-off points suggested by Cole et al., were used to classify childhood overweight and obesity”.
- The “exposure variables” section is well-written. Change the sentence indicating “1,2,3,4,5,6,7,8,9” for something more simple like: “The possible answer ranged from 1 to 9 or more.”
- Preterm delivery. Please, define starting from which week of gestation was a child considered to be preterm.

Results:
- The section is well written and includes the important information.
- I have not find any information about the differences between participants and non-participants in this paper or in the previously published one (ref. 14). Is it this information available. Usually, participants have a higher socio-economical status and a lower BMI than non-participants, affecting this to the prevalences of overweight/obesity (see Wennlof et al.[1] as an example). If the data are available, include some information, if not, add a sentence in limitations.

Discussion:
- See commentary in “limitations” above.
- Give some references supporting that PA and diet are important factors related to obesity. For the first one, you can use for instance our paper recently published in IJBNPA [2].
- Page 13, second paragraph, second sentence: “The study in East German children study found” It seems to be something wrong, may be: An East German children study found
- Last sentence in page 13. Remove “too”, before ref. 5 and 8.

Conclusion:
- Remove “In conclusion” in the second line.

Table 4.
- Add a coma to the sample size “N=26,777” instead of “N=26777”

References used:
1. Wennlof AH, Yngve A, Sjostrom M. Sampling procedure, participation rates


What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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