Reviewer's report

Title: Does abdominal fat accumulation influence health and health related quality of life in primary school children? First cross-sectional results from the Baden-Wuerttemberg Study

Version: 4 Date: 19 October 2012

Reviewer: Judith E de Niet

Reviewer's report:

This is an interesting study reporting on the influence of central obesity on amongst others school absence and visits to the physician. The paper will be of interest to the reader of BMC Public Health. However, I do have suggestions to improve the quality of the paper.

Major Compulsory Revisions

The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

Title

1. I would suggest using the term abdominal obesity or central obesity in the title instead of abdominal fat accumulation. As the authors use central obesity a lot throughout the paper, I would suggest using the term central obesity instead.

2. Throughout the paper, different terms are used for central obesity. Please change this to the use of one term instead of using various terms as this is confusing for the reader.

Abstract

3. Please specify in Methods section the statistical tests that are used for analyses.

4. Please specify I methods section the 2 groups that were used to analyze differences (the 2 WHtR groups) as this is not clear when only reading the abstract.

5. Please specify the direction of the findings in the abstract under results.

6. In the conclusion of the abstract the authors state that parents tent to take off more days of work to take care of their child; however this finding was not significant in the current study.

7. The authors should carefully read the paper with help of a native English speaker to correct English grammar.

Introduction
8. To make the introduction somewhat stronger I would suggest that the authors shorten the section on obesity and its economic burden and describe in more detail what has been found in previous studies with relation to BMI/WHtR and absenteeism of children at school and parents at work, visits to physicians, QoL (and which subscales) etc.

9. I suggest that the authors describe the health promotion program in a little more detail. For example, what are the behavioral and environmental measures that the authors are describing on page 4 first line? What does the program entail (in short)? Are both parents and teens involved? I would suggest addressing those topics.

Participants and data
10. I suggest to divide the Data section with subheadings for the different measures, foe example:
   Demographics; Health behaviors; Anthropometric measurements; Health related quality of life.
   With respect to the child’s and parent’s anthropometric measurements, describe them under the same heading (the two descriptions of measurements are in the current version of the paper not described subsequently).

Statistical analysis
11. Please describe to two subgroups in this section.

Results
12. I suggest that the authors report in the text either p-values or OR’s for their significant findings as well as the direction of the finding. As there are many results described, this will improve the readability.

13. Please clarify for the reader why HRQoL was not tested in the logistic regression (page 7, line 1).

Discussion
14. I suggest that the authors discuss the results not only in line with previous studies, but also as to why the authors think they found the current results.

Minor Essential Revisions
The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

15. The authors use influence in the title to describe the relations found in this study; however, given the statistical tests used in the study, one can only speak of association and correlation but not of influence.

Introduction
16. Please reword line 6-7 on page 3 of the Introduction.
17. Please break up the sentence in multiple sentences line 10-13 page 3.
18. Move line 14-15 page 3 to the next paragraph.
19. Please spell out all the abbreviations when used for the first time (such as WHtR on page 3 of introduction.

Discretionary Revisions
These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

20. As I’m looking at the missing data, I’m wondering why the authors didn’t use Multiple imputation to fill in the missing values as they lose many cases in their analyses.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**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