Author's response to reviews

Title: Relationship of body mass index to percent body fat and waist circumference among schoolchildren in Japan - the influence of gender and obesity: a population-based cross-sectional study

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Author's response to reviews: see over
Dear Editors:

We would like to thank you for considering our manuscript entitled "Relationship of body mass index to percent body fat and waist circumference among schoolchildren in Japan — the influence of gender and obesity: a population-based cross-sectional study" for publication in BMC Public Health. We would also like to thank the reviewers for their feedback that helped us improving the manuscript. Below you find our detailed response (normal font) to "each reviewers' comments" and "editors' comment on e-mail" (in bold). In the manuscript, we highlighted changes in red.

Your consideration of our manuscript is greatly appreciated.

Sincerely yours,

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Referee 1

Minor Essential Revisions:

1) Ad “Information collection”. It would be suitable to present the variation coefficients in the case of height and WC with the repeated measurements. The measurements of height and waist circumference in our study were conducted one time. Therefore, we specified it in "Information collection (Page 6)" of the manuscript. Thank you for your comment.

2) The authors defined obesity on the basis of references 18 and 19. My questions: What is the difference between the two definitions? The obese category did also involve the overweight students or not? What cut-off values were used for %BF by the authors? These issues should be explained in the text.
We appreciate your comment. We specified that the obese category does not include the overweight students and the criteria of each definition in "Definition of obesity (Page 7)".

3) The small, but statistically still significant differences between fourth grader girls and boys (Table 1) in weight and BMI can by all means primarily attributed to the large sample size. In addition to this, do the authors mean that this difference has any physiological importance or not? They are expected to take a stand in this.
We added one paragraph to "Discussion (Page 10-11)" as the response to your comment. We appreciate your comment.

4) Ad Influence of obesity (page 11). The “weaker correlation” observed between %BF and BMI in obese students needs other explanation than the small sample size of obese persons which is too general, since in the case of girls the correlation was 0.7 (line 4) even with a small sample size.
Thank you for your suggestion. We added some sentences to "The influence of obesity (Page 12)" in discussion of the manuscript.

5) Ad Table 1. SD or SEM values should be indicated. I would recommend that the authors also present the percent of obese students in each group
in addition to the absolute numbers.

We indicated SD of each continuous variable in Table 1. We also presented the percent of obese students in each group in addition to the absolute numbers.

Furthermore, we added some phrases ("Data analysis", Page 7) and references (Page 17), and then changed reference numbers (Page 11-13) and the order of references (Page 17), on the basis of revising.

**Referee 2**

**Minor Essential Revisions**

**Abstract**

Pls give more details in methods i.e how was BF% was calculated, statistical analyses performed

We appreciate your comment. We added how BF% was calculated and statistical analyses were performed to "Abstract (Page 2)".

**Methods-Data analysis**

Pls specify whether the correlations were applied separately for females/males or whether partial adjustment was applied.

Thank you for your suggestion. We specified that the correlations were applied separately for sex in "Data analysis (Page 7)" of Methods.

**Editors' comment**

a) abstract: please add some context for the study to the background section of your abstract.

We appreciate your comment. We added some context to the background section (Page 2) of Abstract in the manuscript.