Reviewer’s report

Title: Correction of self-reported BMI based on objective measurements: a Belgian experience

Version: 0 Date: 11 Sep 2017

Reviewer: Nathalie Bossuyt

Reviewer's report:

General comment

This article addresses the inaccuracy of self-reported data on body weight and height, which is a most frequently encountered methodological issue in analyses using self-reported data on Body Mass Index. The authors report on the magnitude of the bias in the Belgian national Health Interview Survey (HIS) of 2013 and propose a method for adjustment that could be used in specific circumstances.

The article is well-written and addresses a relevant topic. However, I believe the added value (i.e. the generalizability of the results and the method used) should be more emphasized in the manuscript.

Specific comments

Methods section

❖ Survey methodology:

➢ It would be helpful to add a sentence explaining in some more detail all sampling stages used in the HIS and the FCS, since including the household level may introduce quite some clustering in the results on BMI.

❖ Study populations:

➢ The proportion of 18-64 years old is very low in the FCS (39%) In the total Belgian population of 2013 65% is in the age group 15-64 and in the HIS 62% is in age group 18-64. Is this difference due to a difference in sampling design between both surveys? If not, could there have been any kind of selection bias?

❖ Background variables:
Could you elaborate on why these specific SES background variables were selected?

Analysis:

- Why was this type of correction factor selected?
- Please explain in some more detail which correction factor is used.
- Argument why the correction factors were not obtained via regression analysis
- Argument why weight category is not included as stratum?
- Are the factors generated in 1 part of the FCS database and tested in another part of that database? If so, please describe in the manuscript. If not, please argument why not.
- Were outliers included in the database used for generating the correction factors?
- Hayes et al. Population Health Metrics 2011, finds that for men separate adjustment of height and weight gave closer estimates of the true percentage of overweight and obesity than through use of direct BMI correction. Do you have arguments that this would be different in the Belgian population?

Results Section

- Misreporting of the self-reported BMI in the FCS

Table 2:

- The mean self-reported BMI (0.97 kg/m²) is not shown in table 2. I would add this number
- I believe table 2 would be more informative if standard errors or confidence intervals were added for the relative and absolute differences between measured and reported BMI (since the magnitude of this difference is the scope of the article).

References

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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