Reviewer’s report

Title: Association of socioeconomic status with overall overweight and central obesity in men and women: the French Nutrition and Health Survey 2006

Version: 1 Date: 4 February 2009

Reviewer: Hynek Pikhart

Reviewer’s report:

Manuscript “Association of socioeconomic status with overall overweight and central obesity in men and women: the French Nutrition and Health Survey 2006” evaluates social inequalities in the very important risk factor for various health outcomes. This is an important topic which is studied in a representative sample of large European population. The authors present interesting findings in well written paper. I have few comments that might be of interest.

Major Compulsory Revisions:

Response rate may be quite big problem in this study. It seems that 46.3% response rate for anthropometric measures is quite low. After excluding people with incomplete data the final dataset has 2204 subjects which is 42% of original sample. I am not sure how representative this sample is of the whole French population and whether authors can make any conclusions about levels of obesity in French population and comparisons with other populations. I am not sure whether the association between SES and obesity can be assessed in such sample.

Results: authors show results for overweight and central obesity but they do not show any results for obesity. This might be also included in the manuscript.

Only very few results are shown as significant - this may be partly due small sample size (and power) of the study. Some of the OR are quite large and the effects might be important however authors do not have power to have these findings statistically significant. One way how to improve the power is to use interaction terms in the regression modelling rather than splitting sample by sex.

Authors need more systematic approach to be able to discuss effects of main socioeconomic characteristics on obesity (education-related, work-related and wealth-related). (see comment about stepwise regression below in Minor revisions section)

Minor Essential Revisions:

The authors need to use consistent terminology throughout the paper. They use terms “central adiposity”, “central obesity”, “central overweight” and I would thing that one term used in the whole paper would make some parts of the text clearer.

Methods: could the authors describe how the methods used were standardised?
It has been shown in literature that measurements in clinical setting differ from measurements done in home settings. Authors stated in their methods that anthropometric measures were measured at home or in health examination centre. Could they describe what was the proportion of measurements done at home? Did they test whether these measurements systematically differ between home and clinic?

Related to this: were socioeconomic and behavioral data also partly collected at home and partly at the clinic?

The data are part of Nutrition Survey but no nutritional data are used among health behaviours? Why?

Statistical methods: I am not in favour of stepwise regression - the authors let computer to decide whether to keep variables in the model rather than to keep key variables in the model. This procedure results in rather difficult gender comparison of multiple regression models. None of the key variables is shown for both men and women and comparison is rather difficult.

Results (page 7) - authors show p values < 0.001 but it is not complete clear what is the origin of these p-values. Do they come from LR tests?

Did the authors test colinearity between socioeconomic characteristics (such as education and employment)? What was the correlation coefficient, for example?

Discussion:
are there other publications in other European populations> It seems that the authors use rather limited number of results for comparison of own results with previous literature.

Limitations of the study (such as already mentioned low response rate or sample size) are briefly mentioned but these should be discussed in larger extent, particularly how they could affect the main findings of this paper.

Discretionary revisions:
Authors put smoking habits among SES measures in the methods. I would probably grouped them with alcohol into health behaviours.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests