Reviewer’s report

Title: Gender-Dependent Associations between Socioeconomic Status and Metabolic Syndrome: A cross-sectional study in the Adult Saudi Population

Version: 1 Date: 13 January 2014

Reviewer: Ana Santos

Reviewer’s report:

This paper aimed at describing the prevalence of metabolic syndrome and to examine its association with socio-economic status in a sample of Saudi adults, considering the potential gender effect in these associations.

Major Compulsory Revisions

My main point has to do with some of the statistical methods applied by the authors. When describing the sampling procedures, a complex sampling design was chosen, as a cluster sampling strategy was applied, and the population of each PHCC was taken as a cluster. Thus, data analysis should consider this complex structure of the sample. Was this considered by the authors? Why is this not explained in the methods?

In the discussion, why do the authors state that the higher income males are more likely to follow sedentary lifestyles and lack of awareness and proper food choices? Isn’t it expected to be the other way around? It has been describe that higher income strata of population have healthier lifestyles when compared to lower income people. How do the authors explain these contradictory results?

I think that the differences regarding gender should be better discussed by the authors. In fact, the difference in the association regarding the socioeconomic variables in males and females should be the major results of this study and properly discussed why the authors think that this happens.

Minor Compulsory Revisions

This is a general remark that the authors should carefully revise the whole text and look for the use of words such as incidence (e.g. line 162) and risk (e.g. line 172) as this is a cross-sectional study and as such, it does not allow the estimate of incidence and the outcomes produced are not related to the risk of MetS but to the odds or prevalence of MetS.

Also, authors should be careful regarding the quality of written English

Methods:

Page 6 – regarding the assessment of socio-economic status why were variables such as physical activity included in this definition? Do the authors consider that physical activity is a component of socio-economic status?
Page 6 – regarding the categories of education – as this type of qualitative classification can vary substantially by population, can the authors provide the number of years of schooling included in each category? Also, physical activity was not in fact evaluated, as the only evaluated variable was the frequency of physical exercise, as such the authors should refrain from using the denomination of physical activity and use “exercise”.

Statistical analyses
Page 6, line 142 – the authors state that multivariate logistic regression analysis were conducted, and models were adjusted for potential confounders, such as age. This is puzzling as in fact age was the only potential confounder of the association included in the models, as illustrated in the tables. Thus, what were the others variables tested, and why they were not included in the final model. Also, I think this section (Statistical analyses) should be moved toward the end of the Methods section.

Results:
Line 155 – the results described here are referred to female participants, but in table 1 there is no gender stratification.
Results regarding age and the distribution of MetS prevalence are in my opinion excessive. In fact, these results are not new and virtually in every population this pattern can be observed, thus authors should consider decreasing this paragraph.
Throughout the text please revise the sentences where state that the risk of MetS increases or decreases, and previously said, the authors using this study design cannot estimate risk.
Also, when describing odds ratio, sentences should reference the class to which these results are compared. It would make the description of results clearer.

Discussion:
Line 188: Please revise words such as direct relationship and consider replacing it by positive.
Also, it is uncommon to see the expression full MetS, what do you mean by that? Please, clarify.
Again, I think that the discussion on the results regarding age distribution of MetS is excessive, and authors should revise it.
Why do the authors state that the higher income males are more likely to follow sedentary lifestyles and lack of awareness and proper food choices? Isn’t it expected to be the other way around? It has been describe that higher income strata of population have healthier lifestyles when compared to lower income people. How do the authors explain these contradictory results?

Level of interest: An article of limited interest
Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests.