Reviewer’s report

Title: Body Mass Index, Waist Circumference and Waist to Height Ratio can Predict the Presence of Multiple Metabolic Risk Factors in Chinese Subjects

Version: 1 Date: 12 September 2010

Reviewer: António Silva

Reviewer’s report:

Major Compulsory Revisions

Title

Recommend changes to:

“Can body mass index, waist circumference and waist to height ratio predict the presence of multiple metabolic risk factors in Chinese subjects”?

The abstract indicates two markers, the introduction indicates four markers and the title indicates three markers.

Abstract

1st paragraph, 5th line

• Indicates two markers. I understand that would be the BMI and measures relating to the waist, yet are four markers (line 22 of the Introduction) that are studied and reported elsewhere in the document.

• I believe the word Obesity should appear as key word

Introduction (major review on the English)

1st paragraph, 10th line

• It should not be used "in contrast", as the author does not make value judgments or reports the advantage of using a marker instead of others.

1st paragraph, 21st line

• Once given the abbreviation of a term (waist circumference [WC]) it must be maintained until the end. Et al appears oddly off-site.

2nd paragraph, 1st line

• “to compare the ability to predict the occurrence”, this sentence should be rewritten to match the simplicity of what is required by science.

Methods (major review on the English)

• The description is not detailed. In this epidemiological kind of studies, methodological description must be as detailed as possible in order to be easily replicated in other populations / studies. For example, what do you mean "in
duplicate after 5 min of rest”? Were the subjects working? Were they doing exercise?

- When referring to "standard techniques", one must describe it or indicate a landmark study that has used them.
- Concerning the variables WHR and WHtR, despite of being obtained indirectly, its data collection should be more detailed. I recommend the use of images, since it only refers as "standard techniques" to the direct measures. I ask for example - Where is the "waist circumference" and "hip circumference"?
- Statistics are poorly presented
  - In which variables is the t-test used?
  - In which variables is the ANOVA used?
  - Which variables are the categorical ones?
- The description of the software comes on the end of the statistical issues and presentation of statistical techniques used is in the beginning.
- Perante a utilização de vários procedimentos robustos de análise estatística e à quantidade de dados recolhidos a descrição deverá ser mais aprofundada
- Given the use of various statistical procedures of important robustness for analysis and the amount of data collected the description should be more detailed.

Results (major review on the english)

- It is not necessary to report to the sample again.
- Regarding the results, the author indicates an interesting difference in the metabolic profiles: men have higher systolic and diastolic blood pressure than women, but this table only presents results and does not compares them. It is important to verify that it is true that the average values are higher but the women SD are higher too.

2nd paragraph, 1st and 5th lines
- Table 2 does not show any relationships between variables as it is pointed in the text. It only presents the data (“relationship”).

3rd paragraph, 1st line
- Author refers again about relationship and only exposes data. Moreover it is written figure 1 and it should be written figures 1 and 2.

3rd paragraph, 3rd line
- Where it says "significantly greater" related to the risk factor number the English should be changed (significantly higher values). Moreover, in the figures I did not really understand where they are marked. There is a “p <0.001” above the bars. It is not understood whether the difference is between all or if it's between that bar and the anterior, posterior, or otherwise.
3rd paragraph, 6th line

• The values presented throughout the text that led me to believe that they relate to figures 1 and 2, do not correspond to the values presented in the figures.

4th paragraph

• The number does not match the figure. From the line 4 up to 36 makes the description of the ROC results. It should always be written in the same manner to maintain the linearity of the reader’s reasoning.

Discussion (major review on the English)

• Begins without using abbreviations on "waist circumference and waist to height ratio", but uses in "BMI". Since it is used the first time it should be maintained throughout the text.

3rd paragraph, 7th line

• When one writes the author’s name in the text it should be numbered right away (Nguyen [23] found ...). There are lots of them that should be corrected.

3rd paragraph, last line

• “The present study has proved” – it is risky to say this when the sample of this study is of 772 Chinese from a Chinese village and the Chinese population is about 1500 million.

5th paragraph, 9th line

• What is WSR? (When the author type "status to waist ratio", the 1st time he should write the abbreviation to further identification)

• I do not understand what you mean by this phrase

Conclusions (major review on the English)

1st line

• “Concluded” is risky and ambitious I would write suggests

• Only use abbreviations in BMI

3rd line

• The conclusion is made to the entire Chinese population. The inference is reduced since it represents a non significant portion of the Chinese population belonging only to one province.

References

• References to the publication date do not always come in the same order. Must standardize. They must all suites the same formatting style.

• The 22nd reference is wrongly formatted in a different font.
Table 2
This table is difficult to understand. In the text says that the table shows the relationship between two variables. The table has only averages SD and differences.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests'