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: 11 August 2010

Reviewer: Rute Santos

Reviewer's report:

1. Is the question posed by the authors well defined? Yes.
2. Are the methods appropriate and well described? Methods are appropriate, but some are not well described.
3. Are the data sound? Not in particularly.
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes.
5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes, but need some revisions.
6. Are limitations of the work clearly stated? No.
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes.
8. Do the title and abstract accurately convey what has been found? Yes.
9. Is the writing acceptable? Yes.

• Discretionary Revisions

The authors may consider to use the word “sex” instead of ”gender”.

The authors may consider being consistent in the use of the terminology when referring to the BMI, WC and WHR and WHtR: “marker” vs “indicator” vs “indexes” etc… please choose one and be consistent throughout the manuscript.

In the result section, instead of “maximal values” (when referring to the cut-off values found in the ROC curves) please use “cut-off values”.

• Minor Essential Revisions

Use always the abbreviation of a given term that you have chosen: for example, the authors have defined WC as an abbreviation for “waist circumference” – but WC is not always used – please check it throughout the manuscript.

Suggests using “the study sample” instead of “the study population” throughout the manuscript.

Introduction:
4th line – “…widely used indicator of obesity and…” suggests: “…widely used indicator of weight status and…”

12th to 16th lines – suggests: delete the word “Otherwise” and. Rephrase the next two sentences to: “The American Diabetes Association has stated that it’s not clear whether WC can predict cardiovascular risk factor better that BMI [12]. Suggesting that there are some controversial issues around the adiposity marker that better predicts cardiovascular risk factors.” – suggests making a paragraph after this sentence.

16th line beginning “ The relation between BMI….! Suggests: “It is also known that the relation between BMI and…..”

20th line – delete the words “et al” after “waist circumference…”

Results:
1st line – “Characteristics of the study population were shown in table 1.” Suggests: “Characteristics of the study sample are shown in table 1.”

2nd paragraph beginning “Table 2 showed the relationship…” suggests “Table 2 shows the relationship…”

• Major Compulsory Revisions

Methods:
This section needs some clarifications:
The authors need to better describe how the sample was recruited – It is clear that the subjects are volunteers and it sounds that it is a convenient sample rather a representative sample of the province o Liaoning, if so please clearly state it.
The informed consent given by the participants of this study was it a written one or a verbal one? Please clarify.
The standard protocols applied to the measures of WC and hip circumference need to be described and supported by a reference.
The standard techniques uses for the blood analysis also need to be described. For how long were the subjected instructed to fast before taking the blood samples? The blood samples were taken from the vein?

Results:
To avoid redundancy with the information given in the tables/figures, this reviewer suggests to highlight in the text of this sections only the results that are statistically significant.
1st paragraph – WHR was also significantly greater in males compared to females – please correct the 3rd sentence of the results section.
1st paragraph 4th sentence of the results section – according to the results presented in table 1 - male subjects had higher diastolic blood pressure and
fasting glucose than female subjects – please correct the sentence.

3rd paragraph suggests deleting the last two sentences of this paragraph, as they are redundant with the information presented in the tables.

Discussion:

The discussion section needs some revisions:

First – the sample of this study is not representative of the adult population of East Asia or of China therefore generalization of this study’ findings should not be drawn – The author may consider to review some of the statements of the discussion section as well as the conclusion sections to address this issue, namely: the last sentence of the 3dr paragraph of the discussion section; the last sentence of the 4th paragraph of the discussion section; and, the conclusion section.

Second – The author may consider discussing one important finding of this study: the fact that WHR was not significantly increased among subjects with multiple risk factors as well as the fact that WHR did not present an AUC significant (in the ROC analysis) to predict the presence of cardiovascular risk factors.

Conclusions:

Avoid generalizations of the results as suggests above and acknowledge the study’s limitations.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.