Reviewer’s report

Title: Identification of an obesity index for predicting metabolic syndrome by gender: The Rural Chinese Cohort Study

Version: 0 Date: 05 Feb 2018

Reviewer: David R. Paul

Reviewer’s report:

Overall, I found this paper to be well-written and informative. However, I do have some concerns outlined below.

* Table 1 provides the breakdown of the number of men, not women. Both should be included.

* Table 1 should provide confidence intervals or standard deviations, not ranges.

* Some of the differences between groups in Table 1 (e.g. age and HDL) have significant differences that have very small effect sizes. Could these results be impacted by the magnitude of the unevenness of the group sizes and/or selection of the Mann-Whitney U test? Could the results have been log-transformed for normality, then t-tests conducted? A reference for this can be found in Fagerland BMC Medical Research Methodology. 2012,12:78. It appears as though the use of a non-parametric test may not be appropriate with sample sizes as large as the one in this study.

* "cutoff s" occurs in the document, but should probably be "cutoffs".

* In general, unevenness of study groups may not be problematic in a statistical analysis. In this case, could the relatively low number of this with METS be problematic? Are there potential problems with sample size in this study? Since no a priori sample size estimate is mentioned, there should be a discussion.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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