Reviewer's report

Title: A Body Shape Index and Body Roundness Index: Two new body indices to identify diabetes mellitus among rural populations in northeast China

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Reviewer: Nir Y. Krakauer

Reviewer's report:

I think the manuscript is close to ready for publication. A few minor points to consider:

1) You can state this more succinctly in the manuscript:

   "The above results were not shown in this manuscript because another paper from our database entitled "Prevalence and awareness of diabetes mellitus among a rural population in China: results from Liaoning Province" has reported the related results" to the section of results and cited the paper "Zhou X, Guan H, Zheng L, Li Z, Guo X, Yang H, et al. Prevalence and awareness of diabetes mellitus among a rural population in China: results from Liaoning Province. Diabet Med 2015; 32(3):332-42" as a reference in our manuscript." --> "These population prevalences are given and analyzed in more detail in another paper by our research group [25]."

2) Looks good. You could state this briefly in the manuscript, something like "The point biserial correlation of DM with anthropometric variables was also calculated, as possibly more appropriate than Spearman rank correlation given the dichotomous nature of DM presence/absence, and yielded very similar coefficients and p values (not shown)."

3) I think that the manuscript should state more clearly what you are saying here:

   "As BRI is a one-to-one nonlinear transformation of the WHtR, as shown in table 3, diabetics in the every quartile of BRI were not consistent with those in the corresponding quartile of WHtR, which could be the main reason why the odds ratios for WHtR and BRI are different." --> "From its definition, BRI is a one-to-one nonlinear transformation of the WHtR. Therefore, ranks for BRI in the population are the same as for WHtR, and the Spearman rank correlation between BRI and WHtR is exactly 1. The reason for the different numbers and odds ratios of each quartile in Table 3 for BRI as compared with WHtR appears to be simply that we rounded the inter-quartile thresholds to two decimal places before applying them to each index."
4) We are honored to read the article entitled “Expansion of waist circumference in medical literature: Potential clinical application of a body shape index” and we have a better understanding of the relationship between ABSI and BMI.

Great. Feel free to also cite it if you decide that it's relevant to the paper.

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

**Declaration of competing interests:**

I declare that I have no competing interests.