Reviewer's report

Title: Is high body fat estimated by body mass index and waist circumference a predictor of hypertension in adults? A population-based study.

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Reviewer: Miguel Gus

Reviewer's report:

In this interesting cross-sectional population based study Santos Silva and colleagues analyzed the accuracy of Body Fat Percentage (%BF) assessed through equations to diagnose hypertension. The best cut-off points with best properties to diagnose hypertension were identified in the equations with BMI for men and with WC for women.

The authors concluded that the use of this simple anthropometric measurement allowed the screening people at risk of hypertension.

Major Compulsory Revisions:
- The %BF formulas seemed not to be a “simple” anthropometric measure. Which are the advantages of the % BF formulas over the simple measures of WC and BMI? This should be presented in the Background section and discussed in the Discussion section.
- The results in the table 2 and 3 are presented according to age strata. As the authors pointed out in the discussion section, an easy screening test should have a good sensitive value. I think that it also should have a homogenous value in different adult age. Considering the multifactorial characteristic of hypertension physiopathology it is hard to believe that any anthropometric measure could fill these ideal characteristics. As presented in these two tables the results are a little bit confusing. For WC formula in women the %BF had a good screening property for all group (71%) but not to age strata. For men is good for 40-59 but not for younger ages. The results presented to the BMI have the same problem. Considering the practical aspects and the screening proposal of the %BF the results should be presented only considering the “all group”.
- The sensitivity values for “all group” should be between the lowest and the highest values in each age strata. For example: for BMI formula the value for “all group” of women is 68.1%. It is between 79.1% for 40-59 years and 42.7% for 20-39 years. For WC formula for “all group” is 71% but for 20-39 years is 58.3% and 40-59 is 54.4%. It sounds strange. Could the authors clarify these numbers?

Minor revisions:
- Some units are missing in table 1 (for example education level)

Discretionary revisions:
- Considering the results of figures 2 and 3 could the population attributable risk (PAR) of high BF% considering the WC and BMI formulas be calculated?
Quality of written English: Acceptable

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

Declaration of competing interests:

No competing interests