Reviewer's report

Title: Validity of self-measured waist circumference in adults at risk of type 2 diabetes and cardiovascular disease

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Reviewer: Anna Peeters

Reviewer's report:

1. Is the question posed by the authors new and well defined? Not new, yes well defined.
2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work? Yes, but selection of the sample is inappropriate and invalidates the results.
3. Are the data sound and well controlled? Yes.
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? Moderately.
6. Do the title and abstract accurately convey what has been found? Yes, except selected population should be referred to.
7. Is the writing acceptable? Yes.

This article addresses an important topic - the validity of self measured waist circumference. The findings are potentially useful as they suggest that while self measured waist circumference is subject to over-estimation there is little variability across different groups, suggesting that this should not lead to systematic bias. Unfortunately the selection criteria for the study being a self-reported cut point above excess risk makes the results difficult to interpret. This selection makes identification of over-estimation much more likely than underestimation. It also means that conclusions across waist groups cannot be made as the following conclusion "Based on the categorised group by objectively measured WC, normal individuals significantly overestimated their WC more than the overweight subgroup (11.33 ± 3.1 cm and 7.15 ± 3.26 cm, respectively) (p < 0.001), and more than the obese subgroup (4.77 ± 5.13)" is self-fulfilling.

In the introduction the authors infer that this research question has not been previously investigated in a high risk group. However, it is not clear why this is of interest, given that other studies have investigated measurement validity in broader populations including this group.

Quality of written English: Acceptable

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.