Reviewer's report

Title: Reliability of anthropometric measures in a longitudinal cohort of patients initiating ART in West Africa

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Reviewer: Herculina Salome Kruger

Reviewer's report:

The article addresses an important topic that is often overlooked by researchers with little understanding of challenges associated even with simple anthropometric measurements. Writing style is good.

Major Compulsory Revisions

The methods are appropriate. It is, however, not clear why only 12 men and women were recruited for the measurements. Given the wide range of age (18-65y) and that both men and women were included, wide variation could be expected, so that the sample size is probably too small, especially considering that some would not return for follow-up. It is also not clear why measurements were done on two consecutive days, rather than on the same day, given physiological differences from day to day.

The measurement equipment could have been described in more detail, e.g. model and company of the scale. State if the Gulick tape was a steel/ fibre-glass tape and if it was non-stretchable. Slimguide calipers may not be as reliable as Harpenden or Lange skinfold calipers. The authors should report whether any calibration of the scale, stadiometer or caliper has been done and how.

The objective and aims are clearly described in the last paragraph of the Background section, although the authors state in the abstract that they describe the reliability and challenges associated with measurement. No clear indication about the challenges, except for legal requirements about firing an observer, was given.

More attention could have been given to the limitations due to the measurement equipment used in the Discussion. The fact that variability was only acceptable for height and weight may have been due to better quality equipment used in the weight and height measurements. The conclusion that only height and weight were sufficiently reliable to be used in future analyses may not be generalisable, but apply to similar study conditions with plastic Slimguide calipers and vinyl (?) tapes.

Discretionary Revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests: I declare that I have no competing interests