Reviewer's report

Title: Common genetic variants are associated with type 2 diabetes in urban Ghana: a hospital-based case-control study

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Reviewer: Michele Ramsay

Reviewer's report:

The authors have appropriately taken into consideration the comments from the first round of reviews. I do have a few more comments and suggestions for consideration.

Major comment: The title remains misleading - suggesting that they have confirmed many variants previously associated (at least 60 loci detected in European and Asian populations) with T2D in Ghana. In fact no comment can be made about the other two loci that were tested since there was no power and other SNP variants within those genes may well be associated with T2D in Ghana, but have not been tested.

May I suggest the following?

"The TCF7L2 rs7903146 (T) allele is associated with type 2 diabetes in urban Ghana: a hospital-based case-control study"

The interest is then that it has been associated with T2D in all populations studied to date, including one from SSA.

The discussion remains long and some of the interpretations are explanations are very sweeping and general, e.g. paragraph 3 and the out-of-Africa comment and selection (to make these statements you need more data on many loci in the vicinity to be able to test for and comment on selection etc.), and paragraph 4 and the "unthrifty allele". I suggest deleting these sentences of conjecture.

Minor comments.

Methods section in "Data management and analysis". Please correct "by height squared in m" not cm.

Results section in "Genetic variants and type 2 diabetes". last sentence - In contrast, two haplotypes (not combinations) were nominally....

Discussion, paragraph 3. "....role of common polymorphisms for...." is misleading. I think what you mean is "...role of polymorphisms previously associated with type 2 diabetes in other populations for association with type 2 diabetes in...."

Level of interest: An article of importance in its field
**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.