Reviewer’s report

Title: Evaluation and refinement of the PRESTARt tool for identifying 12-14 year olds at high lifetime risk of developing type 2 diabetes compared to a clinicians assessment of risk: a cross-sectional study

Version: 2 Date: 29 Mar 2019

Reviewer: Junguk Hur

Reviewer's report:

The authors address many of my comments. I would like to follow up some of them.

1. It is good to clarify that the prediction of T2DM was for life-time incidence; however, the authors were not sure if the timeframe used was consistent across all clinicians who participated in the study. The authors need to revisit each clinician for their definition of T2DM incidence.

2. Although the authors toned down their claim of developing and validating their prediction tool for lifetime risk assessment for T2DM in juveniles, the study still examined how well the questionnaire-based tool could recapture what human experts, clinicians, judged on the risk of developing T2DM. It would be probably much better to collect these clinician's judgement criteria and come up with a consensus model.

3. Related to above comment, the authors confirmed that no record of rationales of clinicians' judgement was collected. Considering each clinician handled less than 100 subjects, I highly recommend the authors to work with the clinicians to reassess the same subjects and record their decision as well as their rationales. I think most clinicians probably used just a few factors in their decision making, which will be easily captured.

4. The author disclosed that the sequential removal of risk factors for model refinement was based on the feedback from stakeholders and PRESTARt collaborative. This is not well justified. Who determined the order of sequential removal, on what basis? The current approach does not fully explore the all possible combinations of risk factors.

5. Using weight alone achieved one of the best prediction performances, which also suggests that the clinicians probably heavily used this factor in their decisions. The authors believe a more holistic assessment of risk is more important for a few reasons. However, the bottom line is none of these additional factors actually improve in terms of prediction performance within the current context of evaluation (matching clinicians'
judgement). I recommend the authors to examine models, including only non-weight factors (either uni-variate or multi-variate).

6. The authors disclosed that there were eighteen participants (6.41%), who were had been deemed to be at high risk by the clinicians, even though they were overweight/obese. It would be important to understand why the clinicians determined them to be at high-risk.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

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No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
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