Reviewer's report

Title: Choosing the most appropriate existing type 2 diabetes risk assessment tool for use in the Philippines: A case-control study with an urban Filipino population

Version: 1 Date: 29 May 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?

Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?

No - there are minor issues

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?

No - there are minor issues

STATISTICS - Is the use of statistics in the manuscript appropriate?

No - there are issues with the statistics in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?

No - there are minor issues
OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?

Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: This is an interesting paper comparing the validity and accuracy of diabetes risk scores for a Filipino population. It uses ROC and sensitivity and specificity analysis as the means of demonstrating appropriateness. This is a nice paper but I don't think the analysis is sufficiently comprehensive. Suggestions are provided below. It is generally well written but would benefit from a native English speaker reading it.

Somewhat surprisingly, the FINDRISC score performance the best on the Filipino population, in terms of specificity and sensitivity and discrimination.

REQUESTED REVISIONS:

Specific comments.

There are literally hundreds of diabetes risk scores published, many on Asian populations. The authors choose 6 scores to compare in terms of sensitivity and specificity. There is no rationale given for their choice. I would have thought a score from an Asian population would have been more appropriate. A rationale for choosing these score should have been given.

There is also a paper published which has done a similar task testing a larger range of score but comes to the conclusion that differences in diabetes scores and their application rest on the score themselves. I think the authors need to read this paper. Tanamas SK, et al. The performance of diabetes risk prediction models in new populations: the role of ethnicity of the development cohort. Acta Diabetol 2015;52(1):91-101.
The choice of measures to assess suitability of the scores are incomplete. The authors could also include a measure of calibration or goodness of fit.

Have the authors thought about re-calibrating the scores to their population?

They should present some calibration curves pre and post calibration.

The other flaw with this work is that the two groups of non diabetes and diabetes people used to validate the score are very small. Scores should be tested on larger populations. Further these people are recruited from public and private clinics so selection bias is also an issue here. These people with diabetes would more severe cases of the disease. Also the population is mainly female and this is also problematic. These issues should be recognised as limitations.

The authors comment that a ROC greater than 0.5 is good diagnostic accuracy. This is not so true. The ROC is a measure of the tool's ability to rank people in terms of risk- discrimination, rather than accuracy. An ROC of 0.5 tells that the ability of the score to rank people in terms of risk of diabetes is 50%, ie the chance that the score would order two individuals in correct order in terms of diabetes risk is 50%. We really need a diabetes score to have a ROC of at least 0.7. This sentence should be modified.

Note: This reviewer report can be downloaded - see attached pdf file.
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.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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