Reviewer's report

Title: Diabetes distress in Indonesian patients with type 2 diabetes: a comparison between primary and tertiary care

Version: 1 Date: 09 May 2019

Reviewer: Research Square

Reviewer's report:

"STATISTICAL REVIEWER ASSESSMENT:

Is the study design appropriate for the research question (considering whether the analyzed population accurately reflects the design and whether you see any problems with control/comparison groups, e.g., likely confounders)?
No - there are major issues

Are methodologies adequate and well implemented (considering whether assumptions are addressed and whether analyses are robust)?
No - there are major issues

Are the analyses adequately communicated (considering whether reporting details are adequate and whether figures and tables are well labeled and described)?
No - there are major issues

Does the interpretation accurately reflect the analyses without overstatement (considering whether limitations/bias are acknowledged and whether accurate descriptors, e.g., 'significant', are used)?
No - there are major issues

Could an appropriately REVISED version of this work represent a statistically sound contribution?
Maybe - with major revisions

STATISTICAL REVIEWER COMMENTS:

The statistical analyses have too many flaws. Also confounders cannot be excluded.

REQUESTED REVISIONS:
Patient selection and data collection: How were the patients selected for the study? Were all patients listed in the clinics included? Why was the time period selected? Data collection is not clear. Was repeated information collected on the same patients? Why collect the data every Friday and Saturday?
Primary versus secondary care definition: The definitions used for secondary care is confusing and should be revised. I suggest, instead of "secondary care", "tertiary care" be used. Secondary
care simply means the patient is treated by a specialist (often still in the community). Tertiary care relates to the situation where the patient is hospitalized and needs a higher level of specialty care within the hospital.

Model: The ordinal regression used for modelling the outcome is not clear and is inappropriate. Calculating the average of DD scores by dividing the total score by the number of contributing items will produce a continuous scale variable and not an ordinal variable. Since this outcome is continuous, an ordinal regression is inappropriate. However, if the researchers still prefer an ordinal regression, it can be used while estimating the quartiles of the DD score based on its distribution and NOT based on the summation of the DD score. Why summation was used? This is not valid.

Confounding: Confounding cannot be excluded in this present analysis. Comparing primary care patients with tertiary care patients is like comparing apples with oranges. These two groups are most likely different by severity of illness. Besides adjusting for age, sex, educational level, occupation, and caregiver status, the researchers need to consider adjusting for major confounders as suggested by previous research listed in the introduction. Additional confounders that might affect the study comparisons are: insulin use, HbA1c levels, body mass index, neuropathy and comorbidities.

Definition of "comorbidities": In this study, the definition of comorbidities is not clear. Why restrict "comorbidities" to only cancer and TB? Why cardiovascular comorbidities (which are more prevalent in this group of patients) excluded?

Please also clarify the scales of all variables included in model. Is "comorbidities" variable dichotomous or does it relate to number of comorbidities? This said, this variable needs to be estimated differently. I also advise the researchers to include age as a categorical variable and not as continuous.

Reporting: In the abstract, please do not relate to unadjusted results as these are not interesting. The researchers need to only report the adjusted results and results that have accounted for the main confounders and the main differences between these two settings (primary versus tertiary). Please add an additional table to show the differences in the characteristics between the patients treated in the primary setting and the tertiary setting. Please show p values to show the comparison between these two groups by different characteristics. This needs to be Table 1.

ADDITIONAL REQUESTS/SUGGESTIONS:

Please refer to my previous comments regarding revision. The whole analysis needs to be re-run."
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:

Acceptable

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