Reviewer’s report

Title: An evaluation of whether a gestational weight gain of 5 to 9 kg for obese women optimizes maternal and neonatal health risks.

Version: 0 Date: 07 Mar 2019

Reviewer: Edson Martinez

Reviewer's report:

The article aims to evaluate whether a five to nine kg weight gain, for obese women, optimizes a set of maternal and neonatal health outcomes, using the national vital statistics database. However, the weak point of the article is that it put an overemphasis on the Bayesian modelling, and this is not the main contribution of the study. From a theoretical statistical perspective, the presented Bayesian model is not innovative and the authors should give more emphasis to the importance of the results for the health area. Therefore, I think the authors should remove the expression "A Bayesian interaction model for evaluating" from the title of the manuscript, since this expression makes the reader think that a new statistical model is introduced to describe the relationship between the variables.

Considering that my expertise lies in Bayesian methods in health, I have the following additional considerations:

1.) In the Results section, it is unclear when the posterior predictive p values were used (as informed in the last paragraph of the Methods section).

2.) The Methods section suggests that it was used MCMC simulation methods, but it is unclear in the manuscript (there are some vague comments just in the discussion section).

3.) Please provide information about the prior distributions used in the Bayesian analysis.

4.) Why posterior medians instead of posterior means? I suppose that the posterior probability densities are skew, but this should be clear in the manuscript.
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.

Yes

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

Yes

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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