Reviewer's report

Title: On the use of the outcome variable "small for gestational age" when gestational age is a potential mediator: a maternal asthma perspective

Version: 0 Date: 14 Sep 2017

Reviewer: Mallorie Fiero

Reviewer's report:

In this manuscript, the authors carry out a variety of directed acyclic graph (DAG) simulations to suggest that both birth weight (BW) and small for gestational age (SGA) should be used as outcome variables in perinatal studies. Although the simulations were thorough, this manuscript would be improved if the authors provided thorough evidence that the issue was current and important enough to warrant publication. Below are a few comments for consideration:

Major Comments

1. The selection of the meta-analysis (Murphy et al.) and systematic review (Eltonsy et al.) articles was unclear. Furthermore, aside from two publications in 2008 and 2009, the majority of papers reviewed in the two articles were from over 10 years ago. The paper would be enhanced if there was a more comprehensive search of current perinatal asthma studies showing the choice of outcome variables.

2. How sensitive are the simulation results due to differing assumptions of the underlying model? More specifically, how would the results be expected to change when the assumptions of the linear effect of GA on BW and common variance of errors were not assumed?

3. The authors state that SGA is "generally perceived as a more adequate measure than BW or LBW", but reference very few articles. It would be helpful if there were more papers referenced to convince the reader that this is a current and important issue.
Minor Comments

1. Under "Generation of outcomes BW and SGA (basic scenarios)", please clarify how the estimated probability of delivering and values of the intercept and GA coefficients were derived from Table 1 in Kramer et al.

2. Under "Generation of outcomes BW and SGA (confounding scenarios)", please clarify why the probability of being exposed to ICS was set to 0.70 for V = 1 and 0.30 for V = 0 were chosen for the simulations.

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

Yes

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

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Please indicate the quality of language in the manuscript:

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