Reviewer's report

Title: Cesarean Deliveries and Maternal Weight Retention

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Reviewer: Bing-shun Wang

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This is an interesting observational study in order to establish causal evidence on the role of Cesarean section on maternal postpartum weight using a large dataset from hospital administrative records. To address selection and confounding biases, the study contributes to the literature by relying on a natural experiment using conditional randomness of fetal malpresentation.

There are several issues with the study design and results presentation. Please see below for more specific comments.

1. A flow diagram of the study will be helpful to demonstrate the subjects in different subsets from the original datasets.

2. Page 5, line 6-8 "Fetal malpresentation is plausibly unrelated to maternal weight prior to pregnancy or gestational weight gain and is unlikely to impact postpartum weight, other than through Cesarean delivery". Is this the core assumption for the natural experiment using fetal malpresentation?

3. Page 5, Line 32-37 "In order for fetal malpresentation to serve as a natural experiment, it must be uncorrelated with not only mother's weight prior to pregnancy and gestational weight gain, but also with other risk factors and characteristics that might influence the likelihood of Cesarean delivery and maternal post-pregnancy weight." Contrary to the above assumption, this statement sounds like deriving from sound evidence or obstetric expertises. Otherwise, it looks like self-certificated.

4. There has a clearly defined exposure involving a well defined subpopulation in the study. "The Propensity Score Matched Sample" consists of mothers who delivered by Cesarean due to fetal malpresentation (exposure group) and mothers delivering vaginally (comparison group). However, "nearly 19 percent of all primary Cesarean deliveries are due to fetal malpresentation" (Page 5, Line 10), this may limit the generalizability of the findings.

5. Page 5, line 6-8 "Fetal malpresentation is plausibly unrelated to maternal weight prior to pregnancy or gestational weight gain and is unlikely to impact postpartum weight, other than
through Cesarean delivery”. If this is a valid assumption, fetal malpresentation may be an ideal instrumental variable. Why not try IV analysis?

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.

Unable to assess

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

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