Reviewer’s report

Title: Cesarean Deliveries and Maternal Weight Retention

Version: 0 Date: 04 Jan 2017

Reviewer: DEBORAH ANN WING

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In "Cesarean Deliveries and Maternal Weight Retention," Kapinos et al. report on a retrospective analysis using "propensity score methods" to clarify the relationship between cesarean delivery and postpartum weight gain. The background and specific aims of the study would benefit from some clarification, however, the overall manuscript is very well written and the study methodology is thorough.

Specific Comments:

A. Background

1. The authors nicely summarize the controversy regarding the increased rate of cesarean deliveries and possible association with negative health outcomes in both the short and long-term.

2. The authors appropriately review the evidence for a positive association between increased pre-pregnancy maternal weight and gestational weight gain to risk of cesarean delivery. They also review the relationship between maternal weight and labor dystocia and maternal weight and non-reassuring fetal heart rate tracing, two of the most common indications for cesarean delivery. While the relationship between maternal weight prior to and during pregnancy and cesarean section is thus clarified, the purpose of the current study is less clear. They write that the goal is to "establish causal evidence on the role of cesarean delivery on maternal postpartum weight," however, this seems to conflict somewhat with their review up to this point, which seemed to establish the effect of weight on risk of cesarean (and not the reverse). Their actual goal seems to be to disprove or invalidate prior assumptions regarding the effect of cesarean delivery on postpartum weight. Please modify.

3. It is also less certain how further study of the association between cesarean delivery and postpartum weight would better "inform provider practices and maternal choices." The remainder of the background provides further information on the obesity epidemic and increased health care costs associated with cesarean delivery, but it is unclear how further knowledge on the relationship between cesarean delivery and maternal weight would affect either provider practice or maternal choices or behavior in this regard. The authors seem to
be implying that knowledge of a positive association between cesarean delivery and postpartum weight may somehow lead to fewer cesarean deliveries, but this could be more clearly stated and/or explained in this section.

B. Methods

1. Some of the discussion regarding use of fetal malpresentation and its "conditional randomness" (i.e. association with maternal characteristics such as age, body type, uterine/fetal anomalies) and other confounders may be more appropriate in the background or discussion sections of the manuscript.

2. The authors detail their processes for case identification and analysis, which appear to be statistically sound. Their use of propensity score is novel method to clarify the relationship between cesarean delivery and postpartum weight. They appropriately incorporate multiple risk factors for malpresentation (such as uterine/cervical abnormalities, fetal/congenital anomalies, and maternal socio-demographic measures) into their logistic regression model and performed both a sensitivity analysis and repeat of their analysis excluding uterine and fetal factors as above.

C. Results

1. Table 1 is redundant in that the data presented for the Cesarean cases (n=777) is presented twice. As these are the same 777 cases, it is unclear why the data in the first two columns for the "Full Sample" and "Propensity Score Matched Sample" is almost, but not exactly, the same. Perhaps the differences are due to rounding errors/typos?

2. Tables 2 and 3 would be easier to read if the columns and rows were transposed so that the comparisons and accompanying p-values were read across the columns (as is standard and how the data was presented in Table 1) rather than down each row. This is a stylistic consideration perhaps best left to the editors.

D. Discussion

1. The discussion provides a concise summary of the ways in which this study contributes to the literature and to the controversy regarding the risks of cesarean delivery. The conclusion here that "contribution to maternal weight retention" is NOT a health risk of cesarean delivery perhaps could have been the ultimate goal of this study and could possibly be expanded on in the Background section.
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?
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Yes

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