Reviewer’s report

Title: The trend of caesarean birth rate changes in China after ‘universal two-child policy’ era: A population-based study in 2013-2018

Version: 1 Date: 27 Apr 2020

Reviewer: Xiu Qiu

Reviewer's report:

I appreciate that the authors have promptly revised the manuscript according to the reviewers' comments. However, some of the comments seem not to be adequately addressed, and some new issues occur in the revised version. Considering the high-standard requirements from BMC Medicine, this manuscript may not reach the scientific criteria for publication. Therefore, my suggestion is "reject". New comments are as follow:

Major comments:

1. Study design
Although the authors dropped the data in 2011 and 2012, the principles of sampling and the quality of data are still not clearly elaborated. As the information of those who did not participate in the NFPCP was not available, it would be necessary to conduct a horizontal comparison with other similar studies in China.

2. Statistical methods
It seems that the marginal effect analysis was not appropriate. Would it be more suitable for examining the trends that are in the same direction before and after a specific time point (so-called "marginal effect")? But in this study, the trends are opposite before and after the implementation of the two-child policy.

3. Result interpretation
It would be better if the authors could interpret their results on a more objective and insightful basis in the Discussion section, e.g. taking into account the latest research outputs and viewpoints of peers (such as JAMA. 2020 Jan 7;323(1):89-91; Risk Manag Healthc Policy. 2020 Mar 19;13:245-253.), comparing the results in the context of the literature, and discussing the significance and implications of the present study. In addition, result interpretation with a focus on the statistical methods is also needed.

Minor comments:

1. Line 67 "ITS showed the caesarean delivery rate…": Technically, ITS is a type of data, not the name of the analysis. It should be ITS analysis or segmented linear regression.

2. Line 202: It is stated that the reference level for nationality was "Han nationality", but in Supplementary Table 1, the reference level was "Others" instead.
3. Figure 1: The sum of the three numbers (15 948, 960, and 9 398 045) is 9 414 953, not 9 414 963.

4. Line 244: Please specify "quantitative analysis".

5. The mathematical symbol for "greater than or equal to" would be better to change into "≥" and specify what "NA" represents in Table 1.

6. Line 266-267: Please describe what data Figure 2-A2 and Figure 2-A4 show.

7. Line 412-414: Please provide the reference for "the previous published national data".

8. Line 417-418: It is not appropriate to use "immediate influence". This should be interpreted without presumed causality.

9. Some data shown in the figures are not consistent with the corresponding data in tables (such as Figure 2 A2, A4 and the β2 values in Supplementary Table 3).

**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.

Not applicable

**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.

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