Reviewer’s report

Title: Effect of a typical systemic hospital reform on inpatient expenditure for rural population: the Sanming model in China

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Reviewer: Abubakr Alfadl

Reviewer's report:

GENERAL

The subject of this paper is important in the domain of health services accessibility. However the paper shows some short comings. The main thing worrying me with this paper is the sample size.

Methods

My main concern is sample size calculation. It is not clear on what base the authors chose the number 1,113,615 as their sample size. Such large sample size is sometimes problematic. It is widely understood among statisticians that the null hypothesis is always false in the real world. If it is false, even to a tiny degree, it must be the case that a large enough sample will produce a significant result and lead to its rejection. So if the null hypothesis is always false, what's the big deal about rejecting it? Therefore, while large sample provide great opportunities for empirical researchers, but also create potential problems in interpreting statistical significance. With such large sample size it is not necessary for statistically significant parameter to be of 'practical' significance. The challenge is to take advantage of this large sample without falling victim to deflating p-values. It is necessary to see the authors acknowledging this concern in the method section.

Statistical Analysis

Page 8, line 148; remove the phrase "the average growth rate (abbreviated as AGR)". Repetition, it is enough to mention the abbreviation.

Page 8, line 151; it is mentioned "T-test and Analysis of Variance (ANOVA) tests were used to test the significance". Is there any post hoc analysis conducted to know exactly where is the difference?
Results

Table 1 was neither presented in the 'Result' section, nor in the 'Discussion' section.

Discussion

In this section authors need to acknowledge the large sample used through moving their focus from relying solely on statistical significance to consideration of practical significance. This can be achieved through a sound presentation of the practical significance of findings. Authors need to be cautious in assessing whether the small p-value is just an artifact of the large sample size, and carefully quantify the magnitude and sensitivity of the effect. In other words, with such sample size, conclusions based on significance alone, claiming that the null hypothesis is rejected, may most probably be meaningless unless interpreted in light of the actual magnitude of the effect size. If these concerns are not considered, jumping from statistical significance to managerial and policy implications may not be warranted.

Although many demographic characteristics were tested (age, sex, Annual net income per capita) in addition to other parameters (e.g., Level of hospital, Hospital regions, Chronic conditions, etc.), and although all of these gave significant results; but only few were presented in the discussion 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?
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?
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