Reviewer’s report

Title: USE OF ORAL HEALTH CARE SERVICES IN PERU: TRENDS OF SOCIO-ECONOMIC INEQUALITIES BEFORE AND AFTER THE IMPLEMENTATION OF UNIVERSAL HEALTH ASSURANCE

Version: 0 Date: 23 Dec 2018

Reviewer: Giovanni Veronesi

Reviewer’s report:

In this paper, the authors investigated whether the implementation of health services (AUS) in Perù increased the prevalence of use of the oral health services, at the same time decreasing health inequities in the access. My review will mostly cover the methodological and statistical issues. The paper is well-written (although now and then some Spanish expressions are present; see Table 4 for instance). I found the use of CC and CI methods appropriate to the design of repeated cross-sectional surveys, as they take into account the entire distribution of the socio-economic measure (per capita expenditure, in this time) in the population, making curves for different years more comparable.

I have a couple of comments for the authors:

- In the analyses of trends over time in social inequalities based upon consecutive cross-sectional surveys, one possible confounder is selection bias. The authors should report the participation rates of different ENAHO surveys, if available, and briefly comment on the potential bias introduced by any differential responding rate by social classes and years.

- The 2017 survey has about 37000 more participants than the others. What is the reason? Is this due to a different prevalence of missing data for some of the variables of interest? I think the authors should clarify this issue, as again it may cause some selection bias.

- Although the ENAHO is a yearly survey (page 5 line 22), the authors have selected specific years (2004, 2008, 2010 and 2017). The authors should clarify why it was not possible to include all the available years in the analysis, and the criteria according to which the years were selected.

- Figure 1 and 2: In concentration curves both axes ranges from 0 to 1. So it would be more appropriate to draw axes of equal length. Table 3 reports dominance test for 2004 vs. 2008, 2010 vs. 2017, and 2004 vs. 2017. However, since these are in different plots, it is not possible to compare them. Is it not possible to have one plot with all the 4 curves by each of the stratifying variable (age, area and region)?

Minor:
- In the results section, page 7 line 13-17, I think there is a typo ("the coastal population increased from 55.5% to 2.5%"")...

- In the methods, page 6 lines 26-32, in the explanation of CC, I don't understand the use of the word "benefit": Measuring inequality by means of the CCs would show greater benefit for the population with the highest expenditure levels when it is below the equity line, and, inversely, greater benefits for the population with the lowest expenditure when the curve is above the equity line."

I would replace it with the measured outcome variable, which is the "prevalence of use of oral health services".

**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.

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

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.