Reviewer’s report

Title: Estimating levels of HIV testing coverage and use in Prevention of Mother-to-Child Transmission among Women of Reproductive age in Zambia

Version: 2 Date: 12 Nov 2018

Reviewer: Francisco Estupiñan

Reviewer's report:

Dear Authors,

Although you have thoroughly addressed most of the comments from previous reviewers there are still some that need to be addressed to better enhance the disclosure of the methods, the interpretability of your results and the discussion of your manuscript. You can see my comments below marked with >>

Comments of former Reviewer #2 still to be addressed:

Methods

4. How data on HIV test was ascertained from women who participated in this study?

Response: Dried blood samples were collected from eligible women interviewed and were tested at the laboratory.

>>Comment:

I would suggest authors include this information as a clarification in parenthesis in line 148, of the methods section, after "(...) preceding the survey including HIV testing (through dried blood sample collection and testing for the women eligible for the interview)."

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6. Page 6, line 19-20: What is the difference between ANC included PMTCT and ANC included HIV test? Authors can explain these terms.
Response: PMTCT package includes interventions provided to women during pregnancy such as maternal education, Prevention and treatment of STIs, Malaria (IPT), ultra-sound scans for foetal defect detection and one of them is HIV testing and treatment (Option B+) which considering the focus of this study estimating HIV the coverage we wanted the HIV testing to come out independently, meanwhile estimating the general PMTCT coverage in ANC.

>>Comment:

As most PMTCT programs will include ANC and most ANC protocols will include HIV testing at some point of the pregnancy, I will suggest the authors addressing the general characteristics of the PMTCT programs/packages in page 3, line 82, previous to introducing the concept of PMTCT cascade regarding HIV testing and ARV prophylaxis to baby, etc.

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Results

17. Page 10, line 52: What are the criteria to define 'optimal HIV uptake'? Authors can clarify.

Response: Optimal in this context refers to the "peak" HIV testing has attained in Zambia from the lower testing uptakes documented in the previous years as shown in the discussion. If this is not fitting it can be removed.

>>Comment:

Please, substitute the word "Optimal" by "Higher" or "The highest", in page 11, line 238; as the "optimality" concept is always related to a current standard that, in this case, would probably be to attempt having near one hundred per cent coverage of the women in reproductive age.

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18. Page 11, Table 4: Marital status, place of residence and ANC covered HIV PMTCT were found to be significantly associated with HIV test in the bi-variable analysis. Why these variables were not included in the multi-variable analysis?

Response: Principally being significant at univariate, the variables "Marital status", "place of residence", "ANC included HIV test" and "ANC covered PMTCT" were included in the multi-variable regression using a stepwise regression they were no longer significant and were dropped
in the final model. Only "Age", "Socio-economic status" of a woman and "ANC included HIV test" were the only explanatory variables in the final model, statistically significant.

>>Comment:

Please, include the use of statistical significance a step-wise multivariable regression as criteria for variable selection in the final model in the Statistical Analysis, in the Methods section on page 6, lines 170 to 173.

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20. Page 11, Table 4: p values reported are from regression analysis or from Pearson's chi-square test?

Response: P values reported are from Regression Analysis. End note on Table 4 was wrongly placed, it was meant for Table 3.

>>Comment:

Please, remove the remaining superscript (b) in Table 4 p-value; and add it to tables 2 and 3 where this end-note would be considered appropriate.

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>> Finally, some minor comments on the use of acronyms and written English could be improved in order to enhance the readability of the manuscript but I let the revision of those comments to the criteria of the authors as they should not impede the publication of the manuscript after comments above are properly addressed.

It is customary to avoid acronyms in the abstract unless the acronym is commonly understood and used multiple times in the abstract. If an acronym is used in the abstract, it must be spelt out (defined) in the abstract, and then spelt out again the first time it is used in the body of the paper. Once an acronym has been defined in the body of the paper, don't repeat the definition again.

I would end by recommending the authors to read the entire manuscript again, putting special attention in the consistent use of capital letters and the closure of the parenthesis when needed.
Kind regards,

**Level of interest**
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

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

Acceptable

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