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: 1 Date: 18 Jul 2018

Reviewer: Rajneesh K. Joshi

Reviewer's report:

Thanks for giving me opportunity to review this article. This manuscript requires revision as some issues are not presented clearly to the readers. I have following comments:

Abstract - Results

1. Page 2, lines 42-43: Which social class of women is associated with optimal uptake of HIV testing? Authors should clarify.

Introduction

2. I understand that this paper is about HIV test coverage among women in reproductive age group and PMTCT use during ante-natal period. However, introduction part of paper only covers PMTCT use during ante natal period. HIV test coverage among women in reproductive age group is not discussed by authors in introduction section of the paper.

3. Authors can mention the aim of their study in last paragraph of introduction section of the paper.

4. Page 4: There is repetition of infant mortality rate and under 5 mortality rate in line 16-17 and 27-28. These figures can be mentioned only once.

Methods

5. How data on HIV test was ascertained from women who participated in this study? Did exclusion of these 1023 women who did not have data on HIV test, lead to bias in study results?
6. Page 6, line 19-20: What is the difference between ANC included PMTCT and ANC included HIV test? Authors can explain these terms.

7. Page 6, line 45-47: Which tests were used by authors to check co linearity and correlation between ANC included HIV test or not and ANC covered PMTCT? And what were the results of those tests?

8. Page 6, line 16-18: There are only three categories mentioned as per wealth quintile. Is it wealth quintile or quantile?

9. Which statistical software was used for analysis?

Results

10. Page 7, line 28-29: 32% is mentioned twice

11. Page 8-9, Table 2: Rather than showing "No" and "Yes" for HIV testing, "Total number (n)" and "tested for HIV- number, percentage with 95%CI" can be shown in table for better understanding.

12. Page 9, Table 2: I could not understand why confidence interval could not be constructed due to stratum with single sampling unit.

13. Page 9, line 25-29: The title should be HIV testing coverage during ANC as it only describes about HIV tests in 6461 women in ANC. Why denominator is 6461 when describing the HIV test in ANC services? Does that mean only 6461 out of 15,388 women have used ANC facilities and the rest never used ANC facilities? Also does it imply that out of total 12413 women tested for HIV, only 6139 women were tested during ANC and rest were tested due to some other reasons. Authors can clarify this issue in their paper.

14. Page 9, Table 3: Test of significance used is not required to be mentioned in title, as it is mentioned in footnotes

15. Page 9-10, Table 3: Rather than showing "No" and "Yes" for HIV testing, "Total number (n)" and "tested for HIV- number, percentage with 95%CI" can be shown in table for better understanding.

16. Page 9-10, Table 3: I could not understand why confidence interval could not be constructed due to stratum with single sampling unit

17. Page 10, Table 3: No need to mention that p value < 0.05 is significant in footnotes, as it is already mentioned in methods
18. Page 10, line 52: What are the criteria to define ‘optimal HIV uptake’? Authors can clarify.

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

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

Discussion

21. Page 12, line 15-16: It is mentioned that overall increase is observed in uptake of HIV. It is not understood, this increase is compared to which year or levels. Though overall around 80% of women had undergone HIV test as per this study, authors have reported that the findings are consistent with 90% tested for HIV.

22. Authors have discussed only HIV test during ANC in discussion section. I believe this paper deals with HIV test among women in reproductive age group, and not only HIV testing among pregnant women. Authors should discuss about other opportunities, apart from ANC where women were tested for HIV. As such authors have reported that only 6139 women were tested for HIV during ANC, out of total 12413 women tested for HIV.

23. Page 13, line 27: How women not attending would bring selection bias in the study, as mentioned? Authors can clarify.

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

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 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

Do you want to get recognition for reviewing this manuscript? Add a record of this review to Publons to track and showcase your reviewing expertise across the world’s journals. Signing up is quick, easy and free!

Yes