Reviewer's report

Title: Syphilis and Human Immunodeficiency Virus infections among pregnant women attending antenatal care clinic of Gondar Family Guidance Association, northwest Ethiopia: Implication for prevention of mother to child transmission

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Reviewer: Mwumvaneza Mutagoma

Reviewer's report:

The manuscript with the title: "Syphilis and Human Immunodeficiency Virus infection among pregnant women attending at antenatal care clinic of Gondar Family Guidance Association, northwest Ethiopia: Implication for prevention of mother to child transmission", is an interesting research. However, it has limitations: The study was conducted in only on health facilities, a retrospective study. It is applied only to the HF.

Major corrections are needed before to be accepted for publication.

Abstract section:

1. Line 28: AOR: Age 20-29 years and >= 30 years; which is the year of reference? It should appear here?

2. Line 33: Report what is significant only

Background

1. Line 6. The first sentence: "Sexually transmissible infections (STIs) are amongst the world's most prevalent diseases. It is a systemic disease which is caused by Treponema pallidum": All STIs are not caused by Treponema Pallidum. There is omission of syphilis some where.

2. Line 12. In 2012, it affects ...: It should be it past tense.

3. 350,000 had adverse pregnancy outcome worldwide. Give reference

4. Moreover, 16% of women with syphilis had no access to Antenatal Care (ANC), this accounts for 22.1% of adverse pregnancy outcomes. Give reference

5. Some important sections are missing:

This section should be clearly structured.
- Syphilis in general
- Syphilis among pregnant women
- Syphilis among pregnant women in the region
- Syphilis and HIV co-infection among pregnant women

- Objectives of the study

6. State general and specific objectives of the study

Method section

1. Talk more about Gondar Family Guidance Association so the reader can be aware about it. Is it one clinic?

2. Line 33. What was the purpose to consider this period of the study (from January 2011- April 2015)?

3. What was done to avoid duplication? For example if one pregnant woman came twice or more in different time?

Inclusion and exclusion criteria are needed.

What about
- consent form?
- data collection process
- questionnaire
- blood sample draw

4. In testing process: What about indeterminate HIV test results?

Quality control

5. What about indeterminate RPR test results?

Confirmatory test?

Quality control

6. More details about ethical considerations

Results

1. The median age of the study participants was 25 year (range: 35 year). 35 yrs is not a range

2. Provide also results of all blood groups (A, B, ...)

3. In the descriptive results, prevalence values are out of 95%CI

4. OR is not applicable. If you want to know the difference of such information in different years you can perform trend with chi-2 for trends or you analyze CI if they are overlapping or not.
5. The sentence: Significantly higher HIV infection were observed in 2011 (AOR: 1.53; 95%CI: 1.23-5.23) and 2012 (AOR:2.28; 95%CI: 1.09-4.77): OR is not applicable. If you want to know the difference of such information in different years you can perform trend with chi-2 for trends or you analyze CI if they are overlapping or not.

6. There was a decline in trend prevalence of HIV from 5.2% in 2011 to 2.1% in 2015 and decline in syphilis prevalence from 2.6% in 2011 to 1.6% in 2015: A p-value for chi-2 for trends is needed.

Discussion

1. The structure of the discussion:
   - Short summary of the report focusing on major findings
   - Relate your finding to literature

2. Line 37. Missing. To what 2.8% is related to?

3. You said that the high prevalence of syphilis in previous year is related to screening and treatment program. What is the change in the current screening and treatment program? It could be due to availability of service. You cannot relate it to high or low prevalence (Line 39-45).

4. Line 53-59. If the 20-29 age group is exposed to prevention method, they could have low prevalence. It is reverse. There is contradiction in your hypothesis.

5. In the current study, the overall prevalence of HIV was 4.1%. Is you site included in sentinel sites? What was you expecting in comparison with the prevalence reported in sentinel sites?

6. This higher prevalence among this age group might be attributed to knowledge about HIV prevention ... Are you assuming that if one has knowledge of HIV he is at high risk of HIV infection?

7. In this study the rate of co-infection is found to be 23(0.66 %). Syphilis was considerably associated with HIV infection,... Considerably associated? The prevalence of co-infection is 0.66%. Do you this that this is a big proportion?

8. The overall national prevalence of HIV among Syphilis seropositive women...This is not a prevalence but a proportion.

9. This result is similar with general knowledge, for HIV and syphilis infection that share similar risk factors and syphilis enable the attainment and transmission... This sentence is not clear.

10. This result is similar with general knowledge, for HIV and syphilis infection that share similar risk factors. Not sure that they have same risk factors. Provide a reference of your statement.

11. The overall blood group distribution in this study showed that majority of the mother were blood group O followed by A with higher Rh positive rate. The distribution of blood groups in the report was not provided. If blood group O is the majority, what are expecting?

12. A study in Pakistan reported the substantial connotation between A blood group and HIV infection...
whereas O blood group had no significant association with any blood transmissible infection and the study indicated that people having blood group A are more susceptible to get HIV infection. Your study didn't provide this information. Either provide it or remove this statement.

13. Consistent with this study, Indian study showed that there was no significant association of HIV and syphilis infection with blood group. You didn't analyze the association between blood group and HIV.

14. The study showed a declined prevalence of HIV infection from 45(5.2%) in 2011 to 9(2.1%) in 2015. No evidence of this decline. Trends analysis with chi-2 for trends is needed here.

15. The declined in prevalence of HIV may attribute by increased knowledge of HIV prevention method among the general population ...What about the scaling up of HIV treatment? "Treatment as prevention"

16. The trend in prevalence of syphilis infection among pregnant women showed a decline magnitude: from 23(2.6%) in 2011 to 7(1.6%) in 2015. There is no evidence

17. There is missing of study limitations.

Conclusion
1. Age and HIV infection are significantly associated with syphilis ... Which age?

2. You should recommend also other nation representative studies.

Reference
1. Consistency in writing author's names

2. Link and date for online references (ref 6). More recent report (ref 6).

Table 2 (Comments applicable to table 3)
1. To be consistent you should also add p-value in multiple regression or delete the p-value in bivarable analysis

2. Year of diagnosis cannot be independent variables. Years of diagnosis are not participants characteristics.
   Your can perform trend analysis for different years but not in this way.
   These comment are applicable to Table 3

Fig
Provide p-value with chi-2 for trends to see if there is difference in prevalence over time.

Level of interest
Please indicate how interesting you found the manuscript:
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Please indicate the quality of language in the manuscript:

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