Reviewer's report

Title: Social and Clinical Attributes of Patients who restart Antiretroviral Therapy in Central and Copperbelt Provinces of Zambia

Version: 5 Date: 13 January 2016

Reviewer: Nathaniel Chishinga

Reviewer's report:

Major Compulsory Revisions
The manuscript still needs some language corrections before being published.

The authors do need to take time and read through their manuscripts very carefully and check for typos, punctuations and language before they submit their manuscript for peer review. I have again tried to correct some of these in the manuscript:

1. Cover page
   - Put a comma between “Mulubwa” and “Oliver” and not a full stop
   - Put a comma between “Mulubwa” and “University”
   - Put a comma between “Mweemba” and “University”
   - Put a comma between “Katayamoyo” and “FHI 360”. Note that it is ‘FHI 360’ throughout the manuscript (two words) and not “FHI360”.
   - Put a comma between “Halwindi” and “University”
2. Introduction
   - In second paragraph first sentence, remove full stop between “60 days” and “[11]”.
   - Last paragraph just before citations “[18, 21-23]”, what does “… than after years” mean? This is not clear, consider revising it.
3. Methods
   Study design
   - The second sentence would read better if it is written: ‘Patients who restarted ART between January 2009 and December 2010 were sampled from five Ministry Of Health-owned ART health facilities that were supported by the FHI 360-led Zambia Prevention, Care and Treatment project.’
   - The fourth sentence would read better if it is written: ‘The health facilities selected in Central Province were Liteta Hospital, Kabwe General Hospital and Mwachisomploa Demo Zone, and in Copperbelt Province Kitwe Central Hospital and Chipokota Mayamba Health Centre.
   - The last sentence starting with “Total sampling …” is not clear. Does this mean that all the patients in the database that met the inclusion criteria were selected
and included in the analysis or how where the participants selected/sampled? Where was this data base or bases located?

Study population
- Was there an inclusion and exclusion criteria? If so include this in the manuscript.

Data collection
- Having read this section, it appears like the FHI 360 database referred to earlier, are data bases FHI 360 uses in supported health facilities, to extract data from SmartCare, for routine reporting. The investigators used the data bases from selected five health facilities for their study to report the outcome. If this is so, the authors need to explain this early so that the reader can understand.
- The last sentence in paragraph 1, in as much as naming the type of SmartCare forms is important, the audience that do not know these forms will be left wondering on what information is contained in this forms and what you used in the analysis. Consider revising this so that it can be understood.

Ethical Issues
- Second sentence, remove comma between “FHI 360” and “Ministry” and put a comma between “Zambia” and “Ministry”.

Statistical Analysis
- Third sentence, describe the outcome variable as: ‘… because the outcome variable (CD4 count) was discrete and not normally distributed.
- The last sentence, what statistical comparisons were made?

4. Results

Characteristics of study population. This should read: ‘Characteristics of study Participants’
- The first sentence is too long. Consider putting a full stop at the end of “… five ART centres.
- Start the second sentence as: ‘Of the 535 patients, 71 (13.3%) were from Chipokota Mayamba, 89 (16.6%) from Kabwe General Hospital, 119 (22.2%) from Kitwe Central hospital, 31 (5.8%) from Mwachisompola Demo Zone and 225 (42.1%) Liteta Hospital’.
- The authors still haven’t cited figure 1 in the text, despite the previous review. Also, in the previous review, it was indicated that only the percentages should have one decimal place. The age and numbers of participants do not need to have a decimal place and can presented as absolute numbers in the test and the tables. Other than age, for the rest, present the absolute numbers followed by the percentages in the brackets (as shown above).
- Delete “either” in the second last sentence in this section. This same is incomplete; “formal” formal what?

Quantile Regression at 6 months
- Add ‘years’ at the end of an age. Since CD4 count is a discrete variable, use
absolute numbers e.g., the third sentence in paragraph 1, that starts with “Patients in the age group 45 ...”, add ‘years’ at the end of “45”, and use 8 instead of 7.9 for CD4 count.

- The fourth sentence in paragraph 1, should read in part as, ‘The results show that the patients had a significantly lower CD4 count at six months if they were receiving second line ART compared to those receiving first line ART; the CD4 count was lower by 65 cells/mm3 ...’

- Note: For easy reading, use this format for AC and/or 95% CI in manuscript: ‘(AC 29.5, 95% CI: 22.8 to 81.1)’ or (95% CI: 48.1 to -2.7).

Quantile Regression at 24 months

- Make one paragraph instead of three paragraphs.

- Is there a reason explained in the discussion why patients at Kabwe General Hospital had a significant increase in CD4 count at 24 months compared to other facilities?

5. Discussion

- Paragraph 1, second sentence, use ‘associated with’ instead of “important predictors”. In third sentence, remove “only” and also use ‘associated with CD4 count’ instead of “strong predictors”.

- Paragraph 2, second sentence, should read in part as, “This result is consistent with a study done on adults in South Africa, which found that resumption of ART was more likely...’.

- Paragraph 2, second last sentence, use ‘severe’ instead of “server” and use ‘resume’ instead of “resumed”.

- Paragraph 2, last sentence, indicate where the cited study conducted.

- Paragraph 4, third sentence, the authors cite to a systematic review where adherence was the outcome. However, the outcome in this manuscript is CD4 count and not adherence.

- Paragraph 5, first sentence needs to be revised. Instead of using “baseline CD4 count” use ‘CD4 count at restart of ART’. Use ‘associated with’ instead of “strong predictors”. Also use ‘at six and 24 months of’ instead of “subsequent stage on”.

- Paragraph 5, second sentence last two words should be ‘assess confounding’ instead of “access cofounding”.

- Paragraph 5, third sentence the authors use a cut off <350 cells/mm3 without further explaining the importance of this cut-off.

6. Academic qualifications

- From previous review PK has MBChB which has been omitted.

7. Acknowledgements

- It is ‘Ministry Of Health’ instead of “Ministry of health”

- It is ‘Research Support Centre’ instead of “Research Support centre”
- It is ‘School of Medicine’ instead of “School of medicine”
- It is ‘African Institutions …’ instead of “African institutions …”

Table 1
- Revise title to ‘Socio-demographic and Clinical Characteristics for 535 Patients at ART Restart’
- Remove the decimal places for the Frequencies
- First row should have Frequency and Percent only, delete “Socio-demographic”
- Second row should just be ‘Sex’ instead of “Characteristics Sex of Participants”
- Similarly, delete row and “Baseline Clinical Characteristics” and “Variable”
- Shift the “Stages” to left column (column 2) like the other variables. Also shift the frequency accordingly so that only the percentages remain in the “Percent” column and remove “%” sign.
- Delete “Baseline” before Weight and CD4 count and delete “N=535”

Table 2
- Remove the “*” that are within table so that they are not confused with the “*” next to AC.
- Use same font type in legend as the rest of the text.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests