Author’s response to reviews

Title: Seroprevalence of Transfusion Transmitted Infections among Blood Donors in Gash Barka Zonal Blood Transfusion Center, Barentu, Eritrea, 2014 through 2017

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Dear Editor

This is to confirm that we have duly responded to the suggestions raised by your reviewers and editorial team. Thank you for the constructive comments. The highlighted concerns included the following:

Requested revisions
1. The total TTI reported was different from the sum of the individual TTI. Why the differences. Otherwise individualize the analysis for each TTI.
2. The reason why the total for total TTI was high was because we had 15 samples which tested positive for at least one co-infection. Therefore, adding the proportions testing positive for HBV, HIV, HCV and syphilis would give a higher value – 265. However, the value used to calculate the proportion testing positive for any TTI was 250. That 265 less 15 (the number of samples co-infected with more than one TTI).

To emphasize the fact that this column does not deal with totals, we have rephrased the word total...
positivity with the word any TTI and proceeded to highlight the meaning of the phrase in the footnote.

2. Abstract Results: "A high proportion of the donors..." The specific value of the proportion should probably be stated in brackets in front of each variable.
   - All proportions have been stated as directed.

3. Introduction: end of last sentence of third paragraph - grammar issues. Should read "..... associated with important clinical diseases have been emphasized."
   - The correction has been effected.

4. Methods: Write the meaning of NBTC in full
   - The suggestion has been effected. See paragraph four in the introduction section.

5. Results: sentence regarding Table 2. 15.3% is not visible on table 2. Table 2 has a different value.
   - Please check your analysis and ensure the total in your prose and table are consistent.
   - The data has been re-analysed and specific changes effected.

6. Table 2 footer: Chi Squared is misspelled
   - Spelling error corrected – e.g. to Pearson Chi-square.

7. Tables 3 and 4 column "Positive No (%)": This column should be removed from these tables. If you sum up the individual TTI, the total in some of the rows is usually greater than the number in the total positive because of double counting. Therefore it will be inappropriate to consider the TTIs together.
   - We have to concede that the reviewer has a point. The use of the word total positivity is indeed confusing. However, we have to note that the column present useful information since knowledge of the proportion of blood units contaminated by at least one agents is important. For instance, it highlights the proportion of contaminated blood samples. And the logistic regression model provides the likelihood that a particular sample may be contaminated. For these reasons, most of the research papers quoted in the reference contain this information.

   - Indeed, most of the paper quoted in this paper provide this information

   However, to limit the confusion, we replaced the word total positivity with any TTI. We have subsequently highlighted the meaning of any TTI e.g. Blood unit’s positive for at least one of the tested transfusion transmissible infections.

8. The total positives in table 2 is different from that calculated on table 3. Why? otherwise you can highlight that an individual may have more than one TTI seropositivity as a footnote.
   - We have reanalysed the data and corrected all the errors. We have also added the following statement in the footnote: any TTI e.g. Blood unit’s positive for at least one of the tested transfusion transmissible infections. It’s our opinion that the latter statement implies the fact that an individual may have more than one TTI seropositivity.

9. Analysis "Seropositivity and associated factors for infection": for reasons emphasized on table 3, it may be appropriate to do the regression for individual TTI or reconsider the analysis.
   - We have conducted regression for HBV, Syphilis and seropositivity for any of the tested TTI’s. We were unable to conduct regression for HCV and HIV due to the small sample size.
10. Table 5: The issues raised on tables 2-4 should be address before conducting this regression; otherwise conduct a different analysis for each TTI.
- See above.

11. Discussion: Please provide supporting references for these statements: "blood safety is still a problem in SSA. In this regard, donor profiling and risk assessment for specific TTI's premised on the association between demographic and behavioural variables has been promoted"
- Thank you! supporting references is provided for the above mentioned statements.

12. Discussion - second to last sentence that includes "it is again our observation...a range of... practices... may predispose individuals in this population to HIV" This may be inappropriate since it was not the focus of your study and you have not cited any of your own data from this study as well as other references that would suggest such.
- The sentence has been deleted.

13. Conclusion - "the data also implicated preponderance of unsafe sexual practices among rural dwelling donors with limited education." Sexual practices were not explored in this study and there is no evidence in this work to suggest any unhealthy practice in the population studied.
- The sentence has been deleted.

**ADDITIONAL REQUESTS/SUGGESTIONS:**
14. The result section should be revised to ensure consistency of the information expressed in the prose and in the table. There is disparity in the total TTI and the sum of the individual TTI. Explanation should given or the analysis individualized for each TTI alone. Statement in the discussion must be based on facts with references cited. Conclusion should be within the scope of the findings. Grammatical and spelling errors throughout should be addressed.
- Necessary changes have been made. Explanation has been stated in the first comment.

15. The reference style is not uniform in the bibliography - please follow journal guidelines
- References have been adjusted to the journal guidelines.