Author's response to reviews

Title: Association of socioeconomic and behavioral factors with adult mortality: Analysis of data from verbal autopsy in Addis Ababa, Ethiopia.

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Author's response to reviews: see over
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Title: Association of socioeconomic and behavioral factors with adult mortality: Analysis of data from verbal autopsy in Addis Ababa, Ethiopia.

Version: 6 Date: 13 March 2013
Reviewer: JayadeepPatra

The authors would like to thank the reviewer for his/her constructive comments from the statistics perspective and helped to improve the status of this paper. We have given our response to the comments one by one as follows and incorporated in the text document and yellow highlighted.
Following are our response to comments for authors:

Specific comments and responses:
Table 1 title: Socioeconomic characteristics should be changed to sociodemographic characteristics.
In table 1, I see %s are not adding up to 100% both for male and female. Besides, total male should be 1864 but if you add up its 1846 (what happened to 18 deceased people? don’t they have age?
Table 2 says total male=1864 though and even table 1 title says total adults = 3709. Female is fine N=1845. but total %s should be 100%. For female: 123=6.7%, 270=14.6% so on and so forth. Similarly for male: 94=5.0%, if correct denominator is 1864 etc. Religion, same as age: %s are not matching it should total 100%. Besides, is it true that in both men and women orthodox (1629vs 1629) and others (50 vs 50) represent exactly same for male and female? I suggest to check the data set it might have been copied by error. In fact all factors like ethnicity, education, marital status should all total 100% by sex. Table 1 needs a complete reshape. Also Suggest reporting/adding Odds ratio from chi-square test (see last comment for how to do).
Response1: we have accepted this very relevant comment and modified Table1. Regarding the odds ratio, we do not see the importance of reporting the relationship or association between the independent variables i.e. sex against ethnicity, education or marital status and others. Please see also the response below.

Table 2. What are these # that are in brackets? are they % if so then say it. Even table 2 chi-square doesn't make sense. how can you say occasionally tobacco use is significant in male compared to female when u don’t have data for female (baseline). Same thing goes for tobacco use<=5 yrs.
Response 2: Thank you and we have accepted the comment and modified Table 2.

Table 3, 4 and 5. Write Total male sample (N=1864) in title. Table 3 is very good in presentation but statistics wise I think there are errors. I suggest adding trend test (of chi-square) to it. I believe "no alcohol use", "no tobacco use" and "no khat use" are reference categories in respective tables - if so then please make a note in footnote that No alcohol use /no tobacco use/ no khat use is the reference category.

Response 3: We have accepted this very interesting comment and included total sample (N=3709) in title because both males and females were included in the analysis. The purposes of these tables are to see if there are significance differences between categories of behavioural factors against causes of death and further to include for in the Bivariate and multivariate logistic regression. We have applied chi square for trend test making no alcohol use", "no tobacco use" and "no khat use" as reference categories in respective tables and we have modified the tables.

Table 6, 7, 8: I don’t think authors should report the covariates as one of the indicators in the Table. If you are controlling for age, sex, education etc then they are not supposed to be reported rather suppressed. Report the other risk factors that go along with these covariates. Table 6 and 7 should be avoided (its redundant) and table 8 can be kept. if you add tobacco, alcohol and khat use as one of the predictors in regression analysis of table 6 and 7 - this problem can be resolved. I don’t understand why authors controlled the variables and then reported the same variables: where are the predictors go? I suggest the following in regression analyses:
For all diseases of interest (HIV, CVD, Malignancy, Chronic liver disease) USE the following:
Covariates: age, sex, religion, marital status, ethnicity, education, occupation
Predictors: alcohol use, tobacco use, khat use
Keep all the results in One table if you like which is table 8.
In table show only risk factors (alcohol, tobacco and khat) and suppress the covariates. And always report the analysis sample N. None of the tables show what was the analytic sample N.
To have the information of table 6 and 7, I suggest to show odds ratios from Chi-square and present in Table 1 in addition. make sure to mark which category is the reference category in Table 1. Such as for age 15-24 should be reference, for religion others should be reference, for education higher education should be reference: that is merging secondary to university), so on and so forth. But make sure these ORs should be produced separately for male and female. to do this, pool the non-
reference data into one and do another 2x2 chi-square and report in an extra column suggesting which one is reference. For example, besides male, add an extra column (3rd column) and report OR (unadjusted) and use 15-24 as referene i.e., OR=1 and 25+ as the non-reference group OR (by pooling 25-34,35-44 …. 85+ into one group) … same way do it for rest of the characteristics (religion: orthodox vs non-orthodox, marital status: married vs unmarried, education: below primary education vs secondary/higher education etc).

Response 4: The topic of this paper is association of socioeconomic and behavioral factors with adult mortality. We have two separate objectives. The first is to show the association of socioeconomic factors (sex, age, education, occupation etc...) with adult mortality and the second is to show the association of behavioral factors (alcohol use, tobacco use and khat use) with adult mortality. That is why we reported the association between socioeconomic factors (sex, age, education, occupation...) with causes of mortality separately. To avoid confusion, we have excluded alcohol use, tobacco use, and khat use while calculating adjusted OR and we have of course the same result. In the report we have mentioned that data were presented only for those associations that were significant otherwise the causes of deaths were too many to present and is not feasible. We have also considered the leading causes of death for public health importance in the country. Table 6 and 7 show two different issues. Table 6 shows about HIV/AIDS which is one of the killer diseases in the study area under the communicable disease category whereas Table 7 shows the two emerging non-communicable diseases in relation to socioeconomic predictors. We did not found any association of CVD or Malignancy diseases with behavioural risk factors and tuberculosis or chronic liver disease with socioeconomic predictors. This was already discussed with the previous reviewers and had been addressed in such a way. We agree with the suppresser effect of logistic regression but we have checked the absence of collinearity with standard error of the β coefficient in the model. We have showed both bivariate output (crude or unadjusted OR) and the multivariate output (adjusted OR). We have included N in all the titles of the tables.

Thanks