Author's response to reviews

Title: Trends and risk factors for neonatal mortality in Butajira District, South Central Ethiopia, (1987-2008): a prospective cohort study

Authors:

Muluken Gizaw (muluken.gizaw@yahoo.com)
Mitike Molla (mitikemolla@gmail.com)
Wubegzier Mekonnen (wubegzierm@gmail.com)

Version: 3 Date: 19 December 2013

Author's response to reviews: see over
Cover letter

First all I would like to thank you all for your time spent in reviewing this document and constructive comments for the second time. As per the comment provided by both reviewers, the MS has been modified accordingly. All concerns of the reviewers especially of the reviewer one which is indicated in conclusion remark has been addressed in the document. Please see the point-by-point response to the comments of both reviewers.

Referee 1:

- The English language has been checked by fluent British speaker.
- I declared that the revised manuscript conforms to the journal style

Major Compulsory revision:

“The multivariable Poisson regression model has to be recalculated...”-

The explanatory variables included in this study were age, sex, residential area, religion, having Oxen, house ownership, water source, roof type and distance to hospital. These were subsequently grouped into three domains: demographic characteristics of a cluster (age, sex, residential area and religion); socioeconomic status variables (having Oxen, house ownership, water source, roof type); and community access to pregnancy and delivery care services (distance to hospital). Unadjusted and adjusted incidence rate ratios with 95% confidence intervals were computed to assess the relationship between neonatal mortality and selected variables. Reference categories were defined as those usually associated with the lowest neonatal mortality rates. All variables found to be significant in bivariate analysis were then included in a multivariate Poisson regression model and adjusted IRR with 95% confidence intervals were calculated. The reason for why I prefer to show both significant and non-significant variables in the table, the readers could easily aware of with what a single risk factor adjusted for. Moreover, this kind of analysis and presentation is very common to see in different journals and publication.

I mentioned this also in the method section of the article.
“The trend analyses have to be recalculated, to test for breakpoint in linear regression”

Thank you, yes certainly I do share your idea and I recalculated the trend analysis in break point using five year period to see whether significant change in neonatal mortality present or not. However, the data only depicts significant increment at early study period. Otherwise, did not show any significant increment or decrement on the next subsequent periods. (See the following graphs). Therefore, we possibly conclude that the trend in neonatal mortality did not show a change over the study period in Butajira. Moreover, the chosen weight mentioned at method section and the discussion changed accordingly.

Fig 1: Observed rates by year in Butajira district 1987-1991
Fig 2: Observed rates by year in Butajira district 1992-1996

\[ y = -0.029x + 1.043 \]
\[ R^2 = 0.017 \]
\[ P-value = 0.83 \]

Fig 3: Observed rates by year in Butajira district 1997-2001

\[ y = -0.069x + 1.783 \]
\[ R^2 = 0.094 \]
\[ P-value = 0.6 \]
Fig 4: Observed rates by year in Butajira district 2002-2008

Minor essential points:

Abstract:
- Intro: English: “a 22 years dataset” – Reformulated
- Methods: “with the objective”- It has been corrected
- Results: decimals: please be consistent: 1 decimal only.- Done
- Results: The 3rd sentence doesn’t flow: “Male neonates ..., distance..., ...were more likely to die- Reformulated
- Conclusion: “and individual level factors, which significantly influence neonatal Mortality”.

Please name these factors: -

- When I check back my data, the significant variables could be seen only at household level. Of course there are variables represents individual level factors such as sex and religion, but they are non modifiable variables. Therefore, not worth to mention non modifiable variables in conclusion remark. Thus, it is pretty good to delete the word “individual”. Moreover, these household level factors are mentioned in the conclusion section.
Methods:

The chosen moving average method has to be described here (including the chosen weights)-
Described
Page 7, 3rd para: Sentence: “Uneven variations “over time?” – Please explain
<IN THE ARTICLE> what you mean where variations occur.- It has been corrected accordingly

Referee 2

Comment on the title– It has been corrected
Comment on the abstract- It has been corrected
Result: - Possibly checked
Figure 1: I tried to construct it again; when I use shadow for the upper and lower tail, it disappearing the points at which confidence intervals cross over each other. Moreover, I need these points to further explain some of the findings in the trend analysis.