Reviewer’s report

Title: Proximate determinants of infant mortality in Ethiopia, 2016 Ethiopian Demographic and Health Surveys: Results of Survival Analysis

Version: 0 Date: 18 Feb 2019

Reviewer: Jahidur Khan

Reviewer's report:

Ethiopia is appreciably performed well to reduce child deaths over time. The pace of decline in infant mortality is faster than child mortality. It is not clear enough from this research paper - what are the gaps in existing knowledge regarding infant mortality in Ethiopia? why this research is important? why only these proximate determinants are important? This research is only found few statistically significant factors (such as multiple birth or twin, birth interval, size of the child at birth and sex of the child), which raises a question - why only a few? Among these factors, two are non-modifiable (multiple births or twin and sex of the child). Another factor "small size of infants" is based on maternal perception.

In the method, a short description of sampling and a description/a flowchart of selecting analytic sample are needed. Selection of analytic sample should contain every exclusion criterion.

Definition of outcome variable is not clear enough, and paper needs a clear definition based on time-to-event data concept. In addition, measurement units and categorization of variables are missing. They are needed in method section for better understanding.

In this paper, Cox PH model is fitted for examining the associated factors with mortality, but the EDHS survey is a multistage cluster survey. Due to sampling design, data is clustered in nature and need to adjust the cluster level variation using Frailty model or Cox PH mode with random effect. I recommend reanalyzing data by using the frailty model.

Overall results are not convincing enough and make many confusions. Firstly, why only very few factors are significant statistically, need a broad description on this issue in the discussion? What about possible collinearity among predictors?
In this paper, "Number of antenatal care visit" is categorized as "\(<\;3" and "\(\geq\;3". But why "\(<\;3" in place of "\(\leq\;4"?"

In "Size of the child at birth" variable, why "Don't Know" is a category? It does not make any sense!

"Multiple birth" variable is a significant factor, but it should interpret carefully due to very few numbers of observations in multiple birth category.

Table 1 should contain the only percentage of death by the categories of risk factors, no other columns.

Table 2 should contain a single column for 95% CI.

Figures are made for only significant factors, but they are presented before model results which creates confusion. Need a clear description or rationale - why only a few figures are presented? Moreover, the figures look very ordinary. Please revise the figures by adjusting the y-axis limit and size.

Discussion section needs to rewrite and to give more focus on the intervention design and policy implications. Limitations of this study are also missing, please write a possible limitation of the study.

Overall presentation (table, text, figure) and English writing are not up to the mark. This paper needs a significant amount of work to make it scientifically standard one.

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An article of importance in its field
Quality of written English
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