Author’s response to reviews

Title: Neonatal mortality and associated factors in the Specialized Neonatal Care Unit Asmara, Eritrea

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Author’s response to reviews:

Dear Prof. Zelalem,

Thank you for giving us this more opportunity to submit a revised draft of our manuscript titled “Neonatal mortality and associated factors in the Specialized Neonatal Care Unit, Asmara Eritrea” to the Journal of BMC Public Health. We appreciate the time and effort that you and the reviewers have dedicated to providing your valuable feedbacks on our manuscript. We have been able to incorporate changes to reflect most of the suggestions and provided by the reviewers. We have highlighted the changes in the manuscript. Two files (one with track change and cleared one) are attached.

Additional Changes: The methodology section of the abstract was modified based on the changes we made in the analysis section of the main text.

Here is a point by point response to the reviewers’ comments and concerns.

comments #1. You have indicated in your response that the Hosmer Lemeshow statistics for your regression has a value of. Please include the following statement in your statistical analysis section:

Response: Thank you for the comment and change has been made to the statistical analysis section. “We evaluated model fit through inspection of Hosmer and Lemeshow test (Chi-square=12.89, df=8; P =0.116), which implies that the model’s estimates fit the data at an acceptable level”.

comments #2. You stated that "Since we did not find a strong correlation between the covariates, we were opted to consider all covariates in the multivariate analysis. This is not a sufficient reason.
Selection of covariates should be justified e.g. selection can be based on previous studies or some kind of theory and/or statistical approach e.g. Variables that were significant at the 0.20 level in the bivariate analyses are often included and retained in the multivariate model. Please state in your statistical analysis section which methods you use to include and retain variables in the multivariable model.

Response: Thank you for the comment again and change has been made to the statistical analysis section. “Variables that were significant at the 0.20 level in the bivariate analyses were included and retained in the multivariate model”.

comments #3. You stated that, The maximum correlation we found in the collinearity test was between (gestational size and birth weight, r=0.436), between (gestational age and birth weight, r=0.563) and between (agar score in 1 minute and in 5 minutes, r=0.509). Looking at correlations only can be misleading. It is possible that the pairwise correlations are small, and yet a linear dependence exists among three or even more variables. That's why many regression analysts often rely on what are called variance inflation factors (VIF) to help detect multicollinearity. A more reasonable approach is to use variance inflation factor (VIF) value $\leq 4$ to detect the presence of potential multicollinearity. Since VIF is not available for logistic regression you can simply use same model specification on SPSS treating your outcome as continuous and using linear regression only to assess for VIF values. Once you assess for that you can add a statement in your statistical analysis section that reads something like this: The potential presence of collinearity was assessed using variance inflation factor (VIF) $\leq 4$. Using these criteria, no collinearity was detected.

Response: Thank you for the important comment and change has been made to the statistical analysis section. “The potential presence of collinearity was assessed using variance inflation factor (VIF) $\leq 4$, and no collinearity was detected”.

Abbreviations

ONRH: Orotta National Referral Hospital; SNCU: Specialized Neonatal Care Unit; RDS: Respiratory Distress Syndrome; APA: Appropriate for Gestational Age; SGA: Small for Gestational Age; LAG: Large for Gestational Age; GynObs: Gynecology-Obstetric; LBW: Low Birth Weight; OR: Odd’s Ratio; AOR: Adjusted Odd’s Ratio; CI: Confidence Interval

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Not applicable.

Availability of data and materials

Pertinent data are presented in this manuscript. Additional data can be requested from the corresponding author upon reasonable request.
Authors’ contributions

AKA conceived the study. MA, ST and LO collected data, entered, analyzed and wrote the initial draft of the study. AKA re-analyzed the data and wrote the report and edited finally by ZO and LXZ. All authors approved the final draft of the manuscript.

Ethical considerations

Ethical approval was sought out from the Ministry of Health research ethics and protocol review committee in Asmara, Eritrea. Medical directors of ONRH, Pediatric department and the SNCU were briefed on the objectives of the study and written consent was obtained.

Consent for publication
Not applicable

Competing interests
The authors declare that they have not competing interests.

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