PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Survival status and predictors of mortality among preterm neonates admitted in Bench Sheko, Sheka and Keffa Zone Governmental Hospitals, South West Ethiopia, 2021: prospective follow up study.
AUTHORS	Mihretu, Esmelealem; Genie, Yalemtsehay; Adugnaw, Emebet; Shibabaw, Aster

VERSION 1 – REVIEW

REVIEWER	Birhanu, Dires Dilla University, Neonatal Nursing
REVIEW RETURNED	27-Jan-2023

GENERAL COMMENTS	I have a big appreciation for the author who had run to tackle the worst form of neonatal mortality which is preterm complication. Having this I try to put my comments as follow. 1. Under your abstract section “high” by itself is not specific. So, better to put your reference to say high line number 31. 2. Line number 38, classification of late preterm, better to re-write correctly 3. It is better if you can summarize line number 53 and 47 by one line 4. I didn’t find exclusion criteria for this study. Is there? 5. Multi-variate shall be changed multi-variable line number 166 6. Under the section of ethical consent, better if you would add reference number for the letter line number 176-177. 7. Line number 222, “medical and surgical related complication predictors”, the table includes another issues like phototherapy care, resuscitation service and transfusion. Are conformable with is type of presentation? 8. Line number 228 states as “institutional and professional characteristics” however nothing is explained about professional characteristics. It needs revision! 9. The concept of line number 248-253 and 254 -258 seems the same, it is better to summarize with one paragraph. 10. Put the table of Schoenfeld residual test, so that it will be more scientific. 11. Table 6, GA <28 is significant predictor for this study with AHR: 9.3 (1.78-48.42), it seems there is great variation in the variable category, for such kinds of category it was better to see another form of classification. 12. Table 6, under the variable list of feeding status, “not initiated” what does it mean? It must be bounded by time or it mean neonates under this category didn’t start anything till occurrence of the event??? 13. Line number 306, “this study revealed a mortality rate of 32.57%” is it rate or proportion?

	14. Your discussion has no enough justification or explanation and, how did you interpret those factors having AHR <1? 15. Time to event is the first objective for such types of studies. Mean or median time to death is the outcome variable. How did you come up with mean time to event? Could you put the CI for the mean time to survive please? 16. Please attach your data collection tool as supplementary data. Thank you!

REVIEWER	Enyew, Engidaw University of Gondar College of Medicine and Health Sciences, Anatomy
REVIEW RETURNED	15-Feb-2023

GENERAL COMMENTS	Manuscript title: Survival status and predictors of mortality among preterm neonates admitted in Bench Sheko, Sheka and Keffa Zone Governmental Hospitals, South West Ethiopia, 2021: prospective follow up study Manuscript Number: bmjopen -2023-072002 Comment to author In the Title: • No comment In the Abstract: o Background: In the abstract section, you research gab is as you said researchers focused on trends not causes and factors but a lot of studies in Ethiopia typical to yours, so it needs paraphrase the background. o Methods: the type of questioners to be collected data is not mentioned, Schoenfeld result is also mentioned to show the model fitness o Result: each independent factors should be stated with 95% CI and HR o Conclusion and recommendation: “the Rate of preterm neonatal mortality was high…,” what is you comparison in order to say high and your recommendation is based on your result focused on the independent factors but your statement doesn’t show that….? • Introduction: • Not comment Method and materials: In general the method part: inclusion and exclusion criteria, study population, sample and unit is not mention. • Study design and setting: no comment • Sample size and sampling procedure: what type of sample size calculation used, stata statistical program is a method, simple you feed numbers, then you get numbers. Basically, what type of proportion and formula you used to determine the sample…? • Measurement and variables: no comment • Operational definitions: well, stated but other additional words or phrases needs to operationalize, for example you used “consecutive sampling technique” in the abstract section. It is not clear for me …? • Data collection tools and procedure: is it appropriate word for “face to face interview “it looks like qualitative data collection… and what primary data you find through chart review …? • Data quality control: no comment • Data processing and analysis: “Variables with a p-value of less than 0.25 were entered for multivariate analysis after each variable underwent cox proportional hazard regression.” P-value less than 0.25 in what analysis the result is come to 0.25 entered … to

	multivariate and are they multivariate, covariate and multivariable; bivariable and bivariate the same terminologies, think of it and write the appropriate terms? On the other hand, you done model fitness and assumption test but there is no written result for example Schoenfeld residual test, what numbers you got, and which levels interprets assumption test fit or not…? You have to state … • Ethical Approval and Consent: no comment Result: • In general the result section good; still needs paraphrasing and in tables sometime the total number the each category are not matched, for example I table 3: Chronic medical problems previously , positive = 46 ,the total number of HIV , DM and HTN = 47 … but is it write or mistake, may be a possibility to be different . any way check there is a difference in other table… • In predictors determination of CHR and AHR: there is significant predictors in AHR but not in CHR in GA , How could it be …?1.13(0.28- 4.61)(CHR); 9.28(1.78-48.42) 0.008*(AHR) • How many significant predictors need to consider good research or what will be our justification if there are no significant predictors in multivariable regression…? Discussion: • discussion part as a whole good but the way of your discussion especially first two three paragraph is looks like logistic regression not hazard regression and your justification is not sound like sample size, study area … so, it needs revision. Conclusion and recommendation: • these two things focus on only and only if based on your result the conclude with general situation the finding is high, low moderate or significant proportion with what to compare and in your result significant predictors are only six but you conclude with seven. The recommendation is also based on your finds but you recommend general way not show the findings.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Dr. Dires Mihretie, Dilla University
Comments to the Author:
I have a big appreciation for the author who had run to tackle the worst form of neonatal mortality which is preterm complication. Having this I try to put my comments as follow.
1. Under your abstract section “high” by itself is not specific. So, better to put your reference to say high line number 31.
Response: We appreciate this idea of insight. We tried to compare with global report and EDHS 2019’s report
2. Line number 38, classification of late preterm, better to re-write correctly
Response: Really, we did it. Please see line 45-46 in the revised manuscript.
3. It is better if you can summarize line number 53 and 47 by one line
Response: Inspiring, we tried to summarize it. Please see line 54-59 in the revised manuscript.
4. I didn’t find exclusion criteria for this study. Is there?
Response: We did it. See line 91-96 in the revised manuscript.
5. Multi-variate shall be changed multi-variable line number 166

6. Under the section of ethical consent, better if you would add reference number for the letter line number 176-177.
Response: Thank you, we add the reference number. Please see line 189.
7. Line number 222, “medical and surgical related complication predictors”, the table includes another issues like phototherapy care, resuscitation service and transfusion. Are conformable with is type of presentation?
Response: Sorry, we revised this sentence
8. Line number 228 states as “institutional and professional characteristics” however nothing is explained about professional characteristics. It needs revision!
Response: Thank you, we revised this sentence
9. The concept of line number 248-253 and 254 -258 seems the same, it is better to summarize with one paragraph.
Response: Thank you very much, we did it. Please see the revised manuscript.
10. Put the table of Schoenfeld residual test, so that it will be more scientific.
11. Table 6, GA <28 is significant predictor for this study with AHR: 9.3 (1.78-48.42), it seems there is great variation in the variable category, for such kinds of category it was better to see another form of classification.
Response: We appreciate this idea of insight. Bringing to health institution is rare for neonates born before the completion of 28 gestational ages in Ethiopia especially in the study area. Only 13 neonates born before the completion of 28 GA were included in this study and this make very wide confidence interval (9.3 (1.78-48.42)). This form of categorization (classification) was employed in other research in the literature, therefore we followed suit.
12. Table 6, under the variable list of feeding status, “not initiated” what does it mean? It must be bounded by time or it mean neonates under this category didn’t start anything till occurrence of the event???
Response: Thank you very much, we tried to make clear. Please see the revised manuscript.
13. Line number 306, “this study revealed a mortality rate of 32.57%” is it rate or proportion?
Response: Thank you very much, It is proportion. Please see the revised manuscript.
14. Your discussion has no enough justification or explanation and, how did you interpret those factors having AHR <1?
Response: We appreciate this idea of insight. AHR <1 indicates that the variable is a preventative factor rather than a risk factor. Please refer to the updated document.
15. Time to event is the first objective for such types of studies. Mean or median time to death is the outcome variable. How did you come up with mean time to event? Could you put the CI for the mean time to survive please?
Response: We appreciate this idea of insight. Please the revised manuscript.
16. Please attach your data collection tool as supplementary data.
Thank you!
Reviewer: 2
Mr. Engidaw Enyew, University of Gondar College of Medicine and Health Sciences
Comments to the Author:
Manuscript title: Survival status and predictors of mortality among preterm neonates admitted in Bench Sheko, Sheka and Keffa Zone Governmental Hospitals, South West Ethiopia, 2021: prospective follow up study
Manuscript Number: bmjopen -2023-072002
Comment to author
In the Title:
• No comment
In the Abstract:
o Background: In the abstract section, you research gab is as you said researchers focused on trends not causes and factors but a lot of studies in Ethiopia typical to yours, so it needs paraphrase the background.

Response: Thank you very much. However this study was done earlier, we are so late for publication after completion the study. During this duration of time, certain retrospective studies are come up from different region of the country.
O Methods: the type of questioners to be collected data is not mentioned, Schoenfeld result is also mentioned to show the model fitness
Response: Thank you, we did it accordingly. Please see in the revised manuscript.
O Result: each independent factors should be stated with 95% CI and HR
Response: Thank you, we tried to add HR. Please see in the revised manuscript.
O Conclusion and recommendation: "the Rate of preterm neonatal mortality was high…," what is you comparison in order to say high and your recommendation is based on your result focused on the independent factors but your statement doesn't show that….?
Response: Thank you, we did it accordingly. Please see in the revised manuscript.
• Introduction:
• Not comment
Method and materials:
In general the method part: inclusion and exclusion criteria, study population, sample and unit is not mention.
Response: Great respected, we tried to add. Please see in the revised manuscript.
• Study design and setting: no comment
• Sample size and sampling procedure: what type of sample size calculation used, stata statistical program is a method, simple you feed numbers, and then you get numbers. Basically, what type of proportion and formula you used to determine the sample…?
Response: Thank you. Sample size was determined based on the following assumptions, HR of the selected covariate (Perinatal asphyxia is taken from study done in University of Gondar = 1.55 that provides maximum sample size, a variability (SD) = 0.5 is used for covariates of interest, probability of failure (event) = 0.288, also a 5% margin of error, 95% Confidence interval and 80% power is used to calculate the sample size.
• Measurement and variables: no comment
• Operational definitions: well, stated but other additional words or phrases needs to operationalize, for example you used "consecutive sampling technique" in the abstract section. It is not clear for me …?
Response: Thank you. It is to mean that all preterm neonate who fulfill the inclusion criteria were included in study without any interval (i.e. K = 1)
• Data collection tools and procedure: is it appropriate word for "face to face interview "it looks like qualitative data collection… and what primary data you find through chart review …?
Response: Sorry it typing error. It is to mean that in-person interview for primary data and chart review for secondary data were used. Please see the revised manuscript.
• Data quality control: no comment
• Data processing and analysis: "Variables with a p-value of less than 0.25 were entered for multivariate analysis after each variable underwent cox proportional hazard regression." P-value less than 0.25 in what analysis the result is come to 0.25 entered … to multivariate and are they multivariate, covariate and multivariable; bivariable and bivariate the same terminologies, think of it and write the appropriate terms? On the other hand, you done model fitness and assumption test but there is no written result for example Schoenfeld residual test, what numbers you got, and which levels interprets assumption test fit or not…? You have to state …
Response: Great respected. We tried to clear and revised this paragraph, please see the revised manuscript.
• Ethical Approval and Consent: no comment

Result:
• In general the result section good; still needs paraphrasing and in tables sometime the total number the each category are not matched, for example I table 3: Chronic medical problems previously ,

positive = 46 ,the total number of HIV , DM and HTN = 47 … but is it write or mistake, may be a possibility to be different . Any way check there is a difference in other table…
Response: Great respected. Certain variables may not have a denominator of 614 since it is based on the pre leading questions. We tried to check and revise it. Please see the revised manuscript
• In predictors determination of CHR and AHR: there is significant predictors in AHR but not in CHR in GA, How could it be …?1.13(0.28- 4.61)(CHR); 9.28(1.78-48.42) 0.008*(AHR)
Response: We appreciate this idea of insight. Some variables are categorized in to 3 or more groups. Gestational age was grouped into 3 categories and one of those categories was significant in bivariate analysis and candidate for multi-variate analysis. Please see the table.
• How many significant predictors need to consider good research or what will be our justification if there are no significant predictors in multivariable regression…?
Response: In statistics, the one in ten rule is a rule of thumb for how many predictor parameters can be estimated from data when doing regression analysis (in particular proportional hazards models in survival analysis and logistic regression) while keeping the risk of over fitting low
Discussion:
• discussion part as a whole good but the way of your discussion especially first two three paragraph is looks like logistic regression not hazard regression and your justification is not sound like sample size, study area … so, it needs revision.
Response: Great respected. We tried to revise it.
Conclusion and recommendation:
• these two things focus on only and only if based on your result the conclude with general situation the finding is high, low moderate or significant proportion with what to compare and in your result significant predictors are only six but you conclude with seven. The recommendation is also based on your finds but you recommend general way not show the findings.
Response: Thank you. We tried to revise it.

Reviewer: 1
Competing interests of Reviewer: I have no conflict of interest

Reviewer: 2
Competing interests of Reviewer: I have no any competing interest

VERSION 2 – REVIEW

REVIEWER	Enyew, Engidaw University of Gondar College of Medicine and Health Sciences, Anatomy
REVIEW RETURNED	01-Jul-2023

GENERAL COMMENTS	Manuscript title: Survival status and predictors of mortality among preterm neonates admitted in Bench Sheko, Sheka and Keffa Zone Governmental Hospitals, South West Ethiopia, 2021: prospective follow up study Manuscript Number: bmjopen -2023-072002 Comment to author In the Title: • No comment In the Abstract: o Background: In the abstract section, you research gab is as you said researchers focused on trends not causes and factors but a

	lot of studies in Ethiopia typical to yours, so it needs paraphrase the background. o Methods: the type of questioners to be collected data is not mentioned, Schoenfeld result is also mentioned to show the model fitness o Result: each independent factors should be stated with 95% CI and HR o Conclusion and recommendation: “the Rate of preterm neonatal mortality was high…,” what is you comparison in order to say high and your recommendation is based on your result focused on the independent factors but your statement doesn’t show that….? • Introduction: • Not comment Method and materials: In general the method part: inclusion and exclusion criteria, study population, sample and unit is not mention. • Study design and setting: no comment • Sample size and sampling procedure: what type of sample size calculation used, stata statistical program is a method, simple you feed numbers, then you get numbers. Basically, what type of proportion and formula you used to determine the sample…? • Measurement and variables: no comment • Operational definitions: well, stated but other additional words or phrases needs to operationalize, for example you used “consecutive sampling technique” in the abstract section. It is not clear for me …? • Data collection tools and procedure: is it appropriate word for “face to face interview “it looks like qualitative data collection… and what primary data you find through chart review …? • Data quality control: no comment • Data processing and analysis: “Variables with a p-value of less than 0.25 were entered for multivariate analysis after each variable underwent cox proportional hazard regression.” P-value less than 0.25 in what analysis the result is come to 0.25 entered … to multivariate and are they multivariate, covariate and multivariable; bivariable and bivariate the same terminologies, think of it and write the appropriate terms? On the other hand, you done model fitness and assumption test but there is no written result for example Schoenfeld residual test, what numbers you got, and which levels interprets assumption test fit or not…? You have to state … • Ethical Approval and Consent: no comment Result: • In general the result section good; still needs paraphrasing and in tables sometime the total number the each category are not matched, for example I table 3: Chronic medical problems previously , positive = 46 ,the total number of HIV , DM and HTN = 47 … but is it write or mistake, may be a possibility to be different . any way check there is a difference in other table… • In predictors determination of CHR and AHR: there is significant predictors in AHR but not in CHR in GA , How could it be …?1.13(0.28- 4.61)(CHR); 9.28(1.78-48.42) 0.008*(AHR) • How many significant predictors need to consider good research or what will be our justification if there are no significant predictors in multivariable regression…? Discussion: • discussion part as a whole good but the way of your discussion especially first two three paragraph is looks like logistic regression

	not hazard regression and your justification is not sound like sample size, study area … so, it needs revision. Conclusion and recommendation: • these two things focus on only and only if based on your result the conclude with general situation the finding is high, low moderate or significant proportion with what to compare and in your result significant predictors are only six but you conclude with seven. The recommendation is also based on your finds but you recommend general way not show the findings.

VERSION 2 – AUTHOR RESPONSE

Reviewer:

Mr. Engidaw Enyew, University of Gondar College of Medicine and Health Sciences

Comments to the Author:

Manuscript title: Survival status and predictors of mortality among preterm neonates admitted in Bench Sheko, Sheka and Keffa Zone Governmental Hospitals, South West Ethiopia, 2021: prospective follow up study

Manuscript Number: bmjopen -2023-072002

Comment to author

In the Title:

• No comment

In the Abstract:

o Background: In the abstract section, you research gab is as you said researchers focused on trends not causes and factors but a lot of studies in Ethiopia typical to yours, so it needs paraphrase the background.

Response: Thank you very much. However this study was done earlier, we are so late for publication after completion the study. During this duration of time, certain retrospective studies are come up from different region of the country. Still only few studies are done over all the country, but yet in the western part of the country.

O Methods: the type of questioners to be collected data is not mentioned, Schoenfeld result is also mentioned to show the model fitness

Response: Thank you, we did it accordingly. Please see in the revised manuscript.

O Result: each independent factors should be stated with 95% CI and HR

Response: Thank you, we tried to add HR. Please see in the revised manuscript. However number of words are restricted by the journal of guideline.

O Conclusion and recommendation: “the Rate of preterm neonatal mortality was high…,” what is you comparison in order to say high and your recommendation is based on your result focused on the independent factors but your statement doesn’t show that….?

Response: Thank you, we did it accordingly. Please see in the revised manuscript.

• Introduction:

• Not comment

Method and materials:

In general the method part: inclusion and exclusion criteria, study population, sample and unit is not mention.

Response: Great respected, we tried to add. Please see in the revised manuscript.

• Study design and setting: no comment

• Sample size and sampling procedure: what type of sample size calculation used, stata statistical program is a method, simple you feed numbers, and then you get numbers. Basically, what type of proportion and formula you used to determine the sample…?

Response: Thank you. Sample size was determined based on the following assumptions, HR of the selected covariate (Perinatal asphyxia is taken from study done in University of Gondar = 1.55 that provides maximum sample size, a variability (SD) = 0.5 is used for covariates of interest, probability of failure (event) = 0.288, also a 5% margin of error, 95% Confidence interval and 80% power is used to calculate the sample size.

Response: Thank you, we did it accordingly. Please see in the revised manuscript.

• Measurement and variables: no comment

• Operational definitions: well, stated but other additional words or phrases needs to operationalize, for example you used “consecutive sampling technique” in the abstract section. It is not clear for me …?

Response: Thank you. It is to mean that all preterm neonate who fulfill the inclusion criteria were included in study without any interval (i.e. K = 1)

• Data collection tools and procedure: is it appropriate word for “face to face interview “it looks like qualitative data collection… and what primary data you find through chart review …?

Response: Sorry it typing error. It is to mean that in-person interview for primary data and chart review for secondary data were used. Please see the revised manuscript.

• Data quality control: no comment

• Data processing and analysis: “Variables with a p-value of less than 0.25 were entered for multivariate analysis after each variable underwent cox proportional hazard regression.” P-value less than 0.25 in what analysis the result is come to 0.25 entered … to multivariate and are they multivariate, covariate and multivariable; bivariable and bivariate the same terminologies, think of it and write the appropriate terms? On the other hand, you done model fitness and assumption test but there is no written result for example Schoenfeld residual test, what numbers you got, and which levels interprets assumption test fit or not…? You have to state …

Response: Great respected. We tried to clear and revised this paragraph, please see the revised manuscript.

• Ethical Approval and Consent: no comment

Result:

• In general the result section good; still needs paraphrasing and in tables sometime the total number the each category are not matched, for example I table 3: Chronic medical problems previously , positive = 46 ,the total number of HIV , DM and HTN = 47 … but is it write or mistake, may be a possibility to be different . Any way check there is a difference in other table…

Response: Great respected. Certain variables may not have a denominator of 614 since it is based on the pre leading questions. We tried to check and revise it. Please see the revised manuscript

• in predictors' determination of CHR and AHR: there is significant predictors in AHR but not in CHR in GA, How could it be …? 1.13(0.28- 4.61) (CHR); 9.28(1.78-48.42) 0.008*(AHR)

Response: We appreciate this idea of insight. Some variables are categorized in to 3 or more groups. Gestational age was grouped into 3 categories and one of those categories was significant in bivariate analysis and candidate for multi-variate analysis. Please see the table.

• How many significant predictors need to consider good research or what will be our justification if there are no significant predictors in multivariable regression…?

Response: As far as my knowledge, there is no specific cut point numbers of predictor factors to say good research. In our studies six variable are independent predictors. However, in statistics, one in ten rule is a rule of thumb for how many predictor parameters can be estimated from data when doing regression analysis (in particular proportional hazards models in survival analysis and logistic regression) while keeping the risk of over fitting low. One reason might be correlation of regressors (the regressors may be related to each other, effectively measuring something similar. It might be also related with loss of degree of freedom.

Discussion:

• discussion part as a whole good but the way of your discussion especially first two three paragraph is looks like logistic regression not hazard regression and your justification is not sound like sample size, study area … so, it needs revision.

Response: Great respected. We tried to revise it.

Conclusion and recommendation:

• these two things focus on only and only if based on your result the conclude with general situation the finding is high, low moderate or significant proportion with what to compare and in your result significant predictors are only six but you conclude with seven. The recommendation is also based on your finds but you recommend general way not show the findings.

Response: Thank you. We tried to revise it.

Reviewer: 2

Competing interests of Reviewer: I have no any competing interest