PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Hypothermia on admission to a neonatal intensive care unit in Oromia, western Ethiopia: a case-control study
AUTHORS	Girma, Bikila Tolessa, Belachew Etana Bekuma, Tariku Tesfaye Feyisa, Bikila Regassa

VERSION 1 – REVIEW

REVIEWER	Reviewer name: Dr. Eirini Koutoumanou Institution and Country: University College London, United Kingdom of Great Britain and Northern Ireland Competing interests: none
REVIEW RETURNED	10-Jul-20211

GENERAL COMMENTS	This study analyses newborn data from 5 public hospitals in Western Ethiopia with regards to their body temperature (low of high) and various maternal and birth-related characteristics. The main statistical tool used is logistic regression where the odds of hypothermia are explored across the various factors of interest. Please see my comments below, which if addressed could improve this manuscript: - The authors mention a pre-test was performed prior to the actual data collection. What did this test involve in practical terms? What was being tested and how? - They mention that a tool was used for this pre-test and that reliability of the tool was checked – what about the validity of this tool? Was there a gold standard to compare it against? But most importantly need to know what the pre-test/tool actually involved? If this tool was not validated this should acknowledged in the study limitations. - They also mention that a questionnaire was prepared and used for data collection. Could they please clarify if this questionnaire was just a tool to collect the necessary data as opposed to including questions that the mothers had to respond to? If not the latter, maybe it should be relabelled to something else other than questionnaire. - Did the authors consider enhancing their choice of variables included in the multivariable model over and above the significant result of 0.25? Choice of predictors in a model based on results from univariable analysis is interesting but it does not provide an answer of desirable predictions within the given research content. So, for example if the authors thought it would be relevant to adjust for other predictors that did not produce a p-value less than 0.25 in the univariable analysis, they should have included those in the model. - The authors performed a sample size calculation "by assumptions of double population proportion formula". It is not clear to me what this means. I suspect that the calculation was based on difference in proportions and that there was a 2:1 ratio for controls and cases.

	However, the main analysis tool was logistic regression and ideally, the sample size estimation calculation should had been based on a logistic regression power calculation. - The results section of Determinants needs to be re-written as the authors have wrongly interpreted each AOR as odds of each determinant as opposed to the odds of the outcome. For example, AOR of 3.43 for weight <2500 compared to >2500, means that the odds of hypothermia are higher in those with lower than 2500 weight compared to those with weight >2500. But the authors have wrongly interpreted this as the "odds of low birth weight were 3.43 times higher among cases…." - Subsequently, the discussion section needs to be reviewed/re-written substantially to reflect the correct interpretation of AOR. - Did the authors check/explore the similarity of the data within each centre and if it would be statistically appropriate/more relevant to analyse the data via hierarchical logistic regression? The paper needs to be reviewed thoroughly with regards to the correct use of English grammar, as well as the tense used, as there are several mistakes. Here are a handful of examples from the introduction section alone: - Also *a* study from Tanzania… (add a) - Studies conducted in Ethiopia *show*… (correct shows) - Studies * identified* several…. (delete were) - …the problem *is* unanswered (replace an with is) - And more…. Minor: - Explain EDHS the first time it appears in the actual text (it's already included in the list of acronyms, but it's needed in the text too) - "neonates paired mothers" – do you mean "neonates and their mothers"? - 'paired mothers' – not the right phrase. Please review the paper thoroughly to correct the use of the term "paired mothers" as it is often used in a wrong way - BSc nurses – meaning nurses with a Bachelors degree of science? - Table 1 and Supplementary table 2 footnotes, correct bivariate with bivariable

REVIEWER	Reviewer name: Dr. Shalini Ojha Institution and Country: University of Nottingham, United Kingdom of Great Britain and Northern Ireland Competing interests: None
REVIEW RETURNED	16-Jul-2021

GENERAL COMMENTS	Thank you for asking me to review this study. It is an interesting look at the associations of hypothermia with a number of maternal, social, and neonatal factors. The findings are in keeping with what is already known but are useful as they represent data from a region that is usually under-represented in research. I have the following suggestions for the authors: What this study adds: the first statement is a description of the study – please remove it from this section. The second point should combine skin-to-skin and breast feeding – although this is not a new finding and hence not something that the "Study adds" it is the important point made by this study. The third point does not convey much – give a specific point about our findings please Page 5, line 6 – Does the definition of hypothermia specify "axillary"

	temperature? Please provide reference for this definition. Page 5, Line 17 "thermo genesis" is one word Page 5 lines 34-37: In Sub-Saharan countries, every 1 degree Celsius decrement of body temperature increases neonatal mortality by 80% because it affects all neonatal body systems [7,8]. - Please check the references sited – they do not substantiate this statement. I agree that mortality risks increase with hypothermia but increase by 80% (likely to be a relative increase) in Sub-Saharan Africa is not supported by the references provided. Similar figures are quoted for Nepal where reference 10 is cited which does show that hypothermia was associated with a 80% relative increase in mortality. I suggest putting both these paragraphs (lines 31 to 55 and page 8 lines 3 to 12) in to two or three sentences with a few key figures quoted that show that neonatal mortality in high in Sub-Saharan Africa and hypothermia is associated with higher mortality. Page 6 lines 36-37: Are these figures for the whole population of the region? Are there other hospitals covering maternity and newborn care for this population or do the study hospitals cover all births in the region? Page 6 line 48-49: Suggest: The source population included all mother-neonate pairs… In pairing mothers and babies, how were multiple births accounted for? Please clarify how the cases were selected: was the case definition temp of <36.5 at admission or any recording of <36.5 at any time during the neonatal unit stay? Page 8 line 3 Africa instead of African Methods: I am not sure how the data were collected and what time point. It appears there was a survey and one temperature measurement. Please clarify the following: When was the temperature measured? Was this at the time of admission or sometime later? How were the other data collected? Were these taken from health records or by recall from health care professionals and mothers? There are many associations tested in this paper. Was there any correction for multiple testing? Results: Page 9 line 11 – what does response rate of 100% mean in the context of this study design? Not sure it is needed here. Page 9 line 11- "mean age of cases of mothers" – should be: mean age of mothers of cases" Similarly in the next sentence. The results show that breastfeeding initiation after 1 hour increased the odds of hypothermia and so did lack of skin-to-skin contact after birth. Did the authors check if these was co-linearity between these two variables? It is very likely that those who had early skin-to-skin care also breastfed early. Table 1 Family size – is this whole family or number of children the women has? What is HF? Table 2 How did you define CPR?

	Discussion: Page 12 lines 3-6: this statement is tautological. The association between LBW and hypothermia is well established and should be stated more clearly and concisely here. Were these LBW babies SGAs were they small due to prematurity? The discussion on early breast feeding and skin-to-skin and their co-existence should be discussed in one single section to make the implications of promoting this practice clear. Page 11, line 48 – what did the study in ref 23 find? Conclusion: please give specific conclusion – the first sentence can be deleted. The second sentence is a list of factors found to be associated with hypothermia – please give this a summary of your findings and how they impact practice. In addition, please consider general language revision for the manuscript.

VERSION 1 – AUTHOR RESPONSE

Authors point-by-point response

1. Response for the editor in chief

Title amend to "Hypothermia on admission to a neonatal intensive care unit in Oromia, western Ethiopia: A case control study"
The English needs MAJOR improvement - sorry.

Response:

- Thank you for your invaluable suggestions. We have taken it in to consideration and we have amended the title as well.
- We have also tried to improve the English.

2. Response to associate editor

I value the topic and the efforts made, but we do need a much better version, in line with the clinical and methodological reviewer's assessment. Additional suggestions determinants ? but what the study explored were associations, not necessary causal, 'factors' is a better word choice perhaps ? Title: hypothermia on admission is perhaps better (to avoid uncertainties related to intended hypothermia).

Response:

- We are very thankful for your constructive suggestions and comments. We have amended the topic and the word 'determinant' as well accordingly.

Check for language and typing errors. This includes the supplement ('supplementary = supplemental table 1, new born versus newborn

Response:

- We have incorporated the language and typos as much as possible in the revised version of the manuscript.

There is likely value to add some information on the total number of cases admitted in the time interval, and could there be a 'seasonal effect' as 'only' data in cases admitted between February 30 (but this does not exist) and April 30, 2020 have been considered.

Response:

- Yes, of course. As far the design was observational case control study, we could not adjust the seasonal variation which might affect the result of the study. Owing this, we have explained the possible effect under the limitation of the study.

3. Responses for Reviewer 1:

This study analyses newborn data from 5 public hospitals in Western Ethiopia with regards to their body temperature (low of high) and various maternal and birth-related characteristics. The main statistical tool used is logistic regression where the odds of hypothermia are explored across the various factors of interest. Please see my comments below, which if addressed could improve this manuscript:

- The authors mention a pre-test was performed prior to the actual data collection. What did this test involve in practical terms? What was being tested and how?

- They mention that a tool was used for this pre-test and that reliability of the tool was checked – what about the validity of this tool? Was there a gold standard to compare it against? But most importantly need to know what the pre-test/tool actually involved? If this tool was not validated this should acknowledged in the study limitations.

Response:

- Thank you for your constructive comments and suggestions. Yes, we have conducted pre-test prior to data collection. We have amended the structure of the tool, checked the clarity of the data, and checked the possible timing of the interview with the respondents. Moreover, we have also checked the reliability of the tool using Cronbach's alpha and we have found the tool was reliable.

-They also mention that a questionnaire was prepared and used for data collection. Could they please clarify if this questionnaire was just a tool to collect the necessary data as

opposed to including questions that the mothers had to respond to? If not the latter, maybe it should be relabelled to something else other than questionnaire.

Response:

- We really thank you for the suggestions. We have prepared the socio-demographic and socio-economic related questionnaires. For the data collected from the mother, we have used the validated tool, that was used by different literatures so far. We have also checked the validity of the tool for our cultural context.

- Did the authors consider enhancing their choice of variables included in the multivariable model over and above the significant result of 0.25? Choice of predictors in a model based on results from univariable analysis is interesting but it does not provide an answer of desirable predictions within the given research content. So, for example if the authors thought it would be relevant to adjust for other predictors that did not produce a p-value less than 0.25 in the univariable analysis, they should have included those in the model.

Response:

- We appreciate your invaluable suggestions and comments. Yes, of course. The authors considered the choice of variables which were included in the final model. First, we have adjusted the variables in the univariable analysis to p-value less or equal to 0.25 and we have taken all the variables (the candidate variables) who were in the cut-off points to multivariable analysis. We have included it in supplemental table 1 and 2. As it is not recommended, we don't think is important to include the variables which were above 0.25 in the univariable model in to the final model.

- The authors performed a sample size calculation "by assumptions of double population proportion formula". It is not clear to me what this means. I suspect that the calculation was based on difference in proportions and that there was a 2:1 ratio for controls and cases. However, the main analysis tool was logistic regression and ideally, the sample size estimation calculation should had been based on a logistic regression power calculation.

Response:

- Thank you for the constructive suggestions and comments. Of course the expected odds ratio between the exposed and non-exposed groups was considered in the Epi info software and power of 80% was considered. We mean by "by assumptions of double population proportion formula", that the assumption behind the study population was two independent populations. P1, the probability of exposure in cases and p2 as probability of exposure in the controls, in which the control to case

ratio was taken as 2:1. We thought that, we can calculate the sample size for case control study in this way as well.

- The results section of Determinants needs to be re-written as the authors have wrongly interpreted each AOR as odds of each determinant as opposed to the odds of the outcome. For example, AOR of 3.43 for weight <2500 compared to >2500, means that the odds of hypothermia are higher in those with lower than 2500 weight compared to those with weight >2500. But the authors have wrongly interpreted this as the "odds of low birth weight were 3.43 times higher among cases…."

Response

- ❖ We really appreciate your constructive and teachable suggestions and comments as well. We have incorporated the comment and included in the revised version of the manuscript.

- Subsequently, the discussion section needs to be reviewed/re-written substantially to reflect the correct interpretation of AOR.

Response

- ❖ Thank you for the suggestions. We have incorporated it.

- Did the authors check/explore the similarity of the data within each centre and if it would be statistically appropriate/more relevant to analyse the data via hierarchical logistic regression?

Response

- ❖ Thank you for the suggestions and comment. Yes, we have checked it and came up with these findings.

The paper needs to be reviewed thoroughly with regards to the correct use of English grammar, as well as the tense used, as there are several mistakes. Here are a handful of examples from the introduction section alone:

- Also *a* study from Tanzania… (add a)
- Studies conducted in Ethiopia *show*… (correct shows)
- Studies * identified* several…. (delete were)
- …the problem *is* unanswered (replace an with is)
- And more….

Response

- ❖ Thank you for the suggestions and comment. We found all the suggestions significant. We have tried to modify the grammar and typos.

Minor:

- Explain EDHS the first time it appears in the actual text (it's already included in the list of acronyms, but it's needed in the text too)

- “neonates paired mothers” – do you mean “neonates and their mothers”?
- ‘paired mothers’ – not the right phrase. Please review the paper thoroughly to correct the use of the term “paired mothers” as it is often used in a wrong way
- BSc nurses – meaning nurses with a Bachelors degree of science?
- Table 1 and Supplementary table 2 footnotes, correct bivariate with bivariable

Response

- ❖ Thank you for the suggestions and comment. We have incorporated and included in the revised version of the manuscript.

Reviewer: 2
Dr. Shalini Ojha, University of Nottingham, University Hospitals of Derby and Burton NHS Foundation Trust
Comments to the Author
Thank you for asking me to review this study. It is an interesting look at the associations of hypothermia with a number of maternal, social, and neonatal factors. The findings are in keeping with what is already known but are useful as they represent data from a region that is usually under-represented in research.

4. Responses for Reviewer:2

I have the following suggestions for the authors:

What this study adds: the first statement is a description of the study – please remove it from this section.
The second point should combine skin-to-skin and breast feeding – although this is not a new finding and hence not something that the “Study adds” it is the important point made by this study.
The third point does not convey much – give a specific point about our findings please

Responses

- ❖ Thank you for your constructive comments. We found the comments significant. We have corrected as per the comments and incorporated in the revised version of the manuscript.

Page 5, line 6 – Does the definition of hypothermia specify “axillary” temperature? Please provide reference for this definition.

Response

- ❖ Thank you for your comment. We have added the reference to it.

Page 5, Line 17 “thermo genesis” is one word

Response

- ❖ Thank you for your suggestion. We have corrected it.

Page 5 lines 34-37: In Sub-Saharan countries, every 1 degree Celsius decrement of body temperature increases neonatal mortality by 80% because it affects all neonatal body systems [7,8].

- Please check the references sited – they do not substantiate this statement. I agree that mortality risks increase with hypothermia but increase by 80% (likely to be a relative increase) in Sub-Saharan Africa is not supported by the references provided. Similar figures are quoted for Nepal where reference 10 is cited which does show that hypothermia was associated with a 80% relative increase in mortality. I suggest putting both these paragraphs (lines 31 to 55 and page 8 lines 3 to 12) in to two or three sentences with a few key figures quoted that show that neonatal mortality in high in Sub-Saharan Africa and hypothermia is associated with higher mortality.

Response

- Thank you for your very important suggestions and comment. We have corrected it and included in the revised version of the manuscript.

Page 6 lines 36-37: Are these figures for the whole population of the region? Are there other hospitals covering maternity and newborn care for this population or do the study hospitals cover all births in the region?

Response

- Thank you for question. Yes, the figures include the total population in the zone. There are five hospitals as indicated in the manuscript which can provide NICU services. But it is not in only these hospitals that are serving for delivery and other related services. There are many health centers in the zone.

Page 6 line 48-49: Suggest: The source population included all mother-neonate pairs…
In pairing mothers and babies, how were multiple births accounted for?

Response:

- Thank you very much for the suggestion. We have actually corrected the sentence to its correct way we wanted to indicate. All neonates who admitted to NICU within 28 days of delivery during the study period were included regardless of the number of neonates the mother had.

Please clarify how the cases were selected: was the case definition temp of <36.5 at admission or any recording of <36.5 at any time during the neonatal unit stay?

Response:

- Thank you very much for your comment and suggestion. It was at admission. We have corrected it accordingly.

Page 8 line 3 Africa instead of African

Response:

- Thank you very much. It corrected.

Methods: I am not sure how the data were collected and what time point. It appears there was a survey and one temperature measurement.
Please clarify the following:
When was the temperature measured? Was this at the time of admission or sometime later?

How were the other data collected? Were these taken from health records or by recall from health care professionals and mothers?

Response:

- Thank you very much for your comments and suggestions. The temperature was measured at admission. Allocation to either case or control was determined at that point. The other data were collected from the mother and the chats of the neonates as well.

There are many associations tested in this paper. Was there any correction for multiple testing?

Response:

- Thank you for the question. The associations tested were for crude odds ratio (COR0 for bivariable analysis to identify the candidate variables for multivariable logistic regression.

Results:
Page 9 line 11 – what does response rate of 100% mean in the context of this study design? Not sure it is needed here.

Response:

- Thank you for the suggestion. It was to indicate the response rate. We Have corrected in the revised version of the manuscript.

Page 9 line 11- "mean age of cases of mothers" – should be: mean age of mothers of cases" Similarly in the next sentence.

Response:

- Thank you for the suggestion. We have corrected it.

The results show that breastfeeding initiation after 1 hour increased the odds of hypothermia and so did lack of skin-to-skin contact after birth. Did the authors check if these was co-linearity between these two variables? It is very likely that those who had early skin-to-skin care also breastfed early.

Response:

- Thank you for your informative suggestion. Yes, we have checked for the effect of multi collinearity.

Table 1
Family size – is this whole family or number of children the women has?
What is HF?

Response:

- Thank you for your questions. It was the whole family size the women have. HF was to show health facility. We have written it fully.

Table 2
How did you define CPR?
Response:

- Thank you for the question. It was to show '**Cardiopulmonary Resuscitation**. We have included the full name in the revised version of the manuscript. It is an emergency procedure that combines chest compression often with artificial ventilation in effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest.

Discussion:

Page 12 lines 3-6: this statement is tautological. The association between LBW and hypothermia is well established and should be stated more clearly and concisely here. Were these LBW babies SGAs were they small due to prematurity?

Response:

- Thank you for the questions and suggestion. We have tried to incorporate the repetitive ideas in the sentence. Of course neonates are susceptible to rapid heat loss and consequent hypothermia because of a high surface area to volume ratio, which is even higher in low-birth-weight neonates. This is attributed to different reasons. We have incorporated in the revised version of manuscript.

The discussion on early breast feeding and skin-to-skin and their co-existence should be discussed in one single section to make the implications of promoting this practice clear.

Response

- Thank you for invaluable suggestions. We have accepted as it is. We have modified and included in the revised version of the manuscript.

Page 11, line 48 – what did the study in ref 23 find?

Response

- Thank you for your question. The study on ref. number 23 revealed that the odds of developing hypothermia was 2.1 times higher among those who did not wear cap compared to those who wear cap. However, the study was cross-sectional study which could have poorly generalized.

Conclusion: please give specific conclusion – the first sentence can be deleted. The second sentence is a list of factors found to be associated with hypothermia – please give this a summary of your findings and how they impact practice.

Response

- Thank you for comments and suggestions. We have included the revised version in the manuscript.

In addition, please consider general language revision for the manuscript.

Response

- Thank you for the suggestion. We have tried as much as possible to revise the language and grammar of the manuscript.

VERSION 2 – REVIEW

REVIEWER	Reviewer name: Dr. Shalini Ojha Institution and Country: University of Nottingham, United Kingdom of Great Britain and Northern Ireland Competing interests: None
REVIEW RETURNED	30-Jul-2021

GENERAL COMMENTS	Thank you for addressing my comments. I have a few remaining views: 1. What this study adds: please correct the format of the second statement. 2. Thank you for checking for co-linearity. Was there any between early skin-to-skin and early breast feeding and if there was did you account for this in. your analysis? 3. Which variable were the OR adjusted for? Please specify this in the methods and in table 2. 4. Dealing with twins and higher order births: I am still not sure how multiple births were accounted for in maternal details. There are 129 babies and 129 mothers. If a mother had more than one baby in the study, was she, therefore, counted twice in the maternal details? Authors need to specify how many such cases were there and if there were any, the maternal characteristics need to be reanalysed counting each mother only once as she is one person even if she had more than one baby. For the regression each mother-baby can be taken as a dyad but number of mother's who are double counted needs to be specified. Statistical advice is be needed to see if there is any ICC correction needed for the regression but as I am not a statistician I am unable to suggest how that may be done. 5. Thank you for describing what CPR means. My question, however, referred to what is the definition by which a baby was said to have received CPR i.e., did all these babies have positive pressure ventilation and chest compression? If there was a baby who had positive pressure ventilation only, would that count as CPR or not? This point pertains to clearly defining your variables - as another example, what does birth at day vs. night mean - what times do these refer to? Does it pertain to staff shift patterns in the hospital? Discussion: thank you for re-writing some sections as per my suggestions. As the findings are not new, I suggest further editing to improve the flow of information and discuss each association more briefly. The paper needs further language editing.

VERSION 2 – AUTHOR RESPONSE

AUTHORS' POINT-BY-POINT RESPONSE

Editor in Chief Comments to Author:

Please ask a native English speaker to edit your paper. The language still needs major improvement before we can send back to the statistical reviewer.

Response

- Thank you for your suggestions and comments. We have tried to edit the whole documents in this revised version.

Reviewer: 1

Thank you for addressing my comments.

I have a few remaining views:

1. What this study adds: please correct the format of the second statement.

Response

- We also thank you for your consideration. We have corrected the format in the revised version of the manuscript.

2. Thank you for checking for co-linearity. Was there any between early skin-to-skin and early breast feeding and if there was did you account for this in your analysis?

Response

- We also thank you for your consideration. We have checked it and there is no co-linearity between skin-to-skin and early breast feeding.

3. Which variable were the OR adjusted for? Please specify this in the methods and in table 2.

Response

- Thank you for your suggestion and comment. The variables were adjusted for the mother's age. We have incorporated the corrected one in the revised version of the manuscript.

4. Dealing with twins and higher order births: I am still not sure how multiple births were accounted for in maternal details. There are 129 babies and 129 mothers. If a mother had more than one baby in the study, was she, therefore, counted twice in the maternal details? Authors need to specify how many such cases were there and if there were any, the maternal characteristics need to be reanalysed counting each mother only once as she is one person even if she had more than one baby. For the regression each mother-baby can be taken as a dyad but number of mother's who are double counted needs to be specified. Statistical advice is be needed to see if there is any ICC correction needed for the regression but as I am not a statistician I am unable to suggest how that may be done.

Response

- Thank you for your detail suggestions and comments. We have not encountered a mother with two or more babies for this particular study during the study period. We had better explain it in the document. Now, we have explained it in the revised version of the document.

5. Thank you for describing what CPR means. My question, however, referred to what is the definition by which a baby was said to have received CPR i.e., did all these babies have positive pressure ventilation and chest compression? If there was a baby who had positive pressure ventilation only, would that count as CPR or not?

This point pertains to clearly defining your variables - as another example, what does birth at day vs. night mean - what times do these refer to? Does it pertain to staff shift patterns in the hospital?

Response

- Thank you for your detail suggestions and comments. Any support done for the neonates to save their life was considered as CPR. It could be those who received both pressure ventilation and chest compression or one of the two. Actually we have taken the variable from the registry on which the nurses working in the NICU were using. They ticked for those who took CPR in the pre-defined format in the independent column.
- Time of delivery pertains to the duration of time range in which the woman gave birth, which in Ethiopia is night time from 7:00 PM to 7:00 AM and day time from 7:00 AM to 7:00 PM). It does not pertain to the staff shift patterns.

Discussion: thank you for re-writing some sections as per my suggestions. As the findings are not new, I suggest further editing to improve the flow of information and discuss each association more briefly.

Response

- Thank you for your consideration. We have tried to improve the flow as well as the grammar as much as possible.

The paper needs further language editing.

Response

- Thank you for your suggestion. We have tried to modify it the revised version of the manuscript.

VERSION 3 – REVIEW

REVIEWER	Reviewer name: Dr. Shalini Ojha Institution and Country: University of Nottingham, United Kingdom of Great Britain and Northern Ireland Competing interests: None
REVIEW RETURNED	08-Aug-2021

GENERAL COMMENTS	Thank you for considering my suggestions and revising the manuscript. Best wishes,

REVIEWER	Reviewer name: Dr. Eirini Koutoumanou Institution and Country: University College London, United Kingdom of Great Britain and Northern Ireland Competing interests: none
REVIEW RETURNED	14-Sep-2021

GENERAL COMMENTS	Well done to the authors who have made great improvements to this manuscript. Some minor corrections include the following: - Rephrase "Neonatal hypothermia was attributed to obstetric…" to "…was associated with…" - Rephrase "Neonatal hypothermia can be caused by…" to "…is associated with…" - Rephrase "Variables were adjusted for mother's age" to "The results/analysis were adjusted for mother's age". Adjustments in

	regression models are incorporated in the stats not directly to the variables. - The authors have answered my earlier questions regarding the pre-test tool, but I am still unclear as to what this test was evaluating? I suspect it was a tool for measuring temperature (as we are told it was tested against a reference thermometer)? If so, can that simply be added in the text describing this tool, 2nd paragraph of the "Data collection tools and data collectors" section? If I am wrong, could the authors please clarify what was this pre-test tool designed to test/evaluate/measure? - Finally, is there a reference regarding the "standardised questionnaires" referred to in the "Data collection tools and data collectors" section?

VERSION 3 – AUTHOR RESPONSE

Point-by-point response of the authors

1. Response for editor in chief

Well done. A few minor changes only

Abstract Results replace "independent risk factors for" with "associated with"

Response

- Thank you for your very constructive suggestions and comments. We have incorporated the comments.

Abstract Conclusions replace "attributed to" with "associated with"

Response

- Thank you for your constructive suggestions and comments. We have incorporated the comments and corrected it accordingly.

What this study adds 1st statement replace "can be caused by" with "is associated with"

Response

- Thank you for your constructive suggestions and comments. We have incorporated the comments accordingly.

What this study adds 2nd statement replace "found to be risk factors for" with "associated with"

Response

- Thank you for your very constructive suggestions and comments. We have incorporated the comments and included in the newly revised version of the manuscript.

Methods I suggest adding the questionnaire as an appendix

Response

- Thank you for your suggestions and comments. We have included it in the newly revised version of the manuscript.

Results replace subheading "Risk factors of neonatal hypothermia" with "Factors associated with neonatal hypothermia"

Response

- Thank you for your suggestions and comments. We have included it in the newly revised version of the manuscript.

Table 2 heading replace "Risk factors of neonatal hypothermia" with "Factors associated with neonatal hypothermia"

Response

- Thank you for your suggestions and comments. We have replaced and included it in the newly revised version of the manuscript.

Similrly change the text
Conclusion replace "significant risk factors for" with "significantly associated with"

Response

- Thank you for your suggestions and comments. We have replaced and included it in the newly revised version of the manuscript.

2. Responses to Associate Editor

Bullet point, what this study adds
Can we claim causality, or perhaps association is more accurate ?

Response

- Thank you for your interesting suggestion. We have corrected and included it in the newly revised version of the manuscript.

Assuming that the supplements are no longer checked for editing related aspects, I still have some suggestions

Response

- Thank you for your suggestion. We have tried to recheck it and we believe that it is correctly written.

Table 1
New born, or newborn ? at least should be written similar (and I assume that newborn is the correct writing ?)

Response

- Thank you for your suggestion and comment. We have corrected it accordingly.

Abbreviations should be explained in the legend (CPR, OR, NICU, CI)
Table 2
Bathed should read bathed, and abbreviations ?

Response

- Thank you for your suggestions and comments. We have corrected it accordingly and included it in the revised version of the manuscript.

3. **Responses to Reviewer: 1, Dr. Shalini Ojha**

Thank you for considering my suggestions and revising the manuscript.
Best wishes,

Response

- We really appreciate your unreserved suggestions, comments and directions you gave us.

4. **Responses to Reviewer:2 Dr. Eirini Koutoumanou**

Well done to the authors who have made great improvements to this manuscript.

Response:

- We really thank you for your constructive suggestions and unreserved corrections you provided us.

Some minor corrections include the following:

- Rephrase “Neonatal hypothermia was attributed to obstetric…” to “…was associated with…”

Response

- Thank you for your suggestion. We have rephrased it accordingly and included it in the revised version of the manuscript.

Rephrase “Neonatal hypothermia can be caused by…” to “…is associated with…”

Response

- Thank you for your suggestion. We have rephrased it accordingly and included it in the revised version of the manuscript.

- Rephrase “Variables were adjusted for mother’s age” to “The results/analysis were adjusted for mother’s age”. Adjustments in regression models are incorporated in the stats not directly to the variables.

Response

- We are very thankful for your careful suggestion. We have rephrased it and included it in the revised version of the manuscript.

- The authors have answered my earlier questions regarding the pre-test tool, but I am still unclear as to what this test was evaluating? I suspect it was a tool for measuring temperature (as we are told it was tested against a reference thermometer)? If so, can that simply be added in the text describing this tool, 2nd paragraph of the “Data collection tools and data collectors” section? If I am wrong, could the authors please clarify what was this pre-test tool designed to test/evaluate/measure?

Responses

- Thank you for your consideration of our previous response regarding pre-test of the tool. The pre-test was not conducted only to measure/evaluate the temperature, but all the components in the tool for reliability check. The pre-test tool was designed to check the reliability of the tool. We tested the tool against reference thermometer to double-check for the possible mislead readings. It was conducted both during pre-test and during the actual data collection.

- Finally, is there a reference regarding the “standardised questionnaires” referred to in the “Data collection tools and data collectors” section?

Response:

- Thank you for your appreciable question. Actually we have developed the questionnaire after carefully reviewing different related literatures. Taking your questions in to consideration, we have tried to correct the phrase which we have used to explain the questionnaire we used.