PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	HEALTH FACILITY STRUCTURE AND MATERNAL CHARACTERISTICS RELATED TO ESSENTIAL NEWBORN CARE IN BRAZIL: A CROSS-SECTIONAL STUDY
AUTHORS	MENEZES, MARIA ALEXSANDRA; Gurgel, Ricardo; Bittencourt, Sonia; Pacheco, Vanessa; Cipolotti, Rosana; Leal, Maria do Carmo

VERSION 1 – REVIEW

REVIEWER	Aastha Kant Tata Institute of Social Sciences, Mumbai, India
REVIEW RETURNED	18-Jan-2018

GENERAL COMMENTS	The paper titled, 'Essential newborn care in Brazil: Coverage and relation with hospital structure and maternal caracteristics' discusses a relevant issue of high neonatal morbidity and mortality in Brazil, despite universal antenatal care availability and hospital delivery. Following are my comments on the paper: • In the abstract, methodology of study could be added. • The second and the third stage of cluster sampling needs more clarification. • In the methods section, more information on data collection tool could be added. • The language of the results section needs editing. For example, the text is written in a comparative language- 'increased to', 'declined to' etc. • The results section should be written with more clarity, especially the interpretation of table 3, 4 and 5. • There is more clarity required on the variables that were adjusted while discussing adjusted odds ratio. • The authors also need to specify the level of significance in table 3, 4 and 5 along with simple and adjusted odds ratio. This is required for understanding which variables will have more impact on the non-use of ENC. Based on the level of significance, the authors might need to modify the results and discussion sections. • In mothers' characteristics, along with other socio-economic factors, wealth index could also be considered. • The authors could add policy/programmatic implications and recommendations of the study. • The language of the article needs editing. For instance, spelling like, 'caracteristics' in the title, 'public and private founding' in the abstract.

REVIEWER	Florian Fischer Bielefeld University
REVIEW RETURNED	27-Mar-2018

GENERAL COMMENTS	Abstract: - I am missing a section on background/introduction. I recommend to add at least one or two sentences, why this topic is relevant. - I am not sure about the term “complementary analysis”. For me, it sounds as if you have conducted a secondary analysis based on data which was collected for another purpose. - Please add a section on methods by summarizing the different aspects mentioned under setting, participants and primary and secondary outcome assessment. You need to describe how the data was analyzed. Article Summary: - The article summary includes strength and limitations merely. That is not what I expect under this headline. Introduction: - Page 5, line 8: I recommend to rephrase it as follows: “”…and nearly one quarter of neonatal deaths occur…” - Page 5, line 13: I recommend to use the singular form “preterm birth”, because all other complications are also in singular form. - Page 5, line 13: I recommend to rephrase as follows: “…reflects economical, social and biological disparities…” - Page 5, line 35: Are the underprivileged groups related to the disparities mentioned above? Please explain this a bit more in detail. Methods: - You have used several headings for the methods section in the abstract, but none on the main text. Maybe it is useful to structure the methods section by adding some headlines? - Page 8, line 24: Did you check for multicollinearity? Results: - The description of numbers is somehow irritating. For example at page 9, line 17, the percentage provided is for the overall sample. This should be stated, because the comparison is just with the group of privately funded facilities. Otherwise, you can provide the number for the publicly funded facilities instead of the overall values. This comment refers to several parts of the results section. - Page 9, lines19-21: You cannot claim a decrease or increase. Please rephrase these parts by mentioning either higher or lower values compared to the “reference group”. - Page 9, lines 50-52: The meaning of this sentence is not clear to me. Can you please explain in more detail how you define “most associated”? Does this refer to the magnitude of difference or statistical issues? Discussion: - Page 22, line 12: The comparison with Uganda is somehow abrupt. Is there any reason behind? - Page 22, line 52ff.: I am not sure whether early breastfeeding is really a causal factor. For example, if newborns have to be at ICU, they were also not breastfed. In this case, the worse health condition (leading to the ICU visit) will be the risk factor, not the missing breastfeeding. - Page 23, line 46: I recommend to use “Limitations” as a headline. - Page 25, lines 10ff.: These are no longer limitations. For that reason, I recommend to use the headline “Conclusions” here. Tables:

	- Tables 1 and 2 can be combined in on table. - Table 1: Please exchange “Brazil” by “Total” (under “macro-region”). This total can be the first line. - Tables 1 and 2: The n applies to the existing data, but not to the number of people receiving this kind of care. For that reason, it makes sense to consider the recommendation mentioned above. The total indicates those people receiving the kind of care. References: - I recommend to use further scientific peer-reviewed literature. Until now, there is a lot of literature in Spanish language.

REVIEWER	Jalemba Aluvaala 1. Department of Paediatrics and Child Health, School of Medicine, University of Nairobi, Kenya 2.KEMRI-Wellcome Trust Research Programme, Nairobi,Kenya
REVIEW RETURNED	12-May-2018

GENERAL COMMENTS	This paper addresses important questions however the following need to be addressed: 1.Overall The authors ought to consider using the STROBE guidelines to guide the reporting of their work. The quality of written English requires substantial improvement to allow the reader to clearly understand the content. 2.Specific a) Abstract. The exposures and outcomes are not clearly defined b)Introduction Specify the actual estimates rather than the use of vague sentences e.g "In Brazil antenatal care coverage is high...." Paper is on essential newborn care but there is no mention of the neonatal mortality rate in Brazil It seems implausible that there are absolutely no data on coverage and or access to Essential Newborn Care in Brazil c) Methods Use STROBE guidelines to report the methods. In its current form it is hard to determine for instance: what the three clusters were, the sampling method used, the definition of exposures and outcomes. In statistical analysis, there is no description of data management and it is unclear beyond the stated "robust variance" how adjustment for clustering was accounted for in the modelling d) Results Would really benefit from STROBE guidance. Proportions, for example, are presented without accompanying numbers and confidence intervals. It is unclear how many regression models were fitted. It is also unclear how many independent variables were tested at univariable analysis but one gets the impression that there numerous a raising the possibility that spurious associations may have been observed. d) Discussion Given the limitations of the methods and results, it was quite difficult to review the discussion

VERSION 1 – AUTHOR RESPONSE

REVIEWER 1

The paper titled, 'Essential newborn care in Brazil: Coverage and relation with hospital structure and maternal characteristics' discusses a relevant issue of high neonatal morbidity and mortality in Brazil, despite universal antenatal care availability and hospital delivery.

Following are my comments on the paper:

- In the abstract, methodology of study could be added.

Answer:

We added: "DESIGN: Cross-sectional observational health facility assessment." **Page 1, line 8.**

- The second and the third stage of cluster sampling needs more clarification.

Answer:

We modified to: "…In the second stage of sampling, an inverse sampling method was used to select as many days as were necessary to interview 90 postnatal women in the hospital. This method, originally proposed by Haldane [11] to estimate frequencies and proportions, can be defined as a technique to sample as many units (in this case, days) as are needed to observe a pre-specified number of successes or, in this case, 90 interviews performed with postnatal women in the hospital. To account for the difference in the number of live births on weekends and on work days, a minimum of seven consecutive days was mandatory and the size of the field team was determined to ensure compliance with this rule [12].

The number of postnatal women (third stage of the sample) to be selected per day and for every hospital depended on the number of live births, the number of interview shifts, and the number of available interviewers per day in the hospital. To ensure a random selection of postnatal women, the survey central office prepared tables containing an ordered list of women to be interviewed according to the number of live births. The ordering of this list was defined by the order of the women's admittance to the hospital. Some additional women were selected to replace those who did not respond [12]." **Page 5, line 21 to Page 6, line 12.**

- In the methods section, more information on data collection tool could be added.

Answer:

We added: "Data was obtained from two sources: i) interviews were conducted with health facility managers and with postnatal women during hospitalisation within the first 24 hours after birth; ii) the medical records of mothers and newborns were consulted after hospital discharge or death. In the case of prolonged postpartum hospital stays, records were analysed up to the 42nd day of hospitalisation for mothers and up to the 28th day for newborns. In the case of postnatal transfers of mothers and/or newborns, data was obtained from the hospital records of the transfer destination, even when the hospital was not part of the original sample of the study. In the case of refusal or early discharge, the participant was replaced by a new subject selected from the same hospital. A digital photograph of the antenatal notes was taken when available and the relevant data from the notes was converted into electronic form. All field work was conducted by healthcare professionals or healthcare students under the supervision of the research team. Further information about the sample design and data collection are detailed elsewhere [10][13]. " **Page 6, line 14 to page 7, line 2.**

• The language of the results section needs editing. For example, the text is written in a comparative language- ‘increased to’, ‘declined to’ etc.

Answer:

We edited the language of the results section.

• The results section should be written with more clarity, especially the interpretation of table 3, 4 and 5.

Answer:

We modified to: “The coverage of the ENC items investigated according to location, type of funding, health facility structural variables, and the mothers’ characteristics is shown in Table 1. In Brazil, pregnant women were referred to a specific health facility during the antenatal period in 58.7% (95% CI 56.7%-60.7%) of cases. According to the type of funding, this was higher in privately funded and for women with adequate antenatal care. Antenatal corticosteroids were used in 41.0% (95% CI 34.2%-48.0%) of pregnant women; it was less frequently used in publicly funded facilities, in the North and Mild-West regions, in facilities without paediatrician available 24 hours a day, with material resources less than 80% and without a NICU. Partograph labour monitoring occurred in 48.5% (95% CI 43.8%-53.1%) of the deliveries around the country, with a distribution similar to antenatal corticosteroid use. Continuous social support during the hospital stay was provided to 19.9% (95% CI 17,0%-23,1%) of the entire sample; it was higher in cases where the mother had 15 or more years of schooling, in facilities with a NICU, with material resources greater than 80%, and with paediatrician available 24 hours a day. Early skin-to-skin contact occurred in 26.3% (95% CI 23.9.0%-29.0%) of cases and only in 13.9% (95% CI 12.0%-16.2%) of women undergoing caesarean section. The rate of breast feeding in the first hour after birth was 59.1% (95% CI 56.3-61.9); this was lower in privately funded facilities, for older women, for women with higher schooling and income, and for women delivering by caesarean section.

The adjusted logistic regression analysis (Table 4) showed that privately funded women were more likely to not use a partograph (ORadj 3.36; IC95% 1.75-6.49) and to not breast feed in the first hour after birth (ORadj 1.87; IC 95% 1.28-2.74). The use of a partograph varies according to the region of residence; it is lower in the North (ORadj 6.94; IC95% 2.89-16.82), Northeast (ORadj: 3.58; IC95% 2.15-5.95) and Mid-West (ORadj: 2.82; IC95% 1.52-5.22).

Lower social class was related to lower continuous social support (social class C: ORadj 1.40; IC95% 1.19-1.65; social class D and E: ORadj: 1.77; IC95% 1.28-2.44).

Caesarean section was associated with an absence of early skin-to-skin contact (ORadj 3.07; IC95% 3.37-4.90) and breast feeding in first hour after birth (ORadj 2.55; IC95% 2.21-2.96), regardless of the maternal characteristics and the hospital structure. “ **Page 9, line 22 to page 10, line 24.**

• There is more clarity required on the variables that were adjusted while discussing adjusted odds ratio.

Answer:

We modified to: “The adjusted logistic regression analysis (Table 4) showed that privately funded women were more likely to not use a partograph (ORadj 3.36; IC95% 1.75-6.49) and to not breast feed in the first hour after birth (ORadj 1.87; IC 95% 1.28-2.74). The use of a partograph varies according to the region of residence; it is lower in the North (ORadj 6.94; IC95% 2.89-16.82), Northeast (ORadj: 3.58; IC95% 2.15-5.95) and Mid-West (ORadj: 2.82; IC95% 1.52-5.22).

Lower social class was related to lower continuous social support (social class C: ORadj 1.40; IC95% 1.19-1.65; social class D and E: ORadj: 1.77; IC95% 1.28-2.44).

Caesarean section was associated with an absence of early skin-to-skin contact (ORadj 3.07; IC95% 3.37-4.90) and breast feeding in first hour after birth (ORadj 2.55; IC95% 2.21-2.96), regardless of the maternal characteristics and the hospital structure." **Page 10, lines 15-24.**

- The authors also need to specify the level of significance in table 3, 4 and 5 along with simple and adjusted odds ratio. This is required for understanding which variables will have more impact on the non-use of ENC. Based on the level of significance, the authors might need to modify the results and discussion sections.

Answer:

It was done in the first version, when we say IC95%, this is about 5% significance.

- In mothers' characteristics, along with other socio-economic factors, wealth index could also be considered.

Answer:

We included a wealthy index in method and result sections. "In Brazil, the organisation responsible for the demographic census (IBGE) uses a particular indicator, which is a proxy wealth index. This index considers the schooling of the interviewee and the access to some specific public services and goods that the interviewee possesses at the time of the interview. The individual is classified according to socio-economic criteria into the following classes: A – more than 45 points; B1 – from 38 to 44 points; B2 – from 29 to 37 points; C1 – from 23 to 28 points; C2 – from 17 to 27 points; D-E – from 0 to 16 points. For this work, classes A, B1 and B2 were grouped as class A and B, and classes C1 and C2 were grouped as class C. Classes D and E remained as in the original [17]." **Page 8, lines 15-22.**

- The authors could add policy/programmatic implications and recommendations of the study.

Answer:

We modified to: "The essential interventions investigated here are simple and inexpensive and should be integrated into existing health policies. The low and uneven coverage of such simple health technologies indicates the necessity for more widespread interventions to improve perinatal outcomes. Related coverage data should also be collected frequently in routine national surveys to guide the allocation of funding in priority areas, such as health facilities without NICU and with inadequate material resources." **Page 21, lines 4-9.**

- The language of the article needs editing. For instance, spelling like, 'caracteristics' in the title, 'public and private founding' in the abstract.

Answer:

Our manuscript was revised by the Scientific Editing Company, from Scotland. We will send again for revision, requesting a certificate from them (attached).

REVIEWER 2

Abstract:

- I am missing a section on background/introduction. I recommend to add at least one or two sentences, why this topic is relevant.

Answer:

BMJ guidelines do not ask for introduction in the abstract and with only 300 words it is not possible to include.

- I am not sure about the term “complementary analysis”. For me, it sounds as if you have conducted a secondary analysis based on data which was collected for another purpose.

Answer:

We modified to: “secondary analysis.” **Page 5, line 12.**

- Please add a section on methods by summarizing the different aspects mentioned under setting, participants and primary and secondary outcome assessment. You need to describe how the data was analyzed.

Answer:

BMJ guidelines do not ask for analyses in the abstract and with only 300 words it is not possible to include.

We structured the methods section by adding these suggested headlines.

Article Summary:

- The article summary includes strength and limitations merely. That is not what I expect under this headline.

Answer:

There is not a section named “Article Summary”. We have excluded this headline.

Introduction:

- Page 5, line 8: I recommend to rephrase it as follows: “…and nearly one quarter of neonatal deaths occur…”

Answer:

We modified to “…and deaths in first 24 hours of life account for nearly a quarter of all neonatal deaths [7].” **Page 4, lines 17-18.**

- Page 5, line 13: I recommend to use the singular form “preterm birth”, because all other complications are also in singular form.

Answer:

We modified to singular form “preterm birth”. **Page 4, line 19.**

- Page 5, line 13: I recommend to rephrase as follows: “…reflects economical, social and biological disparities…”

Answer:

We modified to ” ...may be linked to economic, social and biological disparities..” **Page 4, lines 19-20.**

- Page 5, line 35: Are the underprivileged groups related to the disparities mentioned above? Please explain this a bit more in detail.

Answer:

We modified to “to allocate resources according to where they are needed most and where their effect will be maximised.” **Page 4, line 25 to page 5, line 1.**

Methods:

- You have used several headings for the methods section in the abstract, but none on the main text. Maybe it is useful to structure the methods section by adding some headlines?

Answer:

We added some headlines in the methods section.

- Page 8, line 24: Did you check for multicollinearity?

Answer:

Multicollinearity was tested in the adjusted model and it was verified that the variables included in the analysis are not multicolinearly related to each other. The method used for this test was the VIF (variance inflation factor). Therefore nothing was changed in the analysis presented.

Results:

- The description of numbers is somehow irritating. For example at page 9, line 17, the percentage provided is for the overall sample. This should be stated, because the comparison is just with the group of privately funded facilities. Otherwise, you can provide the number for the publicly funded facilities instead of the overall values. This comment refers to several parts of the results section.

Answer:

We edited result section.

- Page 9, lines19-21: You cannot claim a decrease or increase. Please rephrase these parts by mentioning either higher or lower values compared to the “reference group”.

Answer:

We edited results section.

- Page 9, lines 50-52: The meaning of this sentence is not clear to me. Can you please explain in more detail how you define “most associated”? Does this refer to the magnitude of difference or statistical issues?

Answer:

We edited results section.

Discussion:

- Page 22, line 12: The comparison with Uganda is somehow abrupt. Is there any reason behind?

Answer:

We excluded this information and reference.

- Page 22, line 52ff.: I am not sure whether early breastfeeding is really a causal factor. For example, if newborns have to be at ICU, they were also not breastfed. In this case, the worse health condition (leading to the ICU visit) will be the risk factor, not the missing breastfeeding.

Answer:

In Brazil, it was verified that caesarean section was associated with the birth of preterm and early term babies and these babies are more likely to be admitted to neonatal ICU, hindering early lactation [37][38]. **Page 19, lines 19-21.**

- Page 23, line 46: I recommend to use “Limitations” as a headline.

Answer:

We added a headline named “Limitation”. **Page 20, line 4.**

- Page 25, lines 10ff.: These are no longer limitations. For that reason, I recommend to use the headline “Conclusions” here.

Answer:

We added the headline “Conclusion”. **Page 20, line 15.**

Tables:

- Tables 1 and 2 can be combined in on table.

Answer:

We accepted the suggestion and modified the table.

- Table 1: Please exchange “Brazil” by “Total” (under “macro-region”). This total can be the first line.

Answer:

We accepted the suggestion and modified the table.

- Tables 1 and 2: The n applies to the existing data, but not to the number of people receiving this kind of care. For that reason, it makes sense to consider the recommendation mentioned above. The total indicates those people receiving the kind of care.

Answer:

We accepted the suggestion and modified the table.

References:

- I recommend to use further scientific peer-reviewed literature. Until now, there is a lot of literature in Spanish language.

Answer:

We reviewed references.

REVIEWER 3

This paper addresses important questions however the following need to be addressed:

1.Overall

The authors ought to consider using the STROBE guidelines to guide the reporting of their work. The quality of written English requires substantial improvement to allow the reader to clearly understand the content.

Answer:

We used the STROBE guidelines to revise the manuscript. Our manuscript was revised by the Scottish Scientific Editing Company. We will review it again, requesting a certificate.

2.Specific

a) Abstract.

The exposures and outcomes are not clearly defined

Answer:

We modified to “…The facility structure was assessed by the evaluating the availability of medicines and equipment for perinatal care, a paediatrician on call 24/7, a neonatal intensive care unit (NICU), and kangaroo mother care. The access to each ENC item was assessed according to the health facility structure and the mothers’ socio-demographic characteristics.” **Page 1, lines 14-18.**

b) Introduction

Specify the actual estimates rather than the use of vague sentences e.g "In Brazil antenatal care coverage is high...."

Paper is on essential newborn care but there is no mention of the neonatal mortality rate in Brazil

It seems implausible that there are absolutely no data on coverage and or access to Essential Newborn Care in Brazil

Answer:

We added some sentences: …" The reduction of child mortality is a topic of the Sustainable Development Goal 3, i.e., to ensure healthy lives and promote well-being for all at all ages [1]. Neonatal mortality accounts for 45% of all under-five deaths worldwide [2] and reaches 64% in Brazil [3].

In Brazil, antenatal care coverage is high (98% of pregnant women had at least one antenatal care visit and 66.9% of them had more than 6 antenatal care visits in 2015) and the hospital delivery rate is almost 100%. Nevertheless, neonatal mortality remains high (9.5 deaths per 1,000 live births in 2015) [6] and deaths in first 24 hours of life account for nearly a quarter of all neonatal deaths [7]. The main reasons are preventable causes, such as complications from preterm birth, sepsis, and intrapartum-related asphyxia [8]. This situation may be linked to economic, social, and biological disparities, but may be also linked to the quality of antenatal care, labour, and birth assistance.

However, only limited national data are available on public policies, such as antenatal corticosteroid use in managing preterm labour, and on the availability of the kangaroo mother care (KMC) for preterm or low birthweight newborns [3]. Thus, identifying shortcomings in perinatal care in Brazil is an essential stage in conducting interventions in order to allocate resources according to where they are needed most and where their effect will be maximised. This is a problem that may also affect other countries with a similar level of socio-economic development, observable in different places and at different intensities [9]. "**Page 4, lines 2-8; lines 14-25; Page 5, lines 1-3.**

c) Methods

Use STROBE guidelines to report the methods. In its current form it is hard to determine for instance: what the three clusters were, the sampling method used, the definition of exposures and outcomes. In statistical analysis, there is no description of data management and it is unclear beyond the stated "robust variance" how adjustment for clustering was accounted for in the modelling

Answer:

We revised this section, we removed the term "robust variance" and added the following text: "…All inferential analyses were weighted, taking into account the sampling design plan, which considers the stratification, the conglomerate and the probability of the individuals." **Page 9, lines 7-9.**

We added the method used to choose the final method of analyses - backward method.

d) Results

Would really benefit from STROBE guidance. Proportions, for example, are presented without accompanying numbers and confidence intervals. It is unclear how many regression models were fitted. It is also unclear how many independent variables were tested at univariable analysis but one gets the impression that there numerous a raising the possibility that spurious associations may have been observed.

Answer:

The researchers chose to use the ratios and their confidence intervals because they considered it more appropriate for this exploratory analysis. For each outcome a simple and adjusted modelling was performed, being in all, 12 models. The selection of the variables included in the analysis was based on a detailed bibliographic review, which greatly alleviates the possibility of spurious associations.

d) Discussion

Given the limitations of the methods and results, it was quite difficult to review the discussion

Answer:

We revised this section.

VERSION 2 – REVIEW

REVIEWER	Florian Fischer Bielefeld University
REVIEW RETURNED	09-Aug-2018

GENERAL COMMENTS	The authors have adressed all my comments adequately. The quality of the manuscript has improved substantially. For that reason, I recommend to accept the manuscript as it is.

REVIEWER	Jalemba Aluvaala KEMRI-Wellcome Trust Research Programme, Kenya
REVIEW RETURNED	27-Aug-2018

GENERAL COMMENTS	This paper addresses important issues using a large data set. However, there is room for considerable improvement in the following areas 1. Abstract It is not clear whether the main outcome is utilisation (non-use) or access to essential newborn care as both terms have been used 2.Methods Was the sample size based on precision or power to detect a difference? How were the facilities selected? was it random sampling or otherwise? The exact data obtained from the two methods of data collection are not specified for instance it is not clear if the "structure-related variables" were obtained by interview or observation. Aother example is breastfeeding in the first hour after birth where it is impossible to determine if these data were obtained from medical records or through interview The regressioon modelling approach is not well described as it not clear whether univariate analyses were condeucted first followed by bakward selection of only significant variables 3.Results There are variations in sample sizes as presented in Table 1 which are not explained 4.General The article would benefit from revision of the grammar to ease comprehension.

VERSION 2 – AUTHOR RESPONSE

REVIEWER 2

The authors have adressed all my comments adequately. The quality of the manuscript has improved substantially. For that reason, I recommend to accept the manuscript as it is.

Answer:

Thank you for the manuscript acceptance.

REVIEWER 3

This paper addresses important issues using a large data set. However, there is room for considerable improvement in the following areas

1. Abstract

It is not clear whether the main outcome is utilisation (non-use) or access to essential newborn care as both terms have been used

Answer:

The main outcome is utilisation. We modified to "...To assess the use of the WHO´s Essential Newborn Care (ENC) program items …" Page 2, line 3.

… "The use of to each ENC item was assessed according to the health facility structure and the mothers' socio-demographic characteristics." Page 2, line 14.

… "The utilisation of ENC items is low in Brazil…" Page 2, line 17.

… "The coverage of ENC technologies use is low…" Page 3, line 1.

2.Methods

Was the sample size based on precision or power to detect a difference?

Answer:

The sample size calculation was based on the percentage difference detection. We added: … "The sample size has a power of 80% to detect adverse outcomes in the order of 3%, and differences of at least 1.5% among large geographic regions or types of hospital governance (public/private/mixed). Mixed health care facility describes care in private hospitals that was paid for by government unified health care system. For this study, mixed and public hospitals were analysed together." Page 6, lines 17-21.

How were the facilities selected? was it random sampling or otherwise?

Answer:

They were selected by random sampling. We added: …" according random sampling." Page 7, lines 3-4.

The exact data obtained from the two methods of data collection are not specified for instance it is not clear if the "structure-related variables" were obtained by interview or observation. Another example is breastfeeding in the first hour after birth where it is impossible to determine if these data were obtained from medical records or through interview

Answer:

We added “These data were abstracted from medical records of mothers and newborns and from interviews with postnatal woman.” Page 8, lines 17-18.

And “…At the hospitals, the following structure-related variables were investigated, by interviewing the facilities managers…” Page 8, lines19-20.

The regression modelling approach is not well described as it not clear whether univariate analyses were conducted first followed by backward selection of only significant variables

Answer:

There were both first and second steps analyses. We wrote “Simple regression models were used to estimate the associations between the dependent variable (non-use to each item of essential newborn care) and the independent variables listed above. Crude odds ratios with respective 95% CI were then estimated. In sequence, by the backward method, multiple regression models were developed with each dependent variable and the independent variables that proved significant in the first analysis. Independent variables that proved significant (to a 5% level of significance) in explaining the use or the non-use of each of the essential care items were retained in the model.” Page 10, lines 10-17.

3.Results

There are variations in sample sizes as presented in Table 1 which are not explained

Answer:

We have included to method: “The deliveries included in this study had “early skin-to-skin contact”; few missing cases were reported for “reference to health facility”, “continuous social support” and “breast feeding in first hour of birth”. The total “antenatal corticosteroids used appropriately” were at risk of preterm birth between 24 and 34 weeks´ gestation. Prelabour caesareans were excluded for “partograph used”.” Page 10, lines 3-7.

4.General

The article would benefit from revision of the grammar to ease comprehension.

Answer:

Our manuscript was revised by the Scottish Scientific Editing Company and this draft was revised again by them.