Author's response to reviews

Title: Factors associated with the utilisation of postnatal care services among the mothers of Nepal: Analysis of Nepal Demographic and Health Survey 2011

Authors:

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Author's response to reviews: see over
To

The Chief Editor

BMC Women’s Health

Subject: Submission of revised manuscript “Factor associated with the utilisation of postnatal care services among the mothers of Nepal: Analysis of Nepal Demographic and Health Survey 2011”

Dear Chief Editor,

Thank you for the opportunity to submit a revised version of our manuscript. On behalf of my co-authors, please find attached our revised manuscript of an original article entitled “Factor associated with the utilisation of postnatal care services among the mothers of Nepal: Analysis of Nepal Demographic and Health Survey 2011.” We have provided a point to point response to the reviewers’ concerns and made a number of revisions as appropriate. I have attached a summary of these revisions. We would like to thank you and the reviewers for your time and allowing us to resubmit manuscript for further review.

Sincerely yours,

Vishnu KHANAL

Email: Khanal.vishnu@gmail.com
Factors Associated with Utilisation of Postnatal Care Services among the Mothers of Nepal: Analysis of Nepal Demographic and Health Survey 2011

Authors’ response: We would like to thank both reviewers for their time, and intellectual input.

Reviewer: Christiana Titaley

General comments:

However, some major revisions are required to ensure data were properly analysed and to enrich the discussion.

Authors’ response: We have done major revision to ensure that our analysis is according to acceptable standard. In the revised version, we used Component Analysis Method which has recently surveys like demographic health surveys. Similarly, based on the previously used analytical framework, we used built our models. Overall, starting from Introduction we have significantly revised the manuscript.

Minor Essential Revision
• Please check the spelling and grammar mistakes. There are few typos in each section.
• Kindly make sure the details of references used in the text are complete.
• Authors might want to improve the writing style with one main topic per paragraph, to avoid lengthy paragraphs.

Authors’ response: We have revised our writing and also the major part of writing in the manuscript.

Major Compulsory Revision
In the methods section, please state information about subjects used in the analysis (e.g. last births within....)
Authors’ response: We have indicated this for last five years in the manuscript and highlighted it.

- Be more consistent with decimal digits
  Authors’ response: We have revised to make decimal digits uniform throughout the manuscript.

- In conclusion part: PNC is important not only to prevent maternal mortality and morbidity but also "newborn deaths". This has not been highlighted in the manuscript
  Authors’ response: We have included the importance of postnatal care for newborn survival.

INTRODUCTION
Authors’ response: We have done an extensive review of this section based on comments from reviewer 1 and reviewer 2. While major part of writing remains same, some information are made more specific to Nepal. We have identified some gaps in published literatures from Nepal to demonstrate that our work fills the gap in our knowledge on postnatal care in Nepal.

- Authors did not mention the current recommendation or practice on PNC in Nepal. Are there any recommendations about the PNC services, e.g. whether mother should receive a certain number of PNC services during postnatal period? Or home visitation by health professionals?
  Authors’ response: We have now included in manuscript about the recommendation of Ministry of Health and Population, Nepal which follows the guideline from the World Health Organization.

- First sentence, MMR should be 281 per 100,000 live births.
  Authors’ response: We have revised it to make it clear.

- First & second paragraph: the role of PNC in preventing neonatal deaths was
not mentioned. This is one of the reasons, apart from maternal aspect, the immediate 24h PNC should be conducted.

Authors’ response: Paragraph : ..... We have revised it based on reviewer’s comment to highlight the importance of immediate 24 h PNC for neonatal survival.

• How is the attendance rate against this recommendation? Is it below the target?
It is also good to compare the rate of PNC use in Nepal with other Asian countries. Such information will be useful in the introduction and will help readers to understand why this study is important.

Authors’ response: There is no specific target set for PNC and immediate PNC in Nepal. Therefore, it is difficult to compare. However, as reviewer suggested, we have identified the gaps in existing knowledge to highlight importance of current study.

• Last sentence of the 2nd paragraph --> "For these reasons... PNC has been proved...." needs reference.

Authors’ response: We have added references in the sentence.

• Third sentence from the bottom of the Introduction section, etc --? "There are only few research..... " needs references.

Authors’ response: We have revised and included reference.

METHODS

Authors’ response: As mentioned earlier, we have revised entire methodology section. We have restricted our analysis to last birth occurring in last five years to minimise the recall bias which we have mentioned in our manuscript.

• Authors mentioned that they analysed information from 4148 mothers about their last pregnancies. How was it restricted? Only last pregnancies within the last 5 years? Or no time limits at all? This should be clearly defined. If no time limit, how about the recall ability of mothers?

Authors’ response: As mentioned earlier, we have revised entire methodology section. We have restricted our analysis to last birth occurring in last five years (N=4079) to minimise the recall bias which we have mentioned in our manuscript.
• Needs a reference for DHS Website
  Authors’ response: we have included reference now.

• Need a clearer definition about the outcome variable. How did authors define PNC? Was it only services provided to health workers? Any time limit from PNC, e.g. within the first 42 days or 30 days? Please use the standard definition (with the reference).
  Authors’ response: Thank you for this important comment. we have added a separate section of outcome variable with extensive revision based on the reviewer’s comment. This revision makes our outcome variables easy to understand.

• Authors used 40 assets variables to construct the Wealth Index. What are the variables? That is quite a large number of assets. It will be good to give information about, at least, the groups of those assets.

Authors’ response: It seems that due to poor writing in the previous version, the reviewer understood that we contrasted wealth index. Instead, we used the exiting DHS wealth index which is already in the dataset. However, during our revision, we re-categorised the five categories to three categories based on the available literature (Agho et al. Exclusive breastfeeding in Nigeria). In such categories; we used poor (lower 40%), average (Middle 40%), and rich (upper 20%) for wealth categorisation. We have supported our analysis with the reference.

• What are the basis of the selection of the potential predictors (independent variables)? There are some important variables not included in the analysis, but to my knowledge available in the DHS dataset, e.g. maternal autonomy, paternal occupation, birth attendants (it has been in several studies to influence PNC uptake), etc. Why didn't authors include them?
  Authors’ response: Initially we limited our independent variable due to long list of variables in DHS dataset. In our current version, we revised the analysis procedure entirely. We have included variables based on the existing literatures and reviewer’s
comment. Maternal autonomy and paternal occupation are now included in our analysis.

• Why did authors only present variables with significant unadjusted OR? What were the other variables showing not significant OR? All variables should be shown in Table 1 (descriptive analysis) as well as in Table 2 for the bivariate analysis.

Authors’ response: We revised it according to reviewer’s comment and based on the published articles on similar datasets. We have reflected all unadjusted OR and adjusted ORs in the tables.

• Authors used hierarchical modelling in the analysis; what was the reference for this? Was there a particular reason for using this technique?

• Authors preferred to retain all non-significant variables in the multivariate analysis. What was the reason and the basis of doing so? Was it due to the effect size?

Authors’ response: Both of these comments seem to be closely related. We have revised our methodology section to describe why we chose to use hierarchical modelling and references for that. We are thankful to reviewer for the second comment. We have revised it and kept only significant variable in succeeding models.

• Please make the reference group of variables more consistent (same reference group across models). E.g. for ecological region, the reference group suddenly changed from Mountain (unadjusted, Model 1 & 2) to Terai (Model 3 and 4). Similarly, the reference group for Birth Order also differed across models.

Authors’ response: We revised the analysis based on the reviewer’s comment.

• Why did authors used different groups of variables for immediate PNC? Why including only 4 variables? What was the modelling strategy for this outcome?

Authors’ response: Initially we aimed to analyse immediate PNC among the users. However, it seemed to create confusion for the readers and reviewers. Therefore, we have kept the same groups for any PNC and immediate PNC. For both outcome
variables, we used the same modelling strategies. We assumed, the analysis is now easier to follow than before.

• Under the Explanatory variable sub-heading, authors only mentioned seven variables; whereas there are more variables used in the analysis. Please state all variables used in the analysis (not only the significant ones), but all variables authors thought at the beginning of the study potentially associated with the outcomes.

  Authors’ response: The DHS dataset used large number of variables which we thought would be too lengthy to describe each. However, we have now added further description of variables in this section to include the explanatory variables included our analysis. However some of the variables such as education, we have referred to previous NDHS based published articles which use the same categories as in this manuscript.

It might be best to place the "Statistical Analysis" sub-heading after the "Explanatory Variables" sub-heading.

  Authors’ response: We have revised it accordingly.

RESULTS

• Paragraph 1, authors should not repeat the results shown in Table 1 in the text. Please highlight the most interesting or important parts to draw readers attention.

  Authors’ response: We have revised this section based on reviewer’s comment. We tried to present our findings with minimal repetition.

• Authors can be more consistent in the decimal digit for percentages

  Authors’ response: We have revised it according to the reviewer’s suggestion.

• Table 1. Writing N in the title of column "Attended PNC Visit" and "Immediate PNC" can be misleading. Readers might think that the percentages in the cells of that column were derived from that N; whereas that was clearly not the case. I suggest authors to insert some rows at the beginning to show the number and percentage of mothers attending PNC and immediate PNC.
Authors’ response: We have revised the table. We think that the current presentation be more reader friendly.

• For the third paragraph, readers can be referred to Table 2 earlier (at the beginning of the paragraph).
  Authors’ response: We have revised it accordingly.

• Authors took the results for all variables from either Model 3 or 4. What was the purpose of building Model 2 since there was no elimination of variables in Model 2?
  Authors’ response: We have revised our analysis section. We have explained in our statistical analysis section. We assume our revised analysis accounted this comment of the reviewer.

• Timing of ANC only has information from 3519 respondents. If other cases were coded as missing, the inclusion of this variable into the model can reduce the N for the whole regression analysis (Model 3 and 4)? Please check again. If that was not the case, how did the author recode this variable?
  Authors’ response: We have rechecked the analysis. The missing values are treated as Null. Recoding of timing of ANC is presented in the methodology-independent variables section.

• Variables included in the analysis should be treated carefully. Please check for potential collinearity or interactions. E.g. The unadjusted OR of mothers from higher maternal age were significantly lower than those from 15-19; yet, in Model 2 to 4, the direction of the effect changed, to significantly higher than those aged 15-19. Please check the modelling for other variables as well.
  Authors’ response: Thank you for this important suggestion. We have checked for possible interactions and explained in the statistical analysis section. A separate paragraph is used to describe how we decided this.

• There might be some collinearity issue between the timing of ANC and number of ANC visit. Please check.
Authors’ response: We have added a separate paragraph to add this description in the methodology section.

• The modelling strategy for the immediate PNC should in the Methods section.
  Authors’ response: We added this in methodology section. (describe earlier).

• For the multivariate analysis, how many missing variables? What is the percentage against total respondents?
  Authors’ response: We have added this in our methodology section on how we treated the missing values. Likewise, we have also indicated in the tables for how many cases were actually used by SPSS for running the models (which is generally less than the original sample).

• It is interesting to see that 2% of mothers who delivered at health facilities did not receive immediate PNC (within 24 h). What might be the reason? What can authors suggest to prevent this?
  Authors’ response: Thank you for noting this finding. We have highlighted this in result section and included in discussion section on how can all mothers meet PNC care if they delivery in health facilities.

• For the immediate PNC, when place of delivery was included in the model, the birth order became not significant. The correlation between these two variables might be high. Could authors check for collinearity between these two variables?
  Authors’ response: We revised the entire immediate PNC section. For collinearity issue, we have added a separate paragraph in methodology section. We assume, by doing so, it adds clarity on our analysis.

DISCUSSION
Authors’ response: We have revised discussion section extensively. We have also rearranged the discussion section based on some of the important findings (at the beginning) and so on. Therefore, the order of paragraph might not be the same as in our previous manuscript. We have indicated where the change is made in the revised manuscript (paragraph mentioned).
• 1st paragraph:
# This is repetition from the Introduction Section. My suggestion is to start with the main findings of this study (to answer the research question) and what are the significance of this study?

Authors’ response: Paragraph 1 (in revised manuscript): We have removed the introductory sections and have started from the major findings of the study.

• 2nd paragraph:
# Authors mentioned the role of other family members. Therefore, as mentioned previously, maternal autonomy variable can be included in the analysis, to see the role of mothers/other family members in the decision making process in the household.

Authors’ response: Paragraph 2 (in revised manuscript): We have included these variables in our revised analysis. We are thankful to the reviewer for this insight for our analysis.

# For the seclusion issue, this is common in Asian countries. Are there any studies regarding seclusion issue in Nepal? I will be important to include that. What about the role of home visiting for PNC, which might be a solution for the seclusion issue. This has not been elaborated thoroughly by authors.

Authors’ response: Paragraph 2( in revised manuscript): Study suggesting seclusion from Nepal are available. We have included references from South Asia which has similar culture.

# Authors mentioned their concern about the competency of medical professionals. Could authors elaborate more on this? What would be the potential solution? The reference (#2) was not clear, is it from the MoH of Nepal?

Authors’ response: Paragraph 2( in revised manuscript): We have elaborated this in our revised version. The reference is from Ministry of Health but published by Family Health Division.

• 3rd paragraph:
# This paragraph should be in the Results Section

Authors’ response: We have removed this section.

• 4th paragraph:

If the findings show the discrepancy between HH wealth index in PNC use, what can authors suggest to improve utilization amongst women from poor household? What can be the potential solution for these under-privileged women? Are there any insurance system to help members of poor households accessing health care services?

Authors’ response: We have included in the discussion and in the public health implications. In Nepal, the health insurance system has not been in place. Therefore, we could not discuss more on this issue.

# Similarly to access, what can women be done for women from rural areas to increase their PNC uptake? What about the outreach clinics?

Authors’ response: We have mentioned it in public health implication.

• 5th paragraph:

# Typo in the working time of the government health facilities.

# What can authors suggest so that women working in agricultural field can also receive PNC services?

Authors’ response: Paragraph 5( in revised manuscript) : We have revised the paragraph and we have included recommendations in the public health implication section after discussion.

• 6th paragraph:

# It is interesting to know that women from Hindu religion were more likely to attend PNC. Could authors suggest potential reasons for that? What might be done to women from other religion, e.g. working together with their religious leader?

Authors’ response: Paragraph 7( in revised manuscript) : We have included our recommendation on working with religious leader. We did not fine information or
basis for speculation on why there was a difference in postnatal care by religion. We have included in the discussion.

• 7th paragraph:
# Authors stated that underutilization of PNC amongst younger women are related to their potentially low educational level. However, the model has adjusted for maternal education level. So this might not be the correct explanation for the association between maternal age and PNC utilization.

Authors’ response: Paragraph 8 (in revised manuscript): We have revised this paragraph based on reviewer’s suggestion.

# What can authors suggest to improve the uptake amongst younger and high parity mothers?

Authors’ response: We have included this information in public health implication sub section.

# It is encouraging to see the important role of ANC in promoting PNC. It is therefore important how to increase the uptake of ANC? What can be suggested to promote use of ANC during pregnancy or to promote institutional delivery?

Authors’ response: Paragraph ...(in revised manuscript): We have included in the public health implication of the findings.

# Reference for "Attending ANC visits and adequate counselling of mothers have been found......"

Authors’ response: Paragraph ...(in revised manuscript): We have included references to support our arguments.

• General:
I suggest the authors to discuss potential solutions or recommendations about how to improve PNC uptake, after obtaining the results from these analyses. This has been mentioned briefly in the last, but authors need to elaborate it more.
Authors may also take lesson learned from other countries that might be suitable to the context in Nepal.

Authors’ response: We have added the recommendation to improve the PNC uptake based on the available literatures.

CONCLUSIONS

• The first paragraph is more like the main findings. This can be removed from the Conclusion and placed as part of the 1st paragraph in the Discussion.

• Authors can highlight their recommendations which should be specific to the condition in Nepal, what can be strengthened/needs improvement.

Authors’ response: We have revised it according to the reviewers’ suggestions.
Reviewer 2: David Doku

Authors’ response (Overall response): We are grateful for reviewer’s time and intellectual input. Initially we have used the weighted analysis as per DHS guide. In recent years, the analysis has moved toward complex sample analysis, therefore, we re performed our analysis. We have also worked extensively on all sections – with entire new sections in methodology (hierarchical modelling and issues of collinearity). We have highlighted the changed in our manuscript.

Major revisions

Abstract
Introduction
First sentence. Replace the phrase ” to save the life of mother and newborn” with “to save the life of the mother and newborn. Third sentence. Start the sentence with “The”.
Authors’ response: We have revised according to the reviewer’s comment.

Methods
There was a weird character after the word “care”.
Authors’ response: we have revised it.

Results
“Of the 4148 mothers, less than a half (43.2%) had attended PNC visits; and 40.93% attended immediate PNC (within 24 hours).” Please clarify if the latter figure (40.93%) is out of the 43.2% who attended PNC or the total population.
Authors’ response: we have revised immediate PNC to make the same groups of mothers for both of the outcome variables as our previous analysis seemed to be creating confusion for readers and reviewers. In this analysis, we used the last born mother-child information five year preceding the survey.

In the results the authors reported some mothers (of higher age from hindu region, from richer, etc) were more likely to attend the PNC visit. Compared to what? The comparison group for each of these should be reported. In addition
the sentence should be broken into three or more for easy read and these sentences should be well connected. Furthermore, the grammar and structure of the sentence should be edited.

Authors’ response: We have revised the result section based on the comments from both reviewers.

Conclusion
Insert “of the” between “half and mother” to read “…half of the mothers…” The issues about mothers-in-law is definitely important in Nepal and some Asian countries but the present study did not investigate the role of mothers-in-law hence the conclusion should be based on the present findings

Authors’ response: We have revised our conclusion based on the reviewers comments.

Keywords
Delete “cross sectional survey from the keywords”
Authors’ response: we have deleted the key word cross sectional survey.

Main manuscript

Introduction
Second paragraph
“For these reasons, postnatal has been proved to be an effective means to reduce maternal mortality by providing message on danger signs, assessing and managing the danger sings, providing education on family planning, immunization, breastfeeding and personal hygiene.” Please provide reference.

Last paragraph
“There are only few researches from the developing countries but clearly show the evidence that only few women recieve postnatal care in developing countries.” Apart from typo errors, this sentence is not clear. Please clarify.

Over all, the rationale for the present study needs to be strengthened in the introduction.
Authors’ response: We have significantly revised the introduction section. We hope that the section is presented better than the previous version.

Methods
The authors should describe the variables before statistical analysis

Authors’ response: We have revised this section significantly. We accounted for comments for reviewer 1 as well.

Statistical analysis

Authors’ response: we have revised entire analysis based on reviewer 1 and other recently published articles on DHS datasets. Therefore, reviewer may find some of the data changed. However, we have accounted all of the reviewers’ comments in our revised version.

The first sentence is not clear. Please clarify.
There are also typo errors just as in the entire manuscript.
What kind of multilevel did the authors use? Do the authors mean multilevel?
Further, the rational for the use of the multilevel analysis and well as the level/clusters with the data should be stated. There are repetitions of the information presented under outcome variables.
Second paragraph of statistical analysis. The authors stated “Within the health care factors, the place of delivery is likely to have the strongest effect on the attending postnatal care.” This is a confusing statement that needs clarification.
The last paragraph of this section should be placed at the end of the description of the data.

Authors’ response: We have re analysed and added elaborated description in the statistical analysis. We have accounted all the comments in this section by both reviewers.

Outcome variables
A said earlier, this should be presented before statistical analysis section.
Authors’ response: We have revised this section and presented this section based on reviewer’s suggestions.

Explanatory variables
The section on ethnicity is not clear. Please reword.
That section also needs language editing.
Authors’ response: We have revised this section and have done language editing.

Results
Characteristics of the respondents
Please edit the language to make this section meaningful.
Factors associated with attending postnatal visit
The first two sentences of the first paragraph is a bit of methods and should be presented at the statistical analysis section.
This section too needs language editing.

The result section of poorly presented. For example the authors presented a long change of OR ratios for various variables and stated compared to their counter parts. But it is unclear who these counter parts are. The authors should revise entire results section, particularly, the presentation of the logistic regression results.
Authors’ response: We have revised this section and have done language editing. Based on our findings, we have revised this section substantially and have also accounted for reviewer’s comments to make it clear.

Discussion
Authors’ response: We have revised the discussion section and re arranged the discussion. Where applicable, we have indicated the paragraph number so that reviewer can find where the comments are incorporated in discussion.

The first paragraph. The authors should reword the first sentence to emphasise that these diseases and mortalities can be prevented during PNC.
Second paragraph what do the authors refer to as low status utilisation of PNC visits?

Authors’ response: (Paragraph : ) We have removed the introductory paragraph (paragraph 1) from the previous version based on the comments of reviewer 1. We have started our paragraph with the major findings. In second paragraph, we have included further elaboration of low status of utilisation of PNC comparing with a recent publication based on NDHS 2006.

Third paragraph
The sentence “When the place of delivery was not in model, birth order was also a significant factor associated with immediate PNC visit.” is confusing. Please clarify.

Authors’ response: We have revised it accordingly.

Similarly, the sentence “Remoteness is an outcome of geographic difficulties, access to the services and availability of the livelihood opportunities,” in the fourth paragraph does not make sense. Please clarify how remoteness after availability of livelihood opportunities.

Authors’ response: We have revised this

The authors should explain further how economic disadvantage can affect PNC visits, particularly in the context of Nepal. The entire discussion section lacks the contextualisation of the findings.

Authors’ response: We have included in the discussion and have revised the discussion section significantly.

The last but one paragraph on age is not coherent.

Authors’ response: (Paragraph : ) we have included this as a separate sub section “Public health implication of the findings”. We have revised it significantly based on both of the reviewers’ comment.

Conclusion
The three sentences of the first paragraph of this section are unnecessary
repetitions of the results Again this section needs language editing.

Authors’ response: we have revised conclusion based on the comments from both reviewers.

Tables
Table 1. Are the p-values indicating the statistical significance of the main effects? Please indicate in footnote what the p-values are for Tables 2 and 3. Please add “among Nepalese, Demographic and Health Survey 2011” to the titles.

Authors’ response: We have revised according to the reviewer’s comments and highlighted in the respective tables.

References
This section needs corrections. For example, the authors’ names are not correctly presented in the following references: Neupane S, Teye Doku D: Determinants of Time of Start of Prenatal Care and Number of Prenatal Care Visits During Pregnancy Among Nepalese Women Journal of Community Health 2011.

Authors’ response: We have revised the references according to the reviewer’s comments.