Author's response to reviews

Title: A CROSS SECTIONAL STUDY OF MATERNAL NEAR MISS AND MORTALITY AT A RURAL TERTIARY CENTRE IN SOUTHERN NIGERIA

Authors:

Ikechukwu Mbachu (imbachu@yahoo.com)
Chukwuemeka Ezeama (nicemekt@yahoo.com)
Kelechi Osuagwu (reallifefoundation13@gmail.com)
Chibuzor Obianika (uzorobianika@yahoo.com)
Osita Umeononihu (docomone@gmail.com)
Nkeiru Ezeama (nicert@yahoo.com)

Version: 2 Date: 13 Dec 2016

Author’s response to reviews:

Dear editor,

Re: Submission of Response to Editor’s and Reviewer’s comments on our original with manuscript id: “PRCH-D-15-00479R1 and title “A CROSS SECTIONAL STUDY OF NEAR MISS AT A RURAL TERTIARY CENTRE IN SOUTHERN NIGERIA”

Thank you for your painstaking effort in reviewing our manuscript. Please find enclosed a point-by-point response to the comments by the reviewers. We have adequately addressed the issues you raised in the review.

REVIEWER 1 COMMENTS

1. : Comments have been made on the manuscript -the issue of consent from the patients’ needs to be addressed as there is a conflict of statements - data collected from patient files vs information obtained from patients, relatives and care givers.

Authors’ Response: There was no informed consent from the patients because the study utilized registers and folders to extract relevant information which was updated until discharge or death. This has been corrected in the methods and ethical consideration sections as shown below

The subjects were recruited using an exhaustive sampling approach. Pregnant women admitted in the prenatal ward, labor ward and or in the accident and emergency ward, who survived a near
miss or died were recruited for the study. Data was collected for a period of one year from September 1st 2014 to August 31st 2015. Two medical officers and five interns on rotation were involved in the collection of data. The principal investigator supervised the medical interns and medical officers who were involved in data collection. On a daily basis a medical officer and an intern visited the Labor ward, Obstetrics ward, Gynecology ward, Accident and Emergency, Intensive care unit where the registers were used to recruit subjects for the study. The information obtained was continually updated until the discharge of the patient or death. A pretested questionnaire/form (from National data system on Near Miss and Maternal death) adapted from WHO maternal Near Miss document was used to extract relevant information from the patients’ records. There was no direct contact between the researchers and the patients.

2. Near miss criteria that was used also needs to be explained if it was only the Near miss tool (presented as a table in the WHO near miss manual) or the one presented before this on the manuscript.

AUTHORS RESPONSE: The WHO near miss document used was as referenced below Evaluating the quality of care for severe pregnancy complications. The WHO near-miss approach for maternal health 2011. Assessed at www.who.int on April 30 2013.

3. Corrections embedded in the manuscript.

i. The title has been modified as suggested as shown “CROSS SECTIONAL STUDY OF MATERNAL NEAR MISS AND MORTALITY AT A RURAL TERTIARY CENTRE IN SOUTHERN NIGERIA”

ABSTRACT

ii. Methodology Were some women post partum?

Authors’ Response: Some women presented in the postpartum period. This has been reflected in the revised manuscript.

iii. To read WHO Near miss criteria –and is the Nigeria document a network proforma or a tool adapted from the WHO tool?

Authors’ Response:

The Nigeria document was a network proforma adapted from the WHO Near Miss document. This has been reflected in the manuscript.

iv. Result: Replace with there were 5 maternal deaths.

Authors’ Response: The correction has been made and the statement now reads “: Of the 262 deliveries, 52 women had a near miss event, and 5 women died.”
v. For all maternal death reporting here consider leaving out percentage as the numbers are very small.

Authors’ Response: We understand the reviewer’s perspective however, for uniformity sake, we think the percentage should not be removed.

vi. Consider adding maternal death in the key words.

Authors’ Response: Thank you for the observation. This has been added as suggested.

vii. Background. Not clear – sentence hanging. “The principle of near miss had earlier been elucidated in the treatise by WHO sentence “

Authors’ Response: This has been deleted from the manuscript.

viii. Is it the protocol or the Near miss tool – and then state if the Nigeria Near miss tool is the same or adapted from the WHO near miss tool.

Authors’ Response: The Nigeria network study was adapted from the WHO Near Miss Document.

METHODS

ix. Since when is the facility operational as you state it is new and what are the numbers of deliveries on average in a year?

Authors’ Response: The Teaching Hospital was established in 2005 but became fully functional in 2009.

x. Improve the English. The data collectors were supervised by the principal investigator. Each of the interns has done or was currently doing the Obstetrics and Gynecology rotation.

xi. Authors’ Response: The above phrase has been modified to

“Two medical officers and five medical interns who had done or were doing rotation in Obstetrics and Gynaecology were involved in the collection of data. The principal investigator supervised the medical interns and medical officers who were involved in data collection.

xii. This in contradiction to the statement later that individual consent was not obtained as there was not information obtained from the patient.

Authors’ Response: The ambiguity has been cleared and the sentence now reads “The information obtained was continually updated until the discharge of the patient or death. A pretested questionnaire/form (from National data system on Near Miss and Maternal death
adopted from WHO Maternal Near Miss document) was used to extract relevant information from the patients’ records. There was no direct contact between the researchers and the patients.

xiii. Is this inclusion criteria over and above the one for the Near Miss criteria?

Laparotomy – is this any laparotomy even for ectopic surgery

As I do not think a woman who presents with s/s of ectopic and undergoes surgery for its management is a near miss case. With regards to use of blood products – any amount or more than 5 units as in the near miss tool criteria.

Authors’ Response: Please refer to our reference 4 (previously reference 3), which is a WHO documented used to establish the inclusion. Laparotomy for severe obstetrics conditions which include ruptured ectopic pregnancy and ruptured uterus is one of the inclusion criteria. Use of Blood products falls under critical intervention and implies use of fresh frozen plasma and other blood products. Massive transfusion is also a criteria under the coagulation dysfunction as stated in the inclusion criteria table.

xiv. Consider putting this into a TABLE as presented in the WHO manual reference 3.

Authors’ Response: The inclusion criteria has been put into a table as suggested by the reviewers.

xv. Maternal vital status: Consider putting this as an Appendix.

Authors’ Response: The definition of terms has been removed from the methods section and is now attached as an appendix.

xvi. ?? QUOTE REFERNCE is they are from a WHO document.

Authors’ Response: These definitions are from the WHO Near miss document (new reference 4 and old reference 3).

xvii. DELETE this as your paper did not collect any perinatal data the perinatal indicators have been removed from the manuscript.

Authors’ Response: We appreciation the observation and this has been removed from the manuscript.

xviii. This is contradictory to the statement on data collection within the methodology section.

Authors’ Response: This has been corrected as stated and now reads “Ethical clearance was obtained from the ethics committee of Madonna University Teaching Hospital, Elele, Rivers state Nigeria before the commencement of the study. Informed consent from the subjects were not obtained because there was no personal contact with the patients and researchers. Patients’ folders were used to extract the relevant information which was periodically updated until discharge without revealing the identity of the subjects.”
xix. Explain /detail as the table shows that one patient had ectopic pregnancy and the other had incomplete abortion.

Authors’ Response: This has been rephrased for clarity as shown “Abortive outcome (early pregnancy bleeding) was the leading cause of maternal mortality contributing 2(40%) of the maternal mortality from ectopic pregnancy and abortion related haemorrhage.”

xx. 9 + 7 is not equal to 20

this sentence is about delays in management of the patient once is hospital –so how does lack for transport become a factor?

Authors’ Response: We regret the ambiguity of the statement and this has been rephrased to: “Delays in management were noted in 46(80.7%) of all the cases. Administrative delays were noted in 20 cases and non-availability of blood products 7(12.3) being the leading problems. Patients related delays were noted in 44 cases. Late presentation 22(38.6%), inability to pay 10(17.5%) and lack of transportation 9(15.8%) were the most frequent patient related problems. Different delays are shown in table 5. “

DISCUSSION

xxi. Within this section there needs to be mention about the very prolonged delay of > 240 minutes from diagnosis to intervention in 4 of the 5 maternal deaths

This is a hospital that has only 307 deliveries in one year which is about 25 per month and there are 7 consultants, 4 medical officers and interns. Expound on this finding.

Authors’ Response: There are different reasons for the delays. The hospital operates fee for service which is a major issue. Another challenge is willingness of the patients and relatives to give consent for surgical procedures. Occasionally, hospital’s blood bank may be overwhelmed by needs of the patients. Other issues include availability of staff at all time and power supply. These have been enumerated in the discussion as shown “Significant delays were observed at various levels in this study. This is consistent with the Nigeria near miss network study observation and (WHO STUDY).8,15 This means there is need to shift from quantity to quality of care to reduce mortality. The findings of no maternal death among women who received treatment within 30 minutes of presentation and 80% of the mortality occurring among those with greater than 240 minutes of delay before treatment implies that reduction of the time interval from diagnosis to intervention may reduce the mortality. This means that type three is a very potential target for reduction of maternal mortality in rural areas of Nigeria.

We infer that for substantive reduction in maternal mortality, the hospitals must institute mechanism to reduce the type 3 delay. This include twenty four hour emergency services without emphasis on fee for service in the few hours after presentation, partnering with government and other stakeholders in developing community health insurance services, and 24 hours blood bank services. It also include periodic evaluation of staff’s attitude to work. There is a need for
periodic reviews to identify the different challenges in the management of women with severe maternal outcome.

xxii. The references have been formatted and the corrections have been done.

xxiii. The corrections have been made on the table as suggested.

REVIEWER 2

ABSTRACT

1. For clarity, I suggest the following revisions to the Background: The study evaluated the pattern of severe maternal outcomes, near miss indicators and associated patient and healthcare factors at a private referral hospital in rural Nigeria.

Authors’ Response: The correction has been made as suggested as shown: “The study evaluated the pattern of severe maternal outcomes, near miss indicators and associated patient and healthcare factors at a private referral hospital in rural Nigeria.

2. For clarity, I suggest the following revisions to the Results: Of the 262 deliveries, 52 women had a near miss event, and 5 women died.

Authors’ Response: This correction has been effected as suggested.

3. In the Results, the correct percent of deaths in the age category 20-24 years is 60% (3/5), and not 75%. Please correct or clarify.

Authors’ Response: The error is highly regarded and the correction has been made.

4. In the first sentence, the authors describe that "substantial progress towards reduction of maternal mortality and attainment of the Millennium Development Goals in Nigeria" has been made. This sentence would be more meaningful if this progress was quantified. This can be done by presenting the MMRs from different years.

Authors’ Response: Most maternal mortality figures in Nigeria are mere estimates. The trend from 1900=2015 has been stated in the background as shown “In spite of progress towards reduction of maternal mortality and attainment of the millennium development goals in Nigeria, there is still an urgent need to sustain and increase the quality, availability and accessibility of maternal and child health commodities. 1. A recent report by World Health Organization showed slow reduction of maternal mortality in Nigeria from 1350/100,000 in 1990 to 1170/100,000 in 2000 and 814/100,000 in 2015. 1 However, the Nigeria demographic and health survey estimated the maternal mortality to be 576/100,000.2 Both figures are mere estimates and showed the burden of maternal mortality in Nigeria. This is closely associated with low utilization of reproductive health services and is highlighted in the Nigerian demographic and health survey.
(NDHS) 2013, where only 61% of pregnant women received antenatal care while only 38% of the deliveries are attended by skill birth attendants.2

5. ): Please provide references for the the multiple interventions that have been effective in reducing mortality rates.

Authors’ Response: The multiple interventions have been referenced (see reference 4).

6. It is not clear what this sentence is trying to convey. I believe that the authors are stating that evaluations of maternal deaths and near miss cases provide opportunities to examine social, economic, and structural factors that increase the risk of maternal mortality and morbidities, and these findings can be used to plan interventions that are contextually appropriate. Please clarify.

Authors’ Response: The sentence has been restructured as suggested and now reads “Evaluations of maternal deaths and near miss cases provide opportunities to examine social, economic, and structural factors that increase the risk of maternal mortality and morbidities, and these findings can be used to plan interventions that are contextually appropriate. This will help in strengthening the health system for efficient management of cases.”

7. Please define the "other epidemiological parameters."

Authors’ Response: Other epidemiological parameters of Maternal Near Miss include mortality index, severe maternal outcome ratio and maternal near miss- mortality ratio. These are defined in the appendix.

8. Is it possible to provide the % of women in rural Nigeria that deliver at private facilities?

Authors’ Response: There is no national data on the percentage of Nigerian women that deliver in private hospital. This is highly variable depending on provision of quality and free healthcare.

METHODS

9. Study area: Can you provide additional information on what a "new private teaching hospital" implies? Can you provide the year that the hospital was open?

Authors’ Response: The information has been provided in the method section. The hospital was opened in 2005 and became functional in 2009.

10. Study population: It would be appropriate to first describe the population as the group of people from which the smaller sample was drawn. Can you provide basic demographic information of the women that live in the region? Authors’ Response: The women that live in Elele and its environs are predominantly farmers and traders. This has been included in the method section.

11. Inclusion criteria: Consider using a table to present this information.
Authors’ Response: Your suggestion is well appreciated and the inclusion criteria has been presented in a table.

12. Maternal vital status: Consider including this information as an appendix. Authors’ Response: This has been done as suggested.

13. Traditionally, the sample characteristics are presented in the first paragraph. Please consider rearranging your presentation of results. In line with this, consider combining tables 1 & 2. Furthermore, in the text, you include women's religion, but this information is not included in Table 1. Please consider adding this information to table 1.

Authors’ Response: We appreciate the reviewer’s views and we have merged the two tables.

DISCUSSION

14. The authors write, ”The issue of poverty and ignorance also contributes greatly as 60% of the maternal mortality occurred in women who were unemployed.” Please consider a revision of this sentence. First, claiming that ignorance was a contributor to maternal death does not consider the structural barriers that women in rural Nigeria may face related to education attainment. An alternative could be to saw "low education level"

Authors’ Response: The correction is well appreciated and has been effected in the manuscript as suggested.

TABLES

15. In general, the tables should include more description, including sample sizes for all tables, description of abbreviations, and more context. The tables should provide enough information so that the reader could look at the table, without any text, and understand the study context.

Authors’ Response: The tables have been formatted. We appreciate your kind comments.

16. There are multiple errors in the table percentages. Please double check the calculations and totals are correct.

Authors’ Response: We have carefully recalculated the percentages and corrected the errors.

REVIEWER 3

1. Using the nomenclature already set to the WHO criteria for near miss (Clinical criteria, Laboratory-based criteria and Management-based criteria).
Authors’ Response: We used a tested criteria as outlined by WHO.

2. Population observed in one year is very small.

Authors’ Response: We appreciate the reviewer’s perspective. However, the study highlighted important findings in a private hospital in rural area. This is the first study evaluating maternal near miss in a rural and private hospital in Nigeria hence the need to share our findings and encourage other studies in private and rural hospitals.

3. Deepening the issues of delays.

Authors’ Response: We have emphasized the critical role of reduction of type 3 delay in curtailing maternal mortality in developing countries in our discussion.

4. Analyze delays by type of complications.

Authors’ Response: We considered your suggestion critically. However, our analysis of delays with respect to complications was not statistically significant. We do not think it will add any value to the manuscript. This informed our decision not to include it in the manuscript.

5. Compare data to public hospitals.

Authors’ Response: We compared our study with few studies of maternal near miss in Nigeria and other developing countries.

Dr. Ikechukwu Innocent Mbachu