Author's response to reviews

Title: Utilisation of malaria preventive measures during pregnancy and birth outcomes in Ibadan, Nigeria

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Author's response to reviews: see over
Reviewer 1's report

Title: Utilisation of malaria control measures in pregnancy and birth outcomes in Ibadan, Nigeria

Version: 1 Date: 3 January 2011
Reviewer: Oladoyin Odubanjo

Reviewer's report:

Overview
It is a very good study that adds to the needed knowledge pool for the improvement of child mortality in Nigeria. The objectives of the study are clearly stated; the methodology is clearly described; the data is sound; the conclusions reached are well balanced; related work are appropriately acknowledged; the title and abstract are appropriate; and the writing is acceptable.

However, the suggested revisions are stated below:

Discretionary Revisions
1. In the abstract, it is stated that there is no significant difference in the mean birth weight and gestational ages of babies born to mothers who used ITNs and those who did not. Yet, the conclusions included the recommendation of improved use of ITNs. The authors may consider reviewing the conclusions as contained in the abstract.

Recommendation on improved use of ITNs removed

2. The limitation of the study should be acknowledged. This is a cross-sectional study with much of the data collected being what was reported by the mothers. Bearing in mind the educational level and social class of the majority of these mothers, there is a possibility of inaccurate reporting. The authors did make efforts to ensure as much accuracy as possible (e.g. use of Ballard scores with reported gestational ages where early ultrasound scans were unavailable). Also, in terms of the reasons for the use of the malaria control measures, ignorance of a/the method(s) as a whole was not included. It seems it was assumed that the mothers were definitely informed about the methods. Perhaps this is what is meant by the ‘No reason’ item but it would be beneficial to further clarify this.

The limitations have been acknowledged in the last paragraph of the discussion

Minor Revisions

There a few ‘typographical errors’. Some examples:
1. (Background) Page 4, Paragraph 1, Line 1/2 - Commas should come after the words “where” and “immunity” (not semi-colon). **Done**

2. (Background) Page 4, Paragraph 2, Line 1 – should read as “recommends”. **Done**

3. (Methods) Page 5, Paragraph 3, Line 3 – should read as “The U.C.H. is a tertiary...” **Done**

4. (Methods) Page 5, Paragraph 3, Line 5 – should be “The two hospitals are the government-owned ...” **Done**

5. (Discussion) Page 10, Paragraph 2, Line 4 – should be “national”. **Done**

6. (Discussion) Page 11, Paragraph 1, Line 1 – should be “two-fold”. **Done**

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.
Reviewer 2's report

Title: Utilisation of malaria control measures in pregnancy and birth outcomes in Ibadan, Nigeria

Version: 1 Date: 12 January 2011
Reviewer: Ehijie Felix F Enato

Reviewer's report:

General comments
This article presents the results of what appears to be a well conducted and important study. However, the authors need to address a number of important issues. The manuscript in itself has a lot of technical and grammatical errors, which makes reading and comprehension very difficult.

Specific comments
Title: This should read “Utilization of malaria preventive measures during pregnancy and birth outcomes in Ibadan, Nigeria”
Done

Abstract
Background should read: “Malaria remains a major public health problem in sub-Saharan Africa and the extent of utilization of prevention measures may impact on the burden of malaria in pregnancy”
Done

Objective(s) not stated!
This has been included in the last paragraph of background

Methods: ...Second sentence should read “Data obtained included obstetric information, including birth weight and gestational age during pregnancy”
Done

Results: Write IPTsp in full. Was 21.7% of herbal use specifically for malaria prevention or does this also include disease management? The sentence beginning with “The mean (SD) birth weight (Line 9 from the bottom) is not clear, may need re-wording. What are the p-values for the confidence intervals and odds ratios?
IPTsp has been written in full. Herbal medicine as well as other measures indicated here were for malaria prevention only. Line 9 from the bottom has
been reworded to read ‘The mean ± SD birthweight and gestational age of the babies were 3.02 kg ± 0.56 and 37.9 weeks ± 2.5 respectively.’
P values were not stated where confidence intervals for the odds ratios were given since they both imply level of significance

No key words
Key words have been supplied - ‘Malaria, pregnancy, prevention measures, birth outcomes’

Background: Not well written in its present form. Needs to be re-written, reviewing important literature on the subject matter, and providing a clear justification and objective of the study.

Done
Materials and methods
The author recruited 800 out 1220 postpartum women in the delivery wards of the two study hospitals. I would like to know how you selected these 800 women? Any inclusion and exclusion criteria? Also, how did you arrive at the sample size of 800, was there sample size calculation to ensure that the study is sufficient powered? Which months and year was the study done (seasonal variability may impact malaria in pregnancy). Can you briefly describe the questionnaire used for the study? How was it designed, who administered it, were they trained to do so? Was history of malaria during pregnancy taken or was there any form of parasite diagnosis for malaria in pregnancy? Just collecting history of malaria preventive measures during pregnancy and assessing birth weight and gestational age is not sufficient. By this, the authors are assuming that only malaria during pregnancy results in negative birth outcomes. Indeed, there many other medical and obstetric conditions e.g. pre-clampsia and eclampsia, etc, which can also negatively affect birth weight and gestational age.

The method of arriving at sample size has been described. We recruited consecutive mothers who gave consent. The period of study has been stated. The questionnaires were administered by trained assistants. The objective of the study was to determine the association between utilization of malaria preventive measures and birth outcomes hence we did not look specifically at
the other obstetric factors because we were looking at a cross section of the population without specifically excluding any group.

Results

More women were recruited from Adeoyo Maternity Hospital (a secondary health care facility) than the teaching hospital (UCH, a tertiary health care facility), any explanation to this? Can you estimate the annual attendance or delivery rates for these two hospitals?

There were more deliveries at the secondary facility than the tertiary facility during the study period and generally all year round. Annual delivery rate during the preceding year at the secondary facility was approximately 4500 and 2500 at the tertiary facility.

In general the descriptive headings of almost all the tables are confusing. I am hardly able to make meaning out of them!

Table headings have been rewritten

Table 1, you need to include the number reporting in addition to the percentage frequency, Chi sq (chi-square) can simply be written as X2.

Number reporting (n) has been included. Chi sq removed

Table 2, It is not clear what you compared with chi square statistics. Also, the number of pregnancy can be grouped into 1, 2, 3 and above (i.e. primigravidae, secundigravidae and multigravid). Primigravid and secundigravid women are more susceptible to malaria during pregnancy and the burden is higher too in these groups of women.

Done – number of pregnancies regrouped as suggested

The low birthweight and preterm birth rates among the different age proups and parity groups was compared

Table 3 the percentage response is greater than 100%, and you need to state as footnote that multiple responses were allowed.

Footnote included

I do not think table 4 has any meaningful contribution to the paper. The recommended malaria preventive measures during pregnancy is use of intermittent preventive therapy (IPT) and insecticide treated bed net (ITN). If your respondents were not using these interventions and they also mentioned the reason for that, you can simply say so as text in the result section
Table 5. I think the authors should concentrate on use of IPT and ITN by the respondents, and compare outcomes (birth weight and gestational age) associated with their use or non-use, while controlling for confounding variables like use of other measures and age (as mentioned in page 7, paragraph 2 and line 4).

Tables 6 and 7 seem to me as subsets of table 5 and they (tables 5, 6, and 7) could be combined into one table.

Other preventive measures were included because they were part of the objectives of the study. Tables 5 – 7 have been revised to evaluate any significant associations between the preventive measures used and the birth outcomes. Table 8 has been introduced to show the multivariate analysis of the relative risk associated with use or non use of the different preventive measures in order to eliminate confounding effects.

Discussion: This section also need to be re-written and made more focused

Done

Conclusion: Manuscript needs substantial revision in-line with the comments stated above
Associate Editor comments:

In revising the manuscript the authors need to address several issues raised by the reviewers. Among them are the following specific points identified by the Associate Editor:

1. The recruitment strategy. How were 800 mothers out of 1220 deliveries chosen?

*We set out to recruit 800 consecutive mothers however some mothers did not consent, some were discharged early and were not met especially those who delivered on weekends*

2. The sample size: why 800?

*Sample size was calculated using WinEpiscope 2.0 statistical software, at an approximate delivery rate of 2000 over the 4 month period and assumed low birthweight delivery rate of 14% (from National Demographic Health Survey data) with an estimated exact error of 2.0% at 95% level of confidence and power of 80%.*

3. The unlikely prevalence of preterm (19%).

*Most of the gestational ages from the secondary facility were based on mother’s dates. A large proportion of them were found to be late preterms*

4. The regularity of maternal IPT (not specified).

*Only those who had 2 doses of IPT 4 weeks apart for prevention were recorded as having had IPTsp*

5. Socioeconomic confounding. The analysis is univariable and the meaning of the chi square results in table 1 is not clear. The paper needs a multivariable analysis in order for readers to judge its findings.

*Chi square in table 1 has been removed. The table was only intended to describe the demography of the study group*

6. The population representativeness of the hospital-based sample.
Though the different social classes of the population were represented, caution has to be exercised in extrapolating to the whole population.