Author’s response to reviews

Title: Cross-sectional survey of knowledge of obstetric danger signs among women in rural Madagascar.

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Author’s response to reviews:

Point-by-point response to the comments:

Please see our responses in addressed after each comment.

Reviewer #1:

Abstract

There is need for a background of the study. Has been included.

Introduction

The phrasing of sentences on lines 10-20 need to be improved.

The m-health is not explained enough for the reader to understand on what it was all about.
Phrasing of lines 10-20 was improved and more detailed information about the m-Health was added.

The second part of the objectives (explore effect of knowledge on institutional delivery) appears not to have been achieved - why not remove it completely from the manuscript. In the initial protocol we aimed to explore the effect of knowledge of danger signs on institutional delivery. As correctly noted, the analysis was not possible and the objective has been therefore removed.

Results

Table 1: the numbers of those who received PANDA interventions and those who did not receive should be shown in this table.

We assume that Reviever #1 refers to table 2 and we included the number of women who received the PANDA intervention compared to those who did not receive it.

Parity is repeated delete one. Deleted.

Separate variable ANC visits is not necessary yet there is one which the different categories why not merge. Categories have been merged.

It is not clear from table 3 & 4 which knowledge of danger periods (Pregnancy, childbirth/delivery, postnatal) are referring too. The table titles are not clear.

Titles have been adapted in accordance to previous publication such as Bogale and colleagues. We are not sure how clarity of the title could be improved, please advice.

Table 4: the education variables need to be aligned well with the ODDS RATIOS. Variables have been aligned.

Discussion

Discussion section is fair.

The section lines 15-22 is not clear.

Discussion section, including lines 15-22, has been improved.
There is need to include conclusion section after discussion. Conclusion section was added.

References

Reference: Pembe et al. is not numbered. Was numbered.

General

The English needs to be improved for the whole manuscript.

An English native speaker with scientific experience and a publication record edited the second manuscript. We hope that you approve the revised manuscript.

Reviewer #2: Thank you for your efforts to contribute to our understanding of how to increase knowledge of obstetric danger signs, and ultimately to improve maternal and neonatal outcomes by encouraging families to deliver at health facilities. This manuscript needs

Title:

1. Consider specifying study design "Cross-sectional survey of obstetric danger signs knowledge among women in rural and urban Madagascar" This will help readers searching for this topic to find it more easily.

Thank you for this suggestion. The title was modified according to your suggestion. Even if the city of Ambanja is considered “urban” in comparison to Ambanja district, the whole district is considered rural compared to the rest of Madagascar. Therefore, we did not include the “rural and urban” difference.

2. What does RENY stand for? This abbreviation isn't used anywhere else in the article.
“RENY study” was used as the acronym for the study in the spoken language during the time of conducting it in Madagascar. RENY is an abbreviation of RENY VOARA, which means “safe mother” in Malagasy. As correctly noted by Reviewer #2 it was not used elsewhere else in the article and therefore deleted.

Abstract:

3. Please include sampling method in Abstract. Randomized? Convenience sampling? Sampling method (convenience sample) was added.

Introduction

4. Grammar edit: "Maternal mortality continues to place an unacceptable burden on low- and middle-income country populations.”

Grammar was edited. First and second sentence of the introduction was rephrased and reference updated with data from 2015, published in 2016.

5. What are the stats on maternal mortality and complications for Madagascar?

Maternal mortality ratio for Madagascar was added and compared to Sub-Saharan Africa. Exact data of complications for Madagascar are to our knowledge not available.

6. "It has been assumed that most of these complications can be avoided if women have skilled birth attendants." This sounds odd. "Assumed" makes it sound like this isn't based on anything. Reframed.

7. "Similarly, Hailu and colleagues reported that women who received maternal and child health education were nine times more likely to deliver in a health facility" Citations in text do not line up with numbers in Reference section.

Thank you, was corrected.
8. In general, the Introduction and Discussion sections contain very few references to support the statements made. There is a lot of research on this topic, including reviews. Has any related research been done in Madagascar? Qualitative or quantitative? We have improved the introduction and discussion section and including studies about antenatal care and mHealth interventions. A more detailed comparison was done as well. To our knowledge few other studies on this topic have been conducted in Madagascar so far and the only relevant qualitative and quantitative study by Morris and colleagues is included.

9. Grammar edit: "Furthermore, women benefited from structured health education about danger signs during pregnancy childbirth and in the newborn, as well as information about contraception, breastfeeding, and domestic violence.” According with the comments of Reviewer 1, the PANDA mHealth application has been explained more in detail and therefore the explanation about the health education was reframed.

Methods:

10. No such thing as a cross-sectional cohort study. Cross-sectional study was corrected and the STROBE checklist added.

11. Since study participants who received this education early in the study (August) period could have shared this information with study participants who were interviewed later (October), couldn't the study results had been biased by your education? Did you compare results from the beginning and end of the study to see if differences existed? This should also be addressed in the Limitations section.

Thank you for this comment. Until now, we have not conducted an analysis comparing the difference in women recruited at the beginning vs. the end, because we considered our sample which was additional recruited at different health centres as too small. We have included the mentioned bias in the limitations.

12. Since frequency data are not available, statistics, like odds ratios cannot be calculated. Results are only presented for factors associated with the knowledge of danger signs during delivery and factors associated with the knowledge of danger signs for the newborn. Although knowledge of pregnancy and postpartum danger signs are mentioned in the Methods section as having been collected findings are not discussed. Sentence has been added.
Results

13. Clarity suggestion: The majorities were single (68.0%), living in rural areas (68.8%), and secondary school entrants (53.8%); 43.0% had not started the last three years of secondary school (Table 2).

Clarity suggestion was added, thank you.

14. Clarity suggestion: "Binary and multivariable logistic regression analyses were carried out to identify factors associated with the knowledge of danger signs.

Clarity suggestion was added, thank you.

15. Why are homemaker/unemployed grouped? This makes it difficult to compare groups across studies. In the analysis, we noted a confusion; several women who where housewives stated at the same time that they were unemployed even if they had no formal education and were not actively looking for work. We therefore changed the group to housewives to avoid confusion.

16. "100'000" should be 100,000. Corrected

17. Clarity suggestion: "For 85.7%, a dispensary or hospital was less than an hour's walk away." Corrected

18. Typo?: Most (69.7%) had attended at least the WHO-recommended four ANC visits. 69.6% in Table 2. Corrected

19. Clarity suggestion: "Many women stated that they received information about potential problems that might occur during pregnancy and delivery (70.8%), and nearly all were advised to deliver at the hospital (55.4%) or dispensary (43.7%). Thirty-one percent of women stated that their pregnancy was unintended, either mistimed (19.9%) or not wanted at all (11.0%)."
Thank you, clarity suggestion was included.

20. **Analysis? Was a bivariate and multivariate analysis of knowledge of danger signs during pregnancy and postpartum not done? You mention these, but don't report results.**

We did perform a bivariate and multivariate analysis but neither the bivariate nor the multivariate analysis yield significant results (p<0.05). A sentence was added.

21. **Grammar edit: "These results are consistent with findings of other studies in Africa reporting that only 58% of women were able to mention at least one danger sign for the newborn and even fewer women more than three (10,11).”**

Clarity suggestion was added.

22. **Grammar edit: "This recruitment strategy might have led to a sample with more favorable attitudes towards the health system, who might be more likely to have sought institutional delivery.”**

Grammar edit was adapted.

23. **Reference needed. Or leave out as this is not addressed by the study. "Inclusion of men is also crucial to ensure success in the long run.”**

Thanks for the comment. Even if we consider the involvement of men in antenatal care in general as important, as it is not directly related to the study results, the sentence was deleted.

24. **"However, the rate of unintended pregnancies in our sample was high similar to the rates reported by the Guttmacher Foundation for the African Continent." Was your sample similar to the Guttmacher Foundation or higher?**

The cited publication used the “Live birth estimates for 2012 for each subregion are based on UNPD estimates for 2010–15 (UN 2013). Estimates are therefore based on a much larger sample than ours and considered reliable.
25. "Provision of contraception services as recommended by WHO represents a unique opportunity to prevent future undesired pregnancies, especially among women who attend regular ANC, as these pregnancies are associated with higher risk for both mother and infant." This seems unrelated to the rest of this study. I would either leave it out or develop it further.

We consider this observation (the high percentage of unintended pregnancy as very important) and therefore we developed this paragraph. We hope it finds the approval of the reviewer. If you consider it to confusion, we agree to leave the paragraph out.