Author’s response to reviews

Title: Using fetal scalp stimulation with Doppler ultrasonography to enhance intermittent auscultation in low-resource settings: A diagnostic trial from Tanzania

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Reviewer 1): The detailed responses to my comments and the comments of the other reviewer have been seen and overall the paper is of good quality given the limitations of research in this settings, and as previously mentioned is a valuable piece of research in the context of improving fetal monitoring in resource-poor settings. I think the paper now reads better and the methods/protocol are easier to understand for someone reading it for the first time and I feel it is suitable for publication in this version.

Thank you for your consideration and helpful comments to improve this paper.

(Reviewer 2): I am happy with the responses to the previous comments. However, i'm afraid that there are still a few minor issues:

1. Apologies for the previous advice, but I'm not sure that 'observational study' is quite the right term for this study; a new technique is being introduced so you are not really 'observing' usual practice. Whilst the use of pre- and post- is appropriate, the study might better be titled "A diagnostic trial testing fetal scalp stimulation with Doppler ultrasonography to enhance intermittent auscultation in Tanzania". In the abstract 'observational study could also be replaced with 'clinical trial' ' or 'diagnostic testing study'

a. We have changed the title consistent with your recommendations along with the pertinent descriptions in the text.
2. 'Fetal scalp stimulation' should be added to the key words, along with 'intermittent auscultation'.
   a. This has been added

3. In methods, page 2 line 8, the term requiring them to "be " a planned CS is worded badly, women are women, not caesareans - same under study design.
   a. Thank you for correcting this socially inappropriate jargon. It has been changed in the text to: “Women were excluded if they had any risk factor requiring a planned cesarean delivery such as…”

4. In 'methods - outcome measure', there should be just one primary outcome (eg 'fetal acidosis (defined as umbilical artery pH <7.0 and BE >12mmol/l)') The mild, moderate and severe definitions in this sentence are muddled up I think - it should be 'mild, moderate or severe… pH <7.2, 7.1 and 7.0 respectively'.
   a. This has been corrected in the text.

5. In results, the word parturients in labour is used twice. Parturient is an adjective to describe women in labour, so in labour is not required. X2 Table 1. 'Referral' should maybe say 'referred from outside facilities'
   a. These corrections have been made.

6. The term 'fetal distress' is still in the text. In the methods section it is correctly changed to NRFS - but it remains in the results.
   a. Our apologies, we thought these had been corrected. They are now.

7. Flow chart figure - on right under FSST Absent, the arrow should read 'FSST Absent', not 'FSST present'.
   a. Thank you for catching this error. It has been corrected.

8. Table 3 should better define 'acidosis', specifying the pH used not just the BE
   a. This has been clarified.

9. Table 4 would be easier to read if the IA and IA+FSST were all in one column, with the pH<7.2, pH <7.1 and pH <7.0 as subheadings going down the page
   a. We are trying to show to diagnostic performance for the groups based on which acidemia cut-off that a provider would choose. This is similar to the way data is represented in the Rathore paper using stethoscopes to qualitatively assess accelerations in India. We feel like this Table provides the reader with an
informative comparison of the performance. We regrettably don’t understand the exact modifications you are requesting and have chosen to leave it this way.

10. It is not standard to quote statistical tests for demographic data (table 1) and not to quote it for outcome data (table 2). I would suggest that the p values are removed in table 1 and added in table 2.

a. We would resonate with your views about statistical tests in table 1, but the p-values had been requested by Reviewer #1 in the previous round of edits. P-values for chi-squared test have been added to Table 2.