Author’s response to reviews

Title: Nurses’ and Auxiliary Nurse Midwives’ Adherence to Essential Birth Practices with Peer Coaching in Uttar Pradesh, India: A Secondary Analysis of the BetterBirth Trial

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Reviewer reports:

Reviewer #1: Thank you for the opportunity to review this manuscript that describes the effects of a coaching program on adherence to essential birth practices among nurses and auxiliary nurse midwives. This is a secondary analysis of a cluster RCT and post hoc analysis is declared. I hope that the following comments are useful to the authors.

Response: Thank you for your thoughtful feedback. Please find our responses to each comment below.

Title: (Page 1, L4-7) The length of the title is significant and the intent of the manuscript would be much clearer if a more succinct title was provided.
Response: We have replaced the title with the following shorter version: “Nurses’ and Auxiliary Nurse Midwives’ Adherence to Essential Birth Practices with Peer Coaching in Uttar Pradesh, India: A Secondary Analysis of the BetterBirth Trial”

Abstract: (Page 2 L7-49) Notwithstanding the post hoc nature of the analysis, the abstract could be strengthened by provision of an aim/s and objectives. The significance of the study is also not provided and this inclusion is recommended.

Response: We have clarified the following sentence regarding the study objectives: “This study aimed to examine the adherence to essential birth practices between two different cadres of birth attendants--nurses and auxiliary nurse midwives (ANMs)--during and after a peer coaching intervention for the WHO Safe Childbirth Checklist.”

We have reported the study’s contributions to the literature after the abstract.

Background: The information provided here relates to the trial rather than this study. More context relating to the different cadres of birth attendants is required to make the case for the gap that this study addresses.

Response: We have moved the following sentence from the Discussion to the Introduction to provide the context of nurses and auxiliary nurse midwives in India: “In Uttar Pradesh, India, auxiliary nurse midwives (ANMs) receive 2 years of training while nurses receive 4 years of training. Due to the differences in training and work experience between ANMs and nurses, performance improvement strategies may require customization for each cadre of birth attendants.” We also clarified the preceding sentence to emphasize the lack of data regarding birth attendant competency among different cadres of birth attendants: “We lack data about ongoing birth attendant competency after completion of different professional training programs in many LMICs where there are often no continuing professional training requirements.”

Methods: Overall well described. More details on the analysis on the different sources of data is recommended.

Response:

We have added the following information to the statistical analysis section: “The analyses of the birth attendant survey, coach observations, and data collector observations were descriptive with results presented in proportions and medians as described above. The main analysis describing relationships between cadres and behaviors used data from the independent observer database.”

Results: This is difficult to assess without the aim and objectives. A significant amount of results tables and figures and supplemental tables are provided. To assist the reader, I would recommend the provision of objectives with strong alignment to focused analysis.
Response: We clarified the study aim in the following sentence, located as the last sentence in the Introduction.

“This study examines the characteristics of the two cadres of birth attendants (nurses and ANMs), the amount of coaching each cadre received, and their adherence to essential birth practices over 12 months as an assessment of their response to coaching.” The tables are organized according to these aims: Table 1 summarizes the birth attendant characteristics. Table 2 summarizes the amount of coaching nurses and ANMs received. Figures 2 and 3 show adherence to essential birth practices over time by birth attendant cadre.

Discussion: Again this is difficult to assess without the aim and objectives.

Response: We have clarified the study aim as above.

Limitations: Well-articulated

Conclusions: Appropriate

Response: Thank you for your thoughtful review.

Table 1 Conventional presentation of data would be preferable

Response: We presented the data in Table 1 in such a way to highlight that the denominators vary due to missing responses. The formatting aligns with what has been published in Implementation Science. We would consider restructuring the table if the reviewer has specific suggestions.

Reviewer #2: This paper is a post-hoc secondary analysis of data from a cluster randomised trial of the Better Birth Checklist, published in the NEJM in 2017. The trial showed an increase in use of the checklist but no concurrent improvements in maternal health. The data presented in this manuscript provide a very granular description of the characteristics of the staff trained, the amount of coaching they received, and their response to coaching as measured through adherence to essential birth practices over 12 months. The conduct and reporting of the study appears largely acceptable but there are a few major and few minor issues with this manuscript in its current form that I think should be addressed to improve it in preparation for publication.

Response: Thank you for your thoughtful feedback. Please find our response to each comment below.

Background:
1. It is not clear exactly what type of study this is. It 'seems' like a form of process evaluation (because of the reference to 'dose of' and 'response to' the intervention) but is not labelled as such. Furthermore, as the main trial was negative, with uncertainty as to why this was this secondary analysis could offer some explanation as to why, but in it's current form does not do so.

Response: We have replaced “post hoc analysis” with “secondary analysis” throughout the manuscript to clarify the type of study this is. The purpose of the study was not to explain why the main trial was negative. Instead, our objective was to examine how coaching works in 2 cadres of birth attendants. We have clarified our study objectives as outlined in the responses above.

2. Following on from the above point, the manuscript should contain a clear description of the research question / objectives being addressed.

Response: Our study objective was to examine birth attendant cadre-specific differences in amount of coaching received and subsequent adherence to essential birth practices. We clarified this in the following sentence at the end of the Introduction: “This study examines the characteristics of the two cadres of birth attendants (nurses and ANMs), the amount of coaching each cadre received, and their adherence to essential birth practices over 12 months as an assessment of their response to coaching.”

3. The data collection and analysis centres around the comparison between cadres of staff but the rationale for this is not clear. For example, why this comparison rather than between adherence levels at different birth centres, and the characteristics of those centres. One could hypothesise that exploring both factors, cadre of staff and local context of birth centre, could be important for understanding adherence or lack thereof but currently there is no sense of this in the manuscript, at least to a reader not overly familiar with maternal care in India. Again this makes it hard for the reader to frame and interpret the meaning of the data provided.

Response:

Our team has published a separate paper about variation in maternal and newborn outcomes by facility-level factors in Lancet Global Health (citation: Marx Delaney M, Miller KA, Bobanski L, et al. Unpacking the null: a post-hoc analysis of a cluster-randomised controlled trial of the WHO Safe Childbirth Checklist in Uttar Pradesh, India (BetterBirth). Lancet Glob Health 2019;7(8):e1088–96.). We have summarized the finding that facility-level characteristics were not associated with outcomes and have included this citation in the Introduction. In an unpublished analysis, we found that adherence to birth practices did not differ by facility type, so we did not adjust for facility type as a confounder in this paper. We did, however, account for clustering by facility type because there are differences in birth attendant staffing by facility type.
Methods:

MINOR

Page 5, Lines 24-26: We are told that the coaches are nurses but it would be helpful to know what qualifies these coaches to train others. Had these nurse coaches received further specific training in both the checklist and coaching technique beforehand?

Response:

We have added information about the coaches in the following sentences: “Coaches were nurses with training in childbirth care and were recruited from the same geographic hub as their facility assignments. They received extensive training and support to carry out their responsibilities, which included motivating birth attendants, observing and providing feedback to birth attendants, and problem solving with birth attendants.”

Page 5, Line 57: There is no information about the independent observers. Who were these observers?

Response:

We have included the following sentence about independent observers: “Independent observers were nurses trained in childbirth care who received extensive training to record behavioral data with a standardized tool.”

Page 5, Line 52 - the sentence needs editing

Response: This sentence has been revised.

Results:

MAJOR

4. Page 7, Line 5 - the number of respondents is given but not the total cohort these are drawn. Please report this and the response rate.

Response:

We have added the following for clarification in the Results section: “In total, 647 birth attendants were contacted for the survey. Of the 647 birth attendants, 610 (94.3%) responded, and 37 (5.7%) did not respond or consent. Among the 610 respondents, 40 were Lady Medical Officers, who we excluded in the analysis of nurses and ANMs. Therefore 570 birth attendants were included in our analysis, representing 88.1% of the total birth attendants surveyed.”
MINOR

Page 7, Lines 28-29: "Staff nurses received a median of 13 coaching visits (IQR 8,17), and ANMs received a median of 6 days of coaching (IQR 4,11)." Are coaching visits different from days of coaching. Please clarify

Response:

Coaching visits are the same as days of coaching. We have revised the above sentence to clarify this point.

Discussion

MAJOR

The discussion should include some consideration and interpretation of why there may be a difference in the performance of the 2 nursing cadres. Having made this the focus of the study, the possible underlying causes for this, which could lead to possible solutions to rectify this, are not discussed. Conversely this may not be the key issue, and the data in Figure 2 suggests maybe it is not. In this case, more discussion on why overall adherence improved but was never very high and then dropped off, may be more worthwhile. In either case, the authors interpretation of the results could be more clearly explicated to help the reader make sense of the study.

Response:

We have restructured the Discussion and included an additional reference for interpreting the results: “Additionally, integration of new practices in health facilities often require extended efforts to sustain behavior change initially while more permanent integrating mechanisms take hold.18”

MINOR

Page 8, Lines 16-29: This may be a style issue, but I would suggest the first paragraph of the discussion should always summarise the main findings and interpretation of these. I would recommend adjusting the discussion to do this more clearly. For instance the sharp increase and the drop off in adherence is surely a key finding in the study that should be mentioned in the first paragraph of the discussion?

Response: We have moved the summary of key findings to the first paragraph of the Discussion.