Reviewer's report

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

Version: 0 Date: 02 Aug 2019

Reviewer: TIMOTHY STEPHENS

Reviewer's report:

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.

Background:

MAJOR

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.

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

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.

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?

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

Page 5, Line 52 - the sentence needs editing

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.

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

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.

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?
Level of interest
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal