Author’s response to reviews

Title: On-site clinical mentoring as a maternal and new-born care quality improvement method: Evidence from a nurse cohort study in Nepal

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Author’s response to reviews:

Dear Editor,

We thank you for the opportunity to revise our manuscript. We also thank the Editorial board and both reviewers for their comments and suggestions.

The manuscript has been deeply reviewed to address the reviewers’ concerns. In particular, several sets of additional analyses were performed to distinguish auxiliary nurse-midwives and nurses, as recommended by one of the two reviewers.

Kindly find below our responses to issues raised by the reviewers. Changes in the manuscript are highlighted in blue.

We hope that the editorial board and reviewers will be satisfied with these revisions and that our article will be accepted for publication.

Looking forward your decision,
Sincerely,

Sophie Goyet
Corresponding author

Comments from Reviewer 1

First of all, we want to thank Reviewer 1 for the time she spent on this review, and the quality of her comments and suggestions. We truly appreciate, and believe that with her suggestions, our paper has much improved.

1. This paper is well written and flows easily.

Thank you. The manuscript was proofread by the American Journal Experts (at a certain cost!). It has again been proofread after our corrections. Kindly excuse that this cover letter has not been proofread.

2. Abstract: The tools used by the mentors were 'nationally approved'. Given the poor outcomes for Nepal in this area can the authors indicate whether internationally approved tools had been considered? Please provide some information as to how the tools may reflect those used in other countries.

The training manuals used in this program were revised and updated during the first phase of the program, with international expertise assistance. Available internationally approved tools were contextualized to align to the national MCH program. In the methods section, we have explained that, and added a reference.

3. Separating the data into registered and non-registered staff is essential and would facilitate accurate economic analyses and projections- can the authors please do this, and if not possible, please state reasons in the limitations.

We understand your intention here and we thank you for giving us the opportunity to explain our approach.
In Nepal, nurses working in maternity setting are staff nurses or auxiliary nurse-midwives (ANMs). Registered nurses have received a 3-year pre-service nursing training and are usually appointed as ‘staff nurses’, ANMs have only been trained during a 18-month course. Several of these staff nurses and ANMs have received an additional 2-month training to become skill birth attendants (SBAs). However, both staff nurses and ANMs, being SBAs or not, should be able to attend to a woman in labor, to manage a normal delivery and deal with obstetrical/neonatal complications while waiting for a transfer to a better equipped facility. Moreover, despite their limited training, many ANMs work alone in remote birthing centers, because there is no staff nurse appointed yet, or she is absent. This information has been added in the methods section where we describe the intervention setting.

Because of these reasons, we initially focused our analysis on the type of facility (CEONC, BEONC or birthing center), and on the ‘SBA status’ of the mentee (if she has received the 2-month SBA training or not). Higher health facilities are supposed to well know how to manage normal deliveries and complications. SBA trained staff as well. However, we have now modified our manuscript to also take into account the initial professional training and the position of the mentee.

4. In the abstract (and throughout the paper), please be consistent in placing the N before the percentage in brackets.

&gt;&gt; It has been corrected in the abstract and in the article text.

5. Page 3 Line 14: Please give a brief outline of previous mortality rates, and indicate whether the initiatives described in the next paragraph impacted on these.

&gt;&gt; This information is now added in the text.

6. Page 3 Line 29: Do the authors mean that prior to 2005 Nepalese governments had made no efforts to improve population health? Please provide clarification as to the time period.

&gt;&gt; We meant that after the civil war. We have added this information in the manuscript.

7. Page 3 Line 41: This indicates that the healthcare system is not public. Please provide clarification as to how healthcare is provided, whether recipients pay and in what way (e.g. through insurance, cash)
Since we are reaching our words limit for this type of article, we chose to remove this sentence and not develop this point. Anyway, the situation is rapidly evolving since a new national Constitution was voted in 2015. The whole health system is in transition from centralized to federal governance, our description could appear obsolete.

8. Line 51: Please describe the organisation Deutsche Gesellschaft fur International Zusammenarbeit (GIZ).

The GIZ is the German technical cooperation agency. This information has been added into the text.

9. Line 56: Was the decision to implement the program based on any preceding evidence as to its effectiveness? If not, what influenced the decision to use this program?

The rationale of this intervention was the stagnation of the maternal and neonatal mortality ratios, the poor capacity of staff working in maternity settings, and the need to follow-up nurses after their training for skill birth attendance. The mentoring approach had been experimented in the past to expand abortion care. The manuscript now includes this information.

10. Page 5: Please provide information as to what proportion of the total national districts and birthing centers (approx.) were included in this study.

The information is added in the text.

11. Page 5 Lines 53-54: some of the topics weren't included in the mentorship sessions- was this taken into consideration in the analysis (e.g. mentees examined only on the work they had covered with their mentors)?

Yes, this was taken into consideration. Mentees were only assessed once they were trained in a specific skill, either during their SBA training, or during the mentoring program. In the analyses on mentoring effectiveness we only included mentees with at least 2 assessments.

12. Please provide information as to the duration of each mentorship session- e.g. one hour, one day, one week?
Each mentoring session lasted 3 to 4 days. The text has been amended to add this information.

13. Page 6 Line 15: Semi-colon missing after 'as follows'.

The text is now edited.

14. Line 46: How were the mentors selected? Did they fulfill any specific competencies? Having extensive experience does not mean they were good practitioners, nor does it indicate that they would have mentorship skills.

Their recruitment was based on examination on various criteria: maternity, public health and training experience, good communication skills, position of ‘senior staff’. Most of them were SBA trainers. They received a mentoring training at the beginning of the program.

15. Line 51: Please explain what is meant by 'backstopped'.

By ‘backstopped’ we meant supported and complemented by additional experts. For instance, a team of pediatricians and pediatric nurses were recruited on short term to provide additional clinical training on specific neonatal skills. However, since we do not want to go too far beyond the word count limit, we have decided not to develop this aspect, and removed this part of the sentence.

16. Page 7 First paragraph: There is a lack of clarity here as to how the mentorship was carried out. Did the mentors spend time (how long) with individual mentees going through a training programme?

In this paragraph we describe how the clinical mentoring was complemented by a joint program aiming at improving the management of health facilities. We have added few words to specify that management mentors worked with the health facility heads and the health facility management committees. The title of this paragraph has also been edited. The clinical mentoring was described in a previous paragraph and the figure 1.

17. Page 9 Line 35: Were data on topics covered in the mentorship sessions recorded? Do we know the exposure of each mentee to mentorship around specific topics?
Yes this information is available and used in the analysis. This is why in the tables the number of mentees assessed varies from one clinical skill to another. We only included mentees with at least 2 assessments. This is now explained in the notes below the tables.

18. Page 10 Table 2: It's not clear how many assessments each mentee undertook. Were they at the beginning and end of each mentorship session? This seems to be the only way in which mentees who had one mentorship session could have demonstrated change. Please clarify.

You are right. The assessments were taken at the beginning of each mentoring session. This was described in the methods section (“Then, each nurse-mentee was individually assessed for her knowledge in MNC, as well as for her ability to perform 12 clinical skills, using quality improvement (QI) tools approved by the MoHP.”) as well as in the Figure 1. We have however modified the text and repeated the information in the section presenting the assessments.

19. Page 11 In order to interpret these data we need to understand the responsibilities of each role- e.g. would a support worker have been expected to manage an eclampsia case to the same degree as a registered nurse? Separating out the registered and support nurses data is important. Changes following mentorship would then be clearer for each group, and the baseline needs of each identified correctly.

As explained above, all maternity staff (nurses & ANMs) should be able to perform 10 / 12 clinical skills reviewed/taught through this program. There are only 2 tasks that should only be performed by SBA trained staff: performing a manual aspiration and performing a vacuum delivery, and preferably in a CEONC maternity. This is now mentioned in the footnotes of tables 2, 3 and 4. We have reviewed the analyses to separate nurses and ANMs. A supplemental table is also added to show if ANMs and nurses equally gained from this program.

20. Page 12: The poor results at baseline are concerning but the improvements are heartening. However it is important to identify the proportion of registered nurses who were lacking in knowledge as opposed to support staff. The discussion should include a more extensive commentary on the quality of pre-registration training with recommendations as to how this might be addressed.

We have now added a paragraph in the discussion about this point. It will take very long time before all birthing centers will have an active registered nurse-SBA trained, given the geo-economic situation of Nepal. Another hindering factor is the current transition from a central to federal governance. In the discussion we also explain that the MoHP has taken promising steps by introducing a midwifery education program.
In the result section, we have also edited the table 2 to show the change in knowledge and overall clinical practice, according to the mentees’ initial professional training, their SBA status, their function (ANMs or nurses) and posting (CEONCs, BEONCs or birthing centers).

21. Page 16: The assertion that mentoring 'builds teamwork, staff confidence, motivation and a sense of ownership' appears to be the views of the authors presented as fact. No data are presented to substantiate the claim. Please evidence or take out.

22. No comment is provided in relation to the cost of euros per year for four nurses. How does this relate to local salary costs, for example?

The Average monthly salary for a nurse in the capital city is 15000 Nepali rupees = 130 USD. Again, the word count limits does not allow to elaborate on this point. We have removed this part of the discussion.

23. Page 18: Please move the information on ethics to the methods section.

This paragraph was already in the method section, page 9 of the initial submission.

Comments from Reviewer 2

1. The Title: "On-site clinical mentoring...........". I feel this title should be changed to "On-site training ......" since in the methodology, the nurses were trained and assessed using case scenarios and simulation models and not in the real practical world except for a few cases.

Mentoring is a flexible and on the job teaching and learning process. In our program, case scenario and simulations models were used as teaching methods, along with on-the-job coaching. The mentors have developed a long-term relationship with their mentees, which is also a feature of mentoring. We would like to keep this title, as we truly believe that this was a mentoring program.