Author’s response to reviews

Title: Antenatal care strengthening for improved quality of care in Jimma, Ethiopia: An effectiveness study

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Author’s response to reviews: see over
Author’s covering letter for initial submission

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Version: 1 Date: 16 October 2014

Comments: see over
Regarding MS: 1408585569844773

Letter to the editors/reviewers
We write to you to bring your attention to a previous communication from 2013. We submitted two manuscripts to your journal, one was a needs assessment and the other an evaluation study. In May 2013 the BMC Public Health Editorial Office rejected the needs assessment manuscript, however recommended us to resubmit the evaluation manuscript taking review comments into consideration. We are pleased to inform you that the needs assessment has been published elsewhere and we are ready to resubmit the evaluation manuscript (MS: 1408585569844773) and hope you still find it interesting.

Thank you very much for your detailed and relevant comments to our paper. The revision has clearly made the paper better and more transparent, and we are happy to see that two of the reviewers find it an important study.

Below please find our point-to-point responses in italics to comments from all three reviews. However, the inputs from this review have led to comprehensive changes in the structure of the paper and we therefore hope you will read it in its length to assess the new version of the manuscript.

Yours sincerely,
On behalf of the authors
Sarah Villadsen
Reviewer's report
Title: Process and impact evaluation of a participatory antenatal care strengthening intervention on quality of care in Jimma, Ethiopia, 2009-2011
Version: 2 Date: 15 January 2013
Reviewer: Malabika Sarker

Major Compulsory Revision

Introduction
The literature review in the introductory session is weak.

Our answer:
We have focused this paper on health system strengthening more than antenatal care (ANC), as the introduction to ANC was central to the needs assessment paper. We agree that more information is needed, when this paper stands alone, thus we have included information on purpose, effectiveness and use of ANC as well as information about ANC in Ethiopia, from line 57 to line 75.

The research question was not clear and objective is ill defined.

Our answer:
Thank you for making us aware of this important issue. Several changes have been made to accommodate this. We have:
- Rewritten the objective (also including the perspectives from the review of Jahn) (starting in line 89)
- Elaborated our theoretical understanding of intervention research and included a new section with the subtitle: intervention and evaluation theory (starting in line 99). We specify that we have conducted a complex intervention and evaluated the effectiveness, not the impact.
- Clarified the program theory of our intervention (starting in line 205).

The problem statement is not well justified with data. The background information is missing eg. what proportion of women receive 4 ANC visit?

Our answer:
See the above answers.

The need assessment result (eg quality of care poor) presented in the section was very vague.

Our answer:
The authors neither presented any evidence of usefulness of participatory strategy nor expressed the justification of the participatory strategy for improving ANC.

Our answer:
Thank you for making us aware of this. In the new section about intervention and evaluation theory we have stated why we considered it important to work participatorily and supported this by theories of health promotion planning and examples from implementation of maternal health programs.

Methods & Materials
Although description of the settings and need assessment was described in a separate paper, the health structure (different level of health service centre) with numbers should be presented

Our answer:
We have included the numbers seen per annum at the different facilities in line 140-143.

The description of the intervention was poorly written with incomplete information.

Our answer:
We have rewritten the intervention description with the comments below in mind.

Authors mentioned the principle (should be purpose) of the intervention was ‘to bring the health service to international standard’ was not clear. International standard should be defined.

Our answer:
We used the WHO guidelines for focused antenatal care as the standard. We have written this in line 104 and 173.

Several consumable products, equipments were donated but who donated and what amount and for how long were not presented

Our answer:
We have included this information in line 156 - 170.

The women were asked to pay for laboratory test. Was it free before?

Our answer:
The issue of user fees was central to the needs assessment paper, however should not be forgotten here, and is now included in line 158-159.

The authors miswritten RH, it should be Rh.

Our answer:
We have corrected, see line 162.
Urine analysis for which test?

Our answer:
We have included this information, see line 163.

What kind of training was given to lab technicians and who were responsible for training and for how long?

Our answer:
We have included more details in the text, see line 165. The training was provided by the Department of Laboratory Sciences and Pathology, Jimma University, who also developed brief manuals of the laboratory procedures to be followed for each test.

One of the instruction in the privacy guideline is one person should be in charge in case many health providers are present but who will be in charge and how it will be decided?

Our answer:
It was difficult to understand how best to organize the staff in order to be obedient with the guidelines. Maybe we should have worked more on these issues; however this might be part of larger health system cultures. We have added the perspective that we could have worked more with this in the discussion (starting in line 394).

If majority of women are illiterate why the information folder was developed? Was not it evident during need assessment?

Our answer:
According to DHS 2011 data 69% of women in urban settings in Ethiopia are literate. Our data show that around 80% of the survey participants had been to school. Thus, we don’t expect the majority of women to be illiterate.

During the needs assessment it was clear that there were no systematic health education given and that the staff found it difficult to prioritize which information should be given. Therefore, we developed a brief folder. As reported in the paper, this served as a working tool for the health staff during the intervention period. However, the feedback from health professionals was that when illiterate women attended, it was not useful to distribute. Therefore, we developed the pictogram on danger signs. The folder covered more topic than danger signs, but the most crucial topic to remember at home would be the danger signs. The staff could distribute which one they found most relevant or both to the women.

Why the registration process and physical appearance were monitored? Those were not part of interventions.

Our answer:
We have deleted these aspects from the paper.
The design and the sampling frame is extremely poor and not in alignment with an impact evaluation. How the study participants were recruited was not presented. At household or health facilities? Sampling frame and information on sample size calculation was not presented.

Our answer:
As mentioned above, this intervention should rather be considered an effectiveness evaluation of a complex intervention and not an impact evaluation, and we recognize that we do not have a study that is in line with an impact evaluation.

The intervention was at facility level, while the effect of the intervention was measured by survey data collected at household level. Before the baseline survey, we didn’t have reliable sociodemographic or reproductive data from Jimma, and therefore the calculation of expected changes was extremely difficult. However, we have included our very crude calculations on sample size (line 228-230). The routine data at health facilities were faulty and included women residing in rural areas, but attending services in town. Therefore, we decided to do the best possible with the available funding: We included all eligible women, we could identify, in the study area. We intended to include all women by walking door to door in the entire study area.

Discussion
Discussion was does not properly reflect the findings of the study. No discussion on self reported clinical care. The section on user provider interaction and health problem identified were over reported because there was no substantial information was presented in the result section. Lack of critical analysis.

Our answer:
We have included a section about satisfaction with care in the discussion (see line 428-434) and a section about self-reported clinical care in the study limitation (starting in line 451). Further, we have reshaped the structure of the discussion to better reflect the program theory and have included subheadings called ‘Proximal project outcomes’ in line 366 and ‘Distal project outcomes’ in line 421.

In the study we do not have a direct measure of user-provider interaction, however the measure of experienced privacy, discomfort caused by students, and poor conduct of health professionals are interpreted as indicators of user-provider interaction. In the result section we mistakenly did not report on the conduct of health staff and discomfort caused by students. This is now included in line 325. Further, we have made sure to integrate the findings reported in the result section in the discussion to support our discussion on this issue.

Minor Revision
Result

No information on multiple logistics. Table 4 was redundant.

Our answer:
Table 3 and Table 4 does reflect the same data, however the calculation of odds at intervention versus control sites (our effect measure) is only presented in Table 4. Table 3 reports the absolute numbers and frequencies broken down to facility level, to allow for detailed understanding of the changes.

**Level of interest:** An article of insufficient interest to warrant publication in a scientific/medical journal

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
No

**Reviewer's report**
**Title:** Process and impact evaluation of a participatory antenatal care strengthening intervention on quality of care in Jimma, Ethiopia, 2009-2011

**Version:** 2 **Date:** 19 February 2013

**Reviewer:** Albrecht Jahn

**Reviewer's report:**
The study reports on intervention effects of a participatory ANC intervention in Jimma, Ethiopia. The provides interesting inside, but does not clearly define the pre-intervention primary and secondary outcomes.

**Our answer:**
*We have specified the outcomes in the objectives of the paper (line 89-95). Further, in the section about intervention and evaluation theory, we argue, based on complex intervention theories, that measurement of effects in complex interventions needs to include a range of domains.*

**Major Compulsory Revisions**

1. **Methodology:** The study area and population, as well as inclusion criteria need to presented; a reference to the other paper is not sufficient, as a reader needs to understand the basics of the methodology from this paper. Furthermore, there are contradictions as the other paper states that only women using public facilities were included, while this paper refers also to users of private facilities (page 18).

**Our answer:**
*We have included more information regarding the study area and population (line 136-143) and extended the information about the needs assessment (see comments and answers above). In both the needs assessment paper and the present evaluation paper all women residing in the study area, who gave birth and had been living in the study area during the last year were included, no*
matters where they attended the service, including women attending at private facilities. See line 222-224).

2. In an intervention study primary and secondary outcomes need to be defined; thus the authors should clearly specify their primary and secondary outcomes, as defined prior to the intervention. A relevant primary outcome could have been use of skilled delivery care, as one of the objectives of ANC is the promotion of skilled delivery care. Other outcomes could be user satisfaction and coverage of specific services (e.g. TT vaccination).

Our answer:
We have rewritten the objectives, specified the outcomes of the study and clarified the program theory as written above. Further, relevant to this comment is also the section about intervention and evaluation theory. Present manuscript focus on changes in content of care (proximal project outcomes) and following facility related improvements (distal project outcomes), a later manuscript will focus on changes on behaviours of the women, including place of delivery.

3. In a before-after comparison ANC coverage would have been expected to increase; what is the interpretation that there was no effect, despite an improvement in perceived quality?

Our answer:
Before the intervention, the ANC coverage was already high (83%) and therefore the room for improvement limited. The intervention was facility based, and not community based, and therefore the chances to affect non-attendants were limited. Maybe the rumor that the quality of care has improved will lead to higher coverage over the years, however, with the short timespan between the before and after survey, we find this unrealistic to assess in present study.

4. The observation that better supplies in the intervention group resulted in higher coverage of specific services, related to these supplies cannot be attributed to a participatory approach. The effects of direct inputs, including the policy of free testing in 2010 should be reflected in the limitations chapter.

Our answer:
We believe that it is not always so that supplies are sufficient for actions to happen. With a participatory approach we assure that the direct inputs are those the health professionals are requesting and aspire that the health professionals will take ownership and actually use the inputs in the care provision.

5. The DHS 2011 shows a clear secular trend towards improved ANC services; the discussion should compare the study findings to the DHS data.

Our answer:
We have highlighted the importance of the control group when assessing the effect of the intervention in a context where general improvements for the better are occurring in the study strengths and weakness in the discussion, starting in line 440.
Reviewer's report
Title: Utilization patterns and quality of antenatal care in Jimma, Ethiopia, from user and provider perspectives: A mixed method needs assessment
Version: 2 Date: 31 January 2013
Reviewer: Matthews Mathai

Reviewer's report:
Paper 1: Utilization patterns and quality of antenatal care in Jimma, Ethiopia, from user and provider perspectives: A mixed method needs assessment


The two papers are part of the same project but cover different aspects: the first reports on a baseline assessment of utilization and quality of antenatal care; the second reports on an intervention trial that attempted to improve quality of antenatal care. These papers should be considered separately even though most comments are applicable to both papers.

The methods used are described clearly. After a baseline survey and a better understanding of some of the problems through surveys and interviews, an intervention package to improve quality of antenatal care was developed in consultation with local stakeholders. The intervention included training of health workers, development/adaptation of antenatal care guidelines, emphasis on privacy and respectful care, donation of necessary basic reagents and commodities, etc. The questionnaire used in the pre-intervention survey was used for the post-intervention evaluation. Data have been analyzed using appropriate statistical methods.

Overall there were some improvements perceived in antenatal care; however the improvements were not noted everywhere and not to the extent as one may have expected when an intervention which had involved stakeholders was implemented and followed up with supervisory visits. Changes in attitude and behaviour are more difficult to achieve and may require different and more sustained approach. The authors have also rightly noted the potential problems that well-funded vertical programmes e.g. HIV have on performance of underfunded but equally important preventive and promotive programmes like antenatal care.

A few points for clarification:
Major revision:
1. In the two surveys, women who had given birth in the preceding year were asked to recall the content of care received during ANC.
   • How good is recall of “routine” events (as opposed to complications) in the antenatal period, when asked one year later? Was this assessed?
Our answer:
We aspired to ask the questions in the survey in general terms to not challenge the mother’s recall. We have specified in the methodology that we asked the women to assess if specific services were conducted at least once during ANC and we only differentiated HIV test from other blood tests, see line 235-238.

The degree of recall bias introduced by interviewing up to one year after delivery was not specifically assessed in this study. However, our questions were kept at a similar or more general level than questions regarding ANC in the DHS data, where they in the 2011 version are asking women to remember the services received five years back.

- Were women asked how frequently physical examinations were performed e.g. was BP measured at every visit? The data do not indicate if the information refers to physical examination at least once during the antenatal period or at each contact with the health provider.
- Women may recall that blood tests were done but how would they know what exactly was done? Perhaps for HIV, women are informed of the nature of the test, but is this done for haemoglobin and other tests?

Our answer:
See above.

Discretionary revision:
“Focused antenatal care” is not a term likely to be found in WHO documents or in the reference cited, but a term frequently used by partners.

Our answer:
We have put less emphasis on ‘focused’.

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I declare that I have no competing interests