Author's response to reviews

Title: "Love me, parents!": impact evaluation of a national social and behavioral change communication campaign on maternal health outcomes in Tanzania

Authors:

Michelle Kaufman (michellekaufman@jhu.edu)

Jennifer Harman (jennifer.harman@colostate.edu)

Marina Smelyanskaya (m.smelyanskaya@gmail.com)

Jennifer Orkis (jorkis@jhu.edu)

Robert Ainslie (robert.ainslie@jhuccp.or.id)

Version: 2 Date: 17 Nov 2016

Author’s response to reviews:

Reviewer #1: The article contains interesting information regarding promotion of maternal health campaign, but the reviewer would like to make some comments before it can be considered for publication.

1. The first half of the Background section is too general and redundant. The reviewer recommends the Background section be amended to address issues more specific to the research objectives.

Response: We cut a lot of the text in the Background that was redundant or not specific to the research objectives.

2. The second half of the Background section is written about the campaign. The reviewer considers the campaign to be an "intervention" in this article. Thus, it is better to describe about campaign as an input and/or intervention in the Methods section.

Response: We changed the language in the methods section to discuss the “intervention,” rather than referring to it as a “campaign.”

3. Although the article does not cover all the procedures and outcomes of the whole project, it may be interesting to further study in detail the assessment of factors related to the campaign message catchment including how age/generation, educational level and parity influences in a type of channel of campaign catchment. The reviewer recommends including a careful detailed
discussion on the relationship and/or interactions between women's profile and campaign catchment outcomes in the Discussion section.

Response: We ran comparisons of which intervention channels were most likely to reach which types of women. This analysis has been added to the Intervention exposure section in the Results (lines 350-360). We also discuss implications for future iterations of the intervention based on the relationship between demographics and channel of campaign catchment in the Discussion section (lines 595-603).

Reviewer #2: This paper provided a useful investigation of the impact of a national social and behavioural change communication campaign to improve maternal health outcomes. I have the following suggestions for major compulsory revisions:

1. The major thing that would improve this paper is presenting more key results in tables. On the basis of the data presented, it is difficult to interpret the findings. There is important information missing from your results that would help readers assess your analysis and conclusions drawn. You need a table providing summary descriptive statistics for the study population. You also need a table that includes bivariate results showing prevalence of outcomes in different levels of exposure. This would show whether women exposed or unexposed to campaign messages were systematically different, and which factors may be important confounders. You have only presented two of your outcomes in table format. I'm not sure why the others have not been presented this way, but it would be useful to see the full models for each. Also, I think it would be easier for interpretation and comparison if you used logistic regression for all of the models, and presented Odds Ratios with 95% confidence intervals instead of coefficients. You don't need to include t, Wald's chi-square or df in the tables. You could convert the 'number of ANC visits' variable to 'four or more ANC visits' yes/no, which is a commonly used indicator. For 'timing of first ANC visit', you have presented mean number of weeks, but say you conducted logistic regression, so it isn't clear whether this variable is continuous or binary. Again, 'ANC visit in the first trimester' yes/no, would be a standard way to make this a binary variable.

Response: To include more results in tables, we made the following edits:

- Table 1 is a new table (not tracked due to the messiness of tracking in a table) that shows the demographic statistics for the study sample. It was a mistake that we left this table out in the first submission, so our apologies for that.
- Table 2 is a new table showing the bivariate results requested.
- Table 4 is a new table showing exposure as it relates to timing of the first antenatal visit. We changed the outcome to “first antenatal visit during first trimester,” as the reviewer suggested.
- Table 6 is a new table showing exposure as it relates to delivering at a health facility.
• We presented confidence intervals and Odds Ratios in the tables for each where appropriate and removed t, Wald’s chi-square, and df.

We did not want to make all analyses logistic regressions because some outcomes required continuous values in order to capture variability in the data (e.g., number of ANC visits, birth planning). In those instances, we maintained the linear regression approach. If the reviewer really wants to see 4+ ANC visits as a dichotomous outcome, we can do it that way, at least as a footnote. However, leaving it as a continuous variable allows for a clearer picture of the data.

Minor essential revisions:

2. Was this a national campaign? On line 173, page 9, the phrase "throughout intervention regions" suggests that it wasn’t. It would be good to state this explicitly either way in the abstract and description of the campaign on page 7.

Response: As the title of the paper mentions, this was a national campaign. This is mentioned on page 7 (line 165) in the description of the campaign. We added this point to the abstract (line 33). We also edited line 224 to make it clearer that branded materials were distributed at community events across the country. The mass media communication (radio and TV spots) were national in scope/coverage. Print and other promotional materials were distributed to service delivery partners who were tasked with delivering them to all of the country’s regions, districts, and health facilities. According to partner reports, we estimated that they reached around 3,400 of the ~5,000 health facilities in Tanzania at the time. We added this point on page 9 (lines 229-230).

3. How many regions are there in Tanzania in total? What is the population of the selected five regions? You need to mention in the abstract that these were purposively selected.

Response: There are 30 regions in total. We added the approximate populations of the selected five regions in 2013 to page 10, lines 254-257. We also added to the abstract that the regions for this evaluation were purposively selected (line 34).

4. It would help to present some results in the form of ORs for main findings in the abstract.

Response: We added the Beta’s for reported linear regression findings where they were missing in the abstract (lines 40 and 42).

5. I think you have missed one or two negative results from the abstract. Timing of first ANC?

Response: You are correct; our apologies for the oversight. We added this null finding to lines 42-43.
6. Lines 55-56, page 5 - you mention that challenges remain in meeting the MDGs even though these have now passed.

Response: The evaluation was conducted before the MDG deadline. We have rewritten the sentence to refer to the MDGs in the past tense (now lines 60-61).

7. Line 59, page 5 - can you say what the proposed goal was here? i.e. "...maternal mortality twice as high as the proposed goal of ... per 100,000 live births ..."

Response: We did not have a specific goal in mind for reducing the maternal mortality rate by a specific number, but rather to contribute to achieving Millennium Development Goal (MDG) target 5.A is to, “Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.” The MDG does not explicitly state the goal as a number. We edited line 65 to better reflect the general MDG goal.

8. Lines 96-98, page 6 - this text doesn't read well. Can you re-write it?

Response: We have rewritten the sentence as follows (now lines 128-129):

Despite efforts to reduce these indicators by two thirds since 1990, infant deaths in the country remain at 51 per 1,000 live births; neonatal deaths are at 26 per 1,000; and post neonatal mortality is 25 per 1,000.

9. Line 206, page 11 - you mention that 'eligible women' were read a consent script. You need to provide more detail about how this sample was selected for interview.

Response: Thank you for pointing out this omission. We now provide more detail on eligibility requirements and how women were approached on page 10 (lines 267-270).

10. Lines 213-214, page 11 - you mention household possessions. What were these? Were they a standard set of possessions as used in DHS surveys? It's strange that you haven't found many associations between household asset ownership and health behaviours that usually have a strong socioeconomic gradient. Could the choice of possessions be an issue here? You need to state what they are so that readers can consider how this might affect your analysis. Also, for continuous variables like 'number of ANC visits', do you have enough data at higher levels of attendance? Do you have any other thoughts about why there were few associations with demographic variables?

Response: Household possessions included electricity, paraffin lamp, working radio, working television, telephone, mobile phone, iron, refrigerator, plough, generator, toilet, bicycle, or vehicle/motorbike (see page 11, lines 285-287). We did not use a standard set of possessions, but rather used an adapted version of those in the DHS that was appropriate to our study population.
We did not have sufficient data at the higher levels of ANC attendance, which is why we chose to keep it as a continuous outcome rather than 4+ or less visits.

11. Lines 247-248, page 12 - this is a bit confusingly worded. I think that the 22.1% with no education at all are part of the 87.4% with primary education or less. For clarity, could you present the proportions with no, or primary education separately?

Response: The way this was written was confusing, so thank you for pointing it out. We reworded the sentence to make it clearer (now line 330).

12. Lines 276-274, page 13 - the exposure to the campaign is surprisingly low for a multi-channel mass media campaign. In the discussion, you could comment on this. Can you compare this level of coverage to other campaigns that were or were not successful in changing behaviours?

Response: Agreed, it is low. However, it is similar to what was reported in other quarterly national media monitoring surveys where respondents were asked whether or not they have been exposed to the Wazazi Nipendeni messages (we stated this in lines 538-540). Please note that these monitoring data are not published and were for programmatic use only. From the same monitoring survey data where exposure to other campaigns was collected, we know that exposure levels are quite similar.

We now comment on reasons why we think the exposure was low given the target population in the Discussion section (page 20, lines 595-604).

13. The label 'area of residence' for urban/rural is a bit misleading. It could be region or district or some other geographical division. Can you just call it 'urban/rural residence'?

Response: We chose to refer to this as “residence” since we divide it into three groups (urban, peri-urban, rural) and have made this adjustment on page 11, line 283; page 12, line 321; page 14, line 384; page 15, line 305; page 17 line 513; and in the tables.


Response: We made this change as suggested (now page 16, lines 460-461).

15. Line 332, page 16 - can you check the 35.1% figure? This doesn't seem right given that 127 women delivered at home.
Response: The figure is correct, but the way it was written was confusing. We revised the sentence (now lines 466-468).

16. You haven't presented all of the Odds Ratios, only interpreted them as percent increases in behaviour. The 9% increase in health facility delivery, and 3% increase in HIV testing are very small changes. It would be helpful to present confidence intervals here, or in a table.

Response: All confidence intervals are now presented in the tables, where appropriate.

17. And a point for discussion perhaps - are such small effect sizes likely translate to measurable changes in MMR? Is this approach likely to be cost-effective?

Response: We know from other studies that increasing the number of visits and early visits will reduce MMR, which is mentioned in the Background. We cannot comment on cost effectiveness, as that is beyond the scope of this study and we did not collect data that would allow us to calculate it.