Author's response to reviews

Title: Interest of pregnant women in the use of SMS (Short Message Service) text messages for the improvement of perinatal and postnatal care

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Author's response to reviews: see over
To the editor:

Ref: MS: 7678725597044654

We are pleased to know that we have satisfied the reviewers’ suggestion for this manuscript “Interest of pregnant women in the use of SMS (Short Message Service) text messages for the improvement of perinatal and postnatal care.” We have introduced changes as recommended. Please find the details below.

We are very grateful to reviewers for their valuable suggestions. The manuscript significantly improves with the consideration of these suggestions.

Looking forward to hear from you soon,

Sincerely yours,

Gabriela Cormick,

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Reviewer: Samuel Anya

Title: Interest of pregnant women in the use of SMS (Short Message Service) text messages for the improvement of perinatal and postnatal care

Version: 1 Date: 26 May 2012

Reviewer's report:

Minor Essential Revisions

Background:

It would be helpful if the authors could be more specific about how they thought mobile phones would help to improve access to antenatal care and reduce maternal and perinatal mortality. The reference provided (Ref 5) indicates that the impact of mobile phones has not been demonstrated. The first sentence of discussion section of Ref 5 states that “Robust studies providing evidence on the impact of introducing mobile phones to improve the quality or increase the use of maternal health services are lacking.”

The wording used by the authors in the second sentence of paragraph 3 might be misinterpreted as suggesting that Ref 5 provides evidence of the positive impact of mobile phones. However, Ref 5 having already concluded that robust evidence of positive impact is lacking, goes on in the first sentence of fourth paragraph of the discussion to merely point out the possible uses of mobile phones - “…mobile phones can also be used to deliver mass health messages to pregnant women, recalling women with risk factors to present themselves at an antenatal clinic or referring women who suffer from complications such as fistula, incontinence and infertility.”

Page 4, paragraph 3 – Background:

We agree with the reviewer that the second sentence of paragraph 3 in page 4 could be misinterpreted and it was modified as follows:

“mHealth could be a very useful strategy for low- and medium-income countries to improve antenatal care as it is suggested by programs implemented in …”

Mobile phones may be used in different ways so the background should focus on the use of mobile phones as explored in their study. From their discussion it appears their focus was on delivering text messages to pregnant women on their mobile phones. Therefore, the presentation about the real or potential effectiveness of mobile phones should relate to this form of use.
Page 4, paragraph 3 – Background:

The background was modified to include the examples of use of text messages to women during pregnancy that were previously cited in the discussion:

“mHealth could be a very useful strategy for low- and medium-income countries to improve antenatal care as it is suggested by programs implemented in Zanzibar, Tanzania (Wired Mothers)⁵, the United States (Text4Baby)⁶, and Serbia (Beba Dolazi)⁷ in which gestational period specific text messages are sent to subscribed women to provide educational material, however the impact of this programs is still in evaluation.⁸,⁹,¹⁰”

This clarity is important because if, for instance, sending text messages to mobile phones of pregnant women has been shown to have no impact, then the value of the study is undermined. On the other hand, the rationale for the study is strengthened if sending text messages has been shown to have a positive impact on access to antenatal care and maternal/perinatal mortality. If there is no data or conclusion about impact, this would also have an effect on the articulation of the rationale for the study.

Page 4, paragraph 3 – Background:

The literature shows that although programs are being evaluated there is no conclusive data on its impact; therefore we included in the background the rationale of conducting this study to be able to design and test this strategy in Argentina:

“mHealth could be a very useful strategy for low- and medium-income countries to improve antenatal care as it is suggested by programs implemented in Zanzibar, Tanzania (Wired Mothers)⁵, the United States (Text4Baby)⁶, and Serbia (Beba Dolazi)⁷ in which gestational period specific text messages are sent to subscribed women to provide educational material, however the impact of this programs is still in evaluation.⁸,⁹,¹⁰ We proposed this study as a crucial initial step to design and test a mHealth strategy to address this problem in Argentina.”

Based on the foregoing, the section of the last paragraph of the discussion that contains references 12 to 22 would be better placed in the Background section of the manuscript.

Page 4, paragraph 3 – Background: The part of the paragraph containing references 12 to 22 referring to use of mobile phones to text women during pregnancy was moved to the Background section of the manuscript as suggested.

Methods:
It would be helpful to provide some clarifications.

1. Why were only two health institutions selected from a population of 1.5 million people while four health institutions were selected from a much smaller population of 40,000 people? For instance, were there only two community health centres/public hospitals in Rosario but four in Mercedes?

Page 5, paragraph 1. Methods. We included the following explanation in the text:

“The two sites in Rosario were selected based on that they are the biggest hospitals in the city assisting around 60% of its public deliveries. In Corrientes, the selection was made based on a representation of the various sites providing antenatal care, a unique hospital and 3 peripheral health centres”.

2. Why was having "previously given birth to a live fetus" an inclusion criterion
   a. Did this not exclude potential beneficiaries if, as the authors suggested in the introduction, sending text messages reduces perinatal mortality which includes still births?
   b. It also excluded women in their first pregnancy who, arguably, have more information needs that could be addressed by sending them text messages.

Reply to question 2, 2.a and 2.b:

The reason to include only women who had “previously given birth to a live fetus” was that some questions relate to late pregnancy or postpartum experiences, which women in their first pregnancy would not have had. Pregnant women included in this study were able to recall their previous experience to answer the questions of this study. Our sample did not specifically exclude women who had suffered stillbirth; some of them might have experienced a stillbirth in previous pregnancies. Our aim was to interview women that could account for different parts of the pregnancy. We intentionally recruited pregnant women that were able to recall their experience in their first pregnancy.

Page 5, paragraph 3 - Section Methods: a justification to the inclusion criteria was introduced in the manuscript:

“We decided to include only women who had previously given birth to a live fetus as some questions relate to late pregnancy or postpartum experiences, which women in their first pregnancy would not have had. Pregnant women included in this study were able to recall their previous experience to answer the questions of this study.”
3. What confidence level was used to calculate the sample size?

Page 6, paragraph 3: A change was made in the text to include the confidence level.

“Sample size of 60 subjects in each location was estimated assuming 80% of cell phones availability with a +/- 10% error in the estimation and a confidence level of 95%.”

4. On what basis was the sample size allocated to the six different health facilities?

5. How were the women interviewed at each health facility selected for interview from all the women that attended the clinic on the day of the survey?

Reply to question 4 and 5: This was a convenient sample where interviewers recruited all eligible women in each site until completing the sample number.

Page 6, paragraph 2. Methods: a description was introduced in the manuscript:

“Interviewers recruited all eligible women in each site until completing the sample number.”

Results

1. It would be helpful to explain why more people sampled from Mercedes (the smaller population) compared to Rosario.

Two explanations were introduced, one in Methods and the other one in the Discussion.

Page 6, paragraph 2 - Methods: Interviewers in each site completed the questionnaires and a discordance in the sample obtained in Mercedes and Rosario was due mainly to the number of sites in each city. As Mercedes had more centres all women included the last day exceeded the final sample number.

“Interviewers recruited all eligible women in each site until completing the sample number. As Mercedes had more centres all women included the last day exceeded the final sample number.”

Page 9, paragraph 2 - Discussion: The sampling bias limitation was added in the Discussion section of the manuscript:

“However, we cannot assume that this sample could be representative of the entire population as it was a convenient sample of women interviewed at the health centre or hospital therefore those attending antenatal care more frequently had a greater chance of being included.”

2. Paragraph 2: The distance to the health facilities was presented as time in Minutes
It would be helpful to state what this time refers to?
If the time in minutes refers to travel time, then travel time rather than distance would be the preferable name of this variable.

We find the comment very appropriate. Time in minutes refers to the travel time required for the participants to get to the health facilities. We have change “Distance to the health centre/ hospital” to “travel time required to get to the health centre/ hospital” in:

Page 2: Abstract- Results;
Page 7: Paragraph 2 – Results;
Page 16: -Table 1.

3. Table 1-3:

a. In all the tables, the upper limit of the middle range is presented as <xx, for instance 20 to <35 (Age, Table 1). The upper limits of the middle ranges should be changed to a specific number. The example given would then read as follows, 20 to 34. The middle ranges under Distance (Table 1) would read, 30 to 59 and 60 to 119.

Suggested changes were introduced in Table 1, Table 2 and Table 3.

Discussion:

The section of the last paragraph of the discussion that contains references 12 to 22 would be better placed in the Background section of the manuscript (see comments under Background above).

Page 4, paragraph 3 – Background: The part of the paragraph containing references 12 to 22 was moved to the Background section of the manuscript as suggested.

Conclusion:

The authors conclude that communication with pregnant women through their cell phones is feasible. However, the study examined acceptability rather than feasibility (which involves much more than pregnant women’s interest and acceptance of text messages and phone calls). This section should be modified to reflect this.

The conclusion was modified to reflect that the study assessed acceptability and not feasibility.

Page 11, Paragraph 1- Conclusion was modified as follows:
“This study shows that cell phones would be an acceptable approach to provide pregnancy and postpartum support to women of low socioeconomical level in a middle income country, since the vast majority of women interviewed had access to a cell phone and referred it as a desired and accepted mean of communication.”

Discretionary Revisions:

Why was every pregnant woman asked about both the distance to the health centre and the distance to the hospital (Table 1)?

As a measure of access, it would be clearer to see how much time the pregnant women spent to get to the health facility where they were interviewed.

Page 7, paragraph 2 – Results: “Distance to the health centre/ hospital” was changed to “travel time required to get to the health centre/ hospital” and this modification was introduced to the manuscript.

Page 6, paragraph 3 - Methods: The idea behind this question is that depending on the severity of the antenatal care enquiry or need that women have, they will go to the hospital or to the health centre. This information is therefore important to design a cell phone program for this population.

“This interview included demographic characteristics, use of technology and willingness to receive information via mobile phone. We also asked about travel time to the health centre and to the hospital.”

Reviewer: Justus Hofmeyr

Title: Interest of pregnant women in the use of SMS (Short Message Service) text messages for the improvement of perinatal and postnatal care

Version: 1 Date: 20 May 2012

Reviewer's report:

The question posed by the authors is not new, but has not previously been assessed in this way, and is well defined

The methods are appropriate and well described, and sufficient details are provided to replicate the work. The data are sound and reasonably well controlled (see below)

The manuscript adheres to the relevant standards for reporting and data deposition

The discussion and conclusions well balanced and adequately supported by the data
The title and abstract accurately convey what has been found.

The writing is acceptable.

It would be useful to discuss the possibility of sampling bias, as women who are frequent ANC attenders would have a greater chance of being included, and late or non-attenders might be missed.

Page 9, paragraph 2: The suggestion of sampling bias was introduced in the manuscript discussion:

“However, we cannot assume that this sample could be representative of the entire population as it was a convenient sample of women interviewed at the health centre or hospital therefore those attending antenatal care more frequently had a greater chance of being included.”

Some discussion of differences between the results from the two sites would be of interest.

Page 8, Paragraph 3, 4 and 5 - Results: Some discussion of the differences between the two cities was included in the Results.

More women in Mercedes were older than 35 years (31.3% compared to 7.9% in Rosario) and took them more than 120 minutes to get to the health centre and the hospital (17% compared to 1.6% in Rosario).

A similar number of women from both cities reported having a cell phone, however a larger number of women in Mercedes reported having a cell phone for more than 2 years (59% compared to 41.3) and fewer reported not having changed the number in the last year (26.5% compared to 54%).

The preferred information to be received by SMS was similar in both groups, although more women in Mercedes were interested in receiving appointment reminders (95.2% compared to 63.5%) and mental health advice (88% compared to 65.1%) than in Rosario. More women from Mercedes than in Rosario agreed to receive phone calls during pregnancy and post-partum (94.0% compared to 77.8%).

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:

No competing interests known.