Author’s response to reviews

Title: Social capital and health during pregnancy; an in-depth exploration from rural Sri Lanka

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Author’s response to reviews:

Reviewer reports:

Reviewer #1: This is an interesting and well-designed study, which gives a good insight into the importance of relationships for pregnant women in Sri Lanka.

Major comments:

- p. 5, l 20-23: there are many definitions and interpretations of 'social capital'. Could you please clarify this is just one definition out of many, and explain why you use this particular definition. It seems a bit random to use a definition from a website. The structure of the diaries suggest you focus mainly on relationships between individuals; maybe your definition could reflect this. For example, 'trust' is sometimes included as a component of social capital, but it is not something you focused on. It would improve your paper to narrow down what you mean by social capital.

We included the commonly cited definitions of the experts in this field and highlighted the main terms that they have captured in common. This paper will focus on above terms in describing social capital of pregnant women. LN125-140
- It is not clear from the results what the contribution was of diaries, follow-up interviews and key stakeholders. Could you include a comment on what the different methods added and how results were different between methods?

Thank you for pointing out this deficit. A new paragraph explaining this was added at the beginning of the results section. LN 421-30

- You discuss the absence of social capital as a negative experience, but not the negative experience of received social capital. There are examples of this in the literature. For example, women encouraging other women to smoke during pregnancy, or mothers of pregnant women being over-involved. Did you come across this in your study?

Except for the negative consequences of lack of social capital, we did not observe any negative consequences of social capital in this study. We mentioned this as a point in the discussion as it looks really important. LN 825-830

- You mention antenatal care but not antenatal classes for pregnant women. Although aiming to educate women, they are often an important source of emotional support for pregnant women and an opportunity to extend their social network. I don't know if this is relevant in Sri Lanka, but I would expect a reference to this, either in the introduction regarding evidence for the importance of social support during pregnancy or in your discussion section as a suggestion for increasing low social capital.

In the results section we named classes as sessions because it is the term used in Sri Lanka. Agreeing to your comment we included our findings in the results section. LN687,709-715

- Please address the issue of external validity/ generalizability in your discussion. On the one hand, it would be useful to know how this research is relevant to other LMICs. On the other hand, do you expect some of the findings to be specific to Sri Lanka?
- You make statements about some social capital aspects coming out stronger than others, but it seems to me this is very heavily influenced by your methods. For example, the way you structured the diaries focuses on personal relationships, and this comes out as a very important aspect of social capital. Being a qualitative study based on diaries, there are limitations to the claims you can make about the amount of different types of social capital received by women. Please include this limitation in the discussion section.

- Purposefully because of this limitation we did not structure the diary. Instead we asked pregnant women to write on each an every relationship they had during the day so that we get the real life composition of social networks of pregnant women. This clearly showed that domestic and neighborhood relationships comprise the majority of social capital among rural women but in the semi urban area they also had other affairs. Included this point in the limitations section.

- Minor comments:

- The website link for reference 18 does not work

- This reference was removed.

- p. 3, l 51: 'the situation remains same' ; not clear what is meant and not good English

- Corrected

- p. 4, l 19-20: 'inequalities in health' instead of 'to health'

- Corrected
- p. 4, l 29-30: social capital is not a relatively new concept, it was used around 1900 and ever since.

- Corrected

- p. 5, l 1: 'periods' should be 'period'

- Corrected

- p. 5, l 23-33: you talk about cognitive, structural, bonding, bridging and linking capital as 'dimensions'. Could you distinguish between the dimensions of cognitive/structural and the types of bonding, bridging and linking social capital?

- We hope the reconstructed para in the introduction will accomplish this. LN 152-172

- p. 6, l 39-40: 'we used qualitative design' should be 'a qualitative design'

- Corrected

- p. 7, l 19-20: 'Figure1' misses a space

- Corrected

- p. 11, l 7-8: ".. we did not anticipate emotionally sensitive situations" This seems very odd to me; you were asking women at an emotionally vulnerable stage in their life about support they get from their friends and family and you did not expect this to be emotionally sensitive??

- Replaced the phrase LN 403-404

- p. 11, l 20-22: You said women who fell ill were allowed to discontinue. I hope everyone was allowed to discontinue if they wanted to? It would be very unethical to force people to finish the study, regardless of the reason.

- Women were allowed to discontinue at any stage if they wanted to. LN 414-415

- p. 15, l 26: says 'mothers' instead of 'women'
Reviewer #2:...

I think that social capital is an important area of study. However, I think that you need to explain social capital and the theoretical framework that you are using for it more clearly. I am very familiar with the social capital literature and it is not easy to do this well because there are multiple theoretical frameworks that overlap. For example, I think that bridging, bonding, and linking social capital might be best considered as forms of structural social capital (rather than relational) because of they have to do with the types of network ties that actors have within a network. Overall, I think that your review of the literature and your theoretical framework needs further development to strengthen the contribution of your study. The findings of your study are really interesting but I think that the discussion may need to be adjusted a little bit once you have strengthened your theoretical framework so that it lines up.

Thank you again for submitting your paper for consideration.

Thank you for letting us understand the importance of the theoretical framework on this paper. Initially we tried to limit describing this because the paper is very long.

We have included this in the introduction and mentioned it in the discussion as well. LN141-171, 817-824

Reviewer #3: To the authors(s),

Thank you for your manuscript 'Social capital and health during pregnancy; an-indepth exploration from rural Sri Lanka'. I have read it with interest. Please find below my comments. Although the topic of your study is interesting, the manuscript will still need major revisions and editing.
Thank you for your valuable comments.

Social capital is an often undervalued determinant in healthcare programs and research. You mention that little studies are published on social capital in LMIC. There are quite some studies available though: (Donfouet, H & Mahieu, P (2012)) a study in Cameroon, (Zangh, L et al 2006) a study in rural China, (Fenenga et al 2015) a study in Ghana. These are all studies that look at social capital and health.

We mentioned this because compared to thousands of studies done in HICs only 21 countries out of 140s of LMICs have published studies on social capital and health according to our previous systematic review published in 2015. In this review we were able to synthesize 46 studies done in LMICs. Please note that this is a comparative term and we referenced this systematic review with this phrase as it would be much explainable. LN 96-98

Your study focuses specifically on pregnant women. You also indicate that pregnancy makes women socially vulnerable and emotionally sensitive. Can you explain more clearly why your group of pregnant women is so exceptional compared to healthcare clients in general? Are people that are ill not vulnerable? What do you predict is different?

We do not compare pregnancy with ill. Pregnancy is a normal physiological process that undergoes among healthy individuals. Compared to healthy individuals in pregnancy women could be more stressed, have mood shifts and exaggerated emotions due to hormonal changes (eg. Increased steroids) that usually happens. As in pregnancy and post partum periods the mother's physical capacity to be active is impeded she may need extra support which will make her socially vulnerable. We expanded the para on this. LN111-115

Can you say anything about how this research project, and in particular the research questions were developed? How is it linked to the current strategic plan of the Ministry of Health, considering that the coverage of antenatal care, the preventive and curative services provision is already quite good (pg 4).

This research project was developed to address social determinants in pregnancy. Although the Ministry of Sri Lanka is giving high priority on maternal health the focus is based on health risk
assessment. Assessment of social risk factors are minimal in this agenda and social risk factor assessment remain as a neglected area in maternal preventive strategies. Therefore if we are going for further reduction of maternal mortality, we have to incorporate this. It is mentioned in the introduction LN 107-109

The main theme of your study is social capital. I was surprised not finding any main founders of the social capital concept in your references (Bourdieu, Coleman, Putnam). A more thorough study of this theoretical concept, with it's multiple definitions and ways of conceptualization will help you to boost the introduction of your manuscript. The definition you used is not a very common one in the literature. Your theoretical foundation is now very thin.

Thank you for showing this important aspect. We included all this in the introduction. LN 125-151

You also mention that you have looked at various tools used in social capital studies, Can you be more specific?

Added. LN185-193

Linked to this is my following point. Because you opted to use qualitative methods only, which the purpose of this study I fully support, the use of prevailing theoretical models and empirical insights (in your case the theory of social capital) can help you to construct a deductive conceptual framework. So use knowledge which is already there, specifically also because social capital is complex. This framework can be build on through the inductive process of collecting data as you did. I miss this in your manuscript.

Thank you and we agree on this important point. We tried to incorporate the broader aspects of this framework into the introduction, but as there are little studies done on social capital in pregnancy it would be incorrect to come out with the grass root level links of this framework. Rather we would like to suggest that we need to find these out through further studies. We hope the changes we made in the manuscript have shed light on this aspect. LN 194-203
The description of your selection of respondents/participants and the data collection is described on page 7.

You mention that you use MoH officers and other key informants. Who are these?

Mentioned. LN241-242

You selected are 7 rural and 1 semi-urban. In the conclusions I do not see differentiation between the semi-urban and the rural villages (you mention differences between villages but don't conclude with a thorough analysis on these differences, and certainly not semi-urban and rural. Here you could try to analyse a bit further. Was there any reason not to include any urban area? What do you think the differences would be there?

The city of Anuradhapura is not a fully urban city. Therefore we mentioned it as urban to semi urban community. There were differences in social capital in this urban to semi-urban community, but it was highly heterogeneous as well.

The aim of this paper was not to describe the community differences in social capital but to identify the constructs of social capital in pregnancy and to find their association to health. We are expecting to come out with another paper for describing community differences as it include very much more space in results and discussion. Please kindly consider this matter.

In the study instrument you refer to other papers. Please make sure you add as annexes a model diary, interview guides, check lists, note-taker forms, diary memo's and any other document relevant to review this manuscript.

Will be added.

You mention that you followed all FHI International guidelines. Are these guidelines of academic level? Please add a short description. The document is not an academic paper as far as I can see.
This reference was used as it contains well-written detailed guidelines on practical aspects of qualitative fieldwork. However as you mentioned we added other references that we used as well.

I realize that an earlier published paper on this study includes information on the diary model. But this manuscript should stand by itself and should include sufficient information.

Included LN 277-285

For example, the follow up phone calls to participants where done: how frequent and how long did these conversations last? What were the challenges? could you always reach? Language/dialect issues? Connectivity problems? How did the women experience these phone calls?

Some information was added LN 308-319

The triangulation is a strong point. Note that triangulation when using different methods only applies when using the same respondent group (in this case the pregnant women). You compare the data with the responses from PHMs and senior community dwellers.

In this study, two different methods; diary text and diary interviews are used on pregnant women and using different participants (pregnant women, PHMs and senior community dwellers) the same theme (social capital of pregnant women) is explored.

In your ethical consideration you mentioned that women were counseled in the follow-up interview and arrangements for support were made when needed. What type of support was this and did it not interfere with the findings of your study?

After the diary interview if the investigators thought that women need emotional support they were referred to a counselor for psychological support. Only 3 participants needed this (having mild psychological distress) and it did not affect the study.
The structuring of your conclusion can be improved on. I refer to the conceptual framework including deductive and inductive elements that can help to better present your findings. I also advice to go back to your data to analyze further in order to get more interesting findings. The current findings and conclusions are rather superficial.

We have restructured the conclusion including deductive and inductive elements. LN 858-882.

There is quite some repetition. I noted that on pg 13 you mention that group membership was not common, but on he other hand the participants are very happy with the peer to peer support in the antenatal sessions.

A corrective statement was added.

The relationship between pregnant women and PHM is described as 'bonding'. I would argue that although this is a person in the community, she does have a different professional status.

Agreed. Changed.

Your definition on 'social contribution' is very similar to that of 'social action', which can be part of horizontal (bonding or bridging) or vertical (linking) social capital. Again, this very much depends on which definition you use.

Agree. When going through the definition of social action it seem to us as a much broader term than social contribution where one works for the benefit of others. Most social capital construct definitions seem to overlap, a problem we faced from the beginning itself.

On the point of structural constructs: did you also include in your study the different mobile phone contacts (as network) each of the participants had? That could show that the social capital is not entirely limited to close family and friends.
Yes. Participants documented these in diaries. Most of the time when their own family is far away the pregnant women used to phone frequently. But using the phone for bridging networks was rare among women.

The 'linking' examples on page 18 are described as pregnant women visiting the health services. That is just one element of social capital: how did they describe their relationship with the health services, the clinics. What does 'trust' mean to them? This is important to describe because 'trust' is quite a black-box term. Some of the background articles of Coleman or Putnam describe this very well.

Again in planning the papers of this study, the distinction between pregnant women and the health system was kept for another paper. Therefore we did not try to include in-depth details in this paper as the paper meant to identify the constructs and hypothesize their association to health. For the interest sake, trust meant that mothers believe the PHM. They were satisfied of her care. Sometimes they shared information only with the PHM etc.

On page 21 you introduce the distinction between individual and community social capital. I suggest to bring this more to the beginning of the manuscript.

Agreed. Done. LN 172-176

You have looked specifically at individual social capital. Methodological, do you think you are able to say something about the community social capital?

We observed that pregnant women are not the group to ask/observe on community social capital as generally in rural areas and in the Sri Lankan culture pregnancy is considered as a socially immobilized time period. Some aspects of collective action was observed within health committees and in cultural events. LN 768-778

In your discussion you also mention again the Brazilian pregnant women. Do you think you can use these comparisons or linkage with your program in Sri Lanka, considering in Brazil context and methods are so different?
Very few studies are available on social capital and maternal health so we think that we should mention this study.

I do not understand the last sentence on pg 21

It explains how individual social capital at two different levels seems to be important rather than neighborhood social capital.

First sentence pg 23. I would move this or copy this also to the introduction as it is a very informative sentence.

It is mentioned in the introduction.

Check you reference list. Some information is lacking, for example references that are Annual reports, should indicate the country it concerns. But there are also names of journals lacking

Corrected

Reviewer #4: Comments from reviewer:

General:

The line numbers are not consistent with the sentences. It was not easy to refer from the line numbers.

We apologize for the inconvenience caused. Will submit it in the proper way.

Plagiarism is present in at least three instances. Please, rephrase them as this is considered as a very bad practice.

We are sorry to inform that we did not do this on purpose therefore unable to correct it. We would be grateful if you could kindly show us the places.
Please, narrate in the Methods: If this study is a part of a big study, write which section you are presenting in this article and state the name of the big study (If it has any),

Included stakeholders/ partners of the study, is there any competing conflict of interest among partners of the study and so on.

Stakeholders are common and there are no conflicts of interests.

The methodology section needs to be precise and clean. It needs a lot of narrations and organized presentation of data collection tools and techniques.

As the detailed protocol paper is published we did not intend to write a detailed methodology in this paper. It will cause more plagiarism as well. However some parts in the methods section were elaborated. (highlighted text)

5. The in-text references are sometimes written before a full-stop, sometimes after that, such as, page 6, line 7. The authors should be careful in this respect.

We apologize for this error. It will be corrected.

Comments:

Page 1:

Methods in Abstract: Please, write what kind of qualitative research is this. It seems from the title that this is an exploratory research conducted using qualitative method.

Corrected.

Result section in abstract: Please, add the sample size in 'Methods'. Please, write with whom the key informant interviews were conducted.

Included.

Please, write the names of four different pathways.
Included LN 56-61

Page 3:
line 1-6: Please, add the sample size in 'Methods'.
Included

Line 5: Please, write with whom the key informant interviews were conducted.
Included.

Line 20: Please, write the names of four different pathways.
Included

Page 4:
Introduction:
Line 19: This sentence has high level of matching with source. Please, rephrase this sentence.
Done

Line 20-27: This is plagiarized. Please, rephrase.
Done

Page 5:
General:
Please, link all the paragraphs with the aim of the study. All of them are carrying important information, but they seem to lack connections.

The introduction component was expanded with the recommendations of other reviewers. We tried to link where possible.
Please, link the last line of the paragraph with the rest of the paragraph. It brings questions like, decreased smoking -by whom? Is it only the partner? the family members or the pregnant women herself?

or is that some promotion (as this article talks about social support) that reduces the habit of smoking? Same is for the use of prenatal vitamins- provided by whom? is that related to financial support? How this is related to pregnancy health?

Partly corrected

This is plagiarized. Please, rephrase.

Done

General comments for methodology:

Please, add a section on narrating diaries, diary interviews and in-depth interviews and Key informant interviews. Would you please tell if the diary interviews are the in-depth interviews?

This part was expanded.

Kindly add details on:

the number of study participants for each category,

if there was any case you couldn't follow up (such as, 41 diaries but 38 IDIs),

the reasons for participants declining from the study,

Done. LN 309-19

total study period,

duration of participant recruitment,

Included.LN256-258
after which period IDIs were taken, how long were they, were all of them tape recorded, were they agreed for the interview to be recorded?

Included. LN 287-96 detail information on informed consent- written or verbal, process of taking consent, (Though it is present in the "declaration", it should also be in the methodology.)

Included. LN 414-415

Eligibility criteria of the participants (eg. age, ethnicity, years of residing in that area, marital years, level of education, or anything else?)

Included LN 263-266

Methods, Line 30-33: If this study is a part of a big study, write result from which section you are presenting in this article and state the name of the big study (If it has any), stakeholders/partners of the study, is there any competing conflict of interest among partners of the study and so on.

Included.

Line 39: Please, write what kind of qualitative study is this. It seems from the title that this is an exploratory study.

Corrected. LN 220

Page 7:

line 1-2: Are the mothers registered in both public and private facilities?

Included. Registration in public health sector in Sri Lanka is 99-100%

Line 5-6: Would you please provide updated data? This information is ten years old.

This is the latest DHS available.
Selecting communities:

Have the researchers started to work in all the communities simultaneously?

How working in eight communities was managed? How many members were in the research team?

Mentioned. LN 256-258, 320-24

Are there several ethnic communities? In such situation, how barriers were faced, as for example: language, different cultural context?

We included a moor community. We used an investigator fluent in both English and Tamil. There were no other barriers. People were very corporative.

Line 27: Please, explain 'ancient village'.

Explained. This include generations coming from ancient ancestors of Sri Lanka.

Page 8:

Line 1-2: How data saturation was estimated? Were analysis of data and participant recruitment going simultaneously?

Investigators had to go through the diaries in-depth to prepare the diary interviewer guide. Therefore data familiarization was commenced at the initial period and we were able to estimate saturation.

Phase 1. Participants diaries:

Line 15-20: Please, explain 'available guidelines'. Which guidelines were used? Who developed and pretested this diaries? Action of pretesting of diaries has been stated in this article. Would you please provide a brief on the format of the diary? - is that the normal diaries we use in our regular life for personal documentation or something different with some clues for the study participants to provide information for a study?

This information was added. LN 277-285
Phase 2:

Line 26-27: It would look good if you add a subtitle here as you did for phase 1. It is better to be consistent all over the article.

Added. 301

Line 28-30: Please, add the number of interviews with community workers and health providers.

Added. LN 303-304

Have you developed any guide to have the IDIs with pregnant women (in line 46-50)? It yes, you should add that here also.

Mentioned.

Data collection procedures

Please, write the themes you asked about in IDIs. How did you derive information from the diaries to ask question, was there a mechanism? when the interview took place- was there any rule for that? Is that after she finished writing for two weeks (every day?) or during this two weeks? How long was that? Is that using telephone or face to face? if it is face to face, where it was conducted- at home? or hospital or any other places? Was the interviewer a female or a male with enough training?

Added. LN287-96

Line 41-44: Were the participants given any phone number/contact address at the time of recruitment so that they can call in time of need for assistance during writing diaries? It seems that there was one-way communication from the researchers that questions the validity/accuracy of data from diaries.

Yes the information leaflet contained all this. Added.LN 317-319
Line 51-54: Though highly educated, were the interviewers well-trained to interview women who are pregnant and may emotionally vulnerable? It seems like they were trained on only qualitative methods. Please, add more on if they were trained on qualitative data collection using qualitative methods, understanding research ethics, respecting the traditional practices of different communities and especially on talking to women who are physical and emotionally vulnerable.

Thank you. We added this. LN 320-324

Line 59-60: Please, elaborate the areas where you followed FHI guidelines, such as, steps in taking interviews, training of the RAs and so on.

Added. LN 328-30

Page 9:

Line 1-7: It seems from this paragraph that only diaries and interview notes were translated. Have you translated the verbatim transcriptions of IDIs and KIIIs?

Corrected. LN 332-36

Data Analysis

Line 12: Please, rephrase this sentence. It would be better if you state that you followed Framework approach for qualitative data analysis.

Rephrased.

Line 56-60: These sentences should be stated previously with more details.

Done.

Page 10

Respondent validation
Line 22-32: As this study depends on information provided by respondents in their diaries, there can be under reporting or over reporting. How the researchers planned to control this?

This was clarified in diary interviews. Included. LN 382-84

Page 11:

Line 49-57: Please, remove these lines and add them in the methods section. Only findings should be written in the result section.

Corrected.

Page 13:

Line 47: Please, do not start a sentence with 'But'. There are similar mistakes in several places in this article. Kindly, make corrections.

Corrected.

Line 52-56: It seems that talking over phone when husband or family are away being considered as a means of maintaining social relationships. Would it be possible to explore why the women talks over phone when they are alone/ husband/family is away? And how is it related to improve social capital?

Although they are far apart these micro ties strongly connected in this culture. They keep the loved ones involved in day-to-day matters and reduces loneliness. LN 494-96

Page 14:

Line 33-39: It seems like, being with friend and relatives makes the pregnant women self-confident.

Line 50-51: Have the participants stated about their husbands even when they have conflict with their in-laws?

Yes mentioned in LN 533-34
Page 15

Would it be possible to see if the marital years have any influence in Domestic Cohesion (If data is available)?

Yes. Even the families with 3-4 children had good domestic cohesion. However this situation was different in poor socio-economic situations where husband is addicted to alcohol. It was not very prominent in the urban to semi-urban community as well. However describing community differences was not an aim of this paper.

Page 17:

Line 12: Would it be possible to explore from the study that if the pregnant women feel insecure when they are alone because of anticipating adverse events, such as, sudden abdominal pain, abortion, falling from higher place or anything bad that can happen to the child, any superstitions and so on?

Interestingly, pregnant women did not express these insecure feelings, even they felt lonely. Even though there are absence of individuals that are emotionally close, the culture in the village was to always offer help when someone is in trouble. Or else women had the idea that some one will be there to help in an emergency. Thank you for highlighting this point. Added. LN 603-606, 775-76

Social support to enhance both physical and mental wellbeing

Line 16: Please, remove the space before 'Most'.

Done

Page 18:

Line 19-25: Please, indicate if possible, what kind of person is considered as 'closest'- someone from parent's home, in-laws home, friend?

Added. LN 645-647

Line 41: Please, explain the nature of 'contact'. Is that daily, monthly, 24/7?

Added. LN 659-63
Line 34: Have the Participant stated VOG or any other word? It seems like a technical one.
These three letters are familiar to them. They also used the term specialist.

Discussion:
Would it be possible to see potential linkage between "families of pregnant women and the health service" and "community and the health services" from the data available which will provide insight into social capital in a group.

We understand that group social capital is lacking in this paper. Details on health services were not mentioned in this paper as it was planned to be discussed in another short paper pertaining to this study.