

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Understanding the influence of the MomConnect programme on antenatal and postnatal care service utilisation in two South African Provinces: A Realist Evaluation Protocol
AUTHORS	Kabongo, Eveline; Mukumbang, Ferdinand; Delobelle, Peter; Nicol, Edward

VERSION 1 - REVIEW

REVIEWER	SYED EMDADUL HAQUE UChicago Research Bangladesh
REVIEW RETURNED	15-Mar-2019

GENERAL COMMENTS	<p>The protocol is well written but need more information in the methods.</p> <p>Abstract:</p> <ol style="list-style-type: none">1. Need clear justification. Why this research is important2. Need specific objectives3. Expected outcomes need to be included <p>Sampling and data-collection:</p> <ol style="list-style-type: none">1. I am not sure why district with highest rate are low?2. Need more information on data-collection <p>Qualitative data-collection:</p> <ol style="list-style-type: none">1. Need more information on FGDs. How they will conduct and who will conduct it?2. How they will analysis? <p>Discussion:</p> <ol style="list-style-type: none">1. Expected outcomes may include here. Then readers can get some idea of the outcomes of the research.
-------------------------	---

REVIEWER	Justine Dol Dalhousie University, Canada
REVIEW RETURNED	20-Mar-2019

GENERAL COMMENTS	Thank you for the opportunity to review this protocol. It is an important contribution to the literature around understanding the how, why, for whom and under circumstances mHealth interventions are impactful through using realist evaluations. This builds on the extensive publication of the MomConnect program available in the BMJ Global Health, 2018, V3, Supp 2. Overall, the
-------------------------	---

	<p>protocol is clear and, pending changes as mentioned below, would be a good addition to the literature in this area.</p> <ul style="list-style-type: none"> - In the introduction, a better link between the use of mHealth technology and the MomConnect program is needed. A sentence explaining what the MomConnect program does is suggested to provide this clarification. - It is unclear why some of the sub-districts are highlighted in red in table 1. If they are meant to be highlighted, please clarify why. - Clarification/re-wording in the paragraph on lines 205-209 is requested. - As required by BMJ Open protocols, the dates of the study should be included in the manuscript. In particular, breakdown by phases would be helpful. - Phase I <ul style="list-style-type: none"> o The Intervention-Context-Actors-Mechanism-Outcomes (ICAMO) tool should be cited o (IPT) is stated on line 260 without any clarification. - Phase II <ul style="list-style-type: none"> o Line 279, 286 – should this be Table 2? Currently Table 3 is stated but there is no Table 3 provided. o Additional details on the study questionnaires is desired. What will you be asking participants? Consider adding as supplementary material to facilitate understanding, transparency, and replication in future realist evaluations. o On line 307 IDIs is used but not previously defined. Abbreviations should also not be used at the beginning of sentences. o Further explanation of lines 312-313 is needed. - Phase III <ul style="list-style-type: none"> o Clarification over final output is needed and what will be generated to answer the primary objective. This is very clear in Figure 2 but clarification is needed in the text. - Additional clarification is requested on how authors will ensure trustworthiness of data as per the RAMESES II reporting guidelines. - Overall, some typos and grammatical errors were present. Please review the revised protocol carefully before re-submission. - References need to be reviewed for consistency and completeness.
--	---

REVIEWER	Fasil Wagnew Debre Markos University
REVIEW RETURNED	26-Mar-2019

GENERAL COMMENTS	The reviewer provided a marked copy with additional comments. Please contact the publisher for full details.
-------------------------	--

VERSION 1 – AUTHOR RESPONSE

Reviewer: SYED EMDADUL HAQUE

Comments	Responses
Please state any competing interests or state 'None	The authors declared no potential competing interest with respect to the research, authorship, and/or publication of this article

<p>declared': None declared</p>	
<p>Abstract: 1. Need clear justification. Why this research is important 2. Need specific objectives 3. Expected outcomes need to be included</p>	<p>We thank the reviewer for this comment. We have combined the importance of the research to the specific objectives. This is captured in the following sentence: This paper describes the protocol for a realist evaluation of the MomConnect programme, to provide a theory-based understanding of how, why and under what healthcare conditions the MomConnect programme works or not.</p> <p>We have also added the expected outcomes. Expected outcomes: An improved understanding of how and why the MomConnect intervention improves the health seeking behaviour of pregnant women and mothers of infants, and the health system conditions that influence its implementation (see page 2)</p>
<p>Sampling and data-collection: 1. I am not sure why district with highest rate are low? 2. Need more information on data-collection</p>	<p>We have added the following paragraph to explain and capture why the districts with the highest rates are low. 1) A representative sampling frame from the district health information system (DHIS) was used to obtain the sampling for this study focusing on ANC first visits before 20 weeks for June 2016. This period was the latest month in the master frame data of DHIS used to calculate the sample. All the districts in each province were drawn to identify districts with the highest and lowest ANC first visits before 20 weeks. In Gauteng, West Rand and Johannesburg District have the highest District with (69.0%) and lowest (57.3%) rates respectively. Randfontein Sub-district in West Rand District, Randfontein was identified as the best sub-district with the highest rate of ANC first visits before 20 weeks (80.3%), while Johannesburg A was the sub-district with the lowest rate in the Johannesburg district (50.6%). Similarly, in the Free State Province the districts with the highest (73.4%) and lowest (69.1%) rates are Xhariep and Fezile Dabi districts respectively. Naledi Sub-district (Xhariep District) was identified as the sub-district with the highest rate (80.4%) while Moqhaka Sub-district (Fezile Dabi District), the sub-district with the lowest rate (55.0%).</p> <p>The following paragraphs have been added to beef-up the data collection section as requested by the reviewer. 2) Quantitative data collection: A structured questionnaire survey tool has been developed (Additional fil 1) to collect quantitative data from pregnant women and mothers of infants registered with the MomConnect programme. This tool will assess their understanding of how psychological determinants, socio-cultural context and structural context influence their uptake of MCH services. An appointment will be made with each participant, using the contact details captured in the MomConnect database, to invite them to the facility to participate in the study. In addition, the survey instruments will be administered telephonically to those participants who are unable to visit the facility during the study period.</p>

	<p>Furthermore, a facility assessment questionnaire (see Additional File 2) will be administered to HCP at facility level to explore the structural and contextual attributes that may influence the uptake of ANC and PNC services. (see page 11 and 12)</p>
<p>Qualitative data-collection: 1. Need more information on FGDs. How they will conduct and who will conduct it? 2. How they will analysis?</p>	<p>An estimated 10 to 20 IDI will be conducted with HCPs at facility level to explore their perceptions (resources, implementation processes and programme uptake) of the MomConnect programme (See Additional Files for interview and FGD guideline). Four FGDs (one per facility) consisting of between 10 and 15 participants will be conducted by the field workers and the principal researcher to ascertain participants perceptions regarding the uptake of MCH services and expectations of the MomConnect programme. Daily activities in selected ANC and PNC facilities will be observed as well. IDIs and FGDs will be audio-recorded and transcribed verbatim to be analysed using Atlas ti 8.0. The interview guide and survey questionnaire are designed in English but will be translated into the local language used in the different study settings (Afrikaans, Setswana, Sesotho, Zulu, Xhosa) and back-translated in English. Data gathered from the above sources will be transcribed, translated and backtranslated in preparation for analysis.</p> <p>The qualitative data analysis will comprise thematic analysis Deductive and inductive thematic analyses will be applied to analyse the data collected through observation, interviews and FGDs following these seven steps: (1) Familiarising with the data set; (2) development of a coding framework, (3) Coding a portion of the dataset for each case study (4) testing code reliability, (5) identifying initial themes emerging from the data, (6) using the code manual to apply codes to the entire script, and (7) connecting codes into themes through an interpretation process.</p>
<p>Discussion: 1. Expected outcomes may include here. Then readers can get some idea of the outcomes of the research.</p>	<p>This was addressed by adding the following in the discussion section: It is expected that this study will improve our understanding of how and why the MomConnect intervention influences the health-seeking behaviours of pregnant women and mothers of infants. This study is also expected to provide a detailed description of the health system conditions that influence the implementation of the MomConnect programme to improve the uptake of ANC and PNC services. Finally, findings of the study can be used to improve the rollout and implementation of MomConnect elsewhere.</p>

Reviewer: Justine Dol

<p>Please state any competing interests or state 'None</p>	<p>Thank you for your comment, we have addressed this query by rephrasing the competing interest statement.</p>
--	---

declared': None declared	The authors declared no potential competing interest with respect to the research, authorship, and/or publication of this article
In the introduction, a better link between the use of mHealth technology and the MomConnect program is needed. A sentence explaining what the MomConnect program does is suggested to provide this clarification.	Thank you for this suggestion. We have addressed this by adding the following sentence: The MomConnect programme is an example of the application of this mHealth technology. The present paper presents a protocol for evaluating the MomConnect programme in depth. (see page 4)
It is unclear why some of the sub-districts are highlighted in red in table 1. If they are meant to be highlighted, please clarify why.	Thank you for this observation. We failed to provide a reason for the different colouration. Therefore, the red was removed.
Clarification/re-wording in the paragraph on lines 205-209 is requested	Thank you. The paragraph has been reworded thus: The district health barometer (DHB) 2016/2017 reported 71.2% of PNC visits within six days in GT which is higher than the national average of 75% and also lower than that of FS (85.9%), which is higher than the national average. ANC first visit before 20 weeks was 58.4% in GT far less than the national average in the same period (1). However, our selection of study participating provinces is based on the highest and lowest rates of MomConnect registration and not on ANC/PNC attendance rates.
As required by BMJ Open protocols, the dates of the study should be included in the manuscript. In particular, breakdown by phases would be helpful.	Thank you for your suggestions. We have added the following time frame under the various phases. Phase one of the study because it requires many sub-studies is estimated to take 12 to 18. Phase two is estimated to take 12 - 18 months and Phase three 6 to 12 months depending on funding availability.
Phase I The Intervention-Context-Actors-Mechanism-Outcomes (ICAMO) tool should be cited	Thank you for your suggestion. We have provided a citation for the sentence. The Intervention-Context-Actors-Mechanism-Outcomes (ICAMO) heuristic tool [42] will be used to guide a content analysis approach. (see page 9)
(IPT) is stated on line 260 without any clarification.	Thank you for the observation. This was already explained for the first time on line 246

- Phase II Line 279, 286 – should this be Table 2? Currently Table 3 is stated but there is no Table 3 provided	Thank you for your observation it was actually 3 that was labelled table 2. We have addressed this accordingly, thank you
Additional details on the study questionnaires is desired. What will you be asking participants? Consider adding	Questionnaire are added as supplementary material

<p>as supplementary material to facilitate understanding, transparency, and replication in future realist evaluations.</p>	
<p>On line 307 IDs is used but not previously defined. Abbreviations should also not be used at the beginning of sentences.</p>	<p>Thanks for your observation. This was already explained on line 256</p>
<p>Further explanation of lines 312-313 is needed.</p>	<p>Thank you for your suggestion. We have added the following sentences to elaborate on that statement.</p> <p>The hypothetico-deduction approach is most appropriate when testing an existing theory or a theory formulated a priori. This approach allows for various aspects and the entire hypothesis or initial theory to be examined in light of the new evidence that is emerging in the various cases (see page 12)</p>
<p>Phase III Clarification over final output is needed and what will be generated to answer the primary objective. This is very clear in Figure 2 but clarification is needed in the text.</p>	<p>Thank you for your suggestion. We have added the following sentence to clarify this point.</p> <p>The cross-case analysis will allow us to obtain a more refined programme theory to the initial programme theory and the case-specific theories. This refined theory, although obtained through abstraction, remains close enough to the observed data, yet provides explanations that are sufficiently general to explain outcomes across settings and social activities.</p>
<p>Additional clarification is requested on how authors will ensure trustworthiness of data as per the RAMESES II reporting guidelines.</p>	<p>Thanks, your comment this was addressed using this sentence: The RAMESIS II guideline for conducting and reporting realist evaluation [37] will be used to ensure quality control in the study. First, to elicit the IPT, all the above steps will be followed to ensure the trustworthiness of data collected from various sources, thus capturing a wide range of intended and unintended outcomes, context-mechanism interactions and relevant actors. In phase 2, to assess the reliability of data collection, a pilot study will be conducted in two healthcare facilities selected for convenience in the sub-district with the highest and lowest rates of ANC first visits before 20 weeks in GT and FS, respectively. The pilot will include health care providers (HCPs), pregnant women and mothers. At all levels of the study, quality control and credibility will be assured through data familiarisation by all the investigators and discursive interactions.</p>
<p>Overall, some typos and grammatical errors were present. Please review the revised protocol carefully before re-submission.</p>	<p>This was taken care of.</p>

References need to be reviewed for consistency and completeness.	This done.
--	------------

Reviewer: Fasil Wagnew

Please state any competing interests or state 'None declared': None	Thank you for pointing this out. One of the other reviewers also pointed this out. We have addressed this accordingly: The authors declared no potential competing interest with respect to the research, authorship, and/or publication of this article
--	---