Reviewer’s report

Title: Evaluating Sustainability in the Childhood Obesity Research Demonstration Project: The Model and Process

Version: 0 Date: 21 Nov 2019

Reviewer: Sofia Strommer

Reviewer's report:

The manuscript presents the development of the sustainability evaluation plan of the Childhood obesity research demonstration project. The topic of sustainability of health interventions is of huge importance for the public health impact and relevance of such interventions. Such interventions take huge effort and expense to design and to run and assessing their scalability and sustainability is of utmost importance. However, this paper is enormously complex, and as a result, is very confusing to read and does not reach its potential in being helpful in guiding future sustainability assessment.

It seems this paper could be divided into two papers that could be written separately. Doing this would make the descriptions clearer, and could complement each other. The first paper would be about the development of the evaluation plan. This would involve a detailed account of the development of the plan or assessment framework. More detailed, clear definitions of the theoretical foundations of it, the sustainability constructs and a justification for what should be measured at each level and under each construct. The second paper would then describe the experience of attempting to use this framework, clearly explain data comparison across interventions, the human experience of trying to coordinate such data collection across teams and sites, and the analysis of the data.

The writing style of the manuscript favors long and complex sentences, which are not easy to follow and contain too much detailed information. To improve the flow of the writing, recommend shortening sentences and distilling them into clear and eloquent points.

The methods are currently not replicable. Most of the potential benefit of this paper to the development of sustainability evaluation plans for other complex interventions is lost. There is somehow both too much complex detail, but also vague descriptions of measures and constructs.

It would be good to discuss how this approach is similar to or different from other guidance on complex intervention process evaluation.
Introduction:

Lines 140-145: The definition of the levels of the ecologic model of obesity need to be more clearly defined, in plain English. The current description is vague. What exactly are "direct social and physical dynamic linkages and processes" and "indirect social and physical linkages and processes" and what is the difference between them?

Methods:

The paper describes the use of theoretical frameworks to guide the development of the sustainability evaluation plan for CORD; the Ecologic Model of Obesity, and the Obesity Chronic Care Model. Since details of these models are discussed in the paper and they guide the evaluation plan, it would be useful to include a visual diagram for each model to clarify what they comprise and to allow the reader to refer back to them easily.

I appreciate that this is a summary of the sustainability evaluation plan for CORD, but a lot of the detail for the methods employed get lost. Currently, it is hard to replicate this kind of sustainability evaluation plan, it is not clear how many researchers were required, whether qualitatively trained specialist researchers carried out the interviews, how key informants were identified etc.

Lines 198-202: It would be good to clarify who completed the checklists, how many people were involved in doing this.

Lines 217-219: It would be good to include a sentence about whether the details of the qualitative interviews are reported elsewhere, or if the specific methods for the different components could be attached as a supplementary file.

Lines 217-219: did researchers undertaking this piece of work have qualitative research training or experience?

Lines 221-224: The sentence here is long and complicated, which makes it a little unclear. Could improve by dividing it into two shorter sentences for clarity.

Lines 227-232: This sentence is six lines long. That is too long. To improve clarity of your methods description and flow of writing, I would recommend revising into at least two sentences.
The link between continuation of benefits and the health system utilization, obesity related behavior and health outcomes data collated is not clear. The exploration of data seems very similar to understanding the context of the intervention, as outlined in the MRC guidelines for process evaluation. It could be clearer how the data informs the continuation of benefits from an intervention, assuming this is after the intervention has finished.

Lines 241-243: This sentence has too much detail, is complex and hard to follow. I would recommend revising into at least two sentences.

Lines 243-248: It is unclear what "measures of environments and practices" are and what "beneficial changes" might look like.

Lines 241-257: it is again hard to know what assessments directly assess the project, and how much of it is actually looking at the context around interventions. A more detailed description, framework or diagram depicting the various interventions within the CORD would help here, and perhaps outlining some clear research questions that each sustainability construct is trying to answer.

Table 1 describes institutionalization assessment involving in-depth interviews at multiple levels, but these are not mentioned in the body of the manuscript. The use of "micro", "meso", "exo" and "macro" in the text is currently unhelpful. Clearly describing what they refer to at the start of the manuscript, or in the context of each sustainability construct would be more helpful. The current examples are not helpful, because they are still vague:

Lines 298-299: "degree of group cohesion that helps make innovations sustainable" - in what group specifically in this case? How is this cohesion measured?

Lines 311-316: Parts of this work sound very much like process evaluation, rather than sustainability evaluation. (CF paper cited earlier)

Results and discussion:

It is hard to understand the link between the complex methods described in the paper and the qualitative lessons described in the results, it seems like parts of separate papers. Both are important for understanding how to best assess sustainability of interventions, but they should be described separately, not in one paper. The extensive methods lead the reader to expect descriptions of what was found specifically under the framework described in Table 1.
Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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