Reviewer’s report

Title: Taxonomy of approaches to developing interventions to improve health: a systematic methods overview

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Reviewer: Melissa Kang

Reviewer’s report:

This is a systematic methods overview that proposes a taxonomy of approaches to developing interventions to improve health. It is part of a larger project, the INDEX project, which is funded to produce guidance on intervention development for complex interventions. The manuscript has a useful contribution to make to those who plan, design, deliver, evaluate or implement complex health interventions.

Although the review itself is sound, the manuscript suffers a little from the writing, which is often meandering or confusing. For example, Background, page 4, line 93 ’Undertaking a broad review of approaches is required because existing reviews of intervention development have taken a narrow focus’. Is this sentence necessary? There are also several minor typographical or grammatical errors which jar the reading further.

Background

It would be useful to explicitly state at the outset that the paper is examining complex interventions and to define what the authors mean by this. For example, reference 1 refers to a Comment paper in the Lancet that is mostly about biomedical interventions, and reference 2 refers to interventions that aim to change health professionals' behaviour. Health interventions are far ranging.

Methods

The first two sentences of the Methods section (page 5, lines 115 - 117) are similarly a bit awkward, like the example above. Rather than saying what they are not doing and what is similar to what they are doing, could the authors start this section by emphatically and clearly stating what they are doing (a systematic methods overview) and then clearly define or describe what this is?

Note that PROSPERO is repeatedly mis-spelled in the manuscript.

Page 6, line 129 'The aim of the overview' - again, the first sentence is awkward and makes it unclear to the reader 'The practices undertaken within systematic methods overviews depend on
the aim of the review'- yet we have been told that this is not a review, it is an overview. Although I do understand the concepts, the language is clunky and makes reading more difficult.

It is not until page 6, line 140 onwards - the paragraph titled 'Intervention' that the authors describe the types of interventions they are interested in and what they are excluding. This is important, but it would be good to refer to this broadly in the Background section.

The paragraphs on Intervention development, Refinement, optimization, modification and adaptation are clear. The Search strategies are described in sufficient detail.

Results page 12, line 273 - 274 'PRISMA flow charts were devised to display exhaustive searches within standard systematic reviews.' The next sentence describes the PRISMA flow chart used to search for intervention development in primary studies in 2015-16, but Figure 1 is labelled PRISMA 2009. This paragraph is confusing.

Taxonomy of approaches

The formatting of this section makes reading difficult but perhaps this is a function of the journal's online program? The eight approaches are numbered and would be much easier to read if each heading started on a new line.

The Results including Tables, are otherwise comprehensive.

Discussion

'How to use the taxonomy and synthesis of actions' - again this paragraph is a bit awkward, eg page 20, line 430-1 'That is, the aim is not to replace existing approaches with a new approach'. There is some repetition here when the authors re-state the aim of the overview prior to this sentence. Perhaps this can be tightened or edited to be succinct and clear, to guide readers easily as to how they can use this taxonomy.

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