Reviewer's report

Title: HIV among immigrants living in high-income countries: a realist review of evidence to guide targeted approaches to behavioural HIV prevention

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Reviewer: Geoff Wong

Reviewer's report:

General comments:
I greatly enjoyed reading this manuscript as the authors displayed a clear grasp of not only the topic area, but also of the challenges of undertaking an evidence synthesis of what many would consider a complex intervention. A clear rationale is made for why their review is needed (i.e. the gaps it would fill) and also of why a realist review approach is needed.

Methodologically, the authors have done an excellent job. They have understood to a great extent how to apply the logic of enquiry in realist review. The review has been progressively focussed, the search strategy is well developed, appropriate and tested and the way they have presented their findings are clear and transparent. The authors should be congratulated on a job well done.

Major Compulsory Revisions:
There are a number of areas that I felt just needed clarification. None of these are 'deal-breakers' and in my view do not in any way justify rejection, but I felt they need to be addressed to avoid confusion.

1) In the sentence "Rather, behind the processes of an intervention there is an underlying theory (or mechanism) which explains change (or outcome) and the outcomes are intimately related to the context in which the intervention is implemented [68]." (P 9).

I felt the main assumption behind realist ontology could have been better expressed. The point is that mechanisms cause outcomes to occur and whether they are triggered depends on the context the mechanism is in. Would you please look at rewording this sentence?

In addition, I felt they the authors need to be a little clearer about what they mean by theory and what theory. Pawson prefers the term programme theory to refer to what he says is an overall explanation of how an intervention or programme is meant to work. In this case the programme we are thinking about are HIV prevention programmes. The authors have rightly decided to focus their review on making sense of cultural adaptations and so their programme theory would be around the cultural adaptations needed to make HIV prevention programmes work. In effect a finer level of theory 'below' that of a programme theory that seeks to explain HIV prevention programmes.

More importantly, I felt that they authors should try to separate out and make
quite clear that mechanisms are not the same as programme theories. Mechanisms are causal forces in realism that generate outcomes under specific contexts. Within a programme theory there may be more than one component or part along the journey to the final desired outcome. Within each component there may be more than one mechanism that 'causes' an outcome or response (in the words of the authors). So, it may be worth checking within the Methods section to make sure that the two (mechanism and programme theory) are not conflated?

2) In the results section, I wonder if the authors would like to reassess their conceptualisation of what they have called 'resistance'. It seems to me that these may instead be context factors that 'inhibit' the triggering of their inferred mechanisms? Or even perhaps an 'inhibiting' mechanism fired under the specific contexts the authors have identified.

Minor Essential Revisions:
3) In the Conclusion section, I wondered if the authors might like to provide some guidance or recommendations to potential users of their review? Rather than recapitulate in such detail the sections above, policy and decision makers (for example) may find helpful some of the insights the authors have gleaned and reported in the discussion section of each inferred mechanism. This I felt would make the manuscript more 'policy relevant'?

Discretionary Revisions:
None

I hope that the suggestions I have made above are not too onerous and I look forward to having the opportunity to review again this excellent piece of work.

Level of interest: An article of outstanding merit and interest 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:
I declare that I have no competing interests