Reviewer's report

Title: HIV Prevention for South African Youth: Systematic Review of the Evidence for 'What Works'

Version: 2 Date: 2 November 2009

Reviewer: David Ross

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General comments: This is a potentially very useful, focused systematic review of the literature on HIV prevention interventions for South African youth. Unlike some previous reviews, it provides a useful summary of the various interventions' content, theoretical basis, and delivery methods. This should not be cut or shortened, in my view.

Revisions that I strongly recommend:

1. Overall, however, I find the paper unsatisfactory as it does not present the results of the various interventions on primary and secondary trial outcomes in sufficient detail in table 1 (which seems to only select statistically significant outcome measures and then does not give the effect size nor the strength of the evidence of the association with the intervention (eg. 95%CI or p value), and the very brief summary in the text. Perhaps this was done because of the journal's length requirements. I am sure the authors could add a table and brief summary of these fairly easily and quickly, and think that the editors should definitely allow them to do so even if this makes the review slightly longer than a normal paper. Without this, I think it is difficult for the reader to make their own assessment of the effectiveness of the various interventions and so one has to take the authors' interpretations and conclusions completely on trust - something I am never prepared to do, even with such excellent authors!

   I would separate Table 1 into two tables:
   Table 1: Study design (Columns: 1 (though I would call that Project name & site), 2 Objective, 3 Target Population/ Age group, 4 Experimental design & Sample size, 5 Control or comparison condition, 6. Duration of follow-up
   Table 2. Study Results (Columns: 1. Project name & site, Intervention impact on: 2. Knowledge, 3. Attitudes, 4. Self-efficacy, 5. Reported sexual behaviours, 6. Other reported behaviours, 7. Clinical and biological outcomes.)

2. Use "reported sexual behaviour" where relevant throughout. There is a large literature on the poor validity of reported sexual behaviour among young people, especially in the context of interventions, which renders the use of "sexual behaviour", which implies that this reflects true sexual behaviour wrong in my opinion.

3. I disagree with your decision not to include studies conducted before 2000, just because they had been been included in previous reviews. Surely the earlier
studies' findings are still relevant?

4. I was also puzzled why you did not include evaluations of national level interventions, such as loveLife, Soul City, and the national Lifeskills Programme. Again, surely their findings are relevant. You do not appear to have given any arguments for why it was appropriate to exclude these. Surely these were "directed programmes designed to determine strategies to effect behavioural change leading to a decrease in HIV incidence or related risk behaviours among South African youth."

Suggestions I feel less strongly about:

5. The WHO definition of youth is 15-24y not 12-24y.

6. Why was it necessary for a study to specify their theoretical framework to be included? While I agree that this increases the ease of extrapolating and assessing the results of the study, I would still be very interested in the results of any study that had tried to intervene to prevent HIV among young people. Would you really have excluded a study that showed an intervention to reduce HIV incidence among young people by 75% p<0.001?

7. I think you should make it even more explicit that the IMAGE trial did not include any interventions among young people specifically. The great majority of the women who participated in the intervention were over 25y. The trial, however, evaluated whether there were indirect effects on young people living in the same households as women who had participated in the intervention. eg. p9, and p12.

8. You seem to rule out the possibility that any of the in-school interventions used any "group-based intervention approaches" (eg. p10). Yet such approaches are possible in in-school interventions, even when delivered by teachers. If you are sure that none of the interventions in your review used any of these group approaches, then perhaps you should say that, rather than imply that only individual approaches are possible in schools. For example, both MEMA kwa Vijana and Regai Dzive Shiri used several group-based approaches.

Minor corrections by authors:

9. p13 para 1. There's a bracket after "...promising interventions..." that needs one or more reference.

Level of interest: An article of importance 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:

None.