Reviewer’s report

Title: Pilot Test of an Educational Intervention to Improve Self-management of Diabetes in Persons Living with HIV

Version: 0 Date: 22 May 2019

Reviewer: Jean Craig

Reviewer's report:

The rationale for investigating an intervention to improve self-management in patients living with HIV and diabetes mellitus is clearly presented: self-management is the mainstay of both HIV and diabetes mellitus treatment, but is more difficult to achieve by people with HIV who also have diabetes mellitus.

My major comments are as follows:

1. The style of writing is clear, but, in my view, the manuscript would benefit from some restructuring. There are two stated aims: i) to adapt a successful community-based self-management intervention for people with diabetes and ii) to test the feasibility of administering this intervention in a group setting to PLWH+T2DM. Readability would be substantially improved if the methods were presented in that order.

2. The first aim (to adapt the intervention), entailed focus groups. Was a topic guide used to elicit information on particular themes, and were the data analysed in a structured way, or was this more of a general consultation? Suggest provide further clarification in the methods.

3. For the second aim, the before-after study was conducted in 25 people. As stated by the authors, this study was not powered to detect a difference in pre- and post-intervention outcomes (HIV knowledge, T2DM knowledge, self management activities, blood test results), and formal hypothesis testing is therefore not appropriate. The following sections (and any other sections that allude to hypothesis tests, and the related discussion) therefore need amending:

* page 9, line 19 "We conducted paired t-tests to examine differences in HIV knowledge, T2DM knowledge, self-management activities, CD4, and A1C before and after the intervention".
4. Related to the above point, the purpose of measuring the above outcomes needs to be clearer. If the purpose was to understand whether it was possible to collect the data in advance of a future adequately powered trial, and to ascertain whether the intervention has potential to improve the outcomes, then this needs to be accurately reflected in the objectives, methods, results, discussion.

5. Also related to the above, it would be helpful to include a sentence about the next steps / future research trajectory at the end of the abstract and the background section.

6. Sample sizes require justification (n=6, focus groups; n=25, feasibility of delivering).

7. Information is needed on how the registered nurse or licensed social worker who delivered the intervention were selected and trained / whether this sort of intervention is part of their usual role.

8. In the discussion section it is suggested that the intervention could potentially be delivered at food banks. Do nurses / social workers currently work there? It may help to give a little more context to show whether this is a plausible suggestion.

9. I am not quite clear as to the timing of the follow-up measures (p5, line 19). Were the follow-up measures taken within a 3 week period after completion of the 6 weeks of group instruction, or after completion of the 6 telephone calls that followed the group instruction? (Needs specifying). If the latter, and if the frequency of the 6 telephone calls was one call per week (needs specifying), then the outcome measures were taken 13-16 weeks after start of intervention. I see from the results section that the intervention delivery changed part-way through the study. It would aid clarity to state this change in the methods section, and to say whether change affected timing of outcome measures.

10. Page 8: each of the scales was assessed for internal consistency reliability using Cronbach's alpha. Suggest clarify in the methods - what would be the implications if low
internal consistency reliability were to be identified. The results for the internal consistency reliability testing are currently in the methods section and should be in the results section.

11. Recruitment to the before-after study is likely to have been inflated by the fact that people participating in the first part of the study (intervention adaptation) were invited to participate in the before-after study. 5 of the 6 people involved in intervention adaptation participated in the before-after study, suggesting this group had a particular interest in the study, having been involved in the intervention adaptation. I think this requires discussing in the limitations section.

12. Clinical implications of the study. I am not sure I understand this section. I think it needs revising whilst keeping in mind that the study was not designed to test the effects of the intervention.

Other comments

* Line 8 Abstract - HIV self management was monitored, not only diabetes self management.

* Page 3, line 8: Suggest add prevalence data for HIV-diabetes comorbidity.

* Page 4, line 6 states there are successful self-management interventions for both HIV and diabetes mellitus (DM). Were existing self-management interventions for HIV consulted when adapting the DM intervention?

* Page 5, lines 15 and 16: add sentences explaining the focus of the survey questions and the purpose of obtaining blood sample

* Page 9, lines 18-23: needs rewording to aid clarity; also elaborate on the purpose of checking shoes and feet. Not all readers will be familiar with complications of diabetes.

* Page 10, lines 1 and 2 would sit better in the methods section. It's not absolutely clear what is meant by "first round of the intervention". Do you mean the first cohort who underwent the training programme?

* Page 10, line 5 indicates there were 3 (or more?) cohorts. It would help if this were stated in the methods section.

* Page 5, line 8: PWLH needs changing to PLWH
* P9, line 6: 'Then we assessed the instruments' reliabilities'. Use the full term 'internal consistency reliability here', to ensure not confused with e.g. inter- or intra-rater reliability.

* Consider including your justification for 'streamlining' the intervention in order that the face-to-face component was only half as long in duration as a previous successful intervention for just T2DM, and why you believed it would still be adequate.

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