Reviewer's report

Title: A meta-review of heart failure disease management programs: The challenges of describing and synthesizing evidence on complex interventions

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Reviewer: Rod Taylor

Reviewer's report:

Using the vehicle of meta-analyses of the effectiveness of heart failure disease management, this manuscript examines some of the challenges of evidence synthesis of complex intervention. This is an interesting, important and timely contribution to the literature. Furthermore, this paper provides a helpful framework to explain the (confusing) variance in conclusions of recent reviews of disease management in heart failure.

There are two issues that require particular consideration by the authors:
1. How much of the variation in systematic review is simply a product of when they were conducted – more recent reviews being more comprehensive?
2. I am sure that the qualitative approach taken by the authors to examination of between review heterogeneity is the right one. However, it could be argued that a meta-regression approach could have been used. The authors need to at least explain why they did not opt for a more quantitative approach exploration of heterogeneity in review.

Some specific points:
1. It would be useful to explicitly state that systematic review of cardiac rehabilitation interventions for HF have been excluded from this study.
2. A table showing each review meets the various quality categories would be illustrative and help to explain the wide range of total AMSTAR score.
3. Table 6 – include footnote to define ‘benefits’ or ‘no clear benefits’ e.g. benefit: effect size shows superiority (RR< 1.00) of DM versus control and 95% CI does not include the null effect. Vote counting doesn’t reflect the full detail of effect size. It might be illustrative to add a Forest plot (for each outcome category) showing the mean ES and 95% for each individual meta-analysis.
4. Table 6 – did the authors consider the inclusion of HRQoL? – an important outcome in the context of this therapeutic area.
5. For clarity, suggest re-label results subheading ‘within review pooling of outcomes’ (i.e. as raised above, this study did not formally pool the results across review using a meta-regression approach) and include a new heading: ‘handling of uncertainty in the reporting of review results’.
6. Last para of discussion - the authors seem to be highlighting the need for a formal exploration of heterogeneity of component trials in MA’s of complex interventions. If so, this should be more clearly stated. Is this not a
recommendation for the elaboration of the PRISMA guidelines for systematic meta-analyses complex interventions?

7. Additional material 1 – include column showing the literature search start/end date for each MA.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests'