Author’s response to reviews

Title: Self-management Interventions for Chronic Kidney Disease: A Systematic Review and Meta-analysis

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Reviewer 1:

Very important piece of work that seeks to determine the self-management interventions associated with improved outcomes in patients with CKD. I enjoyed reading this work, thank you. Below are comments, I think may improve this paper.

Abstract

Background and objectives

It is not clear what the objectives are in the abstract. The research gap is highlighted, but the authors need to state the objectives.

Answer: Thanks for the suggestion. The objective has been supplemented.
Results

A bit of tidying up is required especially in the results section. CI could be expressed for example like (5 studies, 1,565 participants; RR 1.35; 95% CI 0.84 to 2.19; I2=0%) instead of inserting commas.

Also any reason why blood pressure has a capital P (a lower blood Pressure level)?

Answer: Appreciated! It has been corrected.

Conclusion

-The first sentence requires rephrasing to bring some meaning to it.

Answer: Appreciated! It has been rephrased.

Introduction

-Line 4-7 page 4, suggest rephrasing this sentence.

Answer: Appreciated! It has been rephrased.

-Line 44, this sentence is not clear. Suggest giving a proper definition of self-management here.

Answer: Thanks for the suggestion. The definition has been supplemented.

-Line 5, Line 11, suggest another way of expressing this, “on non-dialysis CKD is needed”.

- The authors should end this section by stating the objective of the study.

Answer: Thanks for the kindly suggestion. The objective has been supplemented.

Methods

-Line 28, page 6, suggest rephrasing to 12th of May 2018.

Answer: Thanks for the suggestion. It has been corrected.

-Line 18-21, page 6, suggest including a table of search words/terms/strategy.

-Line 10, page 8, please state the occasions when SMD was used.

Answer: Thanks for the suggestion. It has been corrected.

Results

-Line 22, page 9, suggest sticking to one form of measuring duration instead of mixing up weeks and months, “12 weeks to 60 months, and mean duration was 13.44 months”.

Answer: Thanks for the suggestion. It has been corrected.

-Line 50, page 9, suggest expressing numbers in words especially when starting a new sentence and when they are less than 10.

Answer: Thanks for the suggestion. It has been corrected.

-Line 29, page 10, were any attempts made to conduct authors where information was not clear?

Answer: Thanks for the kindly suggestion. Yes, we did, but there is no reply.

-Line 47, Page 11. This sentence is not clear, “Likewise, for the health literacy outcomes, patients who had received exercise management had longer distances on the 6-minute walk (3 studies, 277 participants; SMD 0.70; 95%CI 0.45, 0.94; I2=0%) than the control group”. How is health literacy related to exercising?

Answer: Appreciated! The “health literacy” is confusing, we have changed it to “behavioral risk factor outcomes”

-Line 14, page 12. Please provide examples of adverse events reported.

Answer: Thanks for the suggestion. Only 4 studied report the AEs result, but they all reported like “No adverse events”.

-There is vital information missing in Table 1 such as the number of patients in the intervention and control group and each study and how many completed the study.

Answer: Appreciated! It has been supplemented.
Quality assessment of the included studies is very important. It is this aspect that will demonstrate how good the evidence is. A Table showing this in the main paper would be beneficial.

Answer: Thanks for the suggestion. We have Quality assessment part. The table were shown in eFigure2 and 3 in supplement.

Discussion

-Line 29, page 13. Do you mean self-management or management in general in this sentence, “To date, 6 systematic reviews have studied CKD disease management”

Answer: Thanks for the suggestion. it was “general management”, it has been supplemented.

-Line 43, Page 13. Suggest .....”while the effectiveness of self-management interventions for non-dialysis CKD patients is limited”.

Answer: Appreciated! It has been corrected.

-Lines 1-22, page 14, the authors mentions some outcomes which improved due to the self-management interventions (hopefully) and these are urine protein decline, blood pressure level, exercise capacity and CRP level; while statistical significance is presumed for these out comes, were they clinically significant? What was the minimum clinically important difference?

Answer: Thanks for the suggestion. The mean follow up duration was 13.44 months, since CKD is a progressive disease the follow up time is too short to assess the minimum clinically important difference.

-What are the clinical and research implications of this review?

Answer: Thanks for the suggestion. It has been supplemented.

-You mentioned some limitations of this work, which is good, but were there also some strengths of this study that are worth discussing?

Answer: Thanks for the kindly suggestion. The strengths of this study have been supplemented.

Dong Zhou (Reviewer 2): Peng et al present a manuscript that systemically reviewed self-management interventions in CKD patients in the setting of a meta-analysis. The manuscript is well-written and the analysis appears to be conducted methodically. The overall results showed that self-management strategies did not reduce the risk of all-cause mortality (RR 1.13, 95% CI: 0.68-1.86) but improved a number of intermediate outcomes such as systolic blood pressure. The
topic area is important, and of interest to the readership, however, several concerns should be satisfactorily addressed on below.

1. If this is a study about self-management program among those diagnosed with CKD why is the introduction considering the global capacity for CKD detection? It would be better served by defining self-management behaviors relevant to CKD, as well as program strategies that are employed to promote effective self-management.

Answer: Thanks for the kindly suggestion. The objective of our study is to investigate if self-management intervention provides better renoprotection for CKD. Therefore, we introduced the epidemiology and treatment strategies of CKD, instead of global capacity for CKD detection. We have a paragraph describing self-management strategy frameworks in discussion.

2. In the literature searching section, the authors claimed that "Studies were first screened according to title and abstract, and the full texts of any study considered relevant according to the selection criteria were assessed for eligibility by 2 independent reviewers (JS.H and JW.H)." How were disputes handled?

Answer: Thanks for the suggestion. Disagreements between the reviewers concerning the decision to include or exclude a study were resolved by consensus, and if necessary, consultation with a third reviewer (YF.W).

3. Did the authors use the trim and fill analysis to assess publication bias? Please include an explanation since most readers will not be familiar with this method and include in the same paragraph as the funnel plots.

Answer: Appreciated! It has been supplemented

4. Figure 2: does "M-H, random" refer to Mantel-Haenszel method? For the continuous outcomes in figure2, does IV = independent variable? A figure legend certainly will be needed.

Answer: Thanks for the suggestion. There was a legend under the figure in page 27.
5. What attempts were made at collecting unpublished data? Did the authors contact investigators in the field to discover whether they may have conducted a negative study that was never published? This is the main source of publication bias.

Answer: Thanks for the kindly suggestion. This systematic review included information from published studies only. That is a limitation of our study and was discussed in “limitation” part.

6. The value of the discussion of the 7 self-management frameworks is unclear. There are many health behavior theories and frameworks. Studies based in theory could potentially be acknowledged as such and given higher evaluation weight, but concluding that there are 7 frameworks to be applied in CKD is premature.

Answer: Thanks for the suggestion! The self-management of chronic conditions’ strategies suggested by different guidelines may also vary, which poses a major challenge for clinical practice and researches. Self-management for CKD patients involves long-term habit changes, requires considerable effort from patients, and may take years to be effective. We synthesized the frameworks, which were mentioned by the studies we included To provide a reference for future research.

7. For the supplementary materials, the self-management framework in the text does not match the table, should be corrected.

Answer: Thanks for the kindly suggestion. It has been fixed.