Author’s response to reviews

Title: The effect of commitment-making on weight loss and behaviour change in adults with obesity/overweight; a systematic review

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Author’s response to reviews:

Dear Dr Croker

Thank you for the invitation to resubmit this paper. We thank the reviewers for their time and helpful comments; please find below our responses to these.

Yours sincerely

Nia Coupe

General

Under the broad definition 'soft commitment device' there are several different terms used to refer to the same or similar constructs. This can be confusing thus suggest using consistent terminology throughout the manuscript where possible (i.e. behavioural commitment).

Response: we have used ‘commitment device’ as an umbrella term for all types of commitments. Where appropriate, we have referred to specific techniques e.g. behavioural contract. Some of these have been changed throughout the document in response to your comment.

Background
Page 3, Line 17: Within this sentence I suggest also including reference to cardiovascular disease (i.e. reference number 8, line 30) and increased risk of mortality (reference number 7, line 30) (see point below).

Response: We have added these.

Page 3, line 27: Consider editing this section (e.g. could move some text to introductory section [see point above] to avoid repetition). Also, some individuals could lose 5-10% body weight which is associated with clinically significant health benefits but may never achieve a BMI within the 'healthy range'. Consider rewording.

Response: This paragraph has been reworded

Page 3, line 40: "The inclusion of a commitment device, such as verbal pledge or behavioural contract, may be one way to improve adherence to lifestyle interventions". This doesn't quite fit here and suggest moving this sentence to the next paragraph and/or including some references to back up the statement.

Response: Statement has been reworded and moved to the following paragraph.

Page 5, line 23: Consider using a different word rather than "easy". For example, "are simple to incorporate".

Response: reworded as per suggestion.

Page 5, line 23: "Easy to understand for those with health literacy" - is there evidence to support this statement? If so, I suggest including a reference. If not consider using slightly different language (i.e. "may be easy to understand").

Response: reworded as per suggestion.

Methods

Page 8, line 38: "Papers were assessed independently by three raters with good agreement?" - How was 95% 'good' agreement assessed?

Response: This had originally been calculated using percentage agreement. We have now calculated this using Cohen’s kappa, which we have reported.
Page 8, line 50: "The BCTs were double coded by a second researcher" - not clear if the second coder was one of the authors (or not). Please clarify. Also, how was 'good agreement' corroborated between authors for BCTs (i.e. 79%)?

Response: as above

Page 9, line 14: Worth specifying that it is a narrative review with meta-analysis (e.g. Figure 1 and 2)?

Response: added to Figure 1 and Table 1 titles

Results

Page 9, line 50: Study characteristics - only 14% of total participants included in the studies were men. Consistent with systematic review evidence indicating males are underrepresented in weight management initiatives and randomised trials of weight loss interventions (see. Robertson et al, 2014) - perhaps worth drawing out in the Discussion/limitations section.

Response: added to discussion, Page 22, line 19.

Page 13, line 1 and 38: Sub-headings (Short-term (≤6 months) and Long-term (12 months)) - repetition of sub-headings - for what/why are these sub-heading different from the previous ones? Needs to be clearer what these specific sub-headings refer to (e.g. 'Short-term (≤6 months) weight outcomes').

Response: these refer to the different comparisons- those studies which compared a commitment device with care as usual/ other intervention, and those which compared different commitment subtypes. We have expanded the titles to reflect this.

Page 13, line 55: All of the studies cited here appear to relate to husbands of female participants. Caution suggested when referring to spouses more generally given lack of male participants across the studies included in the review (see previous point above).

Response: We have highlighted these are male spouses/ husbands of female participants when discussed in both results and discussion and tables.

Page 14, line 20: It would be helpful if further details of both physical activity and dietary behaviour measures incorporated in each study (e.g. self-report/questionnaire or accelerometer/device-based etc.). This is important as self-report outcomes are more sensitive to
error/over reporting. For instance, this information could easily be included in Appendix 2 (e.g. extra column labelled 'behavioural outcomes').

Response: This had already been highlighted in Appendix 2, but the code had not been included. This has now been added and expanded further within this table.

Page 16, line 42: Would it be possible to assess the independent effect of behavioural contracts on outcomes independent of other BCTs (e.g. self-monitoring)?

Response: We do not believe this is possible with our data. We have highlighted this in the discussion, page 23, line 4.

Figure titles - included in text but not next to the Figures 1 and 2 (suggest including these as not clear what they represent).

Response: Titles added to figures

Discussion

Page 19, line 15: Typo - "commitments devices".

Response: typo corrected.

Page 19, line 41: The influence of external factors on motivation (intrinsic versus extrinsic) was introduced in the Background section. In this section of the Discussion it may also be worth considering how internal or autonomous motives for physical activity and behaviours important for long term weight control (congruent with Self-Determination Theory; see Ng et al, 2012; Teixeira et al, 2012) may interact with and/or be undermined by behavioural contracts (i.e. reliance on some form of external contingency versus internal volition).

Response: We have expanded this section to incorporate some of this literature, page 20, line 13.

Line 20, line 41: It is important to emphasise that because the majority of interventions included in this review used several BCTs congruent with self-regulation theory it is therefore difficult to observe the unique influence of behavioural commitments on weight and/or behavioural outcomes (i.e. independent of other BCTs).

Response: We’ve tied this in with our response to your comment above re: whether or not we could assess the independent effect of behavioural contracts, included in the discussion (page 23, line 4).
Page 21, line 23: Typo - remove "is" from sentence.
Response: typo corrected.

Simon Russell (Reviewer 2): Overall I found this study to be well conceived with sound methodology, and with an original and valuable contribution to the field. The manuscript was well written, logical and clear to understand. I would recommend for publication after minor revisions.

I have detailed some minor revisions below. A point of greater concern would be the extent to which meta-analyses can be used to draw meaningful conclusions given the low number of included studies and variations between studies; I believe this can be resolved by discussing the limitations of the analyses in more detail.

Page 2 line 30: full stop missing after Results.
Response: Full stop added.

Page 4 line 58: its not clear to me what 'quantity of tasks' means in this context.
Response: amended to read ‘increasing the number of tasks completed’

Page 6 line 21: NICE reference in full, does this need to be included as a numbered reference.
Response: Error in referencing, this has been amended.

Page 6 line 33: I would have imagined commitments typically took place at the beginning of interventions. If not, would this affect willingness to commit for some participants? Was the timing of the commitment in relation to the intervention considered?
Response: We have reworded this to reflect what was meant- that it could take place once at the beginning, or throughout i.e. a new commitment at every session.

‘A verbal or written commitment to adhere to a health behaviour (e.g. diet/exercise), and/or to achieve a desired outcome (e.g. weight loss). The commitment must be witnessed by another (in person or online), and can take place at the beginning or at multiple times throughout the intervention. There should be no material incentive or reward attached to the commitment’

Page 7 line 19: 'were' not 'are', and check tense throughout methods.
Response: Corrected, and methods section checked for inconsistencies.

Page 7 line 42: What was the justification for these five databases? Might searches of Cochrane and SCOPUS have been useful?

Response: The databases were chosen based on similar literature in the field, and also informed by a systematic review specialists within the university’s library. Cochrane had been searched during the scoping phase. We have added a sentence to justify these choices.

Page 9 line 5: Perhaps add a linejustifying why a random effects model was used over fixed effects.

Response: text added (page 9, line 5):

As we expected data to be heterogeneous, a random effects analysis was planned as per the Cochrane Handbook guidance [30]. We also conducted a sensitivity analysis switching to fixed effects, and our conclusions remained the same.

Page 10 line 5: Here and throughout, check capitals for consistency when referring to tables and figures (e.g. Appendix 1/Figure 1 and appendix 2/figure 2)

Response: we have checked and corrected inconsistencies.

Page 12 line 18: 'Two' in italics

Response: corrected.

Page 13 line 34: Here and throughout, check consistency when reporting CIs. Sometimes use a comma between CIs, sometimes a hyphen, variable decimal places and sometimes report the unit of measurement (e.g. kgs) and sometimes do not.

Responses: We have checked consistency, reporting CIs as per other reviews published within this journal.

Page 17 line 53: Perhaps reword this sentence for ease of understanding 'although it is unclear what it is about the group setting that is...'

Response: This section has been reworded and expanded (Page 18, line 11).
Page 18 line 36: Check consistency of using numbers or words to express numbers (in this case 'six studies')

Response: Consistency checked and amended where required. We have followed APA style guidelines, using words to express numbers up to nine.

Page 21 line 29: I think the limitations sections needs to be expanded to include a more in depth acknowledgement about the limitations of the meta-analysis. There are wide CIs, this is acknowledged but the lower bound of the 2nd meta-analysis is zero, so a conservative approach based on these two studies might find no effect. The main meta-analysis includes studies from Japan and the USA which are culturally quite different, they also include studies of just females, just males and one mixed study, and are taken from studies ranging from 1991 to 2016. The number of studies would also not allow sensitivity analyses to consider some of these factors.

Response: We have addressed these points in the discussion with the following text in the discussion (page 22, line 13):

‘There is quite a lot uncertainty in our estimate of mean weight loss; confidence intervals are wide and don’t rule out the possibility of minimal or zero effect in the longer term’. ‘some trials did not report outcome data in sufficient detail to allow meta-analysis, therefore we cannot rule out bias due to selective outcome reporting:’

‘Given the limited number of trials identified, we were unable to explore whether the effect of commitment interventions is consistent across different settings and populations’