Reviewer's report

Title: Meta-Analytic Methods for Synthesizing Evidence from Explanatory and Pragmatic Trials

Version: 0 Date: 30 Aug 2017

Reviewer: Kirsty Loudon

Reviewer's report:

This paper aims to evaluate the inclusion of PRECIS-2 as a covariate in meta-analysis can improve estimation of overall pooled treatment effects of 31 included trials in a Cochrane review to improve obesity in children. I developed PRECIS-2 with over 80 international collaborators. I thus have a vested interest in the tool being used. I am interested in its potential to be used in systematic reviews, as I did in my thesis, so I was particularly interested in your manuscript.

The reporting and conduct of this study need to be improved, there are no references in the Discussion, for instance, though they are referred to. There needs to be clear distinction between PRECIS and PRECIS-2 which has a likert Score and 9 domains (not 10) often PRECIS is referred to instead of PRECIS-2.

Abstract

Conclusion: consider changing "highlights the potential usefulness" of PRECIS-2.

Introduction

P1 line 38 Spelling Loudon instead of Ludon


Method p1 2.1 Line 13 need to insert references [13] [14]

Method P1 Line 28 insert reference [16]

2.2 Line 38 weren't the trials Randomised Controlled trials? Check!
2.2 Line 41, "similar to" would be better word than "consistent". Yoong et al created their own adaptation from PRECIS (2009) Scale 0-4. PRECIS-2 was developed with a scale of 1-5 which you used for your study. Perhaps just say we used PRECIS-2 [16]

2.3 p1 line 25 Please could you state which Kappa statistic was calculated using R software. Cohen's kappa is used for two raters and the Fleiss kappa (adaptation of Cohen's kappa) is used for 3 or more raters.

Was there any piloting of the methodology of scoring trials using PRECIS-2. How much training was there? How much familiarity with the tool was there? That can affect scoring, particularly if one rater has more experience.

3. Results p1 Line 52-57 Refer to Table 1 and put in Ref for the Cochrane review with the 31 studies as not putting in individual RCTS to address obesity in children.

3. Results p1 Line 60. The second sentence doesn't make sense without saying that the reported mean difference…was for 31 RCTs and the intervention to reduce obesity in children. Also state that these results are taken from the original Cochrane review.

3. Results p2 Line 7 Typo 12 Insert [25].

Were any domains harder to code or had greater variation in scores and reduced kappa scores? Were any of the authors contacted for missing information to assist scoring domains? Yoong recommended that primary authors should be contacted to reduce problems with missing information If not this should be stated as limitation. Uncertainty in scoring is not mentioned but has been indicated in previous studies using PRECIS-2 (and PRECIS)

3. Results p2 line 46 Tau2 Write out in full Tau-squared and explain as this is a technical term many systematic reviewers will not be familiar with if not statisticians.

3. Results p2 Line 43, 48, 56, 4. Discussion line 14, 18, 20 PRECIS-2 rather than PRECIS

Discussion

P1 There are no references in this section. Please insert.

P1 Line 40, to avoid confusion avoid using former and latter. Please explain and reference "As expected…".

P1 line 48 is it "can" or "could" - if can please reference.

P2 Line 4 Insert references for "few studies"
P2 line 12 instead of "when" IF may be more appropriate.

P2 second sentence, line 30 - why select these methods?

P2 line 36 rating the domains by 3 individuals is a separate issue to classification of the trials into pragmatic or explanatory.

P2 line 43 Please reference the "number of studies that have explored trichotomous classification of trials".

General comments for discussion : Suggest include discussion of Yoong's study in relation to this manuscript on "meta-analytic methods…"

Also another group have undertaken a systematic review (not Cochrane) and used PRECIS-2 to rate included trials https://www.ncbi.nlm.nih.gov/pubmed/?term=PRECIS-2+systematic+review

P3 Line 43 The author mention misclassification error assuming that differentiates between pragmatic and explanatory. As mentioned in the introduction page 1 line 48 there is a continuum from explanatory to pragmatic and that many trials have domains with a range of scores from explanatory to pragmatic. Along with an overall score, this may be relevant to policy decisions about implementation and worth mentioning in the Discussion as currently only the overall pragmatic score part of the meta-analysis.

Table 1. PRECIS-2 ratings not PRECIS-2 suggest Intervention to reduce Obesity not Obesity intervention in Title.

I don't understand how the studies are ordered, not alphabetic, not by PRECIS-2 score, or PRECIS-2 classification. Please edit.

Table 2 Please write out in full REMR, Tau and BIC

Also Trials to reduce obesity.
Level of interest
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

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5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I was the first author of the PRECIS-2 paper published in the BMJ otherwise I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

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