Critical appraisal – Systematic reviews and meta-analyses

This is a modified version of the BestBETs critical appraisal checklist for reviews and meta-analyses. See <https://bestbets.org/>.

Paper appraised: *(authors, year, and title)*

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| **Introduction** |  |
| Are the aims clearly stated? |  |
| **Methods** | |
| Is the type of structured review chosen (e.g., systematic review, scoping review, rapid review etc.) suited to the aim of what the authors are trying to achieve? |  |
| Is the topic of the review well defined? |  |
| How were the papers identified? For example, were the appropriate search terms and relevant databases used?  Was an attempt made to include non-peer reviewed literature and if so, how was this undertaken? |  |
| Was there evidence of study selection being carried out by more than one author? |  |
| Were inclusion and/or exclusion criteria used to determine which studies were included in the review?  Were the criteria appropriate for the aim of the review? Were any important criteria missed? |  |
| How was the methodologic quality of the papers assessed? For example, did they use formal critical appraisal assessments, or risk of bias tools and did they reference them (e.g., published papers, websites)? |  |
| Is it clear what data were extracted from the studies?  Were the correct data chosen? |  |
| How were the results summarized/synthesized?  Did the authors make an assessment as to whether the studies were suitable for a meta-analysis? |  |
| If appropriate, are the statistical methods described? |  |
| Was the statistical significance level stated? |  |
| Was ethical approval obtained? |  |
| Overall, are the methods described in enough detail that you could repeat them? |  |
| **Results** | |
| Were the basic data adequately described? |  |
| Do the numbers add up? Have all studies identified as a result of the searching process been accounted for (e.g., either included or excluded)? |  |
| If appropriate, was missing key information sought from authors of the included studies? |  |
| Were the differences between studies adequately described? |  |
| Were the results of the studies combined appropriately? |  |
| If appropriate, was publication bias assessed (e.g., via a funnel plot)? |  |
| If appropriate, was heterogeneity between studies investigated? For example, did they calculate inconsistency (I2)? |  |
| Were all important outcomes considered? |  |
| If appropriate, was the statistical significance (p value) stated in the results?  Is this consistent with what was nominated in the methods section? |  |
| What were the main findings/key results? |  |
| **Discussion and conclusion** | |
| What do the main findings/key results mean? |  |
| Do the authors mention the results that were found not to be statistically significantly different?  If so, what rationale was used to explain these non-statistically significant results? |  |
| Does the discussion reflect the results? |  |
| Are the conclusions justified? |  |
| **Interpretation** | |
| What are the clinical implications of this review?  Are the subjects in the studies included in this review similar to those you see? |  |
| **General** | |
| Who funded this study? |  |