

Prioritization of items of the AMSTAR 2 tool to critically appraise systematic reviews and meta-analyses: A best-worst scaling approach

Leclercq V^{1,2}, Hiligsmann M², Parisi¹ G, Beaudart C¹,
Tirelli E³, Bruyère O¹

¹Department of Public Health, Epidemiology and Health Economics, University of Liège, Belgium

²Department of Health Services Research, Maastricht University

³Department of Psychology, University of Liège, Belgium



AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both

Beverley J Shea,^{1,2,3} Barnaby C Reeves,⁴ George Wells,^{3,5} Micere Thuku,^{1,2} Candyce Hamel,¹ Julian Moran,⁶ David Moher,^{1,3} Peter Tugwell,^{1,2,3,7} Vivian Welch,^{2,3} Elizabeth Kristjansson,⁸ David A Henry^{9,10,11}

7. Did the review authors provide a list of excluded studies and justify the exclusions?

For Partial Yes:

provided a list of all potentially relevant studies that were read in full-text form but excluded from the review

For Yes, must also have:

Justified the exclusion from the review of each potentially relevant study

Yes
 Partial Yes
 No

Box 1: AMSTAR 2 critical domains

- Protocol registered before commencement of the review (item 2)
- Adequacy of the literature search (item 4)
- Justification for excluding individual studies (item 7)
- Risk of bias from individual studies being included in the review (item 9)
- Appropriateness of meta-analytical methods (item 11)
- Consideration of risk of bias when interpreting the results of the review (item 13)
- Assessment of presence and likely impact of publication bias (item 15)

Box 2: Rating overall confidence in the results of the review

- **High**
- *No or one non-critical weakness*: the systematic review provides an accurate and comprehensive summary of the results of the available studies that address the question of interest
- **Moderate**
- *More than one non-critical weakness**: the systematic review has more than one weakness but no critical flaws. It may provide an accurate summary of the results of the available studies that were included in the review
- **Low**
- *One critical flaw with or without non-critical weaknesses*: the review has a critical flaw and may not provide an accurate and comprehensive summary of the available studies that address the question of interest
- **Critically low**
- *More than one critical flaw with or without non-critical weaknesses*: the review has more than one critical flaw and should not be relied on to provide an accurate and comprehensive summary of the available studies

*Multiple non-critical weaknesses may diminish confidence in the review and it may be appropriate to move the overall appraisal down from moderate to low confidence.

Objective

- ▶ To assess the relative importance of the 16 **AMSTAR2** items using a best-worst scaling approach among experts in systematic review and meta-analysis



A BWS choice task - Example

Among the following four items from AMSTAR 2, please indicate the most important and the least important for you:

Least important

Most important

Did the **research questions and inclusion criteria** for the review include the components of PICO?



Did the review authors **report on the sources of funding for the studies included** in the review?

Did the review authors **report any potential sources of conflict of interest**, including any funding they received for conducting the review?

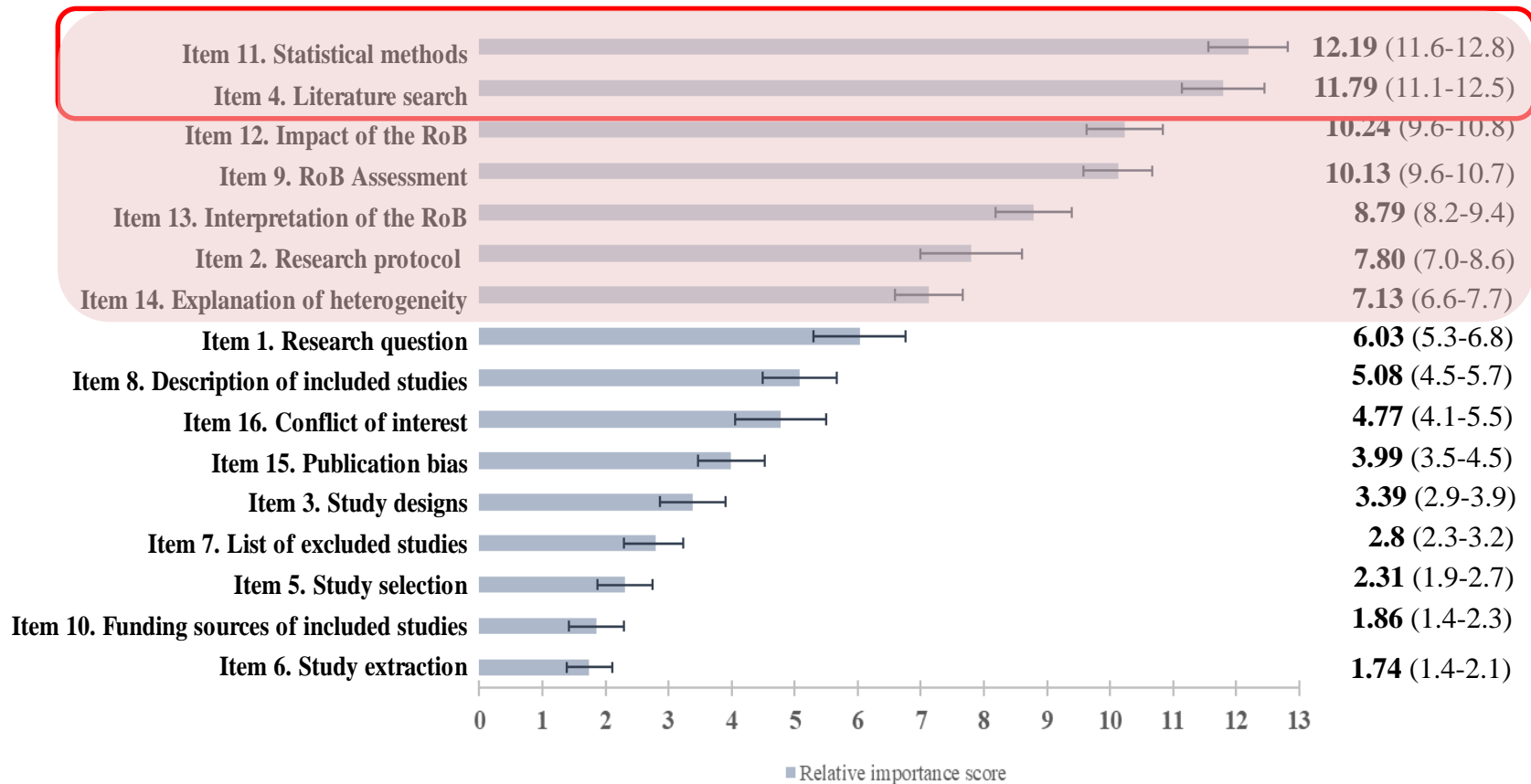
Did the review authors **use a comprehensive literature search strategy**?





242 experts replied to the survey

Relative importance score of 16 AMSTAR2 items according to 242 experts





« the **appropriateness of meta-analytical methods** »

AND

« the **adequacy of the search strategy** »



The **two most important items** in this study

Critical items in AMSTAR2



Cornerstone of SR/MA

BUT also maybe

the two most difficult items to apply and to assess

Further researches will be required to gather more information in order to take better account statistical methods and literature search to critically SR/MA

THANK YOU

Victoria Leclercq

Division of Public Health
Epidemiology and Health Economics
University of Liege
Belgium

Victoria.leclercq@uliege.be

