

Approaches to risk of bias assessments in non-Cochrane reviews



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Background

• The Cochrane Collaboration released recommendations for the conduct of systematic reviews in 2011.(1)

• They recommend using the Cochrane Risk of Bias (ROB) tool for assessing risk of bias in randomized controlled trials but lack specific guidance for non-randomized studies.

Objectives

- 1) Describe approaches and/or tools used to assess risk of bias in a set of non-Cochrane systematic reviews
- 2) Examine changes in approaches over time
- 3) Compare approaches to Cochrane Collaboration and other recommendations for the conduct of systematic reviews.

Methods

• We examined 50 systematic reviews and 35 systematic review protocols produced through the US Agency for Healthcare Research and Quality (AHRQ) Evidence-based Practice Center (EPC) Program from 2005 to 2012. All systematic reviews and protocols were accessible online.

• One reviewer (JS) identified the completed systematic reviews and protocols on the AHRQ website. The reviewer entered the title and year of publication/posting into an Excel spreadsheet, as well as the review objectives or research questions. The reviewer also extracted the methods reported for quality/risk of bias assessments, including any references cited in the methods section of the report. All citations referenced in the methods section for quality/risk of bias assessment were retrieved.

• One reviewer with experience conducting systematic reviews (ESS) independently examined the methods reported and classified the approaches or tools used for quality/risk of bias assessments. A second reviewer with experience conducting systematic reviews and methodological research (LH) checked the classifications.

• The numbers of reviews/protocols using different tools or approaches for quality/risk of bias assessment were calculated and descriptive results are presented.

• We also present the number of tools/approaches used by time period: 2005-2010 (completed reviews), 2011-2012 (complete reviews), 2010-2012 (protocols).

References

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Results

• Overall 50 reviews and 35 protocols were identified. Three reviews and 1 protocol focused on diagnostic questions only and are not included further in the results presented here. In all but one case, the QUADAS tool was used.(2)

• The reviews were published between 2005 and 2012; the median year of publication was 2010. The protocols were posted between 2010 and 2012; the median year of posting was 2011.

• The reviews all included randomized controlled trials, and all but one also included non-randomized studies.

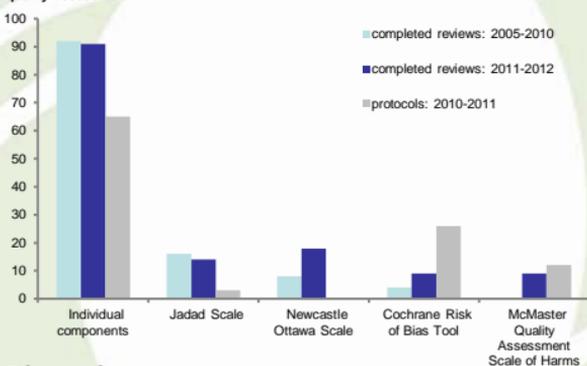
• The most common approach to assessing quality/risk of bias was using individual components (Table). A variety of sources were used to identify the components:

- AHRQ/EPC methods guide (14 [30%] reviews; 18 [53%] protocols) (3)
- US Preventive Services Task Force (11 [23%] reviews; 6 [18%] protocols) (4)
- National Health Services Center for Reviews and Dissemination (6 [13%] reviews; 1 [3%] protocol) (5)
- publication by Deeks et al. (5 [11%] reviews; 0 protocols) (6)
- CONSORT (4 [9%] reviews; 0 protocols) (7)

• Many reviews provided summary assessments for each study most often in the form of good, fair, or poor based on guidance in the AHRQ/EPC methods guide.(3)

Approach or tool used	Number of reviews utilizing this approach (N=47)	Number of protocols utilizing this approach (N=34)
Individual components	43 (91%)	22 (65%)
Provided summary assessments (good, fair, poor)	33 (70%)	19 (56%)
Jadad Scale	7 (15%)	1 (3%)
Newcastle Ottawa Scale	6 (13%)	0
Cochrane Risk of Bias tool	3 (6%)	9 (26%)
McMaster Quality Assessment Scale of Harms (McHarm)	2 (4%)	4 (12%)
Downs and Black	1 (2%)	1 (3%)

Figure. Percentage of reviews/protocols using different approaches/tools for risk of bias/quality assessment



Discussion

• Using individual components was the most common approach to assessing risk of bias in this set of non-Cochrane reviews.

• Use of the Cochrane Risk of Bias tool is increasing, while use of the Jadad Scale is decreasing (Figure).

• Recommendations for the conduct of Cochrane reviews (1) state that the Cochrane Risk of Bias tool must be used for randomized trials. There are no specific tools recommended for non-randomized studies.

• The Institute of Medicine (IOM) released recommendations for the conduct of systematic reviews in 2011.(8) They recommend that risk of bias be assessed systematically using predefined criteria, but they do not recommend specific tools.

• The varied approaches and sources of items for risk of bias assessments demonstrated in this evaluation reflect the lack of detail or specific guidance in the Cochrane and IOM recommendations.