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MEDICINE,
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HEALTH SCIENCES

Quality of published systematic reviews and meta-analyses in medicine and environmental health

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GROUP OF EIGHT AUSTRALIA

Declarations

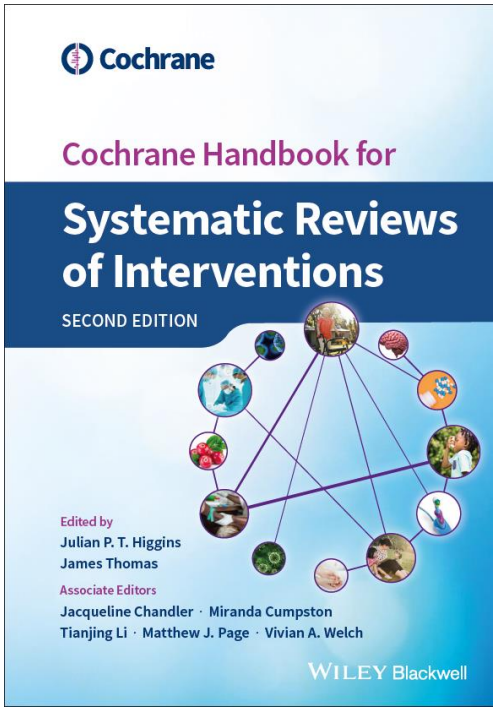
Cochrane Australia

NHMRC

Cochrane Methods Bias

PRISMA

TRANSPARENT REPORTING OF SYSTEMATIC REVIEWS AND META-ANALYSES



Journal of Clinical Epidemiology

PLOS MEDICINE

Systematic Reviews

Outline

Methodological quality of systematic reviews

Reporting quality of systematic reviews

Possible explanations

Summary

Methodological versus Reporting Quality

- **Methodological quality**
  - How well a systematic review was **designed** and **conducted**
  - e.g. comprehensive literature search

- **Reporting quality:**
  - How well the methods and results were **described** in systematic review reports
  - e.g. clear presentation of meta-analyses

Pussegoda et al. Syst Rev 2017;6:131

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Methodological quality of systematic reviews of health and medical research

Adherence to conduct standards (AMSTAR)

Pussegoda *et al. Systematic Reviews* (2017) 6:131
DOI 10.1186/s13643-017-0527-2

Systematic Reviews

RESEARCH Open Access

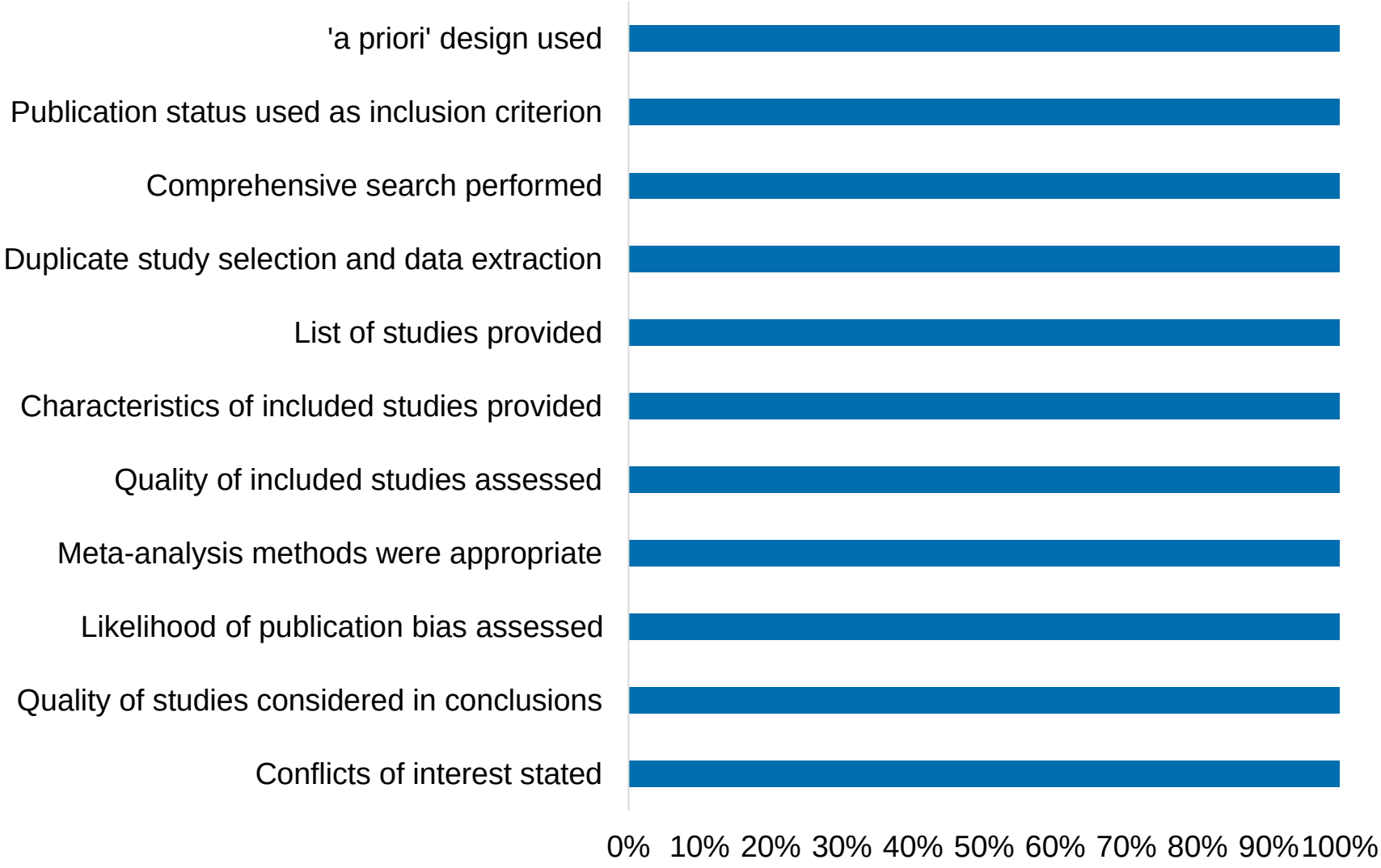
Systematic review adherence to methodological or reporting quality

Kusala Pussegoda[1], Lucy Turner[1], Chantelle Garritty[1,2], Alain Mayhew[1,3], Becky Skidmore[1], Adrienne Stevens[1,2], Isabelle Boutron[4], Rafael Sarkis-Onofre[5], Lise M. Bjerre[3,6,7], Asbjørn Hróbjartsson[8], Douglas G. Altman[9] and David Moher[10*]

23 studies evaluating 1,794 systematic reviews against AMSTAR

All systematic reviews published before 2017

Adherence to conduct standards (AMSTAR) in 1,974 SRs



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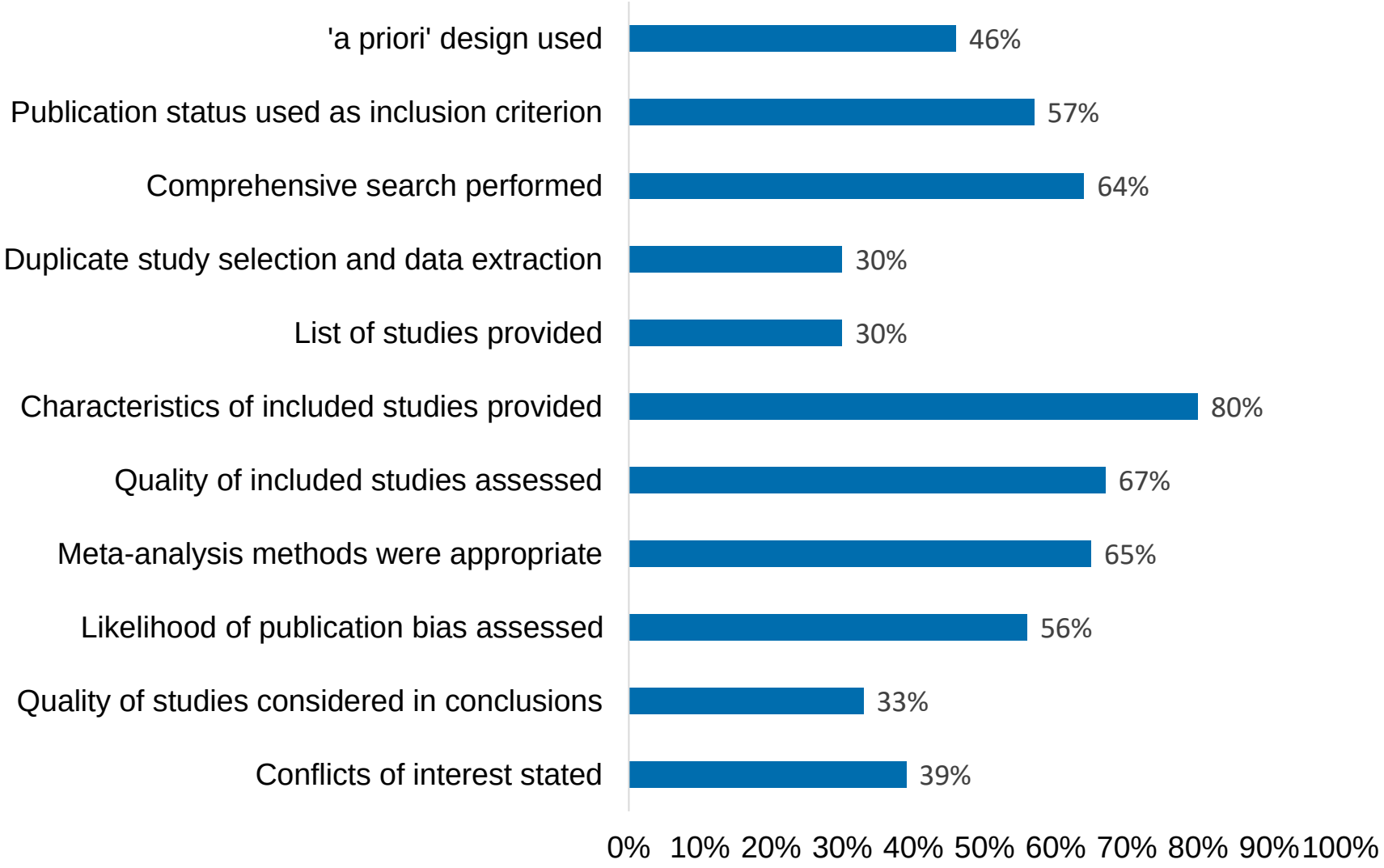

Pussegoda et al. Syst Rev 2017;6:131

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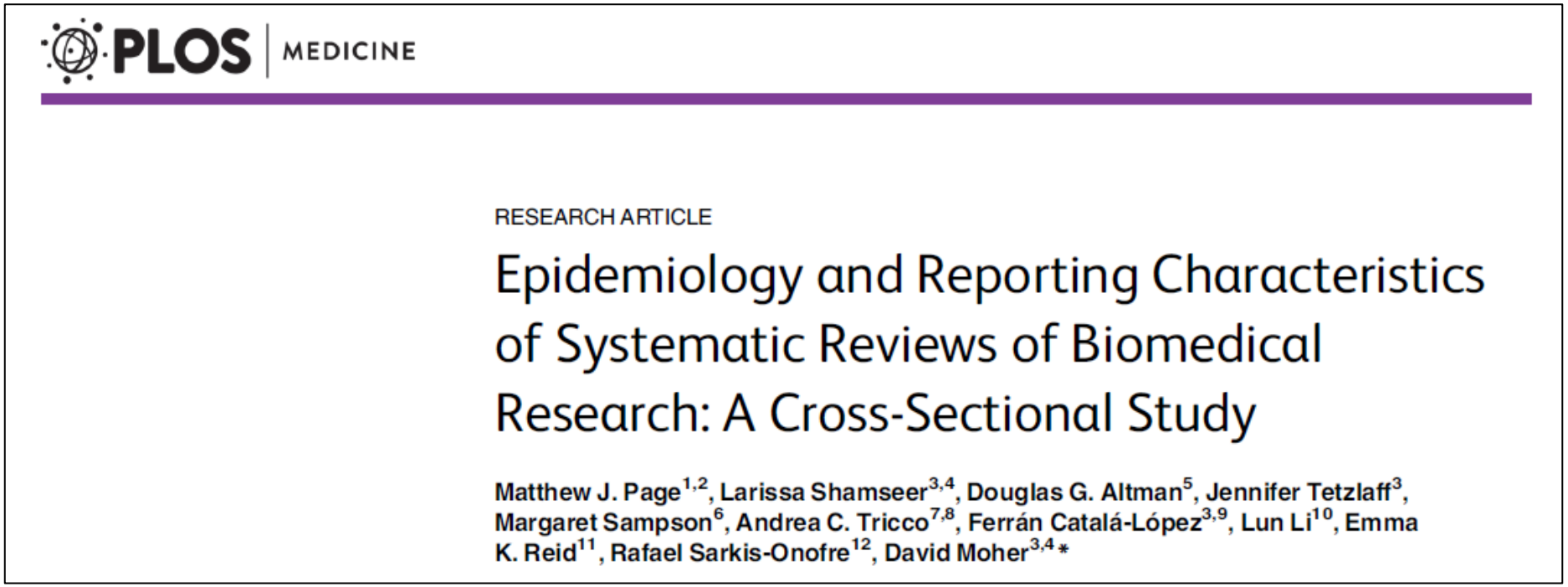
Reporting quality of systematic reviews of health and medical research

Cross-sectional study of reporting quality of systematic reviews



Page et al. PLoS Med 2016;13(5):e1002028

OBJECTIVE

To investigate the prevalence and reporting characteristics (n=87) of systematic reviews indexed in MEDLINE® in February 2014

Results

682 systematic reviews published in a single month (Feb 2014)

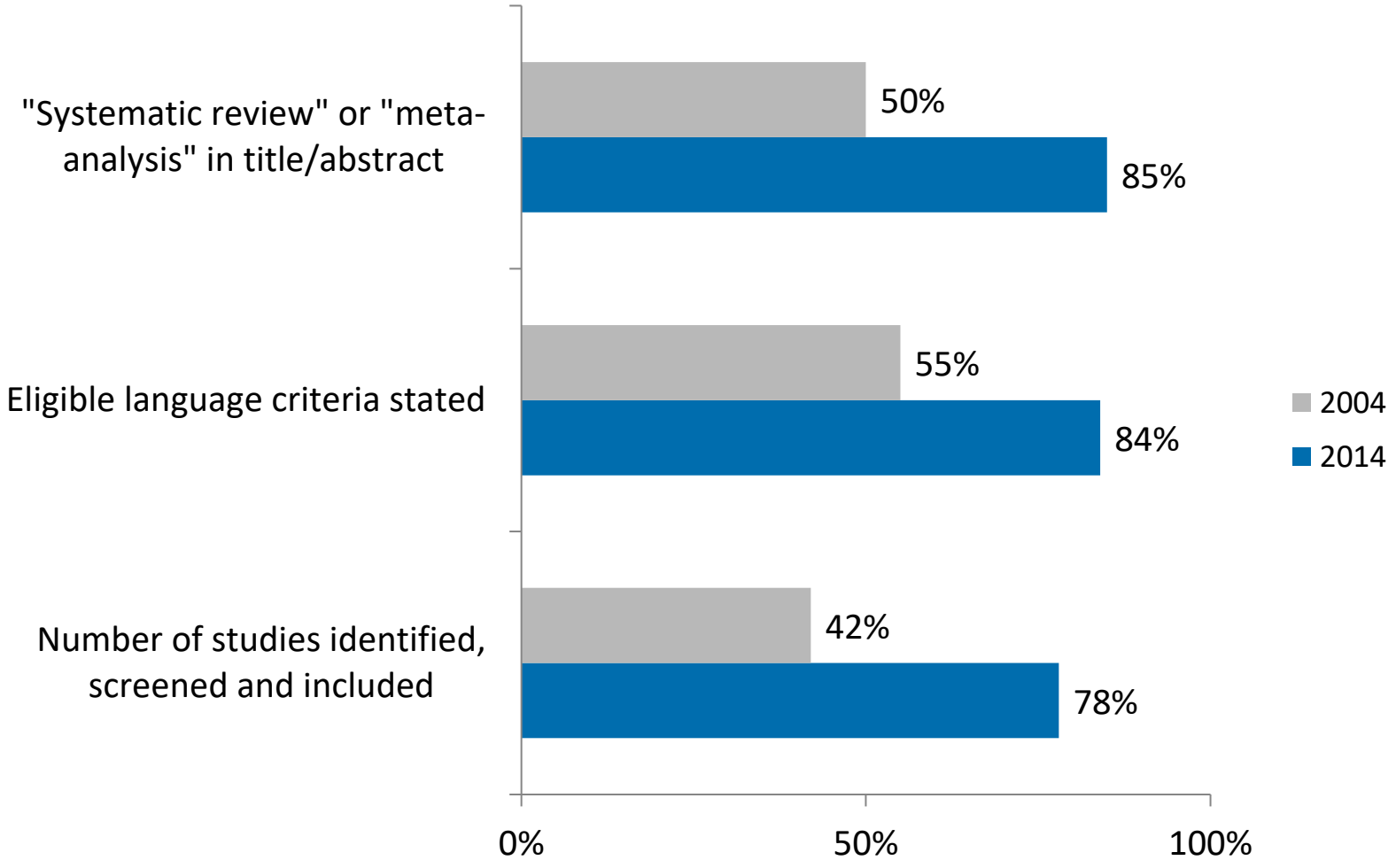
= >8,000 per year
= 22 per day

11,749* systematic reviews indexed in PubMed in 2018

*PubMed search "Systematic Review" [Publication Type] AND ("2018/01/01" [PDAT] : "2018/12/31"[PDAT])

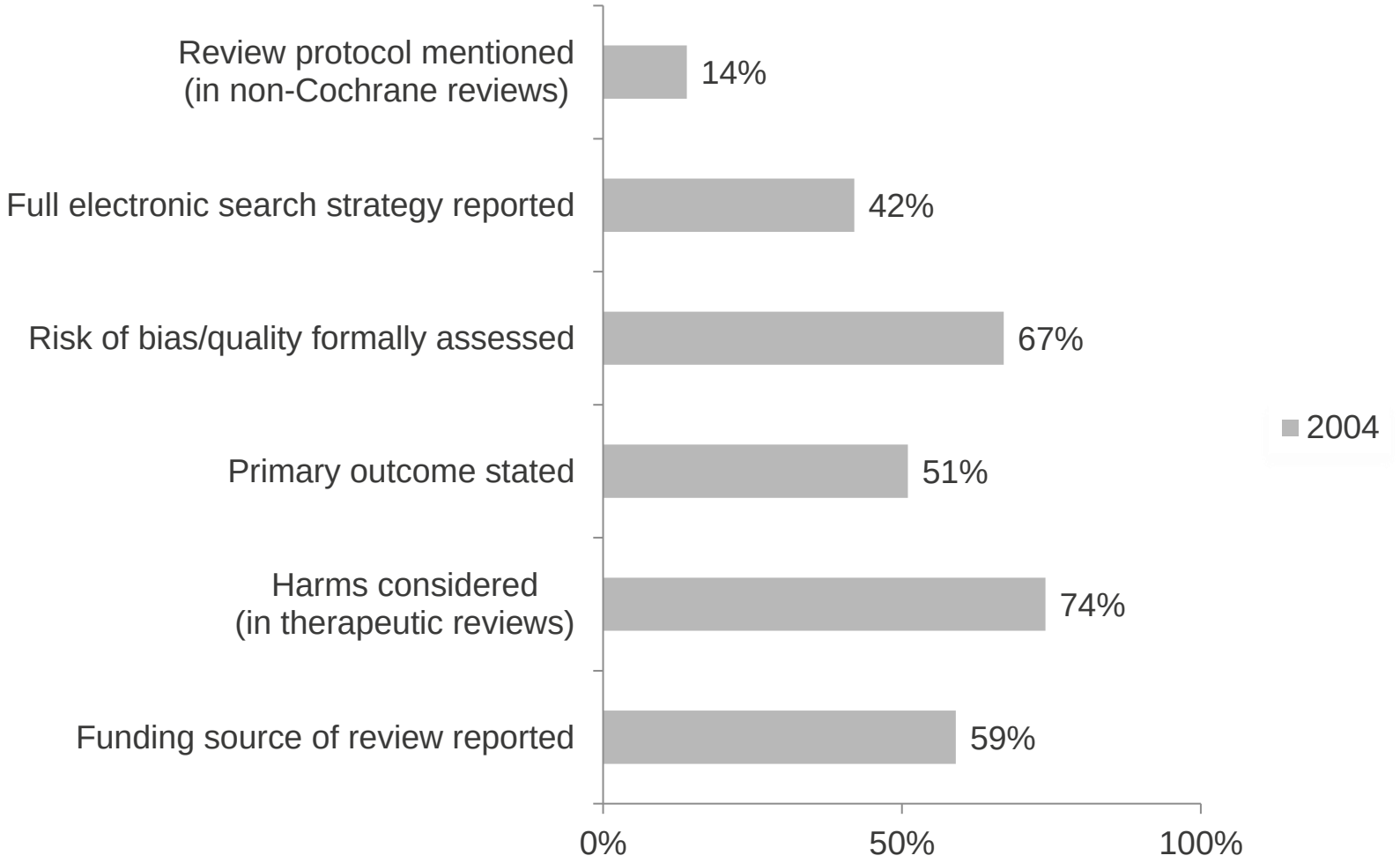
Page et al. PLoS Med 2016;13(5):e1002028

Improvements in reporting 2004 to 2014 (300 SRs per period)



Page et al. PLoS Med 2016;13(5):e1002028

Areas for improvement in reporting 2004-2014 (300 SRs per period)



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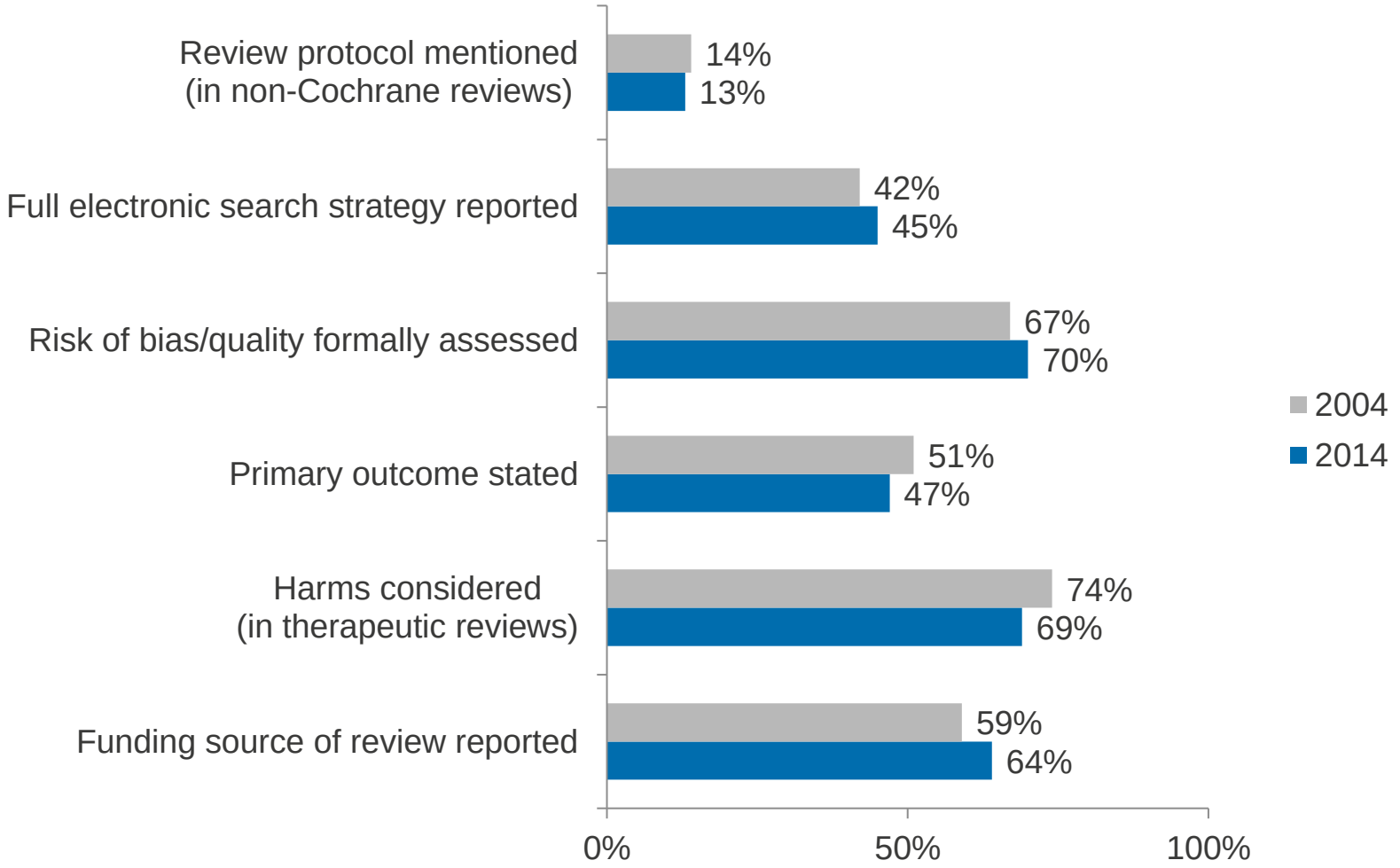
Areas for improvement in reporting 2004-2014 (300 SRs per period)



Page et al. PLoS Med 2016;13(5):e1002028

Page and Moher *Systematic Reviews* (2017) 6:263
DOI 10.1186/s13643-017-0663-8

Systematic Reviews

METHODOLOGY Open Access

Evaluations of the uptake and impact of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) Statement and extensions: a scoping review

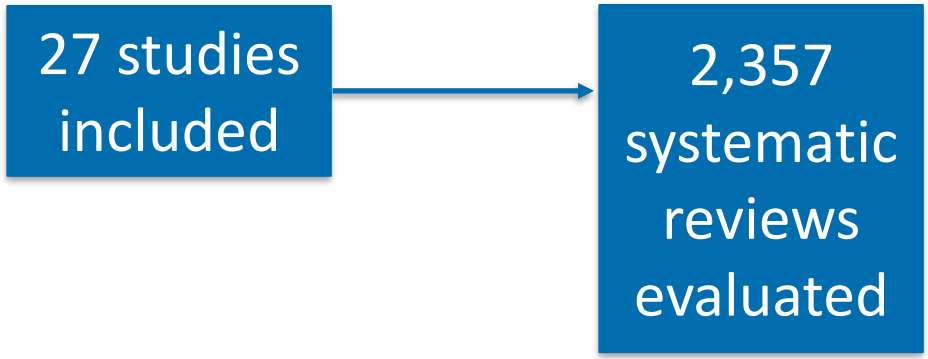
Matthew J. Page[1*] and David Moher[2,3]

Systematic review of studies evaluating adherence to PRISMA

Searched MEDLINE® to July 2017

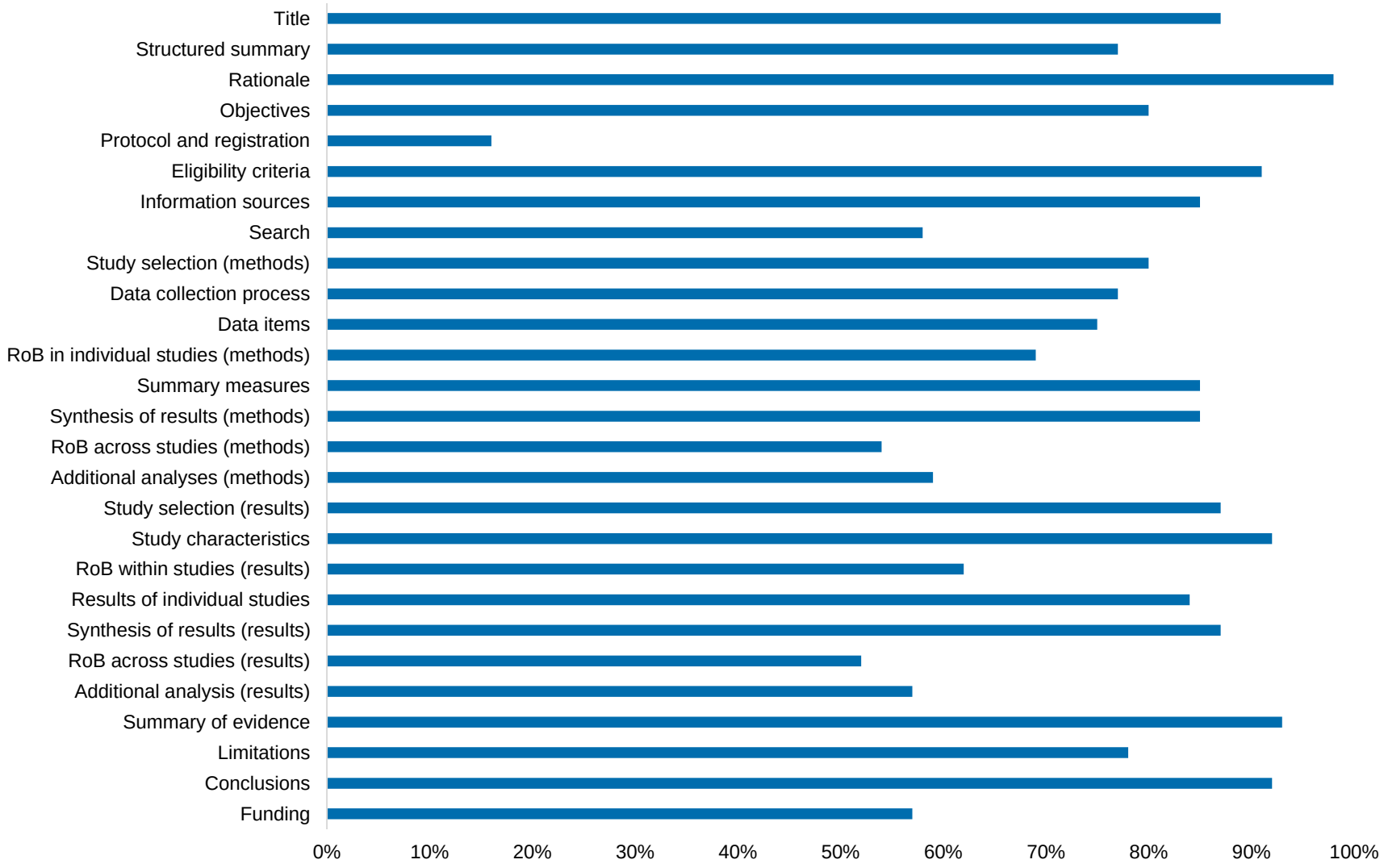
Included studies evaluating adherence to PRISMA in systematic reviews published 2010 onwards

Pooled number of systematic reviews adhering to each item across all studies



Page and Moher. Syst Rev 2017;6:263

Adherence to reporting standards (PRISMA) in 2,357 SRs



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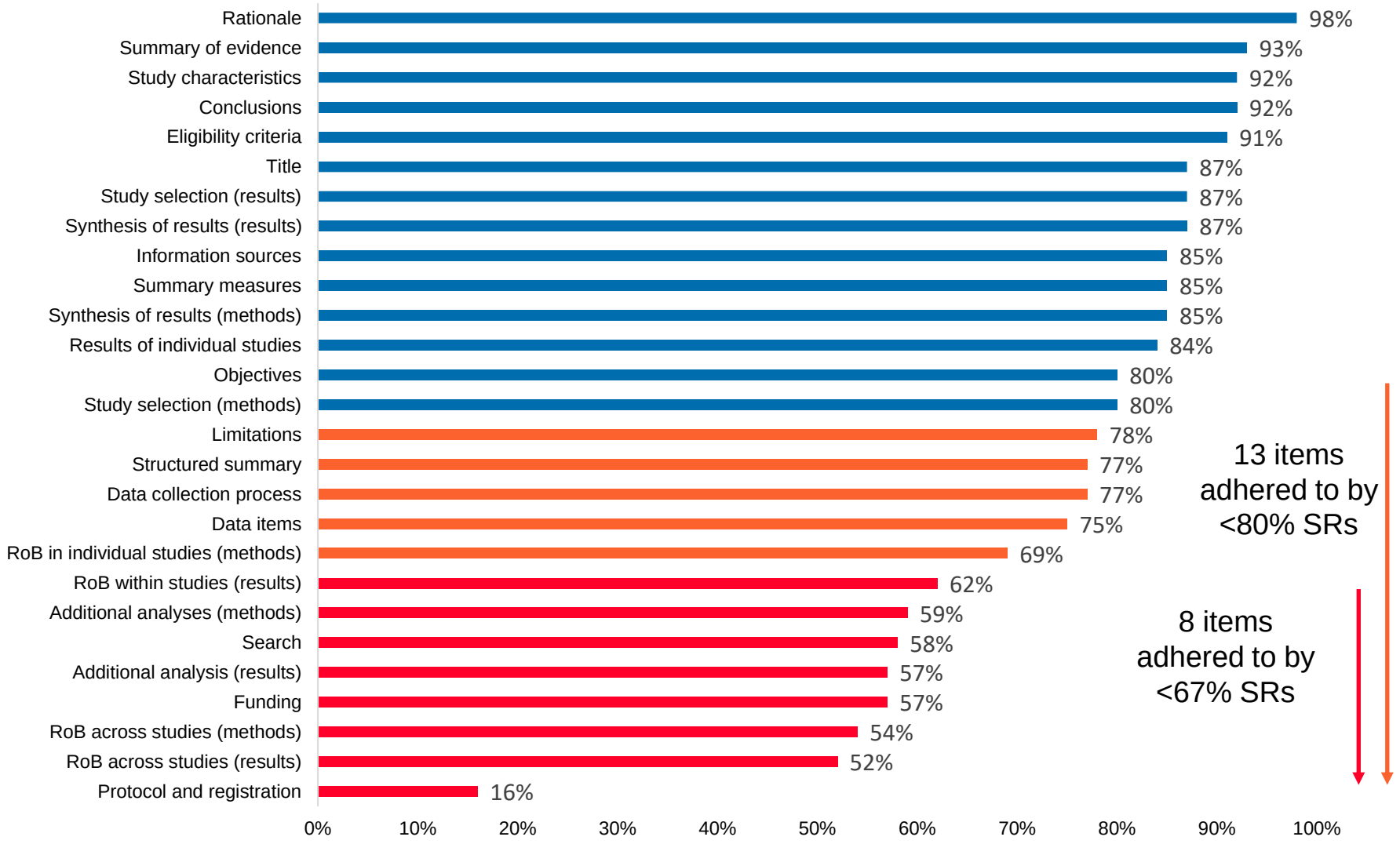

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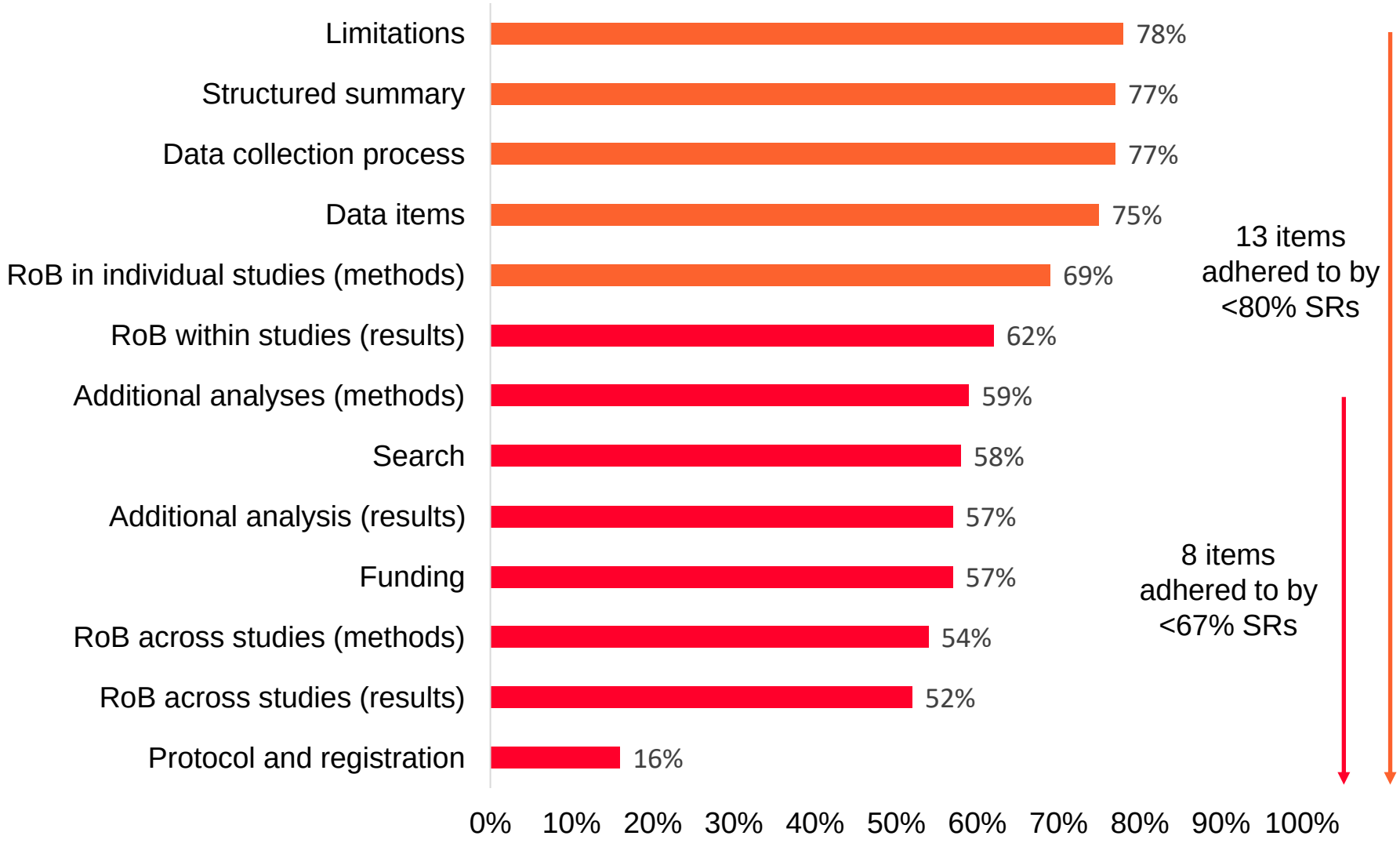

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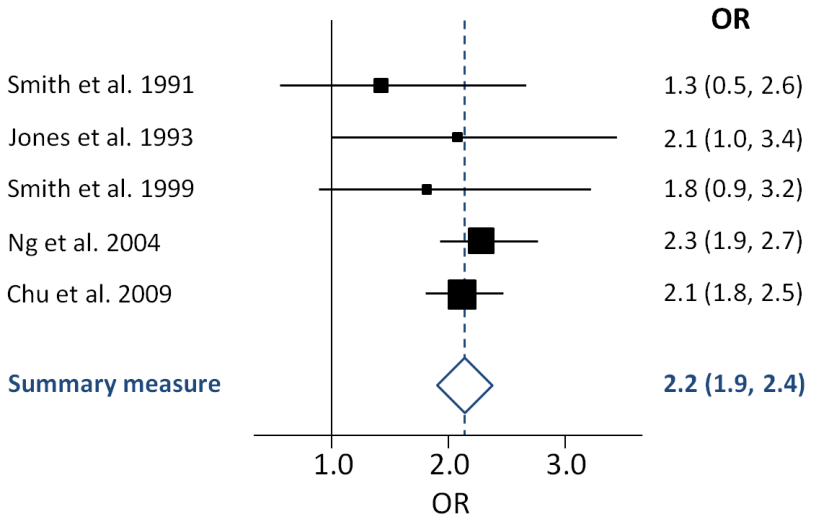
Wayant, Page & Vassar (in press)

- 154 systematic reviews cited in National Comprehensive Cancer Network guidelines

- 35% presented insufficient info to reproduce all meta-analyses



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Pre-publication quality at *Environment International*

Assessment of 52 SRs submitted April 2018-April 2019

- 65% show critical issues in defining research objectives
- 60% used search strategies likely to miss key evidence and/or don't provide transparent methods
- 38% at high risk of failing to include all relevant evidence
- 83% used invalid study appraisal instruments, or often none at all
- 62% employ flawed methods for synthesising the findings of included studies

Whaley (personal communication)

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Possible explanations

Why are there so many systematic reviews of poor quality?

- Lack of awareness of conduct/reporting standards
- Few strategies available to implement reporting guidelines
- Lack of involvement of librarians, methodologists and statisticians
- (Perceived) lack of suitable methods for all fields
- Lack of understanding of resources required
- “Publish or perish” culture

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Summary

Summary

Systematic reviews should be able to provide credible evidence for decision making

Evidence that many systematic reviews:

- fail to adhere to existing conduct and reporting guidelines for systematic reviews
- fail to report methods and results in a way that allows users to reproduce them