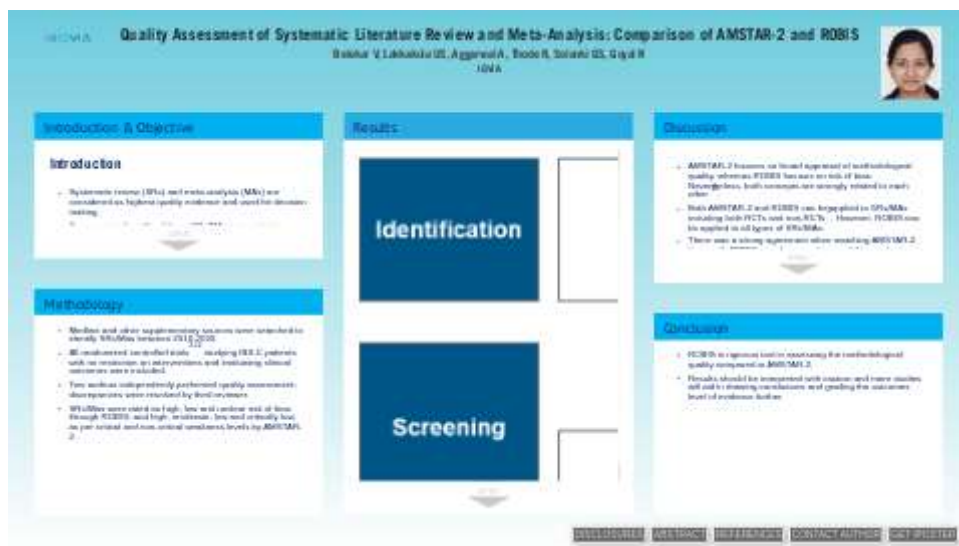


Quality Assessment of Systematic Literature Review and Meta-Analysis: Comparison of AMSTAR-2 and ROBIS



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PRESENTED AT:



INTRODUCTION & OBJECTIVE

Introduction

- Systematic review (SRs) and meta-analysis (MAs) are considered as highest quality evidence and used for decision making.
- Assessment of quality of these SRs/MAs is important as poor reporting and flaws in methodological quality can impair the evidence level.
- AMSTAR-2 (A Measurement Tool to Assess Systematic Reviews-2) is an updated version of AMSTAR and commonly used for the quality assessment of SRs/MAs¹, While the Risk of Bias In Systematic reviews (ROBIS) tool used for risk of bias (RoB) in SRs/MAs².

Objective

- The objective was to compare the commonly used quality tools AMSTAR-2 and ROBIS and determine the methodological quality of SRs/MAs published in irritable bowel syndrome with constipation (IBS-C).

METHODOLOGY

- Medline and other supplementary sources were searched to identify SRs/Mas between 2010-2020.
- All randomized controlled trials³⁻¹² studying IBS-C patients with no restriction on interventions and evaluating clinical outcomes were included.
- Two authors independently performed quality assessment; discrepancies were resolved by third reviewer.
- SRs/Mas were rated as high, low and unclear risk of bias through ROBIS; and high, moderate, low and critically low, as per critical and non-critical weakness levels by AMSTAR-2.

RESULTS

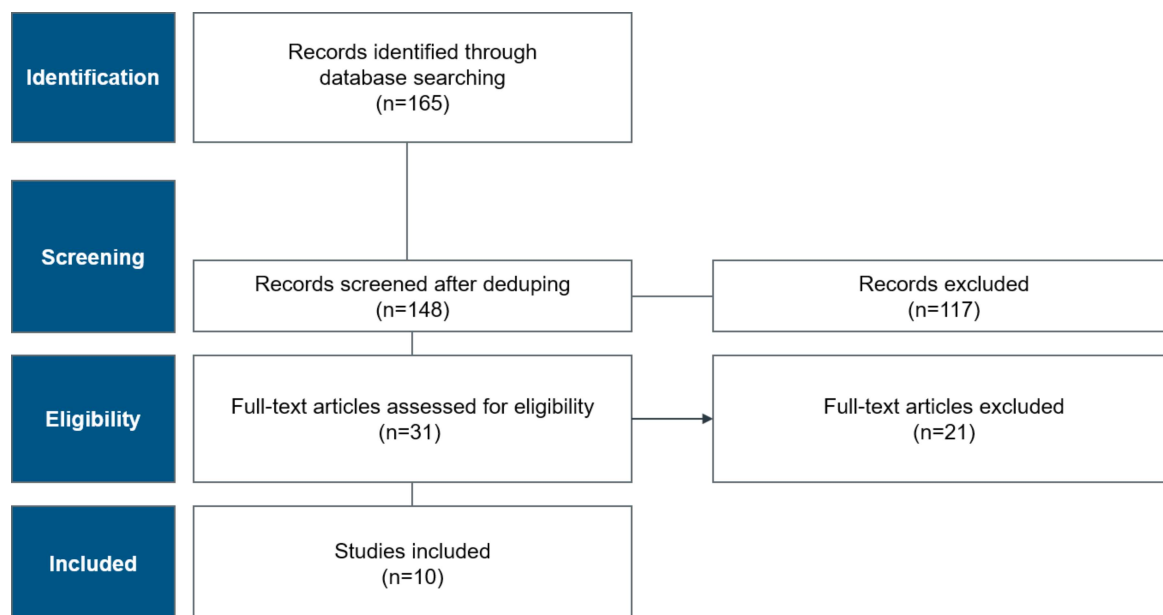


Figure 1: PRISMA chart of included studies

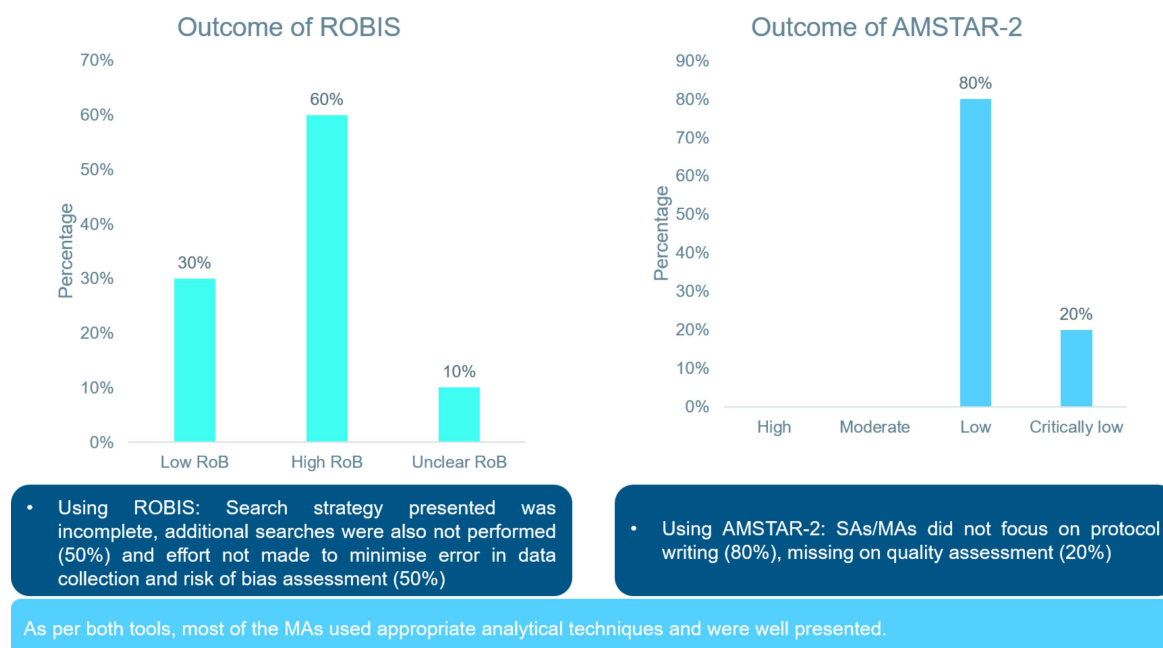


Figure 2: Quality assessment of SRs/MAs using AMSTAR-2 and ROBIS

DISCUSSION

- AMSTAR-2 focuses on broad appraisal of methodological quality, whereas ROBIS focuses on risk of bias. Nevertheless, both concepts are strongly related to each other¹³.
- Both AMSTAR-2 and ROBIS can be applied to SRs/MAs including both RCTs and non-RCTs². However, ROBIS can be applied to all types of SRs/MAs.
- There was a strong agreement when matching AMSTAR-2 items with ROBIS signaling questions and this can be considered as an explanatory analysis. It does not fully demonstrate concurrent validity as both tools cannot be applied at the same time. Therefore, the order in which the ratings were performed might have an influence on this finding².

CONCLUSION

- ROBIS is rigorous tool in assessing the methodological quality compared to AMSTAR-2.
- Results should be interpreted with caution and more studies will aid in drawing conclusions and grading the outcomes level of evidence further.

DISCLOSURES

Disclosure Statement and Disclaimer:

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ABSTRACT

OBJECTIVES: Systematic review (SRs) and meta-analysis (MAs) are considered as highest quality evidence and used for decision making. Assessment of quality of these SRs/MAs is important as poor reporting and flaws in methodological quality can impair the evidence level. The objective was to compare the most commonly used quality tools AMSTAR-2 and ROBIS and determine the methodological quality of SRs/MAs published in irritable bowel syndrome with constipation (IBS-C).

METHODS: Searches were performed on Medline and other supplementary sources to identify SRs/MAs between 2010-2020. All randomized controlled trials with no restriction on interventions and evaluating clinical outcomes were included. Two authors independently performed quality assessment; discrepancies were resolved by third reviewer. In both the tools, questions are well defined around SRs/MAs. SRs/MAs were rated as high, low and unclear risk of bias through ROBIS; and high, moderate, low and critically low, as per critical and non-critical weakness levels by AMSTAR-2.

RESULTS: A total of 10 relevant SRs/MAs (including 9 MAs) were identified from 148 publications. In AMSTAR-2 tool, most of the SAs/MAs were rated low (80%) and critically low (20%) indicating low quality based on the critical domains. However, ROBIS tool showed high risk of bias (60%) indicating low quality, while low and unclear risk of bias were observed to be 30% and 10%, respectively. According to AMSTAR-2, 80% of the SAs/MAs did not focus on protocol writing and 20% were missing on quality assessment reporting. In ROBIS, search strategy presented was incomplete in 50% of publications and additional searches were also not performed. As per both tools, most of the MAs used appropriate analytical techniques and were well presented.

CONCLUSIONS: ROBIS is rigorous tool in assessing the methodological quality compared to AMSTAR-2. Results should be interpreted with caution and more studies will aid in drawing conclusions and grading the outcomes level of evidence further.

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