

PRISMA-AI: A Proposal for Reporting Artificial Intelligence Use in Systematic Reviews and Meta-Analysis

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ABSTRACT

Scientific rigor, transparency, and reproducibility are the fundamental characteristics of good systematic reviews and meta-analyses (SRMA). These fundamentals make SRMA resource-intensive and time-consuming. To enhance efficiency and scalability, researchers are increasingly using artificial intelligence (AI) in literature screening, data extraction, and bias assessment. Current reporting guidelines, including Preferred Reporting Items for systematic reviews and meta-analyses (PRISMA)-2020, were designed for human-led workflows and lack explicit requirements for reporting AI use, creating risks of under-reporting and limited reproducibility. Although AI-focused extensions such as Consolidated Standards of Reporting Trials (CONSORT)-AI, Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT)-AI, and Transparent Reporting of a multivariable prediction model for Individual Prognosis or Diagnosis (TRIPOD-AI) are available in other domains, no equivalent framework is available for SRMA. Experts highlighted this gap in January 2023. We enrich their initial proposal by suggesting domains that can act as a conceptual framework for a PRISMA-AI extension. A potential list of items is also provided, including AI tools identification, algorithmic details, workflow role, human oversight, validation, transparency, reproducibility, versioning, ethics, and limitations. Proposed domains were also mapped with existing PRISMA to demonstrate alignment and potential involvement of AI at various stages of SRMA. Our opinion should be considered an early call to mitigate emerging challenges within current PRISMA reporting.

Keywords: Artificial Intelligence, Transparency in Reporting, Systematic Reviews, Reproducibility of Results, PRISMA-AI

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