



ACADEMIA EUROPAEA

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FROM KNOWLEDGE TO ACTION APPLICATION

Title: Developing Guidelines for the Safe and Effective Use of AI Systems in Systematic Reviews and Meta-analyses

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Category: From Science To Society

Problem (max. 50 words):

The integration of AI tools in systematic reviews and meta-analyses is accelerating, but lacks standardized guidelines. This leads to inconsistent methodologies, potential biases, and difficulties in reproducibility, undermining the credibility and reliability of synthesized evidence.

Unmet Need (max. 50 words):

There is no consensus-based framework to guide researchers on the responsible and effective use of AI in conducting systematic reviews and meta-analyses. As a result, AI-enhanced reviews may lack transparency, reproducibility, and alignment with established evidence standards like PRISMA and GRADE.

Project Description (max. 200 words):

This project aims to develop the first internationally applicable guideline for the safe and effective use of AI systems in systematic reviews and meta-analyses. Through a structured methodology, we will perform a systematic review of the literature on AI-assisted review processes—including automated study selection, data extraction, risk of bias assessment, and evidence synthesis.

We will assess the methodological quality of AI-integrated reviews, identify risks (e.g. automation bias, overfitting, loss of transparency), and evaluate performance metrics across use-cases.

The resulting guideline will address when and how AI may be used, requirements for validation and reporting, and how to integrate such tools within PRISMA and GRADE frameworks. We will publish the guideline in a peer-reviewed journal and develop a visual summary and implementation toolkit to promote adoption.

This project will safeguard evidence-based practices in the age of AI, ensuring transparency, reproducibility, and clinical relevance in future systematic reviews.

Hypothesis (25 words):

A guideline will improve the transparency, reproducibility, and reliability of systematic reviews that incorporate AI tools into their methodological workflow.

Implication for Practice (50 words):

The guideline will empower review authors, editors, and readers to assess and apply AI-supported systematic reviews with confidence. It will promote responsible integration of AI, reducing methodological variability and enhancing the credibility of evidence synthesis in healthcare, policymaking, and research translation.

Implication for Research (50 words):

This project will clarify methodological standards for future research using AI in evidence synthesis, identify key gaps (e.g., validation, auditability), and provide a foundation for further innovations. It will foster interdisciplinary collaboration between computer scientists, methodologists, and clinical researchers in shaping trustworthy AI-assisted research practices.