

THE ECOSYSTEM OF EVIDENCE

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Towards a Fit-for-Purpose Approach to Certainty and Confidence in Mixed Methods Evidence Synthesis

A scoping review

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GIMBE EVIDENCE FOR HEALTH

International Society for Evidence-Based Health Care

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Background

- Healthcare questions increasingly require multiple forms of evidence.
- Mixed methods reviews combine effects, experiences, context and implementation.
- We need transparent judgements about how trustworthy the findings are.
- Most frameworks assess quantitative OR qualitative evidence.



Where is the framework for the integrated finding?

Two traditions, two question

- Quantitative evidence ⟶ Certainty
  - *How confident are we that the estimated effect is close to the true effect?*
- Qualitative evidence ⟶ Confidence
  - *How confident are we that the review finding faithfully represents the phenomenon or experience?*
- Different evidence traditions ⟶ different conceptual foundations
- Both aim to answer the same question: *Can we trust this finding enough to inform decisions?*
- But neither was designed to assess the integrated finding

Aims: What did we set out to find?

1. What exists?

What systems, frameworks or approaches are available for assessing certainty or confidence in quantitative, qualitative and mixed methods evidence?



2. How do they assess it?

What criteria, standards or guiding principles are used to evaluate certainty or confidence?

Methods: How did we approach the review

- Scoping review using the JBI methodology and reported using PRISMA-ScR
- Three-step comprehensive search across: 7 bibliographic databases, key methodological/organisational websites, reference lists and expert consultation
- Included systems, frameworks and approaches for assessing certainty or confidence in quantitative evidence, qualitative evidence, mixed methods evidence
- Searches conducted March 2025 and updated November 2025

Results

- 42 publications, describing 11 frameworks for assessing certainty or confidence in evidence
- 7 quantitative frameworks: GRADE, AHRQ EPC, USPSTF, FORM, NESR, CINeMA and SORT
- 2 qualitative frameworks: ConQual and GRADE-CERQual
- 2 mixed methods frameworks: NASEM, and framework developed by Bray et al., 2020

GRADE: Grading of Recommendations Assessment, Development and Evaluation
AHRQ EPC: Agency for Healthcare Research and Quality Evidence-based Practice Center
USPSTF: U.S. Preventive Services Task Force
NESR: Nutrition Evidence Systematic Review
CINeMA: Confidence in Network Meta-Analysis
SORT: Strength of Recommendation Taxonomy

ConQual: Confidence in Qualitative research
CERQual: Confidence in the Evidence from Reviews of Qualitative research

NASEM: National Academies of Sciences, Engineering, and Medicine

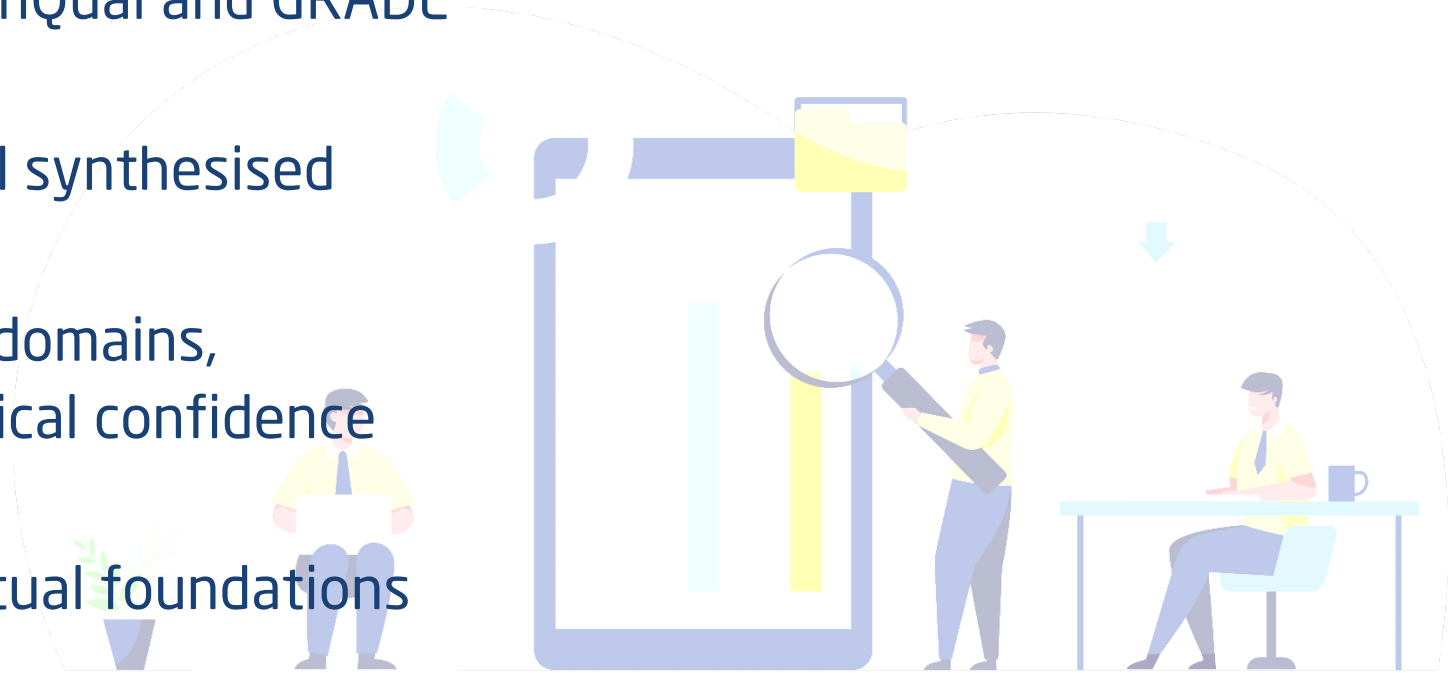
Quantitative frameworks: a well-established tradition

- 7 frameworks identified: GRADE, AHRQ EPC, USPSTF, FORM, NESR, CINeMA and SORT
- Assess the body of evidence supporting an outcome, conclusion or recommendation
- Common assessment domains include risk/quality of evidence, consistency, directness/applicability, precision
- Produce categorical ratings of certainty or strength
- But frameworks differ in what they assess and how judgements are made: evidence certainty vs recommendation strength; structured rules



Qualitative frameworks: assessing confidence

- Two frameworks identified: ConQual and GRADE CERQual
- Assess confidence in individual synthesised qualitative findings
- Both use: explicit assessment domains, structured judgement, categorical confidence ratings
- But they differ in their conceptual foundations and operationalisation
- Confidence reflects how well the finding is supported by the underlying data



Mixed methods frameworks: very different approach

NASEM / Calonge et al. (2022)	Bray et al. (2020)
Certainty-extension approach	Integration-first approach
Starts with an initial quantitative certainty rating	Starts with an integrated analytical concept
Additional evidence streams modify the initial rating	Quantitative + qualitative evidence are assessed together
Finding: intervention–outcome relationship	Finding: analytical concept
Structured, consensus-driven judgement	Holistic, judgement-based integration
Rating: High → Moderate → Low → Very low	Rating: Strong → Moderate → Low → Very low / inconsistent support

The challenge: what exactly are we judgin

- What exactly are we judging?

  An outcome, an integrated finding, a concept, or something else?

- How should different evidence streams contribute to the judgement?

  There is limited guidance on how quantitative and qualitative evidence should be weighted or combined.

- What if evidence streams serve different purposes?

  Qualitative evidence may corroborate, explain, extend or contextualise quantitative findings.

- Can we trust the resulting judgement?

  Emerging approaches have limited evidence of reliability, reproducibility and applicability across different review designs and questions.



Conclusions

What does this mean for mixed methods evidence?

- Certainty and confidence frameworks are well established for quantitative and qualitative evidence.
- Only two identified approaches explicitly address integrated mixed methods findings. These approaches take fundamentally different routes to judging trustworthiness.
- The key challenge is not simply combining ratings – it is determining what the integrated finding means and how the different evidence streams contribute to it.
- There is a need for clearer conceptual and methodological guidance for assessing the trustworthiness of integrated mixed methods findings.