02-06-2025

Methods for advancing decision-making and scientific research: Mapping Reviews and Evidence Gap Maps

Speakers: Yanfei Li; Liping Guo; Nina Dela Cruz
Moderators: Kehu Yang; Meixuan Li

Center for Evidence-based Social Science
Lanzhou University

www.glocalevalweek.org

Methods for advancing decision-making and scientific research: Mapping Reviews and Evidence Gap Maps

JUNE 2
3 PM UTC+8

The main objective of this webinar is to introduce decision-makers and researchers to a new approach: Mapping Reviews and Evidence Gap Maps. This method is a form of evidence synthesis that aims to identify the current state of research and gaps within broader research questions, thereby supporting decision-making and scientific research.

Yanfei Li
Lanzhou University

Mapping Reviews: The Concept and Conducting Steps & How to write a high-quality mapping review

Liping Guo
Lanzhou University

Case 1: Treatment for Depression Among Adults: An Evidence and Gap Map of Systematic Reviews

Nina Dela Cruz
Lanzhou University

Case 2: Map of Evidence and Gap Maps relating to Sustainable Development Goals

Moderator: Kehu Yang
Director of Center for Evidence-based Social Science of Lanzhou University

Facilitator: Meixuan Li
Researcher of Center for Evidence-based Social Science of Lanzhou University

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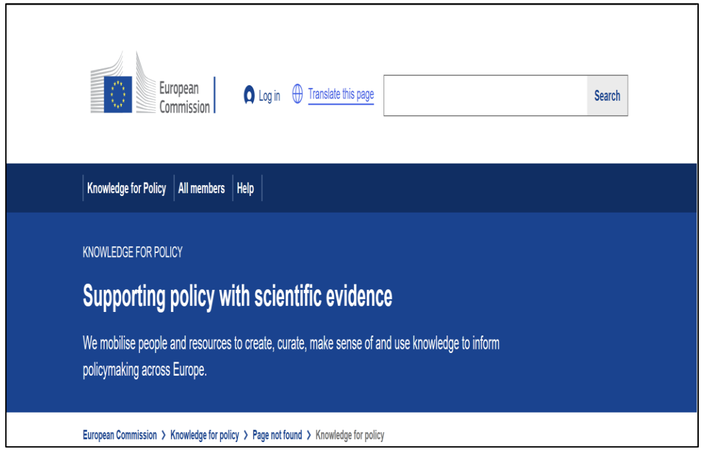
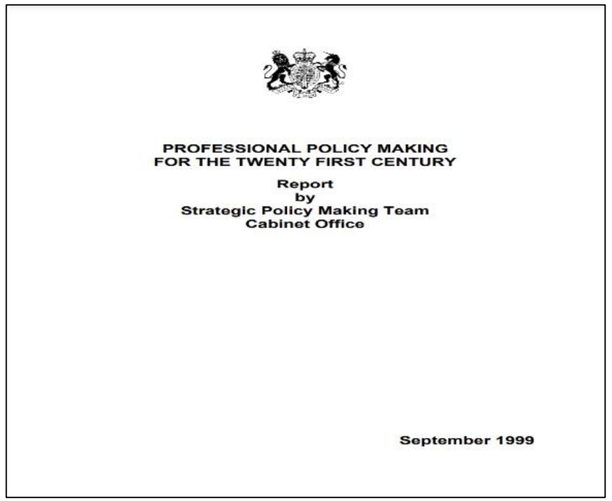
02-06-2025

PART ONE: Mapping Reviews: The Concept and Conducting Steps

Yanfei Li
PRITEM working group
Center for Evidence-based Social Science
Lanzhou University

Evidence is emerging as a key driver of informed decisions



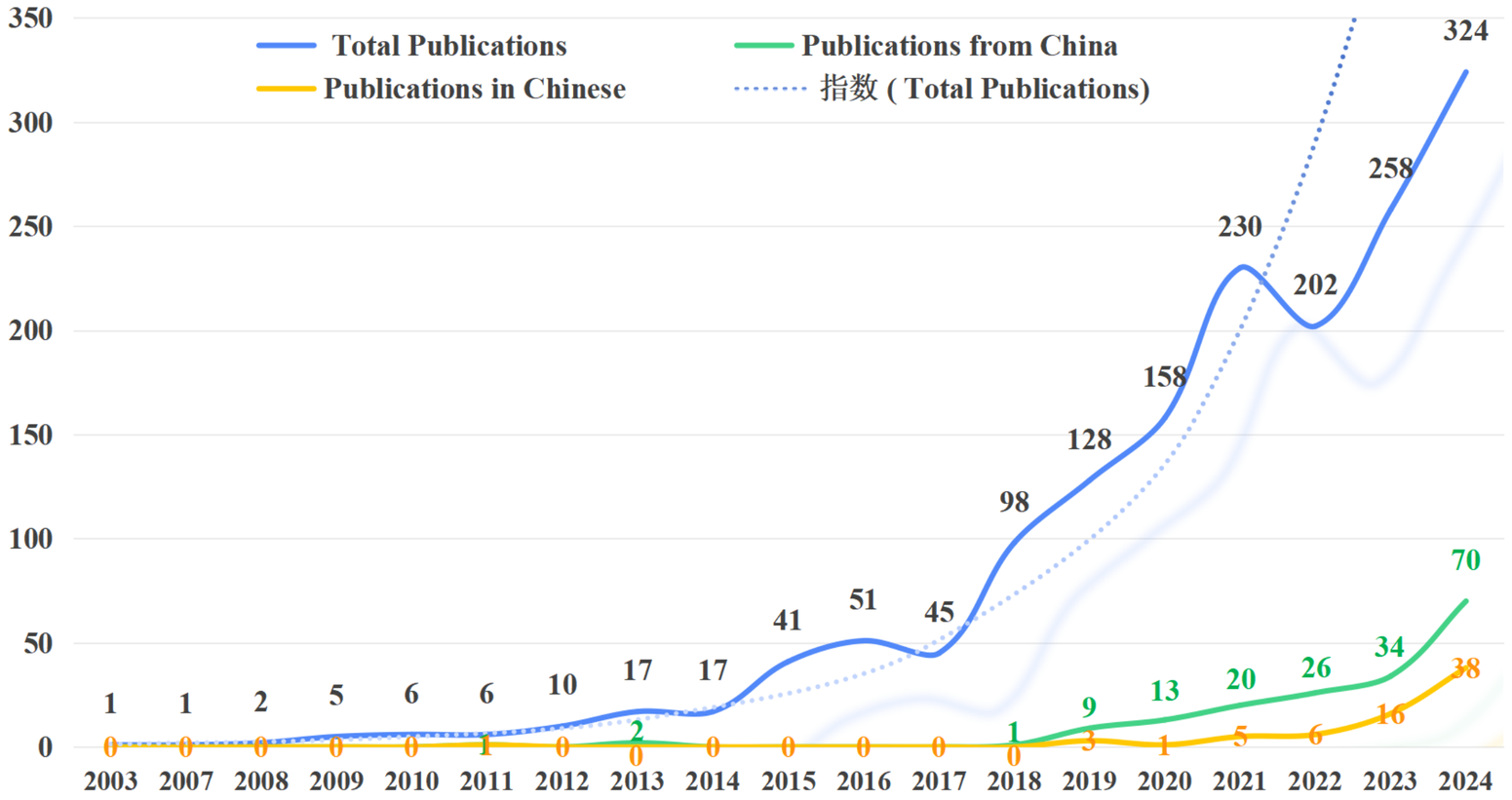


What is mapping review?

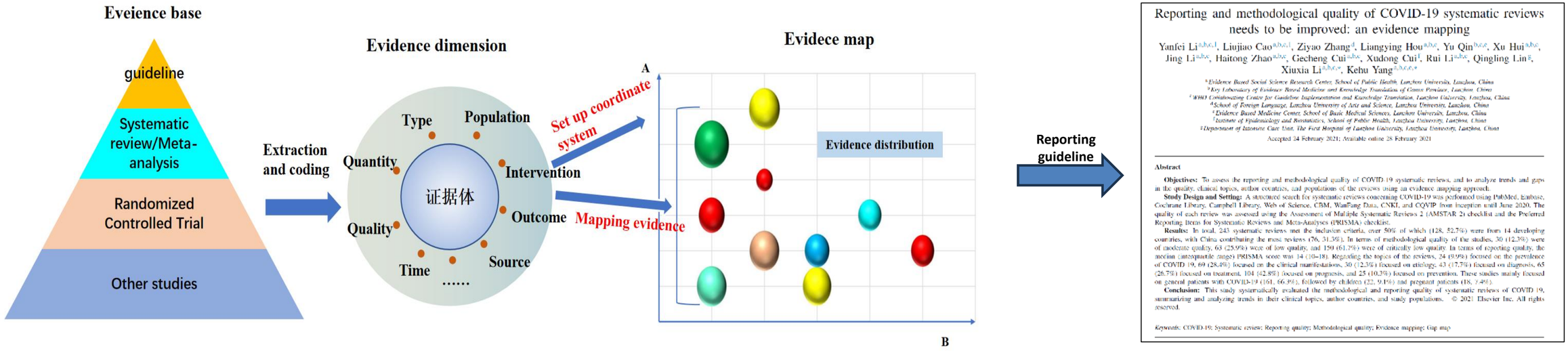
—— "**Show what evidence is there**"

How can we ensure that evidence is accessible and usable for decision-making and research?

Rise of mapping review in international development



Principles and value of mapping review



Reporting and methodological quality of COVID-19 systematic reviews needs to be improved: an evidence mapping

Yanfei Li[a,b,c,l], Liujiao Cao[a,b,c,l], Ziyao Zhang[d], Liangying Hou[a,b,c], Yu Qin[b,c,e], Xu Hui[a,b,c], Jing Li[a,b,c], Haitong Zhao[a,b,c], Gecheng Cui[a,b,c], Xudong Cui[f], Rui Li[a,b,c], Qingling Lin[g], Xiuxia Li[a,b,c,*], Kehu Yang[a,b,c,e,*]

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[e] Evidence Based Medicine Center, School of Basic Medical Sciences, Lanzhou University, Lanzhou, China
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Accepted 24 February 2021; Available online 28 February 2021

Abstract

Objectives: To assess the reporting and methodological quality of COVID-19 systematic reviews, and to analyze trends and gaps in the quality, clinical topics, author countries, and populations of the reviews using an evidence mapping approach.

Study Design and Setting: A structured search for systematic reviews concerning COVID-19 was performed using PubMed, Embase, Cochrane Library, Campbell Library, Web of Science, CBM, WanFang Data, CNKI, and CQVIP from inception until June 2020. The quality of each review was assessed using the Assessment of Multiple Systematic Reviews 2 (AMSTAR 2) checklist and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist.

Results: In total, 243 systematic reviews met the inclusion criteria, over 50% of which (128, 52.7%) were from 14 developing countries, with China contributing the most reviews (76, 31.3%). In terms of methodological quality of the studies, 30 (12.3%) were of moderate quality, 63 (25.9%) were of low quality, and 150 (61.7%) were of critically low quality. In terms of reporting quality, the median (interquartile range) PRISMA score was 14 (10–18). Regarding the topics of the reviews, 24 (9.9%) focused on the prevalence of COVID-19, 69 (28.4%) focused on the clinical manifestations, 30 (12.3%) focused on etiology, 43 (17.7%) focused on diagnosis, 65 (26.7%) focused on treatment, 104 (42.8%) focused on prognosis, and 25 (10.3%) focused on prevention. These studies mainly focused on general patients with COVID-19 (161, 66.3%), followed by children (22, 9.1%) and pregnant patients (18, 7.4%).

Conclusion: This study systematically evaluated the methodological and reporting quality of systematic reviews of COVID-19, summarizing and analyzing trends in their clinical topics, author countries, and study populations.

Keywords: COVID-19; Systematic review; Reporting quality; Methodological quality; Evidence mapping; Gap map

Broad evidence, including policy documents, programs, and research studies, was systematically collected based on the research question

Build a scientific and consensus-based coding tool

- **Build an evidence repository**
- **Present existing evidence in detail**
- **Improve access to high-quality evidence**

- **Report the research process**
- **Structurally report existing high-quality evidence and policy recommendations**
- **Structurally report evidence gaps and future research priorities**

Interest-holder involvement

Mapping review offers evidence-informed guidance for decision-making and research prioritization

What is mapping review?

RESEARCH METHODS 2003

THE EVIDENCE BASE FOR COMPLEMENTARY AND ALTERNATIVE MEDICINE: METHODS OF *EVIDENCE MAPPING* WITH APPLICATION TO CAM

David L. Katz, MD, MPH, FACPM, Director, Yale Prevention Research Center, Department of Epidemiology and Public Health, Yale University School of Medicine. **Anna-leila Williams**, PA-C, MPH, **Christine Girard**, ND, **Jonathan Goodman**, ND, **Jonathan Goodman**, ND, **Beth Comerford**, MS, **Alyse Behrman**, MPH, Yale Prevention Research Center, Yale University School of Medicine. **Michael B. Bracken**, PhD, Department of Epidemiology and Public Health, Ya

Journal of Clinical Epidemiology

Journal of Clinical Epidemiology 79 (2016) 120–129

Evidence & Gap Maps: A tool for promoting evidence informed policy and strategic research agendas

Birte Snilstveit[a,*], Martina Vojtkova[b], Ami Bhavsar[a], Jennifer Stevenson[c], Marie Gaarder[c]

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Accepted 6 May 2016; Published online 4 July 2016

Abstract

A range of organizations are engaged in the production of evidence on the effects of health, social, and economic development programs on human welfare outcomes. However, evidence is often scattered around different databases, web sites, and the gray literature and is often

Haddaway *et al. Environ Evid (2018) 7:7*
https://doi.org/10.1186/s13750-018-0121-7

Environmental Evidence

METHODOLOGY Open Access

ROSES RepOrting standards for Systematic Evidence Syntheses: *pro forma*, flow-diagram and descriptive summary of the plan and conduct of environmental systematic reviews and systematic maps

Neal R. Haddaway[1†], Biljana Macura[1†], Paul Whaley[2] and Andrew S. Pullin[3]

Abstract

DOI: 10.1002/cl2.1125

METHODS RESEARCH PAPERS

Campbell Collaboration WILEY

Guidance for producing a Campbell evidence and gap map

Howard White[1] | Bianca Albers[2] | Marie Gaarder[3] | Hege Kornør[4] | Julia Littell[5] | Zack Marshall[6] | Christine Mathew[7] | Terri Pigott[8] | Birte Snilstveit[9] | Hugh Waddington[10] | Vivian Welch[11]

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Campbell *et al. Systematic Reviews* (2023) 12:45
https://doi.org/10.1186/s13643-023-02178-5

Systematic Reviews

METHODOLOGY Open Access

Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): the same but different— the "Big Picture" review family

Fiona Campbell[1*], Andrea C. Tricco[2], Zachary Munn[3], Danielle Pollock[3], Ashrita Saran[4], Anthea Sutton[5], Howard White[6] and Hanan Khalil[7]

Abstract

Scoping reviews, mapping reviews, and evidence and gap maps are evidence synthesis methodologies that address broad research questions, aiming to describe a bigger picture rather than address a specific question about intervention effectiveness. They are being increasingly used to support a range of purposes including guiding research priorities and decision making. There is however a confusing array of terminology used to describe these different approaches. In this commentary, we aim to describe where there are differences in terminology and where this equates to differences in meaning. We demonstrate the different theoretical routes that underpin these differences. We suggest ways in which the approaches of scoping and mapping reviews may differ in order to guide consistency in reporting and method. We propose that mapping and scoping reviews and evidence and gap maps have similarities that unite them as a group but also have unique differences. Understanding these similarities and differences is important for informing the development of methods used to undertake and report these types of evidence synthesis.

Introduction

Evidence synthesis(defined broadly as the rigorous collation, evaluation and analysis of literature, studies, and reports) is increasingly viewed as critical to inform decision making in policy and practice. Over the past three decades, as various methods of evidence synthesis have emerged and evolved, the systems and labels used to categorize different review types have proliferated. A recent catalog of evidence synthesis approaches and terms identified 48 distinct review types [1]. Moher et al. (2015) [2], describes them as a "family" of evidence synthesis products that have arisen in response to policymakers and other stakeholders needs for diverse forms of information. This growth reflects the increased value placed on evidence synthesis to inform decision making, and we now see evidence synthesis used to address a broader range of research questions beyond effectiveness, along with tailored approaches (in terms of methods and

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BMC

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REVIEW

Research Synthesis Methods WILEY

Advancing the methodology of mapping reviews: A scoping review

Hanan Khalil[1] | Fiona Campbell[2] | Katrina Danial[3] | Danielle Pollock[4] | Zachary Munn[4] | Vivian Welsh[5,6] | Ashrita Saran[7] | Dimi Hoppe[1] | Andrea C. Tricco[8,9,10]

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[2]Population Health Sciences Institute, Newcastle University, Newcastle upon Tyne, UK
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Tier 2 Canada Research Chair in Knowledge Synthesis; NIHRC Investigator, Grant/Award Number: APP1195676

Abstract

This scoping review aims to identify and systematically review published mapping reviews to assess their commonality and heterogeneity and determine whether additional efforts should be made to standardise methodology and reporting. The following databases were searched; Ovid MEDLINE, Embase, CINAHL, PsycINFO, Campbell collaboration database, Social Science Abstracts, Library and Information Science Abstracts (LISA). Following a pilot-test on a random sample of 20 citations included within title and abstracts, two team members independently completed all screening. Ten articles were piloted at full-text screening, and then each citation was reviewed independently by two team members. Discrepancies at both stages were resolved through discussion. Following a pilot-test on a random sample of five relevant full-text articles, one team member abstracted all the relevant data. Uncertainties in the data abstraction were resolved by another team member. A total of 335 articles were eligible for this scoping review and subsequently included. There was an increasing growth in the number of published mapping reviews over the years from 5 in 2010 to 73 in 2021. Moreover, there was a significant variability in reporting the included mapping reviews including their

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doi:10.1017/rsm.2024.9

Research Synthesis Methods

RESEARCH ARTICLE

Key concepts and reporting recommendations for mapping reviews: A scoping review of 68 guidance and methodological studies

Yanfei Li[1,2], Elizabeth Ghogomu[2,3], Xu Hui[1], E. Fenfen[4], Fiona Campbell[5], Hanan Khalil[6], Xiuxia Li[7], Marie Gaarder[8], Promise M. Nduku[9], Howard White[1,10], Liangying Hou[1,11], Nan Chen[12], Shenggang Xu[7], Ning Ma[1], Xiaoye Hu[7], Xian Liu[7], Vivian Welch[2,3,†] and Kehu Yang[1,†]

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[6]La Trobe University, School of Psychology and Public Health, Department of Public Health, Melbourne, Australia
[7]Center for Evidence-Based Social Science/Center for Health Technology Assessment, School of Public Health, Lanzhou University, Lanzhou, China
[8]International Initiative for Impact Evaluation (3ie), London, UK
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[10]Evaluation and Evidence Synthesis, Global Development Network, New Delhi, India
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Corresponding author: Kehu Yang; Email: yangkh-ebm@lzu.edu.cn

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Keywords: evidence mapping; mapping reviews; methodology; reporting; scoping reviews

Abstract

Mapping reviews (MRs) are crucial for identifying research gaps and enhancing evidence utilization. Despite their increasing use in health and social sciences, inconsistencies persist in both their conceptualization and reporting. This study aims to clarify the conceptual framework and gather reporting items from existing guidance and methodological studies. A comprehensive search was conducted across nine databases and 11 institutional websites, including documents up to January 2024. A total of 68 documents were included, addressing 24 MR terms and 55 definitions, with 39 documents discussing distinctions and overlaps among these terms. From the documents included, 28 reporting items were identified, covering all the steps of the process. Seven documents mentioned reporting on the title, four on the abstract, and 14 on the background. Ten methods-related items appeared in 56 documents, with the median number of documents supporting each item being 34 (interquartile range [IQR]: 27, 39). Four results-related items were mentioned in 18 documents (median: 14.5, IQR: 11.5, 16), and four discussion-related items appeared in 25 documents (median: 5.5, IQR: 3, 13). There was very little guidance about reporting conclusions, acknowledgments, author contributions, declarations of interest, and funding sources. This study proposes a draft 28-item reporting checklist for MRs and has identified terminologies and concepts used to describe MRs. These findings will first be used to inform a Delphi consensus process to develop reporting

†Vivian Welch and Kehu Yang are senior authors.

Since the emergence of mapping review in the early 2000s, its methodology has been evolving, and standardization is gradually taking shape

History of Mapping Review

2000 — Introduced by the Yale Prevention Research Center in 2000 as “evidence mapping”

2003 — Methodology for systematic mapping developed by EPPI

2005 — “Evidence Based Policing Matrix” developed by CEBCP

2006 — Methodology of EPPI was adopted by SCIE

2007 — Global Evidence Mapping Initiative (GEMI)

2010 — The first 3ie “Evidence Gap Map” was produced which focused on the health and nutritional impact of agricultural intervention

2011 — The team at Lanzhou University was the first to introduce the concept of mapping review into China.

2016 — The Collaboration for Environmental Evidence (CEE) introduced ROSES

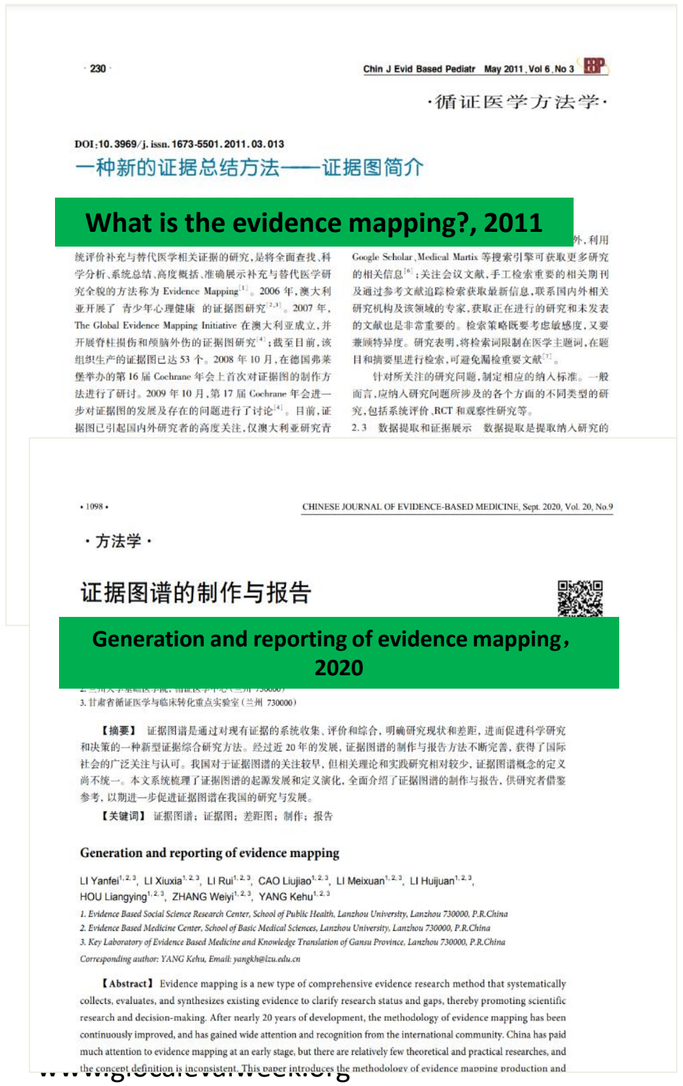
2016 — South Africa’s Department of Planning, Monitoring and Evaluation introduced “Policy-Relevant Evidence Maps”

2017 — Campbell has applied the EGMs to range of research questions

2020-2025 — The team at Lanzhou University proposed a more systematic terminology and process for mapping reviews

2022-2025 — PRITEM has worked on core concepts of mapping reviews, including terminology and definitions, and is currently developing reporting standards

Contributions from the Lanzhou University Team



230 Chin J Evid Based Pediatr May 2011, Vol 6, No 3

·循证医学方法学·

DOI:10.3969/j.issn.1673-5501.2011.03.013

一种新的证据总结方法——证据图简介

What is the evidence mapping?, 2011

·1098· CHINESE JOURNAL OF EVIDENCE-BASED MEDICINE, Sept. 2020, Vol. 20, No.9

·方法学·

证据图谱的制作与报告

Generation and reporting of evidence mapping, 2020

【摘要】 证据图谱是通过对现有证据的系统收集、评价和综合，明确研究现状和差距，进而促进科学研究和决策的一种新型证据综合研究方法。经过近 20 年的发展，证据图谱的制作与报告方法不断完善，获得了国际社会的广泛关注与认可。我国对于证据图谱的关注较早，但相关理论和实践研究相对较少，证据图谱概念的定义尚不统一。本文系统梳理了证据图谱的起源发展和定义演化，全面介绍了证据图谱的制作与报告，供研究者借鉴参考，以期进一步促进证据图谱在我国的研究与发展。

【关键词】 证据图谱；证据图；差距图；制作；报告

Generation and reporting of evidence mapping

LI Yanfei[1,2,3], LI Xiuxia[1,2,3], LI Rui[1,2,3], CAO Liujiao[1,2,3], LI Meixuan[1,2,3], LI Huijuan[1,2,3], HOU Liangying[1,2,3], ZHANG Weiyi[1,2,3], YANG Kehu[1,2,3]

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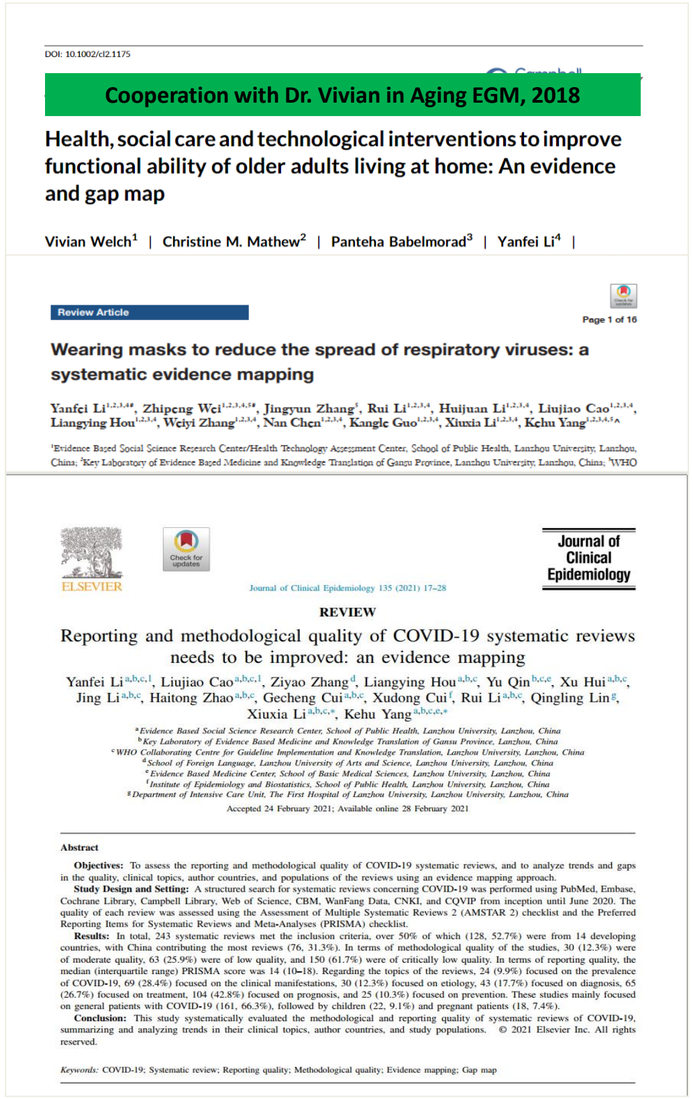
Corresponding author: YANG Kehu, Email: yangkh@lzu.edu.cn

【Abstract】 Evidence mapping is a new type of comprehensive evidence research method that systematically collects, evaluates, and synthesizes existing evidence to clarify research status and gaps, thereby promoting scientific research and decision-making. After nearly 20 years of development, the methodology of evidence mapping has been continuously improved, and has gained wide attention and recognition from the international community. China has paid much attention to evidence mapping at an early stage, but there are relatively few theoretical and practical researches, and the concept definition is inconsistent. This paper introduces the methodology of evidence mapping production and



DOI: 10.1002/cl2.1175

Cooperation with Dr. Vivian in Aging EGM, 2018

Health, social care and technological interventions to improve functional ability of older adults living at home: An evidence and gap map

Vivian Welch[1] | Christine M. Mathew[2] | Panteha Babelmorad[3] | Yanfei Li[4] |

Review Article

Page 1 of 16

Wearing masks to reduce the spread of respiratory viruses: a systematic evidence mapping

Yanfei Li[1,2,3,4#], Zhipeng Wei[1,2,3,4,5#], Jingyun Zhang[1], Rui Li[1,2,3,4], Huijuan Li[1,2,3,4], Liujiao Cao[1,2,3,4], Liangying Hou[1,2,3,4], Weiyi Zhang[1,2,3,4], Nan Chen[1,2,3,4], Kangle Guo[1,2,3,4], Xiuxia Li[1,2,3,4], Kehu Yang[1,2,3,4,5^]

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ELSEVIER Check for updates Journal of Clinical Epidemiology 135 (2021) 17–28 Journal of Clinical Epidemiology

REVIEW

Reporting and methodological quality of COVID-19 systematic reviews needs to be improved: an evidence mapping

Yanfei Li[a,b,c,1], Liujiao Cao[a,b,c,1], Ziyao Zhang[d], Liangying Hou[a,b,c], Yu Qin[b,c,e], Xu Hui[a,b,c], Jing Li[a,b,c], Haitong Zhao[a,b,c], Gecheng Cui[a,b,c], Xudong Cui[f], Rui Li[a,b,c], Qingling Lin[g], Xiuxia Li[a,b,c,*], Kehu Yang[a,b,c,e,*]

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Accepted 24 February 2021; Available online 28 February 2021

Abstract

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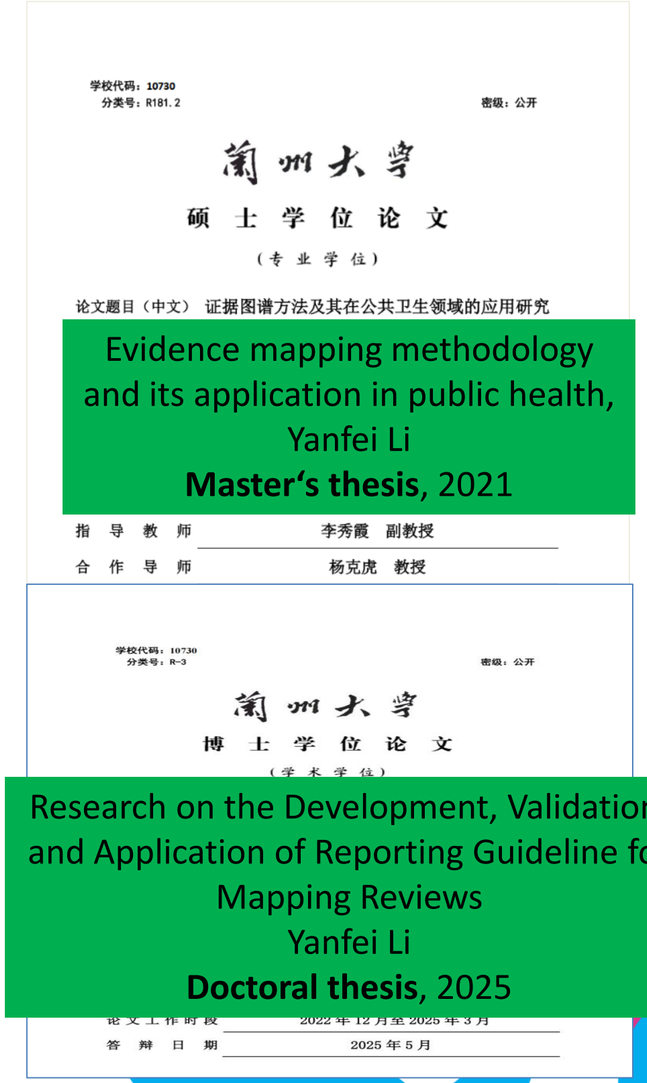


学校代码：10730
分类号：R181.2 密级：公开

兰州大学

硕士学位论文

（专业学位）

论文题目（中文） 证据图谱方法及其在公共卫生领域的应用研究

Evidence mapping methodology and its application in public health, Yanfei Li
Master's thesis, 2021

指导教师 李秀霞 副教授
合作导师 杨克虎 教授

学校代码：10730
分类号：R-3 密级：公开

兰州大学

博士学位论文

（学术学位）

Research on the Development, Validation, and Application of Reporting Guideline for Mapping Reviews
Yanfei Li
Doctoral thesis, 2025

论文工作时段 2022年12月至2025年3月
答辩日期 2025年5月

History of Mapping Review

2000 — Introduced by the Yale Prevention Research Center in 2000 as “evidence mapping”

2003 — Methodology for systematic mapping developed by EPPI

2005 — “Evidence Based Policing Matrix” developed by CEBCP

2006 — Methodology of EPPI was adopted by SCIE

2007 — Global Evidence Mapping Initiative (GEMI)

2010 — The first 3ie “Evidence Gap Map” was produced which focused on the health and nutritional impact of agricultural intervention

2011 — The team at Lanzhou University was the first to introduce the concept of mapping review into China.

2016 — The Collaboration for Environmental Evidence (CEE) introduced ROSES

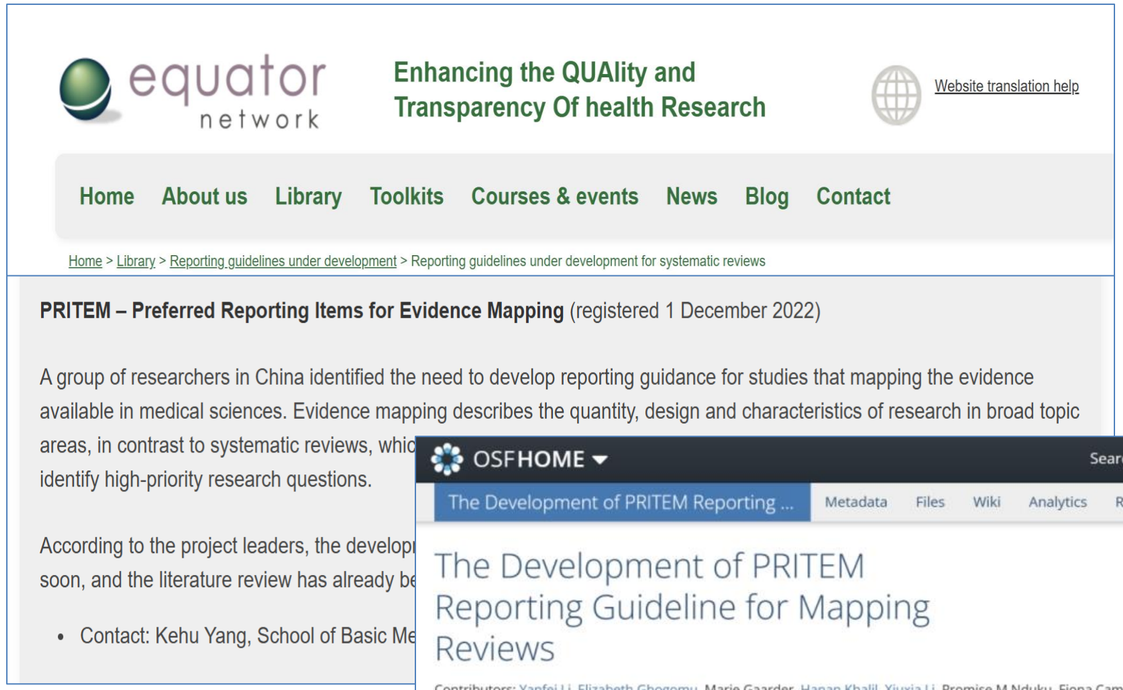
2016 — South Africa’s Department of Planning, Monitoring and Evaluation introduced “Policy-Relevant Evidence Maps”

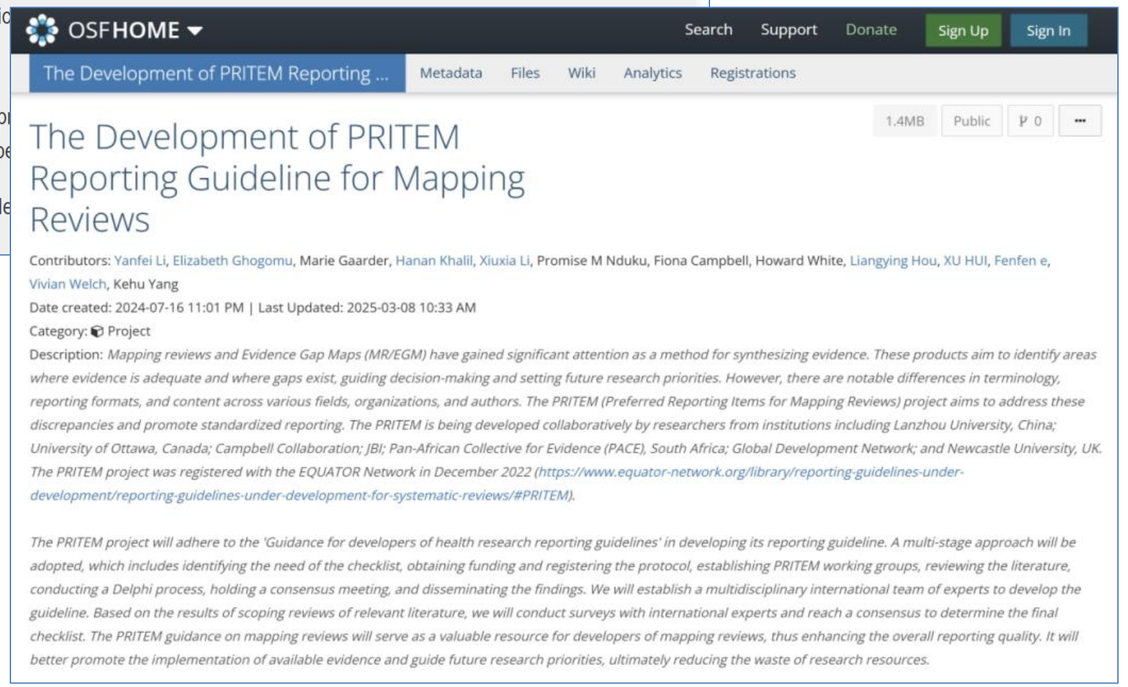
2017 — Campbell has applied the EGMs to range of research questions

2020-2025 — Lanzhou University proposed a more systematic terminology and process for mapping reviews

2022-2025 — PRITEM has worked on core concepts of mapping reviews, including terminology and definitions, and is currently developing reporting standards

PRITEM Working Group





PRITEM Working Group

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Led by a 6-member advisory board :

- Marie Gaarder, International Initiative for Impact Evaluation (3ie)
- Howard White, Lanzhou University
- Hanan Khalil, La Trobe University
- Fiona Campbell, Newcastle University
- Promise M. Nduku, Pan-African Collective for Evidence (PACE)
- Xiuxia Li, Lanzhou University

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Preliminary Achievements of the PRITEM Working Group

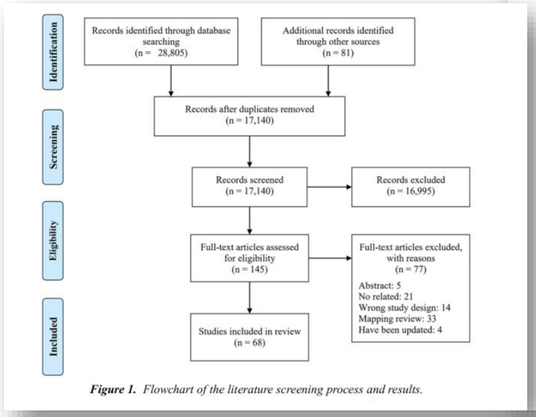
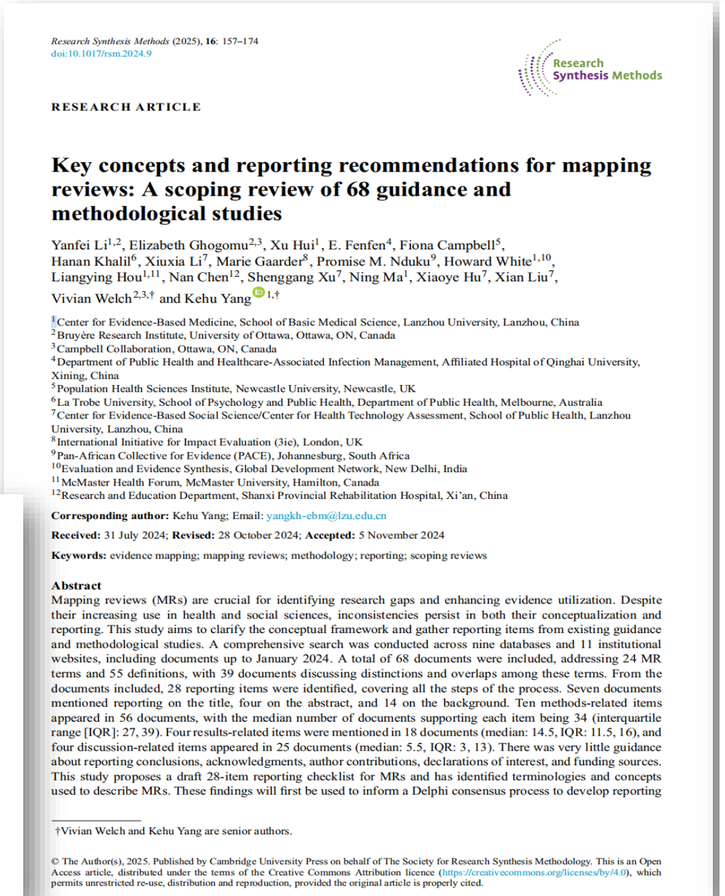


Figure 1. Flowchart of the literature screening process and results.



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Research Synthesis Methods

RESEARCH ARTICLE

Key concepts and reporting recommendations for mapping reviews: A scoping review of 68 guidance and methodological studies

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Keywords: evidence mapping; mapping reviews; methodology; reporting; scoping reviews

Abstract

Mapping reviews (MRs) are crucial for identifying research gaps and enhancing evidence utilization. Despite their increasing use in health and social sciences, inconsistencies persist in both their conceptualization and reporting. This study aims to clarify the conceptual framework and gather reporting items from existing guidance and methodological studies. A comprehensive search was conducted across nine databases and 11 institutional websites, including documents up to January 2024. A total of 68 documents were included, addressing 24 MR terms and 55 definitions, with 39 documents discussing distinctions and overlaps among these terms. From the documents included, 28 reporting items were identified, covering all the steps of the process. Seven documents mentioned reporting on the title, four on the abstract, and 14 on the background. Ten methods-related items appeared in 56 documents, with the median number of documents supporting each item being 34 (interquartile range [IQR]: 27, 39). Four results-related items were mentioned in 18 documents (median: 14.5, IQR: 11.5, 16), and four discussion-related items appeared in 25 documents (median: 5.5, IQR: 3, 13). There was very little guidance about reporting conclusions, acknowledgments, author contributions, declarations of interest, and funding sources. This study proposes a draft 28-item reporting checklist for MRs and has identified terminologies and concepts used to describe MRs. These findings will first be used to inform a Delphi consensus process to develop reporting

†Vivian Welch and Kehu Yang are senior authors.

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Journal of Clinical Epidemiology

ORIGINAL RESEARCH

Meta-epidemiology and reporting characteristics of mapping reviews: a scoping review

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Abstract

Objectives: To investigate the meta-epidemiology and reporting characteristics of mapping reviews.

Study Design and Setting: We conducted a scoping review of a sample of recent mapping reviews (2022–2023) by searching nine electronic databases and eleven institutional websites up to January 2024. A 28-item reporting checklist, developed by our team and based on existing guidance and methodological studies of mapping reviews, was employed to assess reporting characteristics. The median (interquartile range [IQR]) was calculated based on the number of studies that reported each specified reporting item.

Results: A total of 451 mapping reviews were included, with 197 published in 2022 and 254 in 2023. The USA published the most studies (80, 17.74%) and the University of London being the most active institution (23, 5.10%). Barbosa JLV from Universidade do Vale do Rio dos Sinos authored the highest number of studies, with significant collaborations primarily between Chinese and Canadian teams. The studies spanned 11 fields within health and social sciences, Environmental Evidence and Campbell Systematic Reviews published the most studies. A random sample of 200 studies was further assessed for reporting characteristics, where items such as title, author, abstract, background, conclusions, acknowledgments, contributions of authors, declarations of interest, and sources of support were reported by over 50% of the studies. Median number of studies reporting items related to methods, results, and discussion was 89.5 (IQR: 45.5, 165.25), 94.0 (IQR: 61.5, 183.5), and 164 (IQR: 124.0, 179.25), respectively. Items such as the definition of stakeholders, registration information, deviations from protocol, strategy for adequacy and priority setting, and plans for map updates were reported by less than 20% of the studies.

Conclusion: Mapping reviews receive contributions from authors across various countries and institutions. However, collaboration between teams is limited, and the reporting of included studies, especially in the methods and results sections, needs improvement to better emphasize their unique attributes and functions compared to other methods.

Keywords: Mapping reviews; Evidence and gap maps; Meta-epidemiology; PRITEM; Reporting; Scoping review

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[1] Vivian Welch and Kehu Yang are senior authors.

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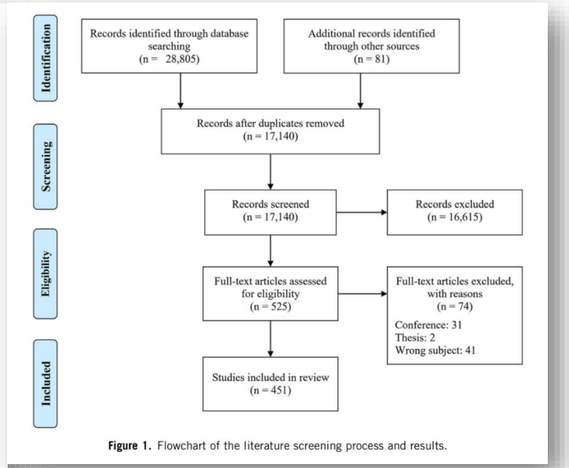


Figure 1. Flowchart of the literature screening process and results.

Definitions and Terminology of Mapping Review

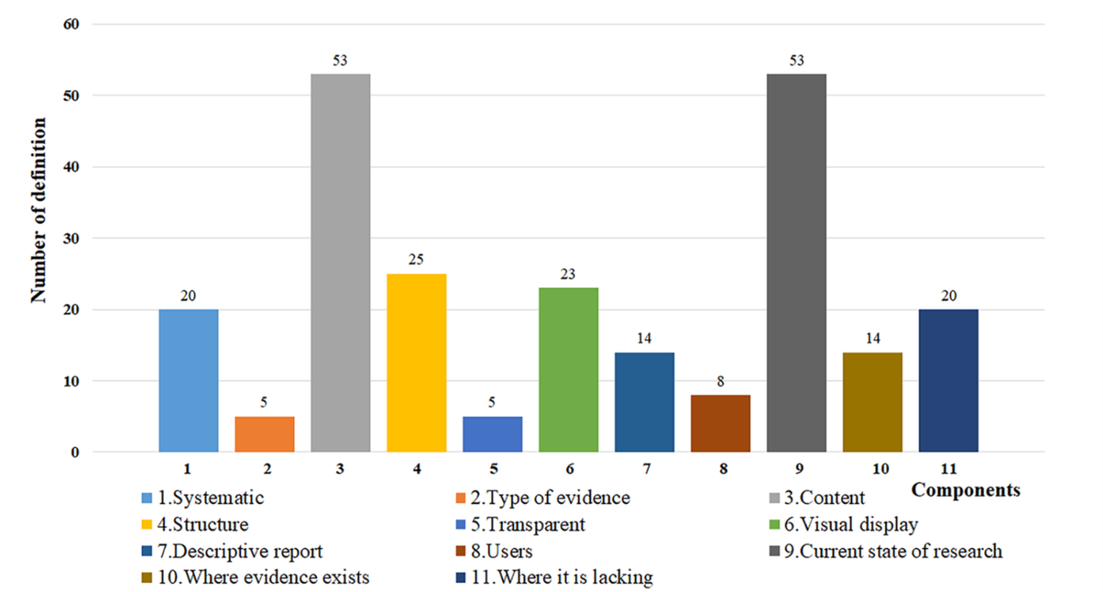


Figure 2. *Analysis of 55 definitions across 11 components.*

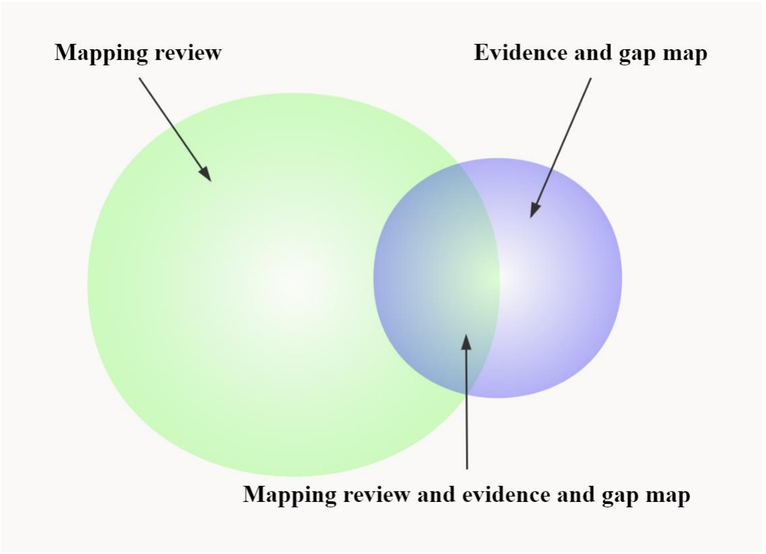
Table 2. *Terminologies used in included documents and corresponding research fields.*

No.	Terms	*N*	Research field (*n*)
1	Evidence map	23	Health science (11), NR (8), social welfare (1), others-public health (1), others-public sector (1), international development (1)
2	Evidence mapping	19	Health science (10), NR (6), others-public health (2), climate solutions (1)
3	Systematic map	17	Climate solutions (8), social welfare (3), NR (3), health science (1), others-public sector (1), international development (1)
4	Evidence and gap map	15	NR (7), others-social science (3), climate solutions (1), others-public health (1), others-social policy (1), education (1), international development (1)
5	Mapping review	7	NR (6), health science (1)
6	Systematic mapping	5	Climate solutions (3), social welfare (2)
7	Mapping study	4	Others-software engineering (1), NR (3)
8	Systematic mapping study	4	Others-software engineering (4)
9	Map of maps	3	NR (1), others-social science (1), others-public health (1)
10	Systematic evidence map	3	Climate solutions (3)
11	Systematic evidence mapping	3	Climate solutions (3)
12	Focused mapping review and synthesis	2	Others-social science (1), NR (1)
13	Mega-map	2	Others-social science (1), others-public health (1)
14	Systematic mapping review	2	NR (2)
15	3ie map	1	Others-public sector (1)
16	Evidence review map	1	Climate solutions (1)
17	Evidence review mapping	1	Climate solutions (1)
18	Evidence/gaps mapping reviews	1	NR (1)
19	Evidence-based policing matrix	1	Crime and Justice (1)
20	Gap map	1	NR (1)
21	Glaserian systematic mapping study	1	Others-software engineering (1)
22	Mapping research	1	NR (1)
23	Rapid evidence mapping	1	Health science (1)
24	Systematic literature mapping	1	Social welfare (1)

Note: NR, not reported indicates that there are no restrictions on the research field for entries in this table.

Definitions and Terminology of Mapping Review

- "Mapping review" updates and replaces earlier terms such as "evidence mapping" and others including "evidence/gaps mapping reviews," "mapping research/study". It encompasses terms used in specific fields like "systematic map" for environmental science, "systematic mapping study" for software engineering.
- The term "Evidence map" is consistently used within mapping reviews in various forms such as tables, charts, or databases.
- An EGM is a special interactive form of an evidence map that can be used within mapping reviews, other research methodologies, or as a standalone tool.
- **The systematic definition and objective of mapping reviews are as follows:** Mapping reviews are a method of evidence synthesis that systematically collects, assesses, and synthesizes existing evidence to clarify the current state and gaps in research, thereby fostering decision-making and further research. **It aims to** identify areas with adequate evidence to support decision-making and highlight areas lacking evidence to guide primary research and evidence synthesis.

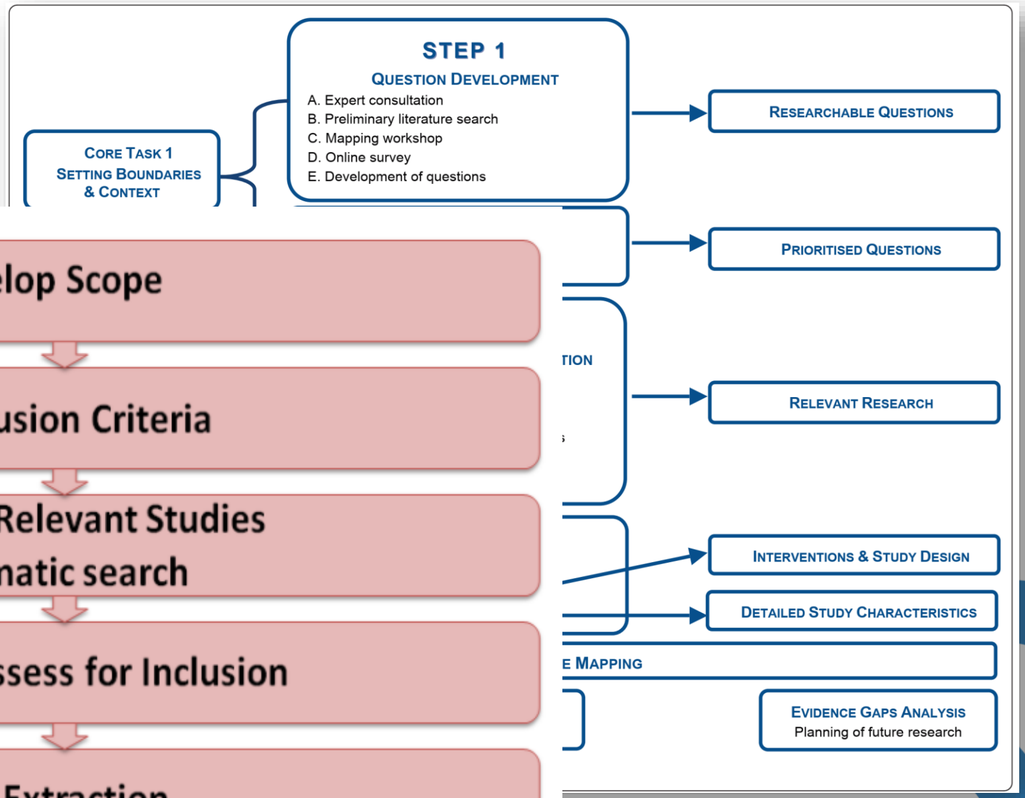


Steps for conducting a mapping review

TABLE 1 Steps in the Process of Evidence Mapping

Step	Task	Description
1	Identify and convene the appropriate experts	Groups and/or individuals with particular interest, insight, and expertise in that field are assembled to help define the appropriate scope and focus of the project.
2	Apply expert opinion to define the region of evidence to be mapped	This step requires consideration of the various ways of interpreting a broad field, such as CAM, in order to define the general boundaries of evidence of interest. Establishing the appropriate boundaries for the map begins with input from an appropriately representa-
3	Establish the coordinates to be used for positioning within the map	Just as longitud
4	Define the map boundaries in terms of pertinent coordinates	A final consens
5	Search the relevant "terrain"	Prevailing meth
6	Draw the map	Evidence retriev
7	Study the map to identify any needed revisions and to establish priorities for detailed assessments	The map is circ
8	Perform detailed assessments in priority areas	Clusters of evid
9	Generate reports summarizing the "lay of the land"	Summaries ind

The 9-step process by Yale



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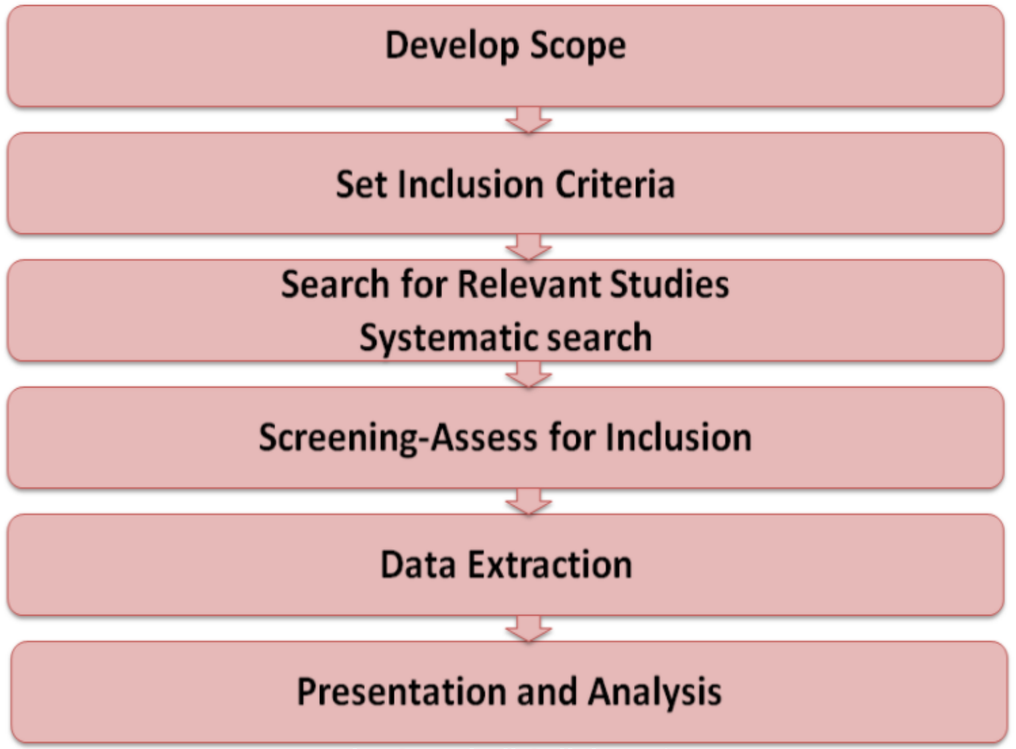

The Campbell Collaboration

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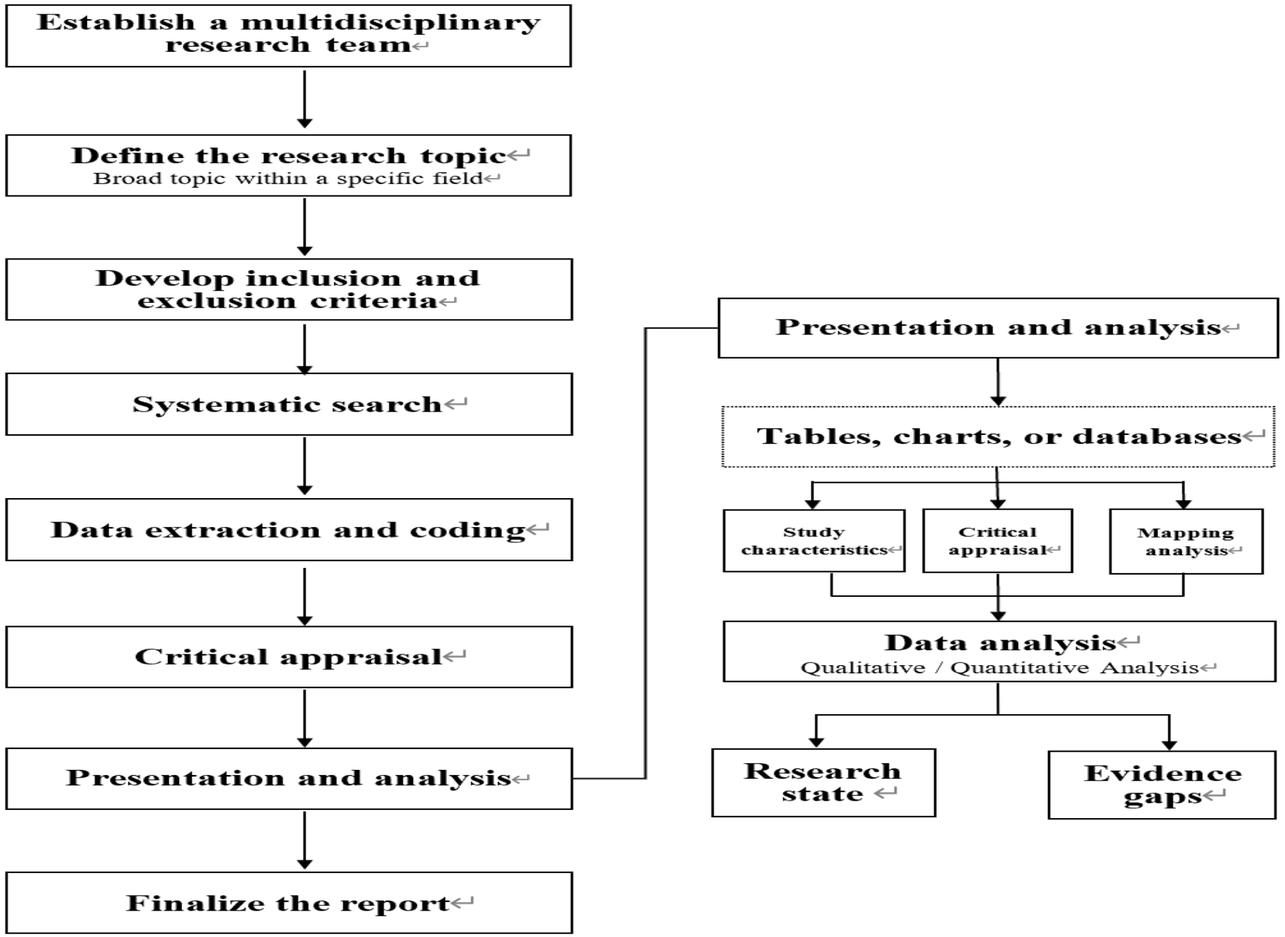
KATZ D L, WILLIAMS A-L, GIRARD C, et al. The evidence base for complementary and alternative medicine: methods of Evidence Mapping with application to CAM [J]. Alternative therapies in health and medicine, 2003, 9(4): 22-30.

BRAGGE P, CLAVISI O, TURNER T, et al. The Global Evidence Mapping Initiative: scoping research in broad topic areas [J]. BMC medical research methodology, 2011, 11(100968545): 92.

WHITE H, ALBERS B, GAARDER M, et al. Guidance for producing a Campbell evidence and gap map [J]. Campbell systematic reviews, 2020, 16(4): e1125.

Steps for conducting a mapping review

Interest-holder involvement



02-06-2025

PART TWO:
How to write a high-quality mapping reviews report

Yanfei Li
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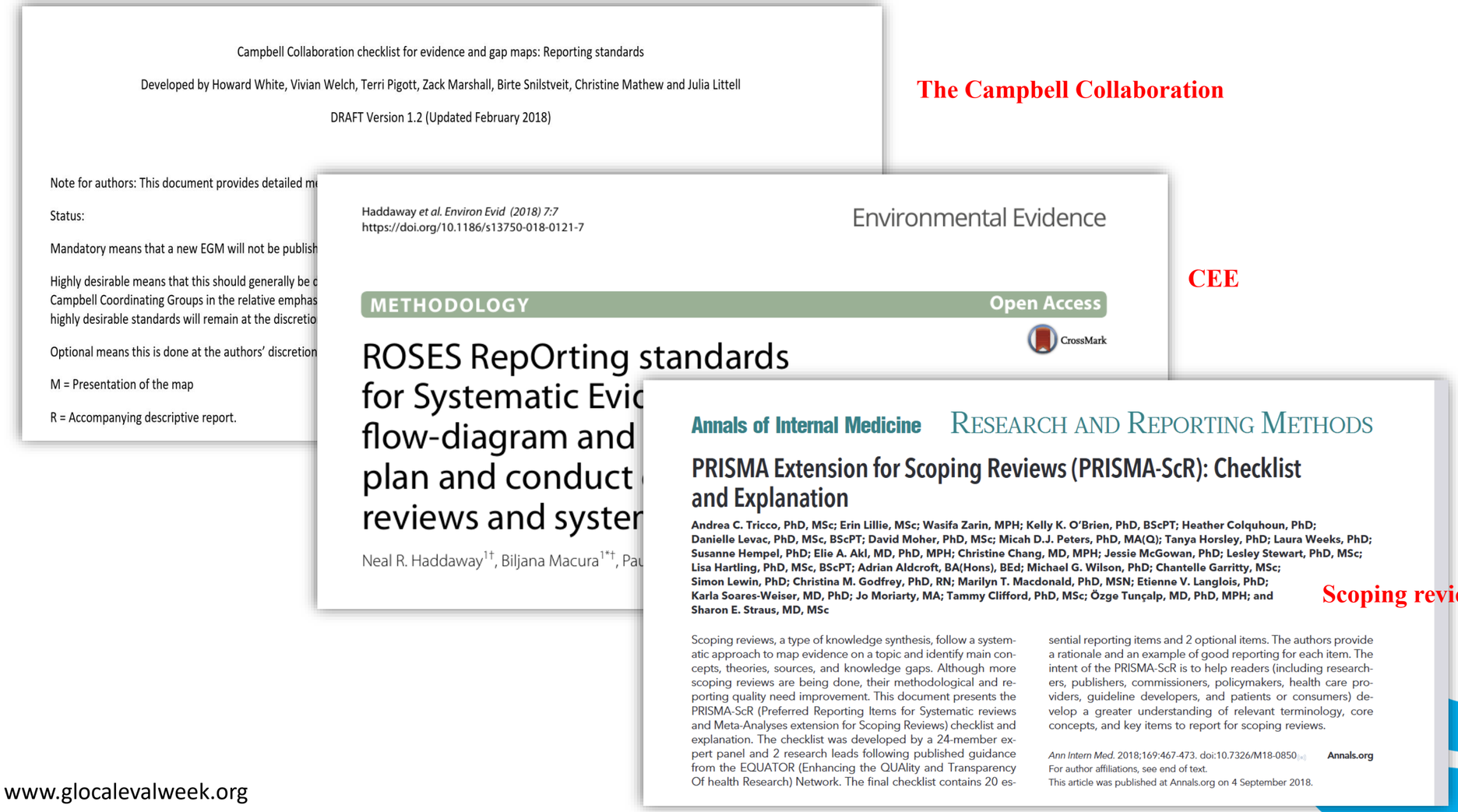
Lanzhou University

Current Reporting Standards?



Campbell Collaboration checklist for evidence and gap maps: Reporting standards

Developed by Howard White, Vivian Welch, Terri Pigott, Zack Marshall, Birte Snilstveit, Christine Mathew and Julia Littell

DRAFT Version 1.2 (Updated February 2018)

Note for authors: This document provides detailed me

Status:

Mandatory means that a new EGM will not be publish

Highly desirable means that this should generally be d
Campbell Coordinating Groups in the relative emphas
highly desirable standards will remain at the discretio

Optional means this is done at the authors' discretion

M = Presentation of the map

R = Accompanying descriptive report.

The Campbell Collaboration

Haddaway *et al. Environ Evid (2018) 7:7*
https://doi.org/10.1186/s13750-018-0121-7

Environmental Evidence

METHODOLOGY

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ROSES RepOrting standards
for Systematic Evic
flow-diagram and
plan and conduct
reviews and syster

Neal R. Haddaway[1†], Biljana Macura[1*†], Pau

CEE

Annals of Internal Medicine

RESEARCH AND REPORTING METHODS

PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation

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Scoping reviews

Scoping reviews, a type of knowledge synthesis, follow a systematic approach to map evidence on a topic and identify main concepts, theories, sources, and knowledge gaps. Although more scoping reviews are being done, their methodological and reporting quality need improvement. This document presents the PRISMA-ScR (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) checklist and explanation. The checklist was developed by a 24-member expert panel and 2 research leads following published guidance from the EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network. The final checklist contains 20 essential reporting items and 2 optional items. The authors provide a rationale and an example of good reporting for each item. The intent of the PRISMA-ScR is to help readers (including researchers, publishers, commissioners, policymakers, health care providers, guideline developers, and patients or consumers) develop a greater understanding of relevant terminology, core concepts, and key items to report for scoping reviews.

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For author affiliations, see end of text.
This article was published at Annals.org on 4 September 2018.

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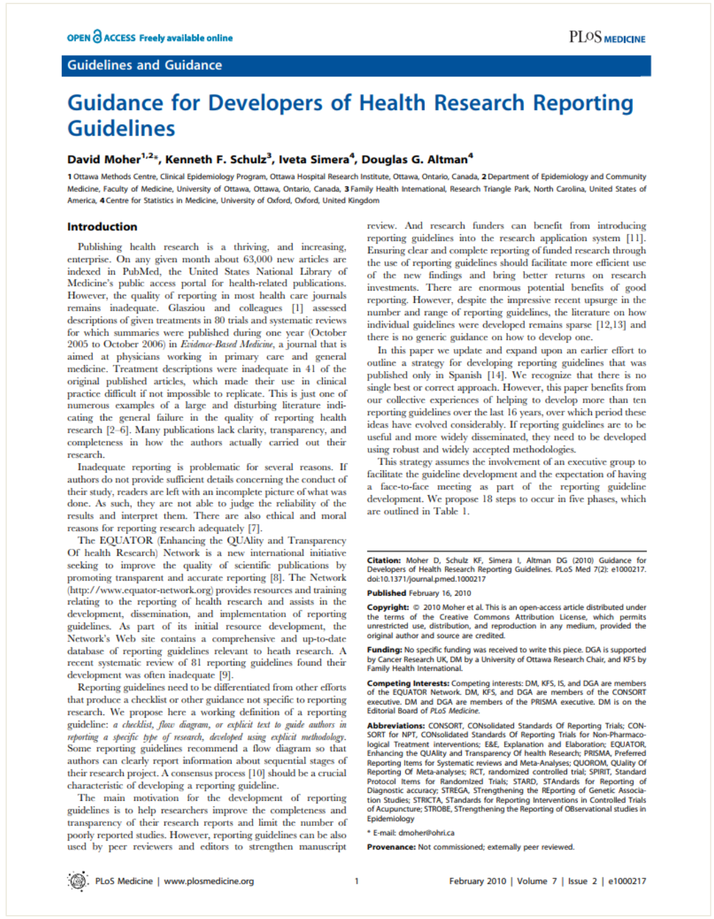

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PLoS MEDICINE

Guidelines and Guidance

Guidance for Developers of Health Research Reporting Guidelines

David Moher[1,2]*, Kenneth F. Schulz[3], Iveta Simera[4], Douglas G. Altman[4]

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Introduction

Publishing health research is a thriving, and increasing, enterprise. On any given month about 63,000 new articles are indexed in PubMed, the United States National Library of Medicine's public access portal for health-related publications. However, the quality of reporting in most health care journals remains inadequate. Glasziou and colleagues [1] assessed descriptions of given treatments in 80 trials and systematic reviews for which summaries were published during one year (October 2005 to October 2006) in *Evidence-Based Medicine*, a journal that is aimed at physicians working in primary care and general medicine. Treatment descriptions were inadequate in 41 of the original published articles, which made their use in clinical practice difficult if not impossible to replicate. This is just one of numerous examples of a large and disturbing literature indicating the general failure in the quality of reporting health research [2–6]. Many publications lack clarity, transparency, and completeness in how the authors actually carried out their research.

Inadequate reporting is problematic for several reasons. If authors do not provide sufficient details concerning the conduct of their study, readers are left with an incomplete picture of what was done. As such, they are not able to judge the reliability of the results and interpret them. There are also ethical and moral reasons for reporting research adequately [7].

The EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network is a new international initiative seeking to improve the quality of scientific publications by promoting transparent and accurate reporting [8]. The Network (http://www.equator-network.org) provides resources and training relating to the reporting of health research and assists in the development, dissemination, and implementation of reporting guidelines. As part of its initial resource development, the Network's Web site contains a comprehensive and up-to-date database of reporting guidelines relevant to heath research. A recent systematic review of 81 reporting guidelines found their development was often inadequate [9].

Reporting guidelines need to be differentiated from other efforts that produce a checklist or other guidance not specific to reporting research. We propose here a working definition of a reporting guideline: *a checklist, flow diagram, or explicit text to guide authors in reporting a specific type of research, developed using explicit methodology*. Some reporting guidelines recommend a flow diagram so that authors can clearly report information about sequential stages of their research project. A consensus process [10] should be a crucial characteristic of developing a reporting guideline.

The main motivation for the development of reporting guidelines is to help researchers improve the completeness and transparency of their research reports and limit the number of poorly reported studies. However, reporting guidelines can be also used by peer reviewers and editors to strengthen manuscript review. And research funders can benefit from introducing reporting guidelines into the research application system [11]. Ensuring clear and complete reporting of funded research through the use of reporting guidelines should facilitate more efficient use of the new findings and bring better returns on research investments. There are enormous potential benefits of good reporting. However, despite the impressive recent upsurge in the number and range of reporting guidelines, the literature on how individual guidelines were developed remains sparse [12,13] and there is no generic guidance on how to develop one.

In this paper we update and expand upon an earlier effort to outline a strategy for developing reporting guidelines that was published only in Spanish [14]. We recognize that there is no single best or correct approach. However, this paper benefits from our collective experiences of helping to develop more than ten reporting guidelines over the last 16 years, over which period these ideas have evolved considerably. If reporting guidelines are to be useful and more widely disseminated, they need to be developed using robust and widely accepted methodologies.

This strategy assumes the involvement of an executive group to facilitate the guideline development and the expectation of having a face-to-face meeting as part of the reporting guideline development. We propose 18 steps to occur in five phases, which are outlined in Table 1.

Citation: Moher D, Schulz KF, Simera I, Altman DG (2010) Guidance for Developers of Health Research Reporting Guidelines. PLoS Med 7(2): e1000217. doi:10.1371/journal.pmed.1000217

Published February 16, 2010

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Competing Interests: Competing interests: DM, KFS, IS, and DGA are members of the EQUATOR Network. DM, KFS, and DGA are members of the CONSORT executive. DM and DGA are members of the PRISMA executive. DM is on the Editorial Board of *PLoS Medicine*.

Abbreviations: CONSORT, COnsolidated Standards Of Reporting Trials; CONSORT for NPT, CONsolidated Standards Of Reporting Trials for Non-Pharmacological Treatment interventions; E&E, Explanation and Elaboration; EQUATOR, Enhancing the QUAlity and Transparency Of health Research; PRISMA, Preferred Reporting Items for Systematic reviews and Meta-Analyses; QUOROM, Quality Of Reporting Of Meta-analyses; RCT, randomized controlled trial; SPIRIT, Standard Protocol Items for Randomized Trials; STARD, STAndards for Reporting of Diagnostic accuracy; STREGA, STrengthening the REporting of Genetic Association Studies; STRICTA, STandards for Reporting Interventions in Controlled Trials of Acupuncture; STROBE, STrengthening the Reporting of OBservational studies in Epidemiology

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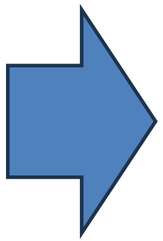
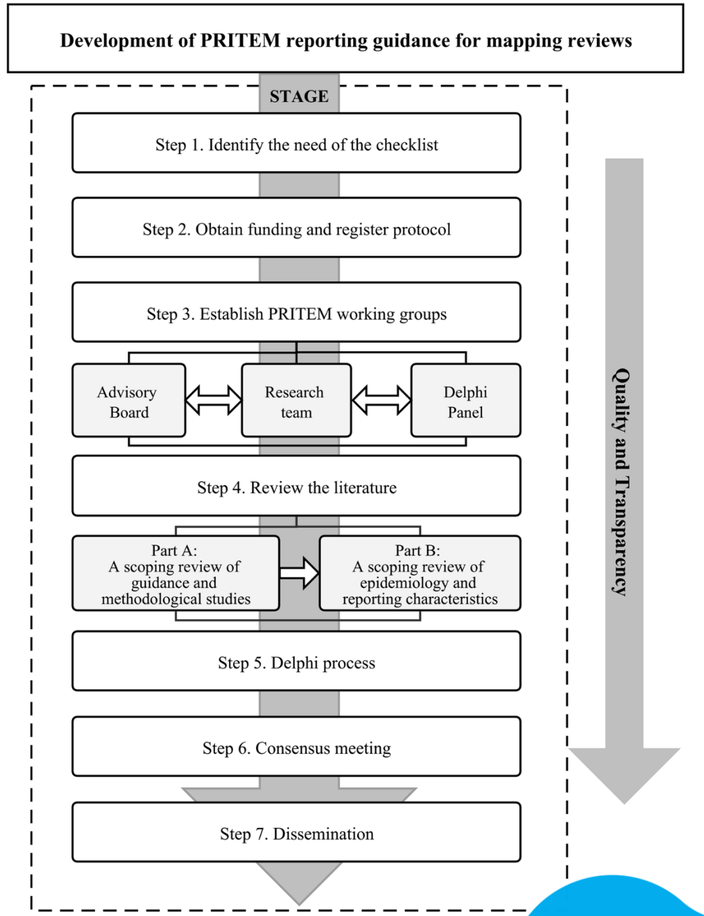
Provenance: Not commissioned; externally peer reviewed.





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Part A: A Scoping Review of Mapping Review Guidance and Methodological Studies

This part aims to propose a consistent framework for terminology and to gather appropriate reporting items from existing mapping review guidance and methodological studies.

Part B: A Scoping Review of Epidemiology and Reporting Characteristics of Mapping Reviews

This part will explore the epidemiological and reporting characteristics of mapping reviews, supplement potential items for mapping reviews based on results of Part A, and determine the reporting frequency of these items.

PRITEM

A Scoping Review of Mapping Review Guidance and Methodological Studies

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doi:10.1017/rsm.2024.9

Research Synthesis Methods

RESEARCH ARTICLE

Key concepts and reporting recommendations for mapping reviews: A scoping review of 68 guidance and methodological studies

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Keywords: evidence mapping; mapping reviews; methodology; reporting; scoping reviews

Abstract

Mapping reviews (MRs) are crucial for identifying research gaps and enhancing evidence utilization. Despite their increasing use in health and social sciences, inconsistencies persist in both their conceptualization and reporting. This study aims to clarify the conceptual framework and gather reporting items from existing guidance and methodological studies. A comprehensive search was conducted across nine databases and 11 institutional websites, including documents up to January 2024. A total of 68 documents were included, addressing 24 MR terms and 55 definitions, with 39 documents discussing distinctions and overlaps among these terms. From the documents included, 28 reporting items were identified, covering all the steps of the process. Seven documents mentioned reporting on the title, four on the abstract, and 14 on the background. Ten methods-related items appeared in 56 documents, with the median number of documents supporting each item being 34 (interquartile range [IQR]: 27, 39). Four results-related items were mentioned in 18 documents (median: 14.5, IQR: 11.5, 16), and four discussion-related items appeared in 25 documents (median: 5.5, IQR: 3, 13). There was very little guidance about reporting conclusions, acknowledgments, author contributions, declarations of interest, and funding sources. This study proposes a draft 28-item reporting checklist for MRs and has identified terminologies and concepts used to describe MRs. These findings will first be used to inform a Delphi consensus process to develop reporting

†Vivian Welch and Kehu Yang are senior authors.

Table 2-4 Preliminary reporting items identified from guidance and methodological studies

Section	Item	Topic	N	Section	Item	Topic	N
Title	1	Title	7	Methods	15b	Tools for mapping	21
Authors	2	Authors	3		15c	Dimensions in Maps	40
Abstract	3	Structured summary	4		15d	Strategy for adequacy and priority setting	16
Background			14		15e	Data analysis methods	24
	4	Rationale	8	Results	16	Study selection	17
	5	Objectives	12		16a	Flow of studies	15
Methods	6	Stakeholders	31		16b	Excluded studies	8
	6a	Identification and definition of stakeholders	22		17	Study characteristics	9
	6b	Stakeholder engagement	31		18	Risk of bias in included studies	14
	7	Registration and protocol	12		19	Mapping analysis	15
	7a	Registration information	4		19a	Maps of included studies	14
	7b	Reference protocol	12		19b	Areas with adequate evidence	2
	7c	Deviations from protocol	5		19c	Evidence gaps and clusters	6
	8	Eligibility criteria	35	Discussion			25
	9	Search sources	41		20	Summary of main results	2
	10	Search strategy	39		21	Limitations of the review	7
	11	Selection process	33		22	Implications	4
	12	Data extraction and coding	37		23	Plans for map updates	21
	12a	Data items	35	Discussion	24	Conclusions	6
	12b	Development of coding tools	26	Other information	25	Acknowledgements	2
	13	Data collection process	28		26	Contributions of authors	2
	14	Critical appraisal	27		27	Declarations of interest	3
	15	Data presentation and analysis	44		28	Sources of support	4
	15a	Types of presentation	44				

In the 68 included documents, 57 mentioned one or more reporting recommendations for MRs, covering 28 items related to topics such as Title, Authors, Abstract, Background, Methods, Results, Discussion, Conclusions, Acknowledgements, Contributions of authors, Declarations of interest, and Sources of support

PRITEM

A Scoping Review of Epidemiology and Reporting Characteristics of Mapping Reviews

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ORIGINAL RESEARCH

Meta-epidemiology and reporting characteristics of mapping reviews: a scoping review

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Abstract

Objectives: To investigate the meta-epidemiology and reporting characteristics of mapping reviews.

Study Design and Setting: We conducted a scoping review of a sample of recent mapping reviews (2022−2023) by searching nine electronic databases and eleven institutional websites up to January 2024. A 28-item reporting checklist, developed by our team and based on existing guidance and methodological studies of mapping reviews, was employed to assess reporting characteristics. The median (interquartile range [IQR]) was calculated based on the number of studies that reported each specified reporting item.

Results: A total of 451 mapping reviews were included, with 197 published in 2022 and 254 in 2023. The USA published the most studies (80, 17.74%) and the University of London being the most active institution (23, 5.10%). Barbosa JLV from Universidade do Vale do Rio dos Sinos authored the highest number of studies, with significant collaborations primarily between Chinese and Canadian teams. The studies spanned 11 fields within health and social sciences, Environmental Evidence and Campbell Systematic Reviews published the most studies. A random sample of 200 studies was further assessed for reporting characteristics, where items such as title, author, abstract, background, conclusions, acknowledgments, contributions of authors, declarations of interest, and sources of support were reported by over 50% of the studies. Median number of studies reporting items related to methods, results, and discussion was 89.5 (IQR: 45.5, 165.25), 94.0 (IQR: 61.5, 183.5), and 164 (IQR: 124.0, 179.25), respectively. Items such as the definition of stakeholders, registration information, deviations from protocol, strategy for adequacy and priority setting, and plans for map updates were reported by less than 20% of the studies.

Conclusion: Mapping reviews receive contributions from authors across various countries and institutions. However, collaboration between teams is limited, and the reporting of included studies, especially in the methods and results sections, needs improvement to better emphasize their unique attributes and functions compared to other methods.

Keywords: Mapping reviews; Evidence and gap maps; Meta-epidemiology; PRITEM; Reporting; Scoping review

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Table 2. Research fields and frequency of keywords in mapping reviews

No.	Research fields	Number	Key words	Occurrence
1	Health science	174	Health	38
2	Climate solutions	74	Systematic review	37
3	Social welfare	62	Management	32
4	Education	52	Impact	28
5	Business & management	17	Mapping review	26
6	Children & young persons wellbeing	17	Systematic mapping	25
7	Aging	12	Care	24
8	Knowledge translation & implementation	12	Systematic mapping study	24
9	Crime & justice	11	Evidence map	21
10	Disability	10	Evidence mapping	20
11	International development	10	Framework	20

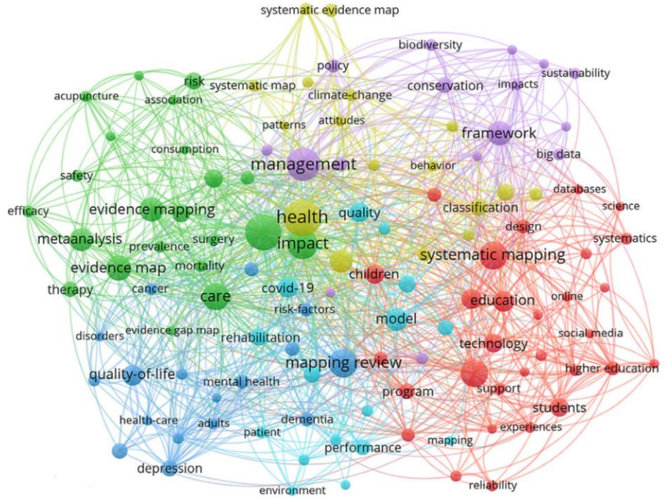

Figure 4. The keywords cooccurrence network of mapping reviews.

PRITEM

A Scoping Review of Epidemiology and Reporting Characteristics of Mapping Reviews

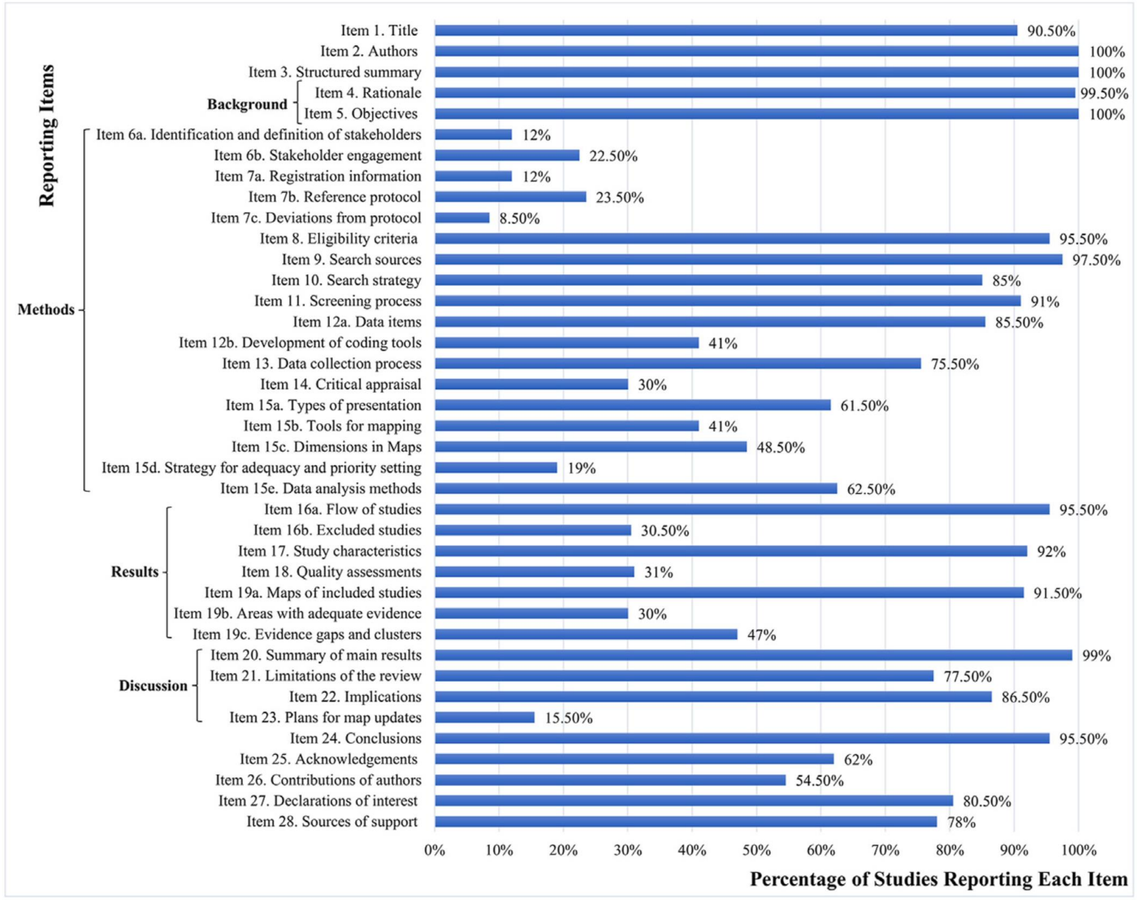

Figure 5. Reporting assessment of 200 mapping reviews.

- Less than 50% of the studies fully reported key mapping review items, including 15 recommended elements related to stakeholder involvement, data extraction and coding, data presentation and analysis, evidence mapping analysis, and plans for future updates.

- No additional reporting items were identified during the assessment process.

PRITEM

Preliminary Reporting Items Identified from the Literature Reviews

Section	Topic	Item #	Checklist
Title	Title	1	Specify the scope and identify the report as a mapping review, evidence and gap map, or both
Authors	Authors	2	List names and affiliations of all authors
Abstract	Structured summary	3	Provide a structured summary that includes (as applicable) background, including the rationale and objective for the review*; methods, including stakeholder engagement, protocol, eligibility criteria, search, coding, critical appraisal, and data presentation and analyses (specifically mention the strategy for adequacy and priority setting); results, including study selection, characteristics, risk of bias, and mapping analyses; conclusions, including a summary of the main findings and implications of those findings
Background	Rationale	4	Describe the scope of the review and explain why conducting this review is important
	Objectives	5	Provide a structured statement of the research question(s) within a key element framework, and specify whether this review is intended for decision-making, to delineate evidence gaps and clusters for future research, or both. Utilize frameworks such as PI/ECOS (Population, Intervention/Exposure, Comparator, Outcome, and Study Design), PCC (Population, Concept, and Context), PIT (Population, Index Test, Target Condition), and others like PECO, PEO, and PO for various research questions.
Methods	Stakeholders		
	Identification and definition of stakeholders	6a	Specify the identification process of stakeholders and define the various types of stakeholders involved, such as direct users of research outputs (e.g., researchers and policy decision-makers), and those directly affected by decisions (e.g., patients in the field of medicine)
	Stakeholder engagement	6b	Provide detailed descriptions of stakeholder engagement at each stage of the review process
	Registration and protocol		
	Registration information	7a	Provide registration information for the review, or state if the review was not registered
	Reference protocol	7b	Apply the review protocol, or specify if no protocol was established
	Deviations from protocol	7c	Describe and explain any amendments made to the information provided at registration or in the protocol

(Continued)

PRITEM

Preliminary Reporting Items Identified from the Literature Reviews

Section	Topic	Item #	Checklist
	Eligibility criteria	8	Specify the inclusion and exclusion criteria for the review, defining characteristics of the study within a key element framework based on different research questions.
	Search sources	9	Present all databases, registers, websites, organizations, reference lists, and other sources searched or consulted to identify studies, along with the dates when each source was last searched or consulted. If machine learning was utilized for literature search, present the details of the sources from which the literature was drawn
	Search strategy	10	Present the full search strategies for all search sources, including any filters and limits used. If machine learning was utilized for literature search, present the details of the relevant software and its search strings
	Screening process	11	Provide the process for literature screening, including at the title/abstract and full texts levels, and clarify the methods ensuring the repeatability of this process, such as specifying the number of people involved and whether they worked independently. If machine learning was used for literature screening, specify the details of how inclusion decisions were made
	Data extraction and coding		
	Data items	12a	List all variables used for data extraction and/or further coding
	Development of coding tools	12b	Define and provide details on the analytic or consensus-based conceptual framework developed for developing coding tools
	Data collection process	13	Provide the process for data extraction from reports of included studies and coding, and clarify the methods ensuring the repeatability of this process, such as specifying the number of people involved and whether they worked independently. If machine learning was used for data extraction, specify the details of the relevant software and the logic used for extracting key fields.
	Critical appraisal	14	Specify whether the quality of included studies or reviews was assessed. If done, describe the methods used for assessment and the procedures ensuring the repeatability of the assessment process, such as specifying the number of people involved and whether they worked independently.
	Data presentation and analysis		
	Types of presentation	15a	Specify the presentation formats for the mapping results of included studies, such as charts, tables, and interactive maps

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PRITEM

Preliminary Reporting Items Identified from the Literature Reviews

Section	Topic	Item #	Checklist
	Tools for mapping	15b	Describe the tools or software details used for generating mapping results, including any automation or artificial intelligence software
	Dimensions in Maps	15c	Specify the dimensions or coordinate matrix and filters (if possible) used for positioning within the maps. If Evidence Gap Maps (EGMs) tools are utilized, consult the PRISMA-EGM guidelines as necessary
	Strategy for adequacy and priority setting	15d	Specify the strategy for determining areas with sufficient evidence, aimed at supporting decision-making and future research priorities, including evidence gaps and clusters. If possible, specify the method for ranking these priorities.
	Data analysis methods	15e	Describe the methods used in the data analysis process, such as descriptive analysis, thematic analysis, and statistical analysis, among others
Results	Study selection		
	Flow of studies	16a	Describe the results of the search and selection process, from the number of references initially identified to the number of studies ultimately included in the review. Provide a flow diagram to illustrate this process
	Excluded studies	16b	List key excluded studies that readers might reasonably expect to find and provide justification for each exclusion
	Study characteristics	17	Describe the basic study characteristics of interest. Consider equity and provide the citations, native format of extracted data and its corresponding coding for each included study, if possible.
	Quality assessments	18	If quality was assessed, describe the quality assessments for included studies or reviews.
	Mapping analysis		
	Maps of included studies	19a	Present a map here, showing how the relevant literature is organized according to transparent, replicable key elements framework (research question), with a concise description. If possible, consider equity and include filters that allow for the generation of customized maps.
	Areas with adequate evidence	19b	Provide a structured report within a key element framework detailing areas with sufficient evidence support for decision-making based on the strategy for adequacy, if possible
	Evidence gaps and clusters	19c	Provide a structured report within a key element framework detailing areas requiring further research, including primary studies and additional evidence synthesis, based on the strategy for priority setting, if possible

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PRITEM

Preliminary Reporting Items Identified from the Literature Reviews

Section	Topic	Item #	Checklist
Discussion	Summary of main results	20	Describe the main findings and provide a general interpretation of the results within the context of other evidence
	Limitations of the review	21	Discuss the limitations of both the review processes and the included evidence
	Implications	22	Discuss the implications for decision-making and future research in a structured manner based on key elements framework, if possible
	Plans for map updates	23	Discuss the necessity of updating the map based on current research results and trends, and provide details of the update plan, including timing and content to be updated.
Conclusions	Conclusions	24	Report the main findings of the review and summarize the implications of those findings
Acknowledgements	Acknowledgements	25	Acknowledge the contributions of individuals who are not listed as authors of the review
Contributions of authors	Contributions of authors	26	Detail the specific contributions of each author
Declarations of interest	Declarations of interest	27	Report any competing interests of the review authors
Sources of support	Sources of support	28	Describe the sources of financial or non-financial support for the review and specify the role of the funder

• The term "review" in the items includes the EGM report.

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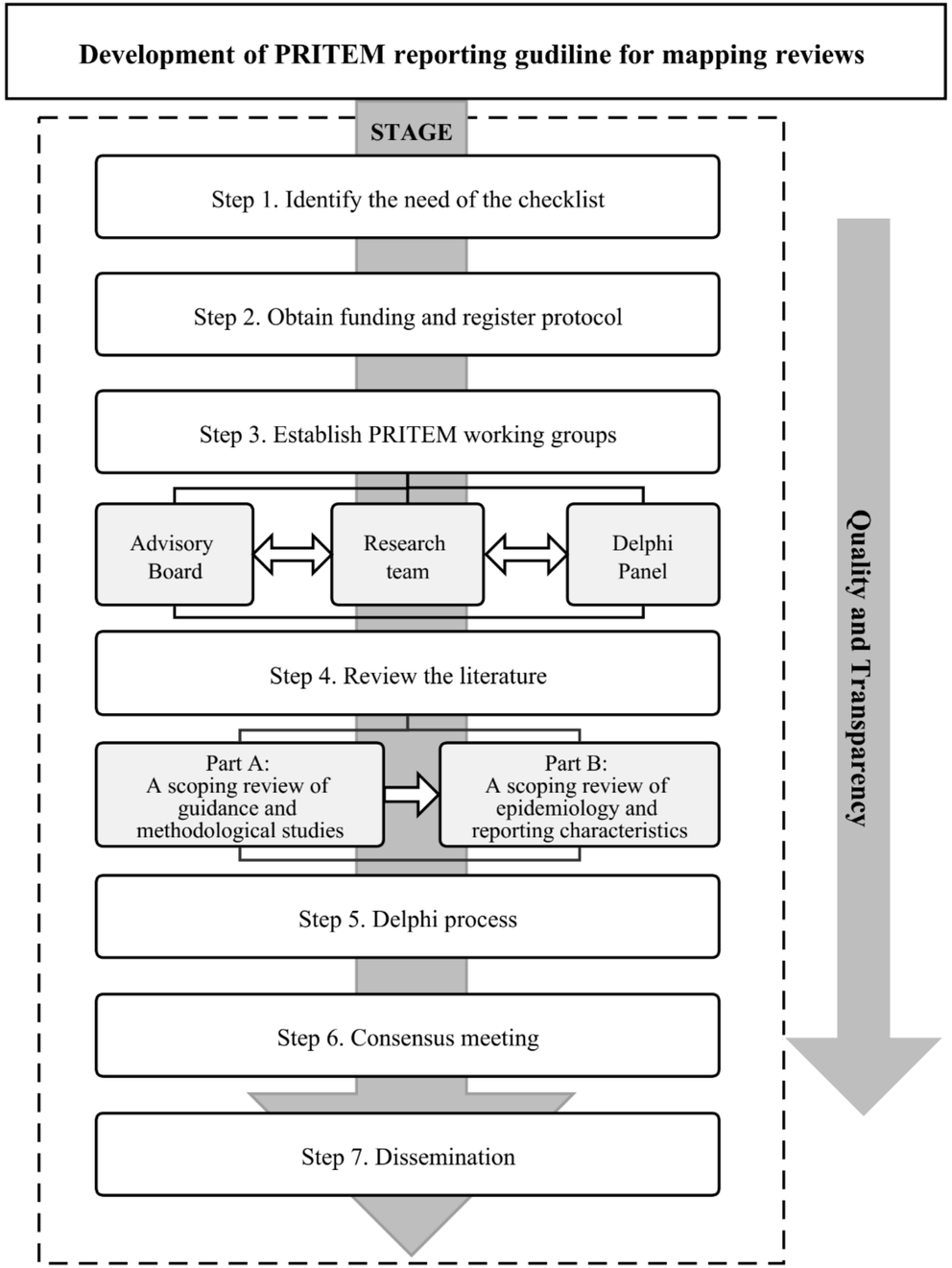

2022.10

2022.12 EQUATOR Network

2024.01 2024.08

2024.07

2024.10

2024.11

2025.01

Prospects and Next Steps

Publish and promote the PRITEM guideline

Facilitate the establishment of an international collaborative platform for mapping reviews

Develop AI- and big data–driven automated mapping review platforms

Conduct research on the application pathways and effectiveness of mapping reviews in decision-making

We are currently preparing to establish a Global Mapping Review Collaboration Network
You are welcome to **join us** (yanfeili2018@163.com or yflcan2023@gmail.com)

global **evaluation** initiative

Thank you!

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