

Navigating the Swampy Lowlands: Developing Methods for 'Big Picture' Evidence Synthesis

Fiona Campbell



Swampy lowlands

Donald Schön (1983)

‘In the varied topography of *evidence synthesis*, there is a high hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy confusing problems defy technical solution’.

Big Picture Reviews

Scoping Reviews

Mapping Reviews

Evidence Gap Maps

- Exploring definitions and purpose
- Similarities/difference
- Innovations and ways forward

Critical review, Literature review, Mapping Review, Meta analysis, Mixed Methods review,

14

Grant and Booth (2009)



48

Sutton et al (2019)

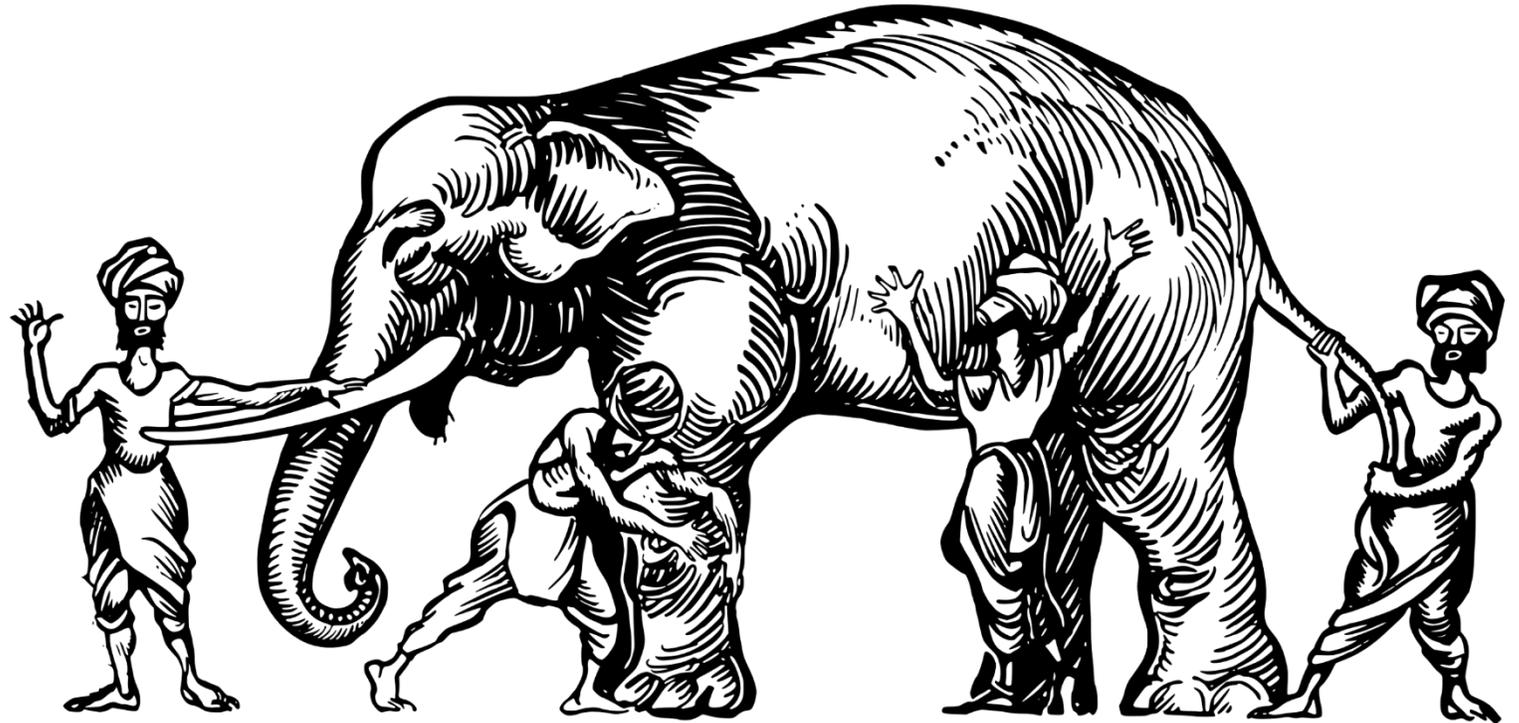


850+

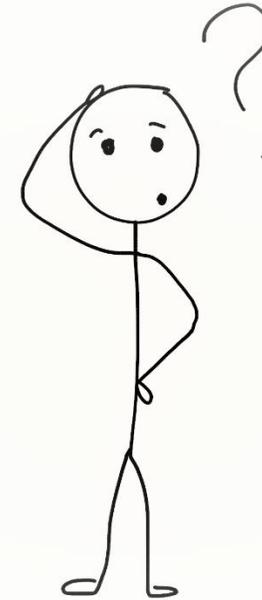
Munn, Pollock (current)

Review, Systemized Review, Umbrella review

The Blind Men and the Elephant



Scoping review, mapping review or EGMs?



Label	Description	Methods used (SALSA)			
		Search	Appraisal	Synthesis	Analysis
Rapid review	Assessment of what is already known about a policy or practice issue, by using systematic review methods to search and critically appraise existing research	Completeness of searching determined by time constraints	Time-limited formal quality assessment	Typically narrative and tabular	Quantities of literature and overall quality/direction of effect of literature
Scoping review	Preliminary assessment of potential size and scope of available research literature. Aims to identify nature and extent of research evidence (usually including ongoing research)	Completeness of searching determined by time/scope constraints. May include research in progress	No formal quality assessment	Typically tabular with some narrative commentary	Characterizes quantity and quality of literature, perhaps by study design and other key features. Attempts to specify a viable review
State-of-the-art review	Tend to address more current matters in contrast to other combined retrospective and	Aims for comprehensive searching of current	No formal quality assessment	Typically narrative, may have tabular	Current state of knowledge and priorities for future
Mapping review/ systematic map	Map out and categorize existing literature from which to commission further reviews and/or primary research by identifying gaps in research literature	Completeness of searching determined by time/scope constraints	No formal quality assessment	May be graphical and tabular	Characterizes quantity and quality of literature, perhaps by study design and other key features. May identify need for primary or secondary research
Meta-analysis	Technique that statistically combines the results of quantitative studies to provide a	Aims for exhaustive, comprehensive searching.	Quality assessment may determine inclusion/	Graphical and tabular with	Numerical analysis of measures of effect assuming absence of

Guidance for conducting systematic scoping reviews

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ABSTRACT

Reviews of primary research are becoming more common as evidence-based practice gains recognition as the benchmark for care, and the number of, and access to, primary research sources has grown. One of the newer review types is the 'scoping review'. In general, scoping reviews are commonly used for 'reconnaissance' – to clarify working definitions and conceptual boundaries of a topic or field. Scoping reviews are therefore particularly useful when a body of literature has not yet been comprehensively reviewed, or exhibits a complex or heterogeneous nature not amenable to a more precise systematic review of the evidence. While scoping reviews may be conducted to determine the value and probable scope of a full systematic review, they may also be undertaken as exercises in and of themselves to summarize and disseminate research findings, to identify research gaps, and to make recommendations for the future research. This article briefly introduces the reader to scoping reviews, how they are different to systematic reviews, and why they might be conducted. The methodology and guidance for the conduct of systematic scoping reviews outlined below was developed by members of the Joanna Briggs Institute and members of five Joanna Briggs Collaborating Centres.

Key words: evidence synthesis, literature review, methodology, scoping review, systematic review

Int J Evid Based Healthc 2015; 13:141–146.

Introduction

Reviews of primary research are becoming more common as evidence-based practice gains recognition as the benchmark for care, and the number of, and access to, primary research sources has grown. As more authors are conducting reviews to integrate research findings, various review types have evolved with their respective methodologies developing in precision and clarity. In 2009, Grant and Booth identified 14 different types of literature reviews.¹ One of these review types was the 'scoping review'. Although the first framework for scoping reviews was published in 2005,³ scoping reviews are still a relatively new methodology that, as yet, do not possess a universal definition or definitive

method.^{4–6} Scoping reviews have great utility for synthesizing research evidence and are often used to map existing literature in a given field in terms of its nature, features, and volume.³ As such, scoping reviews have also been called 'mapping' reviews.^{3,4,7} In general, scoping reviews are commonly used for 'reconnaissance' – to clarify working definitions and conceptual boundaries of a topic or field.⁵ Scoping reviews are therefore of particular use when a body of literature has not yet been comprehensively reviewed, or exhibits a large, complex, or heterogeneous nature not amenable to a more precise systematic review. While scoping reviews may be conducted to determine the value and probable scope of a full systematic review, they may also be undertaken as exercises in and of themselves to summarize and disseminate research findings, to identify research gaps, and to make recommendations for future research.³

This article will first briefly introduce the reader to

'Scoping reviews have great utility for synthesizing research evidence and are often used to map existing literature in a given field in terms of its nature, features and volume. As such, scoping reviews have also been called mapping reviews'

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RESEARCH AND THEORY

What is Case Management? A Systematic Mapping Review

 Sue Lukersmith^{a,†}, Michael Millington^{a*} and Luis Sal

The description of case management in research and clinical quality analysis, policy and planning. Case management makes of health care, social services and other sector services conditions. There are multiple components and variations of client population. This paper aims to scope and map how case management is described in the literature for mental health, diabetes, mental health, spinal cord injury). Following literature and exclusion by health condition, community-based potential papers for data extraction. Data from 79 papers saturation (no new information) and mapped to the model, 22 definitions, five models, with 69 activities or tasks of (interventions). The results confirm the significant term produces role confusion, ambiguity and hinders comparison contexts. There is an urgent need for an internationally agreed and management of care.

Keywords: case management; complexity; care coordination; integrated care; taxonomy; scoping

Introduction

Case management, also known as care coordination is a complex integrated health and social care intervention and makes a unique contribution to the health, social care and participation of people with complex health conditions.[1–4]. In the 1960's case management emerged in response to the de-institutionalisation of large numbers

[5, 7–9]. The significant terminological variance, lack of understanding and a common language for case management and care coordination has impeded quality analysis, policy and planning [4, 10–12]. There is an urgent need for a common international language, but which first requires an understanding of the terms used to describe case management in the literature.

A systematic mapping review of surrogate safety assessment using traffic conflict techniques

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 Crash-conflict relationship
 Crash surrogates
 Surrogate based crash severity

ABSTRACT

Safety assessment of road sections and networks have historic data have several noteworthy and significant shortcomings, it assessment of crash causes and contributing factors, limited important crash-related factors resulting in an omitted variable and require long observation periods to justify expenditures. This must wait for sufficient crashes to accrue at a site—some in improvements to prevent crashes. The more quickly the professional safety, the better.

Surrogate safety assessment methodologies, in contrast, are require shorter observation timeframes in which to formulate safety assessment methodologies have been developed and a unifying framework does not exist to date. A unifying framework methodological developments and begin a productive discussion do or should fit together to understand road user risk better.

This paper aims to fill this gap by thoroughly mapping traffic total of 549 studies were meticulously reviewed to achieve the resulting framework provides a consolidated and up-to-date strategies and conflict measures and metrics.

Further work is needed to advance surrogate safety methodology a comprehensive and reliable set of surrogate measures relationships between conflicts and crashes, developing ways to conduct safety assessment, and integrating crash severity measures into

1. Introduction

Road safety assessment has matured over the last 50 years. There are well-established methods of road safety assessment that traditionally rely on the analysis of police-reported crash data for the development of countermeasures to improve safety. The crash-based assessment, however, is plagued by several well-known shortcomings (Tarko, 2018b). A

connected and automated surrogate safety assessment method of assessing safety events known as traffic conflict techniques (Amundsen and Hyden, 1997) review to help consolidate

Review article

Air pollution, physical activity and health: A mapping review of the evidence

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ARTICLE INFO

Handling Editor: Hanna Boogaard

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 Exercise
 Active travel
 Transport

ABSTRACT

Background: Exposure to air pollution and physical inactivity are both significant risk factors for non-communicable diseases (NCDs). These risk factors are also linked so that the change in exposure in one will impact risks and benefits of the other. These links are well captured in the active transport (walking, cycling) health impact models, in which the increases in active transport leading to increased inhaled dose of air pollution. However, these links are more complex and go beyond the active transport research field. Hence, in this study, we aimed to summarize the empirical evidence on the links between air pollution and physical activity, and their combined

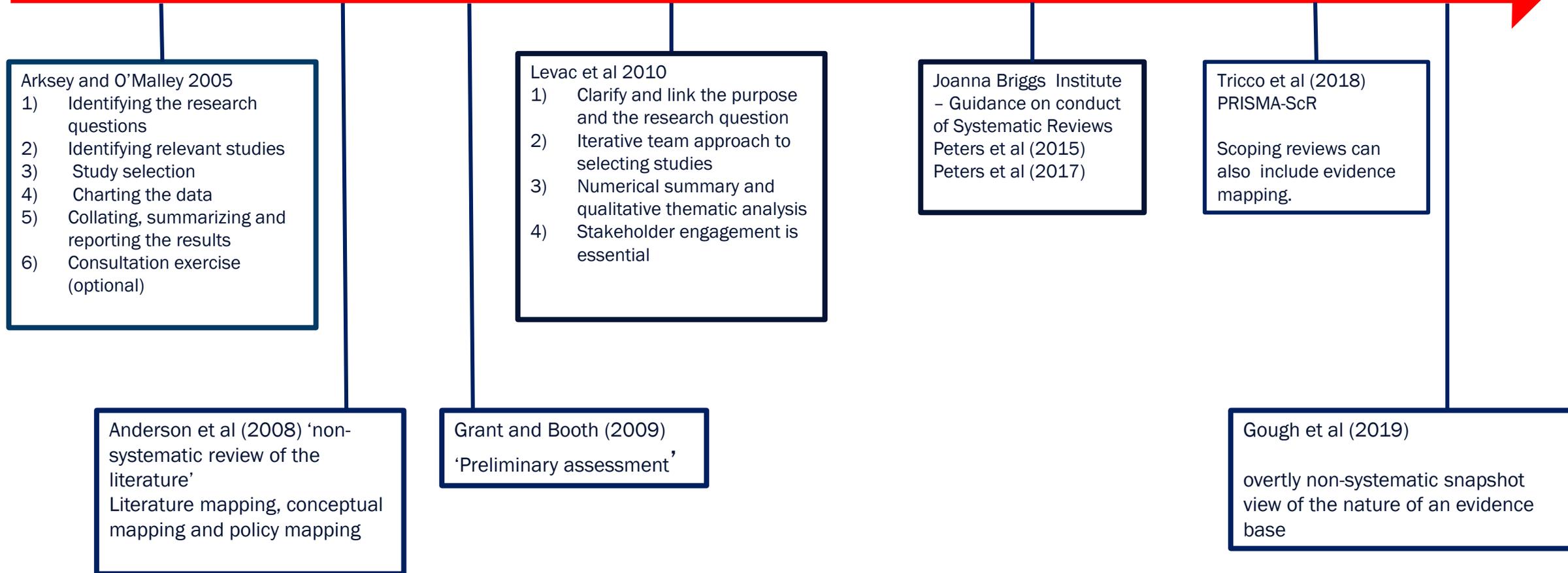
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whats in a name.pdf

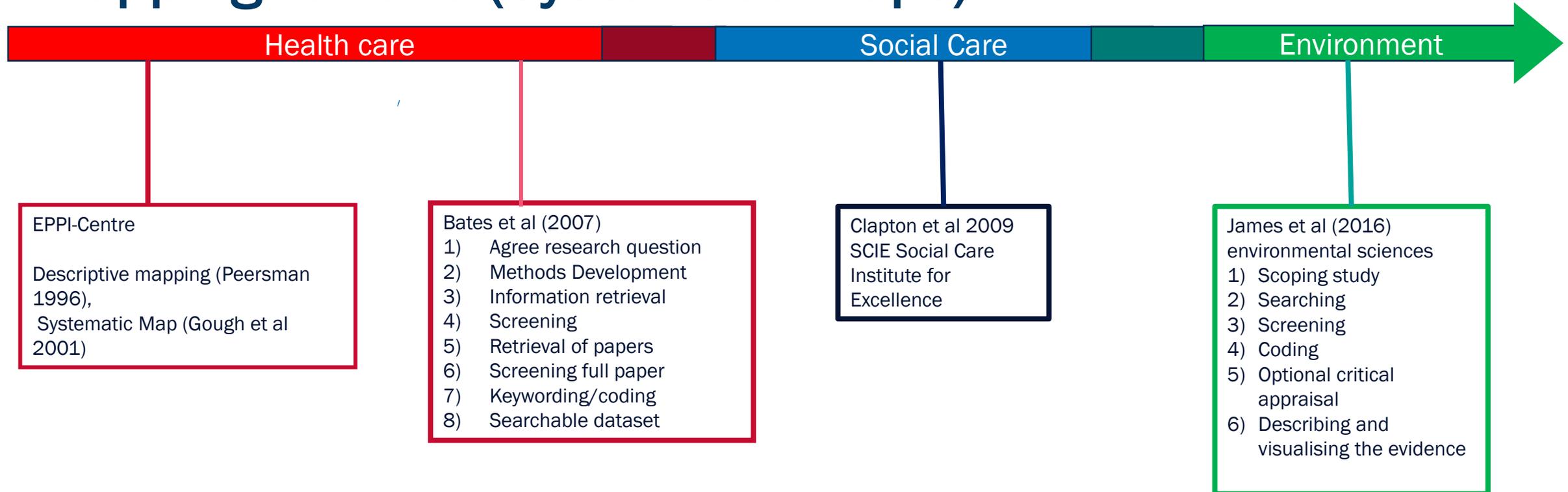
Why Does it Matter?

- Different expectations make reviews difficult to commission and deliver
- Peer review processes become more complicated
- Editorial decisions are inconsistent
- Readers cannot benchmark review quality
- Inappropriate criteria used to evaluate
- No basis for reliable decision-making

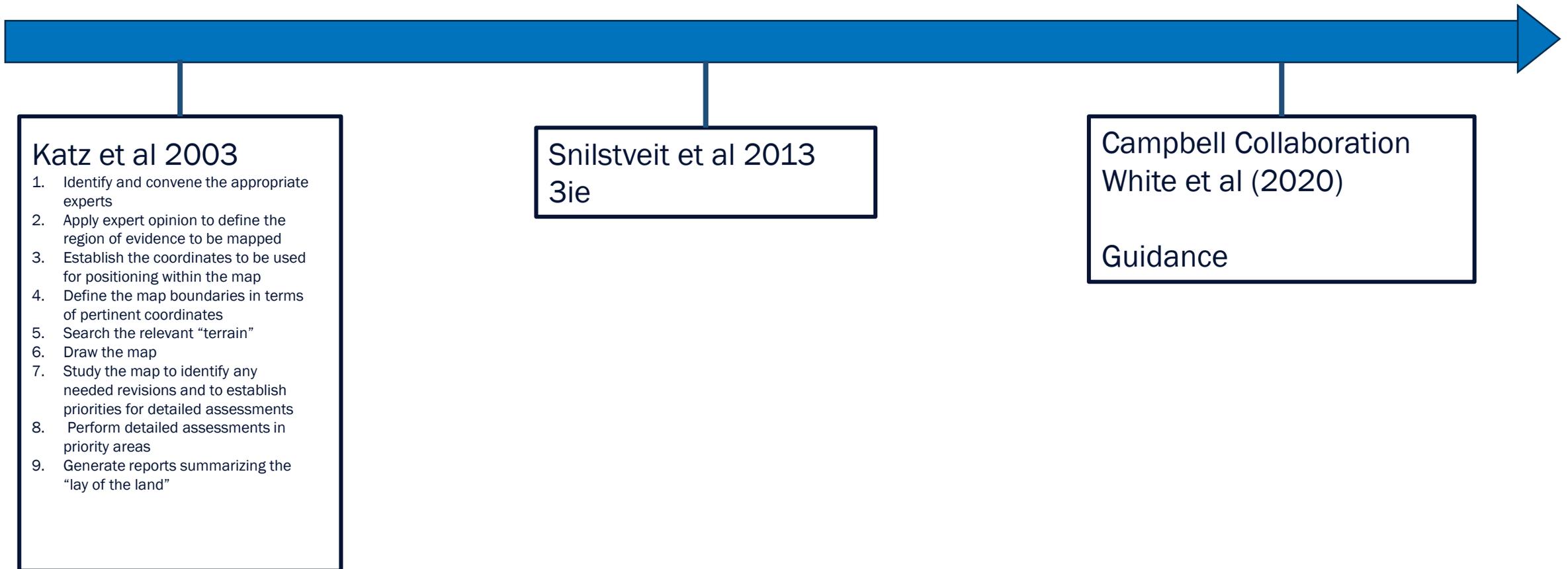
Timeline



Mapping reviews (Systematic Maps)



Evidence Gap Maps





Dr Danielle Pollock · 26/03/2023 ...

What happens when a scoping review, mapping review and evidence and gap map walk into a bar? They try to work out their differences....

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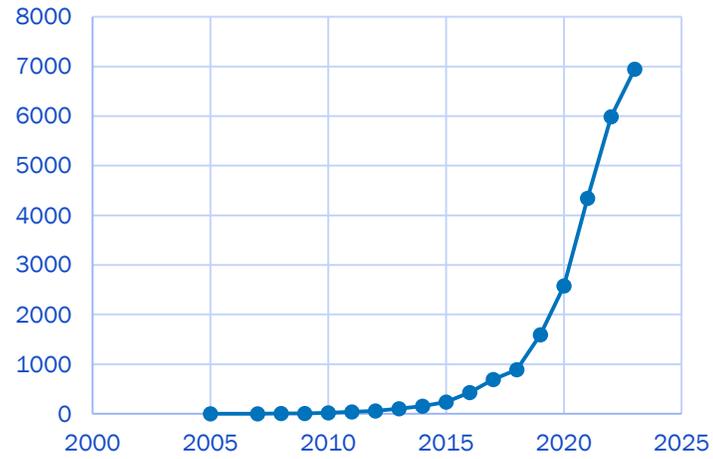
#JBIScoping



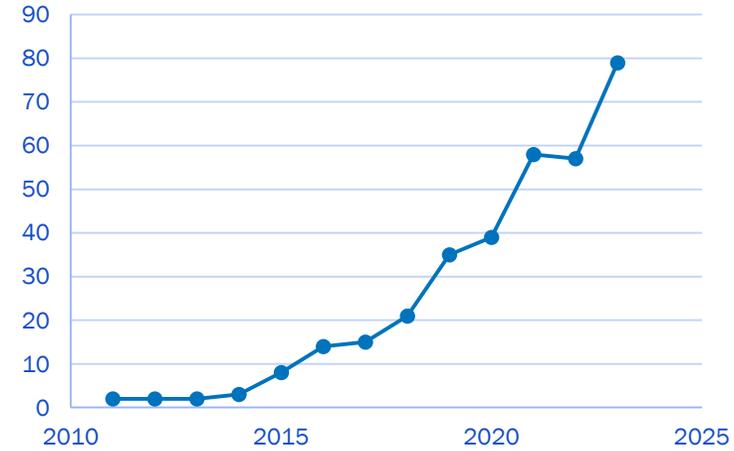
Mapping reviews,
scoping reviews, and e...

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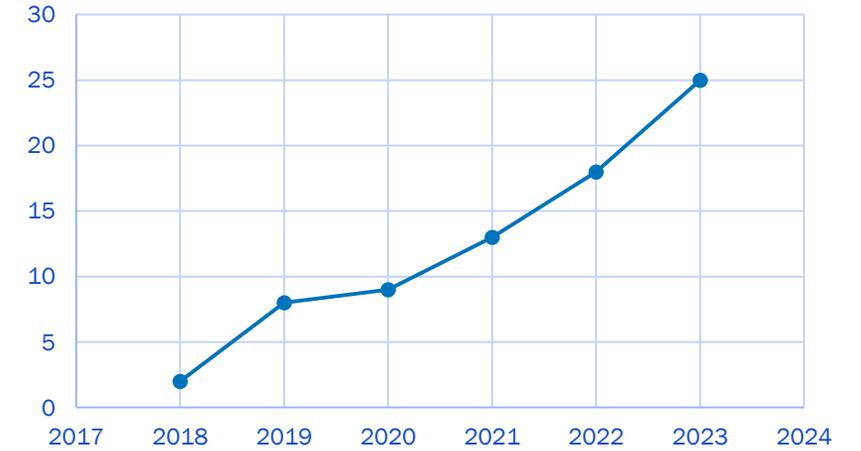
Scoping reviews



Mapping Reviews



Evidence and Gap Maps



Why are they growing in popularity

- Responding to the needs of knowledge users
- Applying an evidence synthesis lens (transparency, rigour, formal methodology, reporting standards) to an approach that has always been part of the scientific processes

Dear Fiona,

*When I found your Evidence and Gap
Map I started jumping for joy in the
library....*

Purpose of Big Picture Reviews

- Mapping – key concepts, main sources, types of evidence
- Conceptualising
- Identifying Gaps
- Identifying Clusters
- Creating a database
- Collating
- Describing nature and characteristics
- Cataloguing
- Exploratory
- Characterising an expanse of evidence
- Clarifying a complex concept

What is happening in practice.....

Scoping Reviews (Pham et al 2014, Tricco et al 2016)

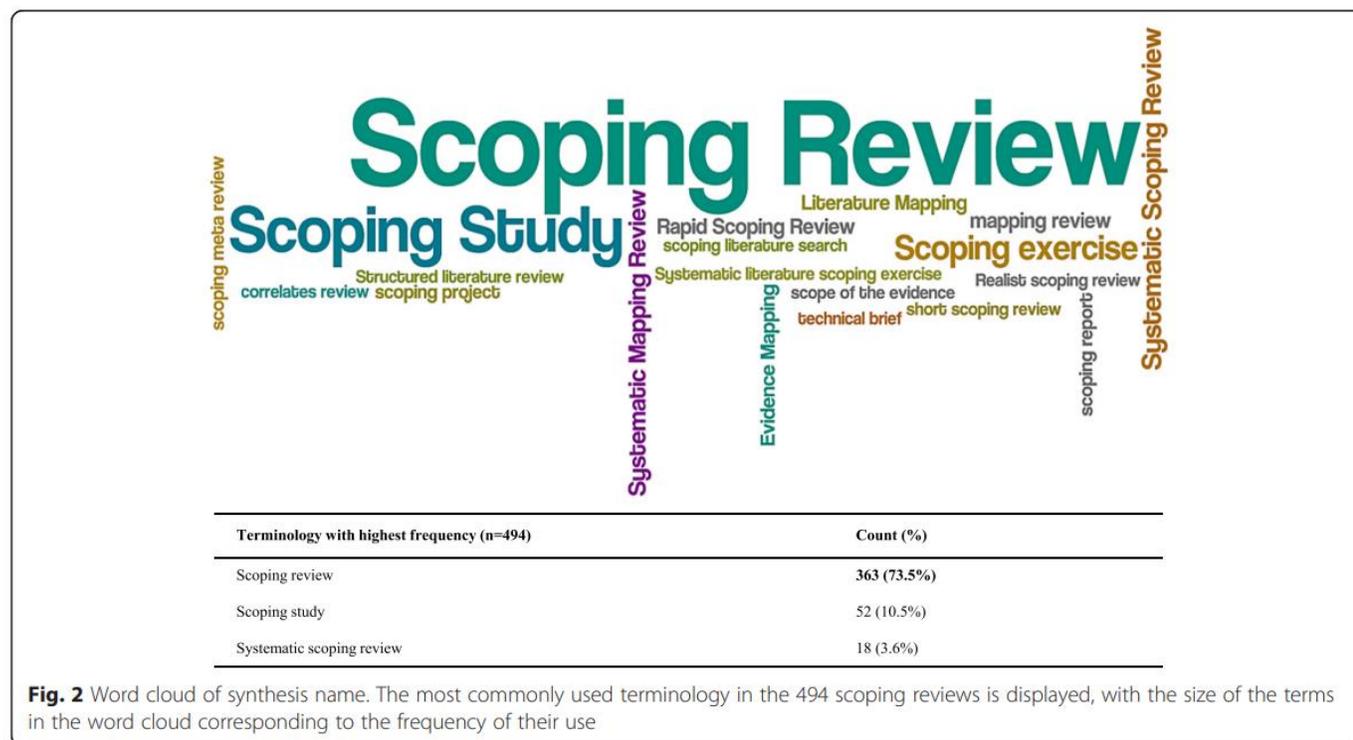
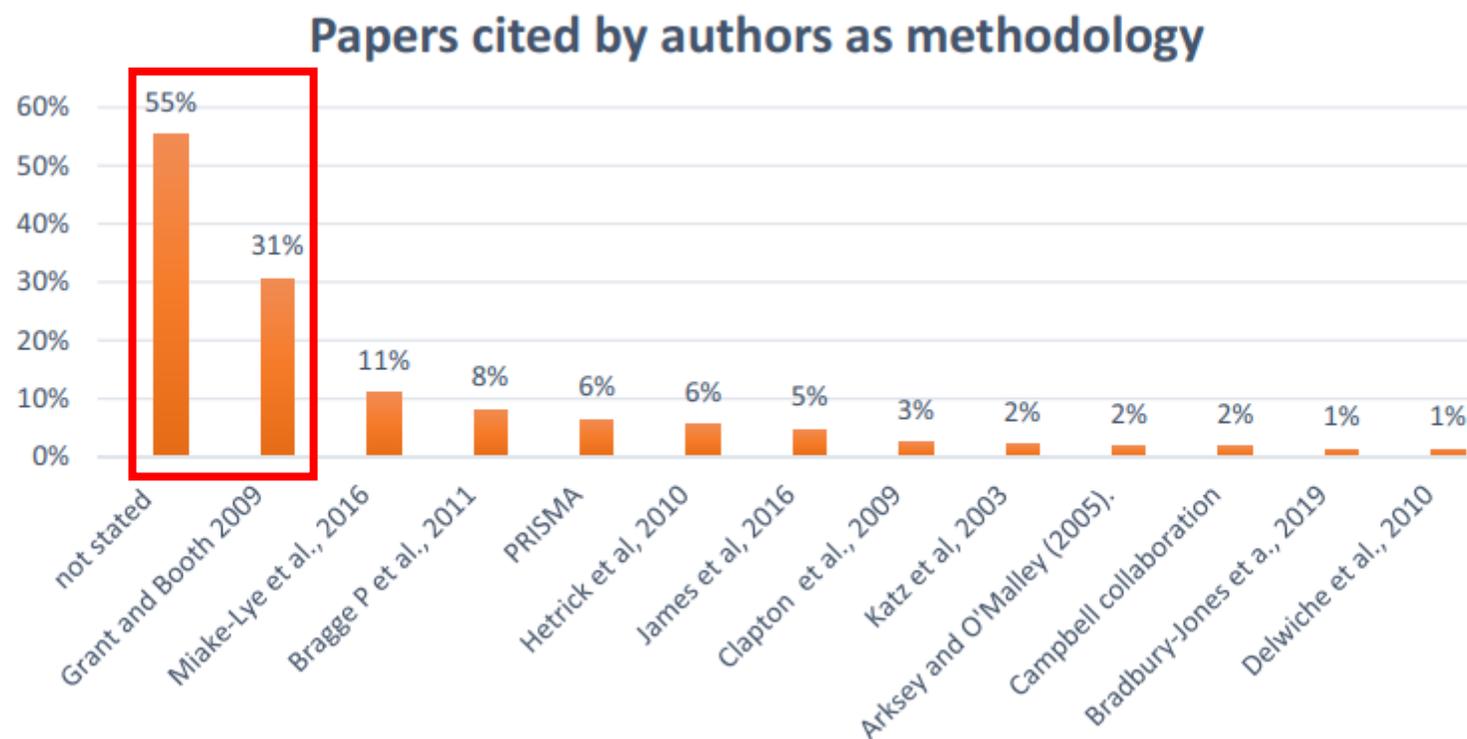


Fig. 2 Word cloud of synthesis name. The most commonly used terminology in the 494 scoping reviews is displayed, with the size of the terms in the word cloud corresponding to the frequency of their use

Mapping Reviews (Khalil et al 2024, Miayake-Lye et al 2016)



Evidence and Gap Maps

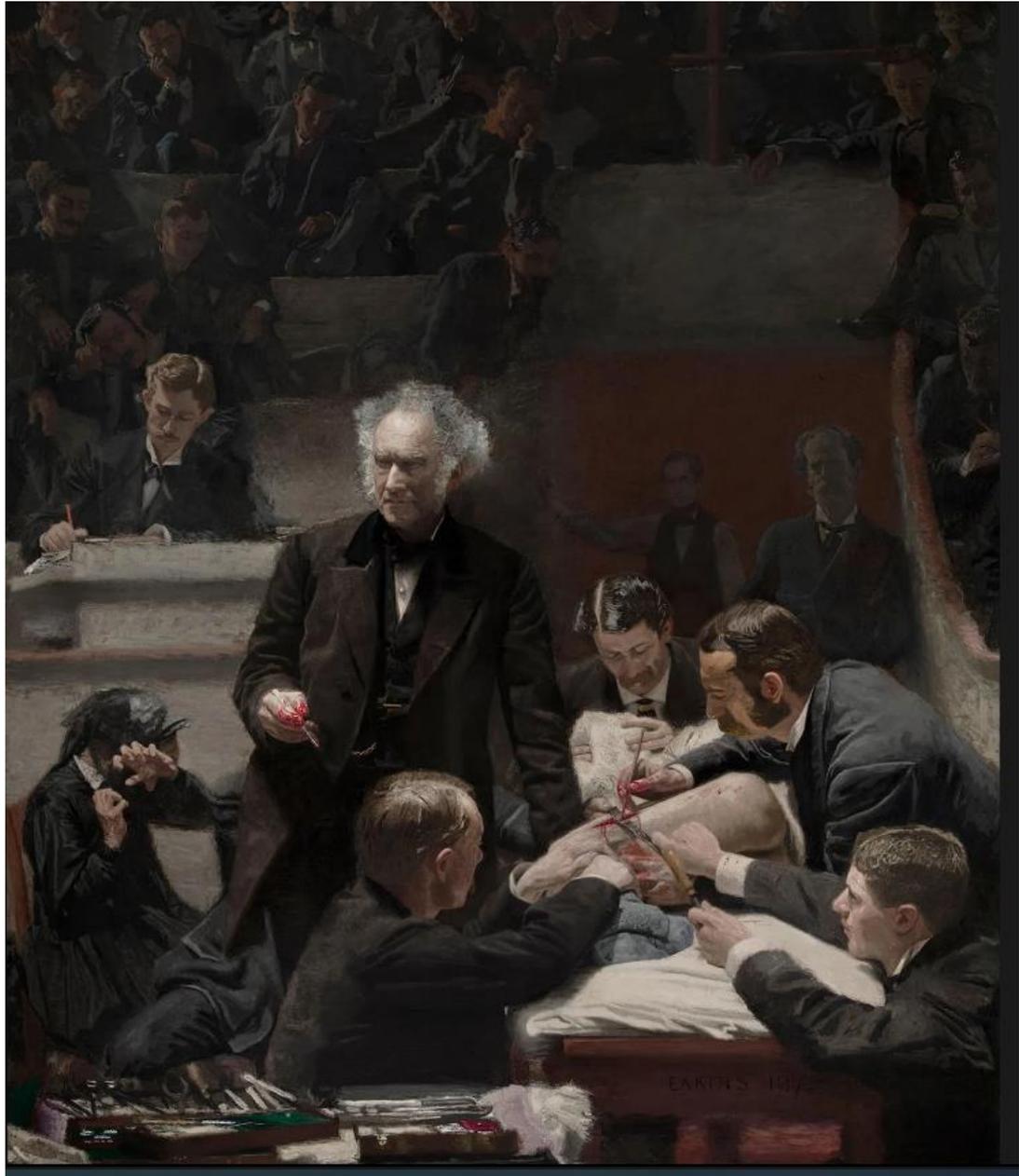
Campbell et al (2024)



Digital Interventions for Reducing Social Isolation and Loneliness in Older Adults



			Outcomes													
			Individual level outcomes							Community level outcomes					Process indicators	
Interventions			Loneliness	Social isolation	Social connectedness	Quality of life/well being	Anxiety/depression	Confidence level or self esteem	Adverse effects	Social support	Social engagement	Social cohesion	Social capital	Digital divide	Acceptance	Adherence
Improving social skills	Training in how to use digital technology for communication (e.g., computer, internet)		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●	●	●●●●●		●●●●●	●●●●●
			●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●	●	●●●●●		●●●●●	●●●●●
			●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●	●	●●●●●		●●●●●	●●●●●
	Digitally delivered training (e.g. about caregiving/skills building)		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●	●	●●●●●		●●●●●	●●●●●
			●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●	●	●●●●●		●●●●●	●●●●●
	Digitally delivered learning (e.g. new language)															
Enhancing social interactions	Digital connections with family/friends		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●	●	●●●●●		●●●●●	●●●●●
	Digital connections with community		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●	●	●●●●●		●●●●●	●●●●●
Enhancing social support	Digital/remote ehealth services		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●				●●●●●	●●●●●
	Digital social and health care coordination with		●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●	●●●●●	●●●●●				●●●●●	●●●●●



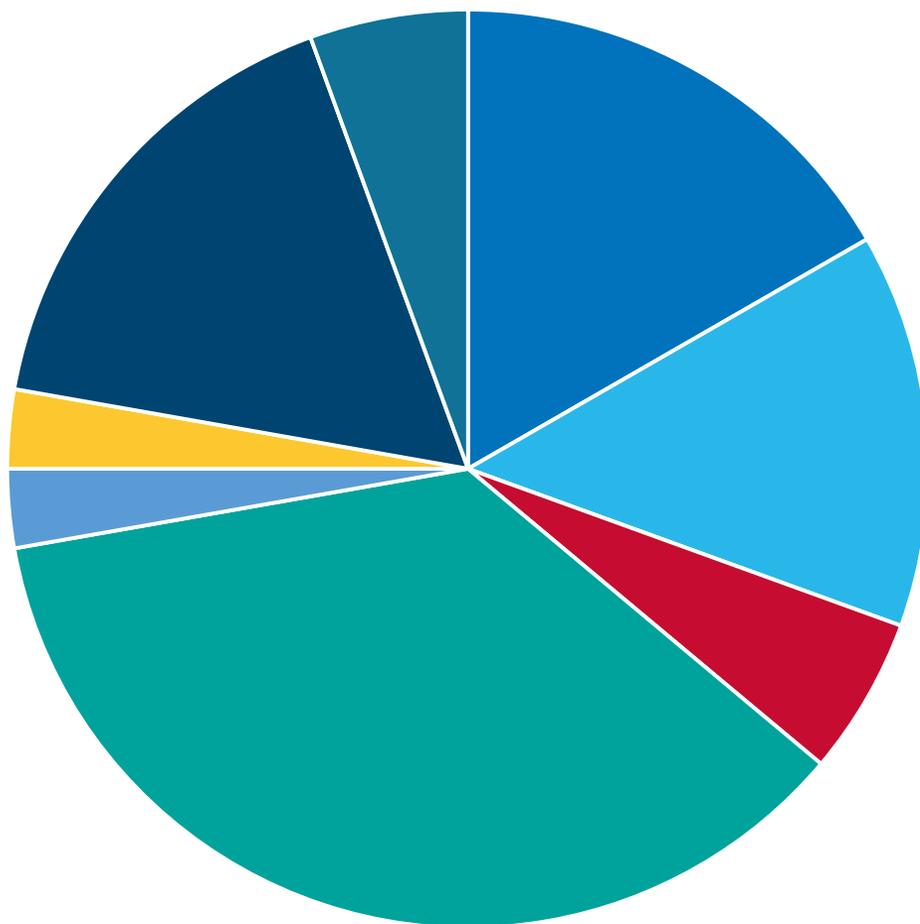
Classification of Lung Tumours

TUMOURS OF THE LUNG															
Epithelial Tumours															
	Bronchial papillomas	Sclerosing pneumocytoma	Alveolar adenoma	Papillary adenoma of the lung	Bronchiolar adenoma / ciliated muconodular papillary tumour	Mucinous cystadenoma of the lung	Mucous gland adenoma of the lung	Atypical adenomatous hyperplasia of the lung	Adenocarcinoma in situ of the lung	Minimally invasive adenocarcinoma of the lung	Invasive non-mucinous adenocarcinoma of the lung	Invasive mucinous adenocarcinoma of the lung	Colloid adenocarcinoma of the lung	Fetal adenocarcinoma of the lung	
TUMOUR DESCRIPTORS	Localization	Localization	●	●	●	●		●	●	●	●	●	●		
	Clinical features	Clinical Manifestation	●					●				●			
		Imaging	●	●	●	●		●		●	●	●	●	●	●
		Others							●						●
	Epidemiology	Epidemiology	●	●	●	●		●	●			●		●	
Etiology	Etiology	●	●	●	●						●				

● Low ● Moderate ● High ● Unclassifiable

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Topics covered



- Health behaviours
- Environment
- International development
- Social care
- Policing
- Research methods
- Health care
- Education

The Map Face (n=60)

- 78 % no date evident on the map
- 73% funder not explicitly stated
- 72% authors not stated
- 77% no links to a protocol or a report

16 (39%) described as 'living' or described methods for updates

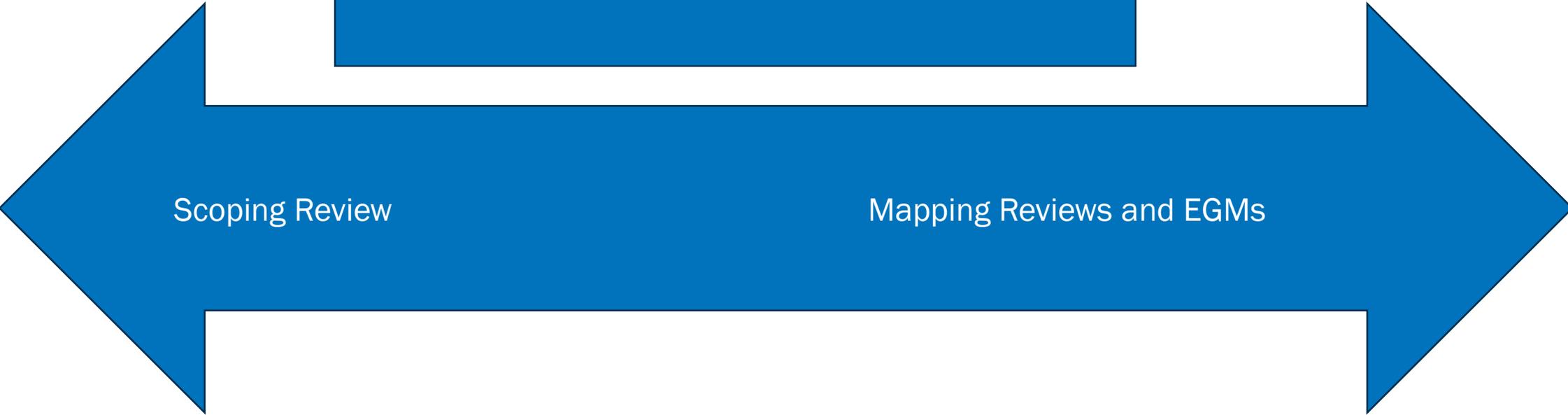
FREQUENCY

- Continuously (n=2)
- 2 weeks (n=1)
- 4 months (n=1)
- 10 months - 18 months (n=10)
- 24 months (n=1)
- Unclear ('when appropriate') n=2
- Throughout the life of the project (n=4)

PROCESS

- Automated (n=1)
- Automated searched with machine learning screening (n=1)
- Repeated searches (n=2)
- Stakeholders/reader alerts (n=1)
- Auto alerts (n=1)
- Unclear (n=10)

- Address broad questions
- Systematic, transparent, reproducible, rigorous methodologies in locating, data extraction and analysis
- Protocol development
- Supported by methodological guidance
- May include one type or multiple types of evidence
- Critical appraisal is not a core feature
- Descriptive/numerical summaries



Scoping Review

Mapping Reviews and EGMs

Evidence Synthesis

Systematic Reviews of Effectiveness

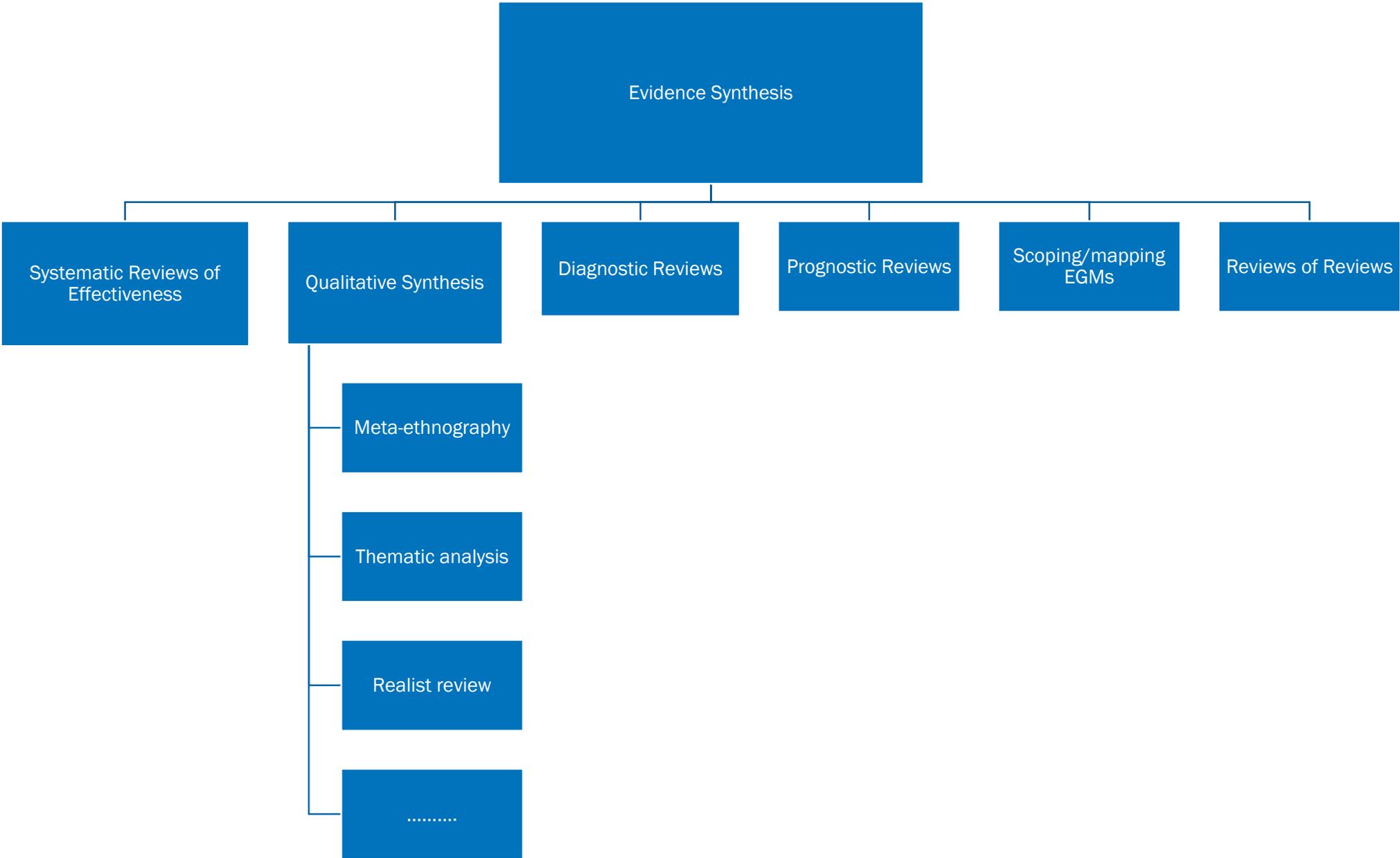
Qualitative Synthesis

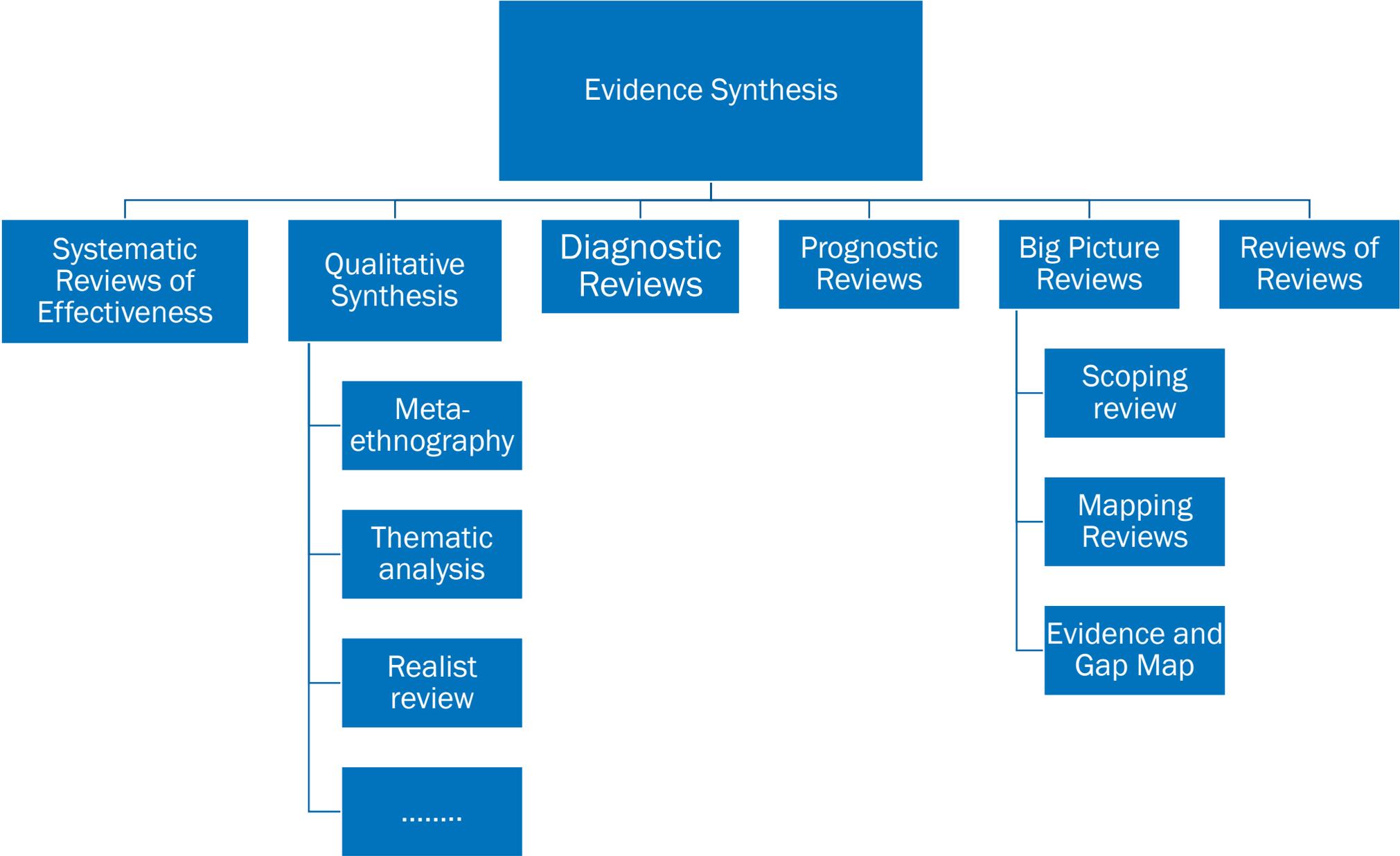
Diagnostic Reviews

Prognostic Reviews

Scoping/mapping EGMs

Reviews of Reviews





	Scoping Reviews	Mapping Reviews	Evidence and Gap Maps (EGMs)
Purpose	Clarifies and identifies key concepts/definitions, characteristics or factors related to a concept.	Collates, describes, and catalogues the available evidence related to the question of interest.	Systematic evidence synthesis product which visually displays the available evidence and identifies research gaps relevant to a specific research question.
Question	Narrow focus to a broad question; what are the definitions for a particular concept?	Broad question: what do we know about a topic?	Very broad question, includes all relevant evidence of a specified kind for a particular question
Evidence Source	Identifies and maps evidence irrespective of source.	Identifies and maps evidence irrespective of source. Generally > 80+ studies	Identifies and maps evidence irrespective of source. Generally > 80+ studies
Extraction	Extensive and detailed data extractions	High-level with pre-defined codes for extraction*.	High-level with pre-defined codes for data extraction*
Analysis	Inductive (needs to be developed) or deductive (pre-determined) analysis (may include basic qualitative content analysis)	Deductive summary of high level data with pre-defined codes.	Deductive summary of high-level data dependent on framework.
Presentation of results	Visual summaries must be accompanied by a descriptive synthesis	Visual summaries with or without EGMs	Visual, interactive online output placed on a web-based platform, such as a funders webpage.

- charting be considered an *iterative process* in which researchers continually update the data-charting form.
- chart and *summarize complex concepts* in a meaningful way
- synthesizing process information may benefit from *utilization of qualitative content analysis* approaches to make sense of the wealth of extracted data
- analytical stage resembled *qualitative data analytical* technique



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Making existential meaning in transition to motherhood—A scoping review



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 Chief Consultant)^b, Niels Buus, RN, MScN, PhD (Associate Professor)^a

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Childbirth

Transition

ABSTRACT

Objective: to provide a thematic overview of the existing literature on existential meaning-making related to transition to motherhood among mothers of full term born babies in Western oriented countries and to discuss the themes from a existential psychology perspective.

Design: the review follows the approach of a scoping review. Systematic searches in the electronic databases PubMed, CINAHL and PsycINFO were combined with manual and electronic searches for related references. Studies published between 1990 and 2010 examining dimensions of existential meaning-making in transition to motherhood were selected. Eleven papers were included in the synthesis, all using qualitative interviews. The following data were extracted from each study: (a) author(s), year of publication, study location, (b) aims of the study, (c) participants, (d) research design, (e) data collection method, (f) outcome measures, and (g) results.

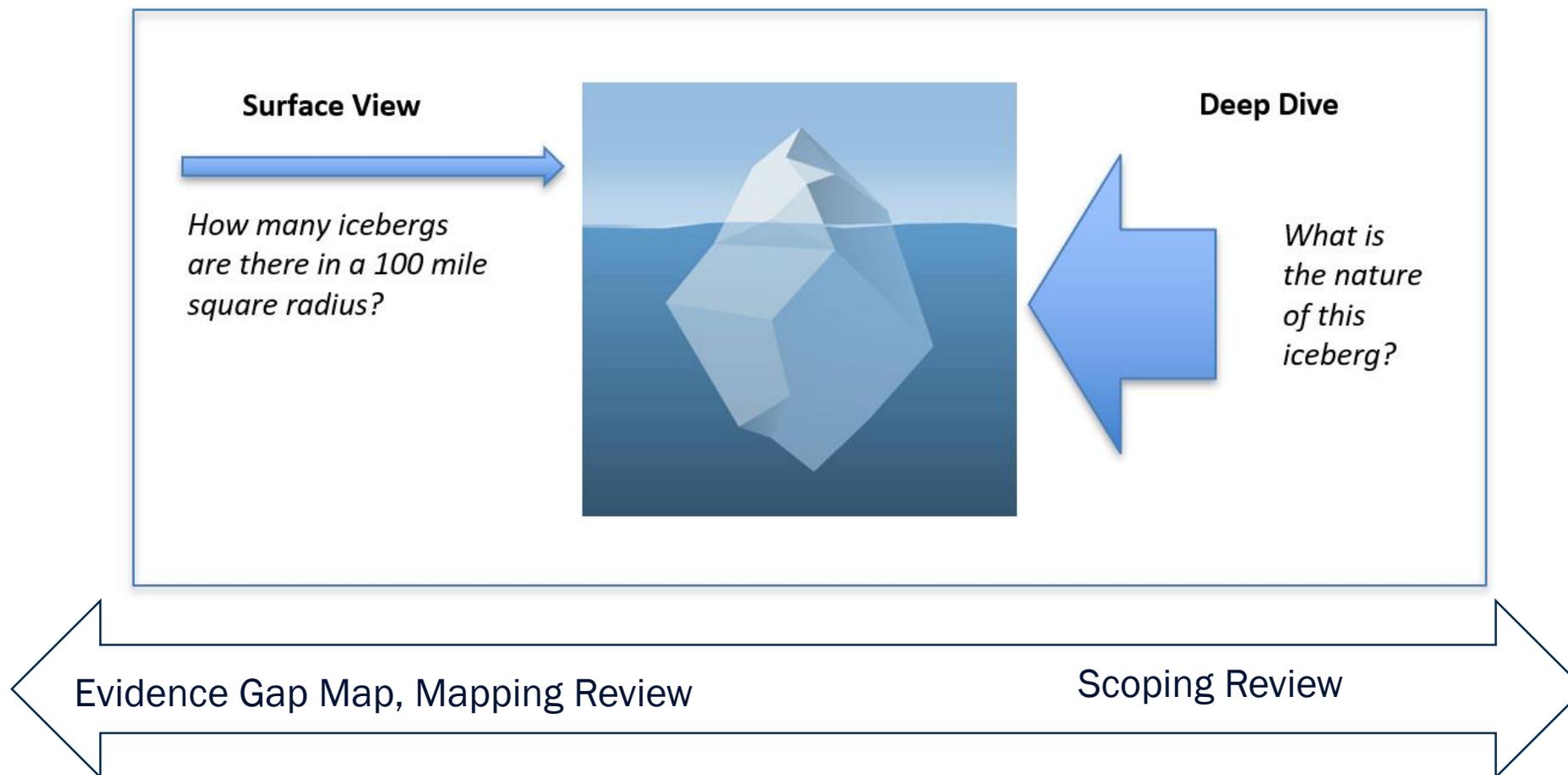
Measurements: the studies were synthesised in a thematisation on the basis of the existential psychotherapist and philosopher Emmy van Deurzen's concepts of four interwoven life dimensions, through which we experience, interpret, and act in the world: Umwelt, Mitwelt, Eigenwelt, and Überwelt.

Key conclusions: the findings in this review suggest that transition to motherhood is considered a pivotal and paradoxical life event. Through the lens of existential psychology it can be interpreted as an existentially changing event, reorganising values and what makes life worth living, and to some women also being interpreted as a spiritual experience. However, in present maternity services there is a predominant focus on biomedical issues, which sets the arena for motherhood transition, and the issues related to potentially existentially changing experiences, are not considered important. Without an integrative approach, where personal meaning-making issues are discussed, the potential for growth during existential authenticity is not utilised. Transition to motherhood raises existential questions about mortality and meaning of life, and we should explore this field in research and in clinical work.

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Callister et al. (2010)	17 Australian (Victoria) women who had given birth during the last 12 months. 14 VB, 3 sectio, 25–35 y Para 0=8, multipara=9 All in committed relationships 11 in birthing centres (average only 1,9%).	Life-changing wellness-experience. Difficult to describe the pain. Incredibly intense and painful.	'Before you have a baby, it's all about you.' (5)	Being empowered by giving birth. Life-changing wellness-experience. 'Creating your own baby and then giving birth to it – there is nothing like it' (4).	Challenge of birth as symbolic of life. Having a connected experience with a Higher Power – profound life-altering experience.
Miller (2011b).	17 UK women White, heterosexual, most self-identified as middle-class, employed and partnered.	'...being convinced. I was going to die... hideously painful.'(13).		'Everything I'd planned went completely wrong'. (14). 'The idea of being able to 'cope' with being a mother'. Before the birth women anticipate that they will naturally and instinctively know how to mother. Mothering did not come 'naturally' for most of the women.	Retrospectively could the women challenged the 'myths of motherhood' and 'risk' talking about how things had really been 'Returning to a new normal'.

Approaches to Data Extraction/Coding



Coding variable	Example of information that may be recorded
Full reference	Author(s), title, date, publisher
Year of publication	Date of publication in years
Publication type	Academic journal, book, conference paper or thesis
Language	Article language
Study country	Name of country
Linked study	Other articles reporting the same study
Data source	e.g. Primary or secondary research
Data type	e.g. Quantitative or qualitative
Study design	e.g. Experimental, quasi-experimental, observational, survey
Population(s)	e.g. Species, group
Intervention(s)	Type(s) of intervention investigated
Exposure(s)	Type(s) of exposure investigated
Comparator(s)	Type(s) of comparator used
Outcome(s) assessed	Types of outcome assessed
Sampling strategy	e.g. None specified, randomised, systematic
Length/period of study	e.g. Number of days, weeks, months, years or time period over which study was undertaken



Scoping Reviews

How is the concept ‘moral injury’ used and defined within the existing literature.



Mapping Reviews

What is the extent and nature of the research related to moral injury.



EGMs

What research has been published related to moral injury and where are the research gaps.

	Scoping Reviews	Mapping Reviews	Evidence and Gap Maps (EGMs)
Purpose	Clarifies and identifies key concepts/definitions, characteristics or factors related to a concept.	Collates, describes, and catalogues the available evidence related to the question of interest.	Systematic evidence synthesis product which visually displays the available evidence and identifies research gaps relevant to a specific research question.
Question	Narrow focus to a broad question; what are the definitions for a particular concept?	Broad question: what do we know about a topic?	Very broad question, includes all relevant evidence of a specified kind for a particular question
Evidence Source	Identifies and maps evidence irrespective of source.	Identifies and maps evidence irrespective of source. Generally > 80+ studies	Identifies and maps evidence irrespective of source. Generally > 80+ studies
Extraction	Extensive and detailed data extractions	High-level with pre-defined codes for extraction*.	High-level with pre-defined codes for data extraction*
Analysis	Inductive (needs to be developed) or deductive (pre-determined) analysis (may include basic qualitative content analysis)	Deductive summary of high level data with pre-defined codes.	Deductive summary of high-level data dependent on framework.
Presentation of results	Visual summaries must be accompanied by a descriptive synthesis	Visual summaries with or without EGMs	Visual, interactive online output placed on a web-based platform, such as a funders webpage.

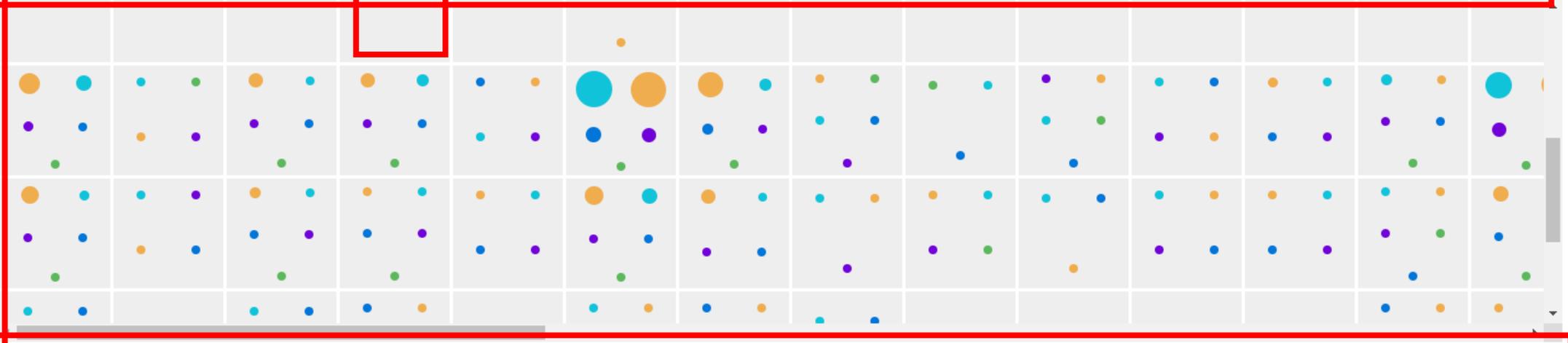
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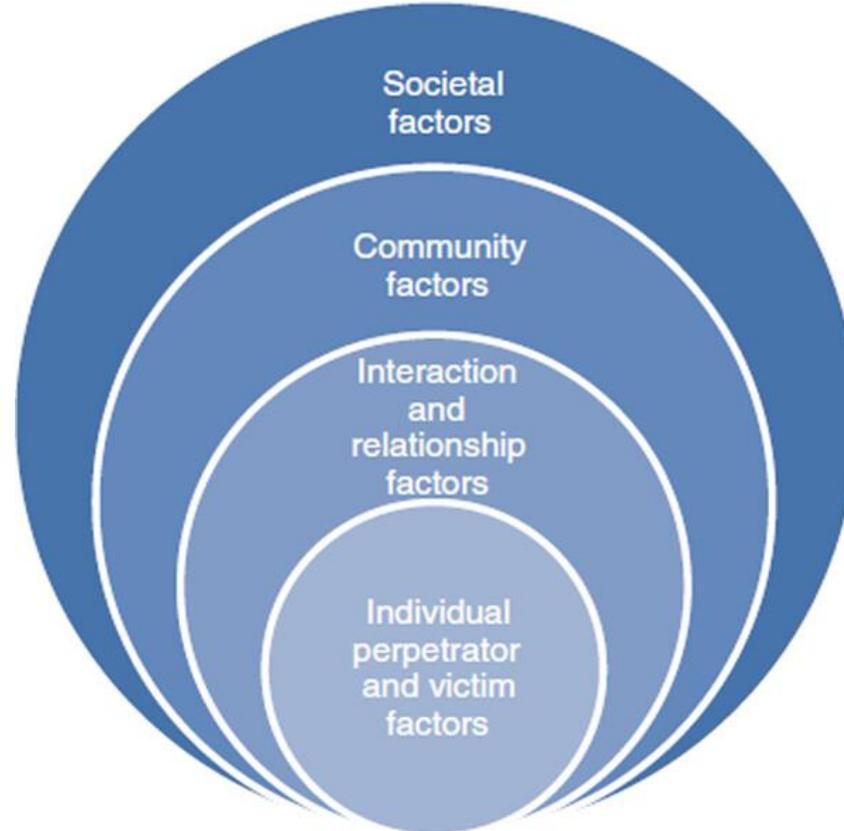
Non-familial Intergenerational Interventions and their Impact on the Social and Mental Wellbeing of Younger and Older People a Mapping Review and Evidence and Gap Map



Children and young people centred outcomes												Older people centred outcomes		
Attainment and knowledge	Mental health	Agency	Mental wellbeing	Loneliness and social isolation	Attitudes	Intergenerational interactions	Peer interactions	Physical health outcomes	Health promotion	Other	Attainment and knowledge	Mental health	Mental wellbeing	

activities
Level 5 Demonstration projects
Level 6 Ongoing intergenerational programmes
Level 7 Intergenerational community





Risk and protective factors organized according to the socio-ecological model (Labrum & Solomon, [2015](#))

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Purpose of Big Picture Reviews

- Mapping – key concepts, main sources, types of evidence
- Conceptualising
- Identifying Gaps
- Identifying Clusters
- Creating a database
- Collating
- Describing nature and characteristics
- Cataloguing
- Exploratory
- Characterising an expanse of evidence
- Clarifying a complex concept

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Purpose of Big Picture Reviews



Scoping Reviews

- Conceptualising
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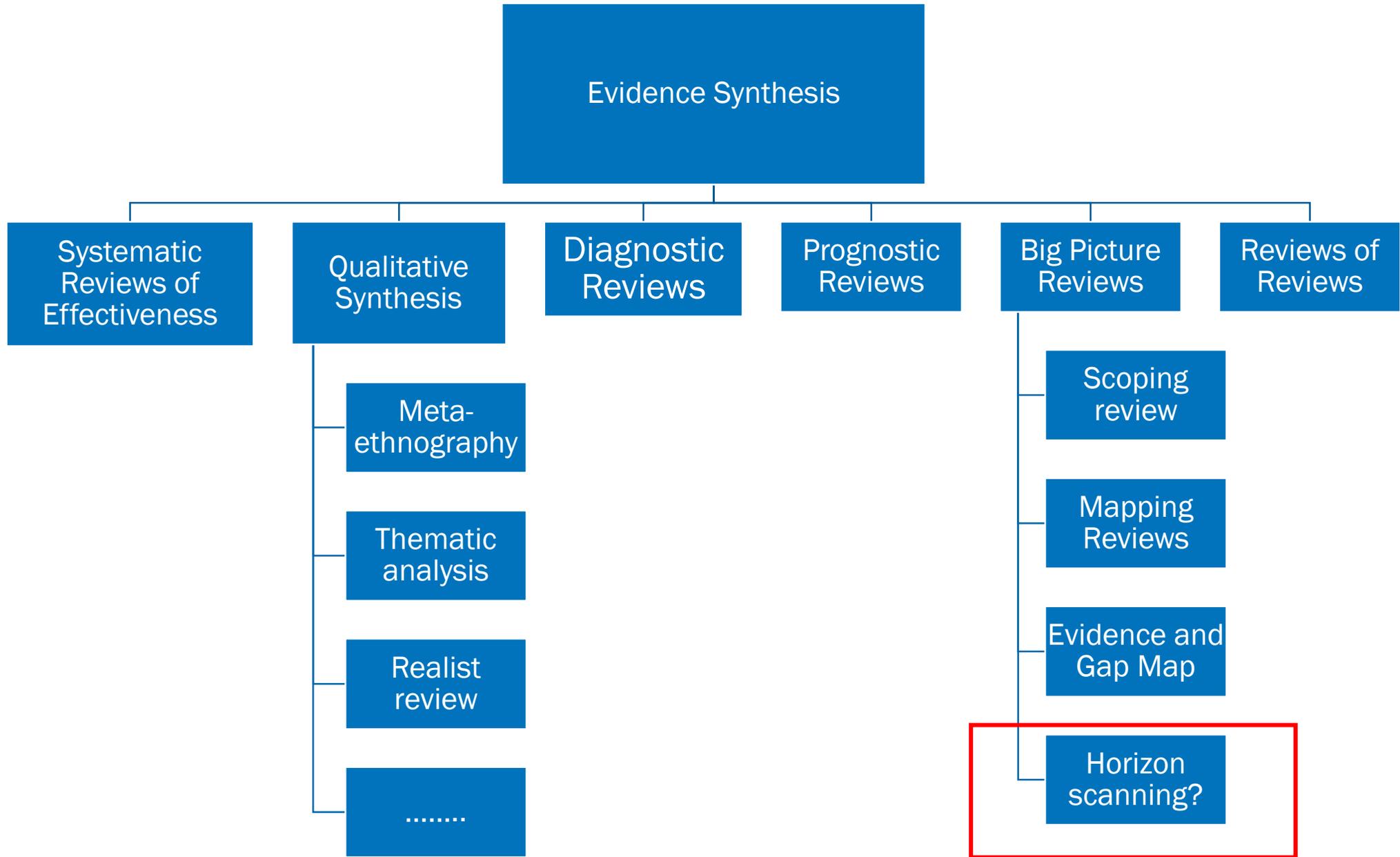
Mapping Reviews

- Mapping – key concepts, main sources, types of evidence
- Collating
- Cataloguing
- Characterising an expanse of evidence



EGMs

- Identifying Gaps
- Identifying Clusters
- Creating a database
- Cataloguing



The future

- Taxonomy being developed...
- PRIMAP
- PRISMA-EGM
- Rapid approaches
- Living Maps

Recommendations

- Read the methods sources you are using, don't just copy everyone else.
- Tools should be helpful
- Addressing 'broad' questions is very broad!
- Consider Big Picture Reviews as a family with different approaches within it
- Think carefully about the face of your map

Thank you

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