



CURRENT BEST PRACTICES FOR THE CONDUCT OF SCOPING REVIEWS

Heather Colquhoun, Reg OT.(Ont.)

Occupational Science and Occupational Therapy, University of Toronto

Impactful Biomedical Research: Achieving Quality and Transparency

May 12, 2016

Collective experiences of our team

Kelly O'Brien, Danielle Levac, Andrea Tricco, Wasifa Zarin, Erin Lillie & Sharon Straus

- the conduct of 40 scoping reviews collectively
- co-led a two-day, 48 person international meeting on the development of methodological quality criteria for conducting and reporting scoping reviews
- the conduct of a scoping review of scoping reviews which includes 545 articles
- Published 2 methodology papers for the conduct of scoping reviews
- Leading (S Straus PI) the development of reporting guidance

The plan

- Scoping reviews – defining concepts
- Methods – Resources, highlights, reporting
- Tips and challenges

‘All in the Family: systematic reviews, rapid reviews, scoping reviews, realist reviews, and more’

- Systematic review – questions about intervention effectiveness
- Rapid review – when time is of the essence
- Scoping review – an overview of a broad field
- Evidence map – a visual representative of studies
- Realist review – how and why complex social interventions work

Moher et al. Systematic Reviews (2015) 4:183

DOI 10.1186/s13643-015-0163-7

Scoping review definition

- “A scoping review or scoping study is a form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting, and synthesizing existing knowledge”

Colquhoun, et al. J of Clin Epi. 2014,
67, p. 1292-94

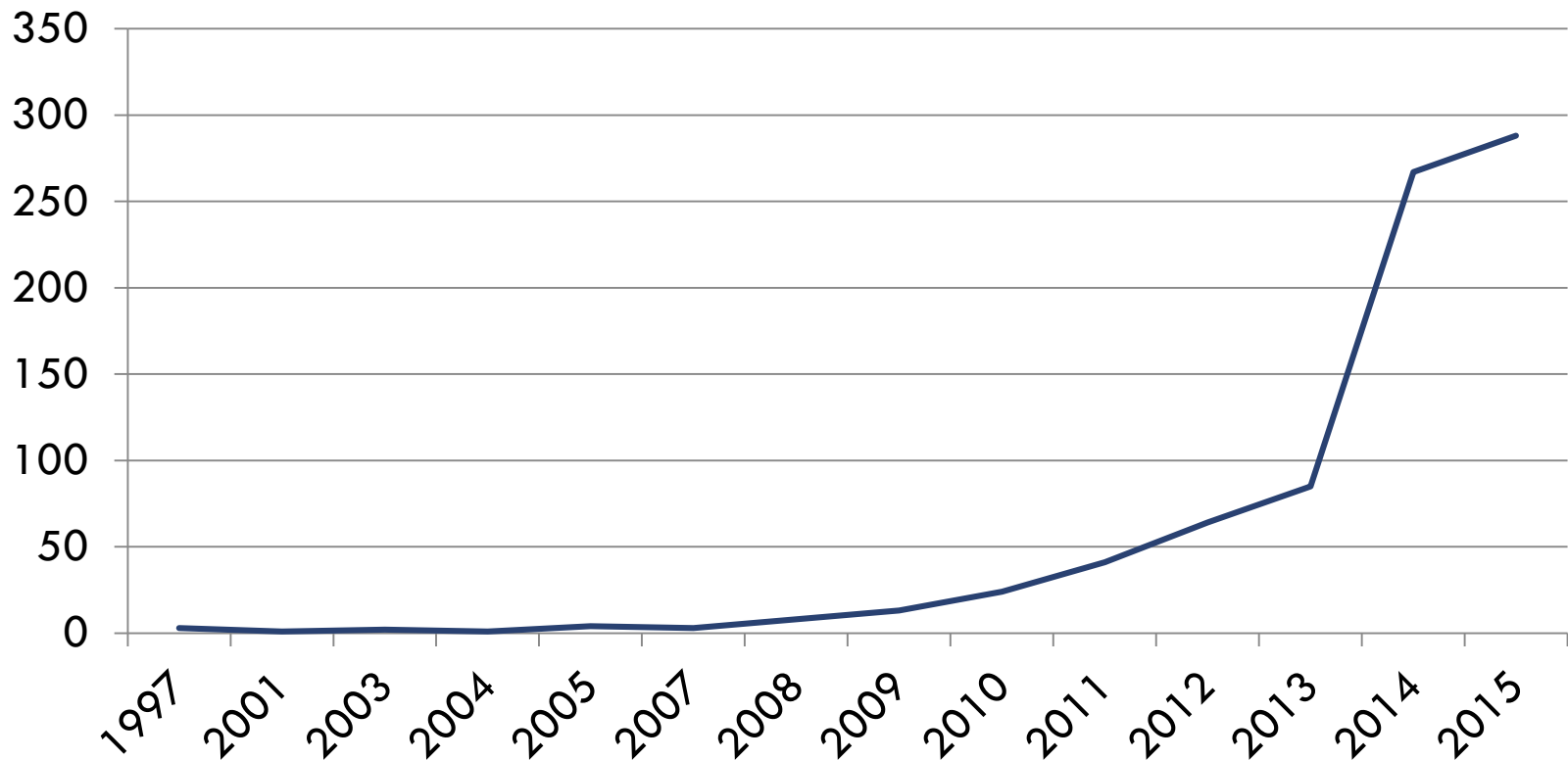
- Broad question to investigate what has been done in a field

Why do a scoping review

- Determine the ability to conduct a systematic review
- Exercises in and of themselves
 - ▣ to summarize and disseminate research findings
 - ▣ to identify research gaps or general gaps in an area
 - ▣ make recommendations for the future research
 - ▣ map a body of literature with relevance to time, location (e.g. country or context), source (e.g. peer-reviewed or grey literature), and origin (e.g. healthcare discipline or academic field)

Scoping reviews published by year

No of scoping reviews



Scoping reviews by year 1997-2015, search conducted Dec 31, 2015 - Medline, EMBASE, CINAHL, and PsychINFO

Methods support

- Arksey H, O'Malley L. **Scoping studies: towards a methodological framework.** *International Journal of Social Research Methodology* 2005, **8**(1):19-32.
- Levac D, Colquhoun H, O'Brien KK. **Scoping studies: advancing the methodology.** *Implementation science: IS* 2010, **5**:69.
- Colquhoun HL, Levac D, O'Brien KK, Straus S, Tricco AC, Perrier L, Kastner M, Moher D. **Scoping reviews: time for clarity in definition, methods, and reporting.** *Journal of clinical epidemiology*, **67**, 2014.
- Peters MD, Godfrey CM, Khalil H, McInerney P, Parker D, Soares CB. **Guidance for conducting systematic scoping reviews.** *International journal of evidence-based healthcare* 2015, **13**(3):141-146.
 - ▣ Joanna Briggs Guidance, comes with a supplement

Deciding to do a scoping review

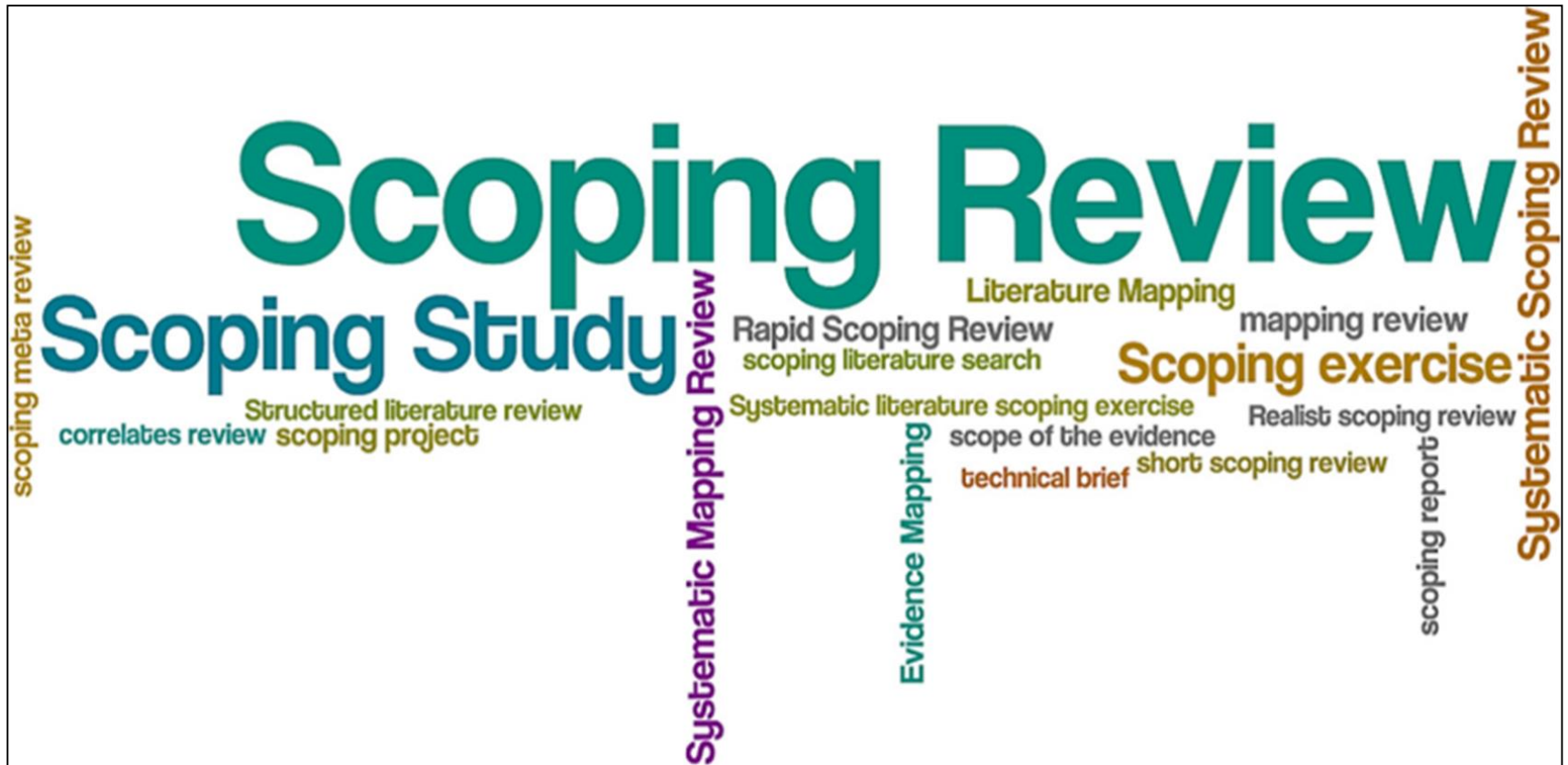
- A scoping review is not necessarily less work than a systematic review
- Articulate why a scoping review is the best methodology to answer your research question
 - ▣ Avoid framing the rationale in the negative, e.g., ‘we are doing a scoping review because we are not assessing quality or because we are not doing a meta-analysis’
- Has a scoping review already been done?
 - ▣ Protocol search: <http://www.crd.york.ac.uk/PROSPERO/>
 - ▣ Scoping review search
- Understand who the knowledge users are for the review
- Consider the consultation phase and how this might fit into your question

Protocol

- Consider publishing a protocol or at least develop a written plan of action
 - ▣ The protocol should detail the criteria that the reviewers intend on using to include and exclude studies and to identify what data is relevant, and how the data will be extracted and mapped
 - ▣ Get feedback from the knowledge users
 - ▣ Use PRISMA-P
- The iterative nature of scoping reviews

Title

- 'Scoping review' in the title
- The PCC mnemonic
 - ▣ Population - Who
 - ▣ Concept - What
 - ▣ Context – With what qualifiers



Tricco et al. BMC Med Res Methodol. 2016; 16: 15. Published online 2016 Feb 9. doi: 10.1186/s12874-016-0116-4

Review question/objectives/purpose

- Question
- Objective
- Purpose
 - Too often miss the purpose
 - Why does this body of literature need to be summarized and for who? What exactly do you want to accomplish? How will the results advance the state of knowledge, and what purpose will the findings serve?

Review question/purpose/objective

- Example question: What are the experiences and preferences of Bangladeshi patients and carers in gaining access to diabetes-related health care information and services?
 - Determine key barriers and facilitators affecting access to diabetes healthcare information and services for Bangladeshis?
 - Determine preferred sources and forms of information for Bangladeshis?
 - Determine levels of knowledge regarding diabetes within the Bangladeshi community?
 - Purpose: A greater understanding of the factors that can influence access, including identifying the barriers and facilitators to access, may lead to improved service delivery with the potential to improve the healthcare of patients.

Alam R, Speed S, Beaver K: A scoping review on the experiences and preferences in accessing diabetes-related healthcare information and services by British Bangladeshis. Health & social care in the community 2012, 20(2):155-171.

Sources and search

- Describe such that it could be repeated by others
- *Describe all information sources*
 - ▣ databases with dates of coverage
 - ▣ if contact with authors to identify additional studies
 - ▣ date last searched
 - ▣ any limits (e.g., publication status, time, language) on the types of sources should be explained
 - ▣ grey literature, reference list searching, hand searching

Inclusion/exclusion criteria

- Vital for decision making; time consuming
- 'we included studies that were consistent with the research question' – not good enough
- Exclusion criteria is equally as important

Screening

- At least 2 reviewers for all screening
- Same criteria should be applied at level 1 and level 2 – but level 2 you are using the full text article

Extraction (or charting)

- Two people involved
- List and define all variables for which data were sought – develop a guide
- ‘we extracted anything in the paper related to the construct of interest’ – not good enough
- Pilot test

Synthesis plan

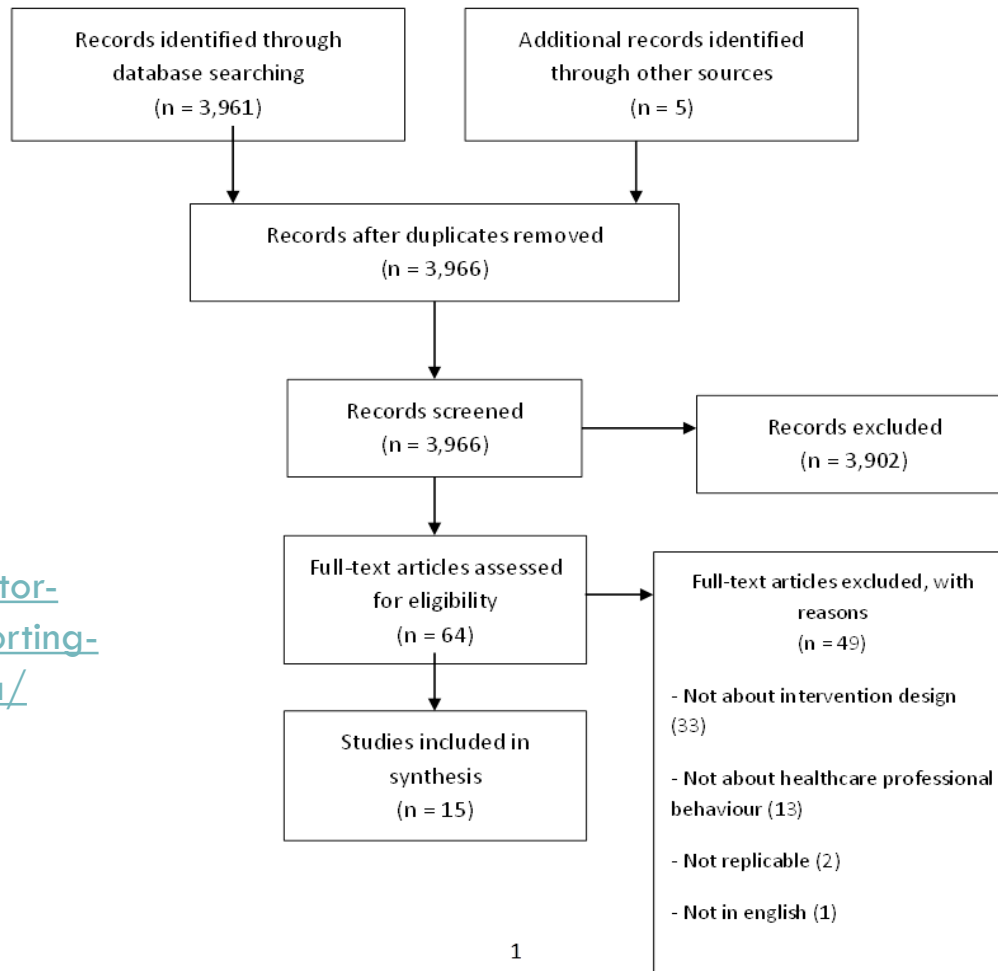
- Clearly outline the synthesis plan (in methods)
- Ensure synthesis is more than just a superficial summary of all the studies
- Analytical interpretation?

Results

- Present results in diagrammatic or tabular form (numerical summary), and/or in a descriptive format (narrative summary) that aligns with the study objectives and scope of the review
- Outputs consistent with purpose?
- PRISMA flow diagram

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram

Figure 1 –PRISMA diagram



<http://www.equator-network.org/reporting-guidelines/prisma/>

General Tips

- Poor reason to do a scoping review: Really think there is nothing out there but want to do a review to confirm there is no literature
- Describing interventions in a scoping review
 - ▣ Either with or without a review of effects
- The importance of reporting (transparency) all details of the methods undertaken

General Tips

- Consider very carefully decisions that reduce the scope (depth and breadth) of the review
 - ▣ Resources and time alone are not adequate to reduce scope
 - ▣ Limits must be consistent with the question asked
- Scoping reviews for trainees or students
 - ▣ Knowledge syntheses are team sports

Enhancing the QUALity and Transparency Of health Research (EQUATOR) Network

- Reporting guidance – **PRISMA-ScR...coming**
- <http://www.equator-network.org/reporting-guidelines/prisma/>

Contact: heather.colquhoun@utoronto.ca