

Evidence synthesis

A review of reviews

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A review of reviews

- Types of evidence synthesis (also known as reviews)
- Reproducibility
- Making your review work reproducible



Zoom link: bit.ly/oulib-czoom

Logistics

- Documents to have ready
 - Grant and Booth (2009)
 - Homework 2 worksheet (search strategy, to compare)
 - Homework 4 worksheet (to do in class)
 - One of the four review papers listed on Homework 4
- Where to sit
 - Pick a table with people who have chosen the same paper, 4-5 people max

Context for pre-class reading

- Grant and Booth (2009)'s Table 1 lists 14 types of reviews
 - Other perspectives, there are so many variations

A newer classification

- “48 review types were identified and categorised into seven families” Sutton et al. 2019¹
 - Traditional reviews
 - Systematic reviews
 - Qualitative systematic review
 - Review of reviews
 - Rapid reviews
 - Mixed methods reviews
 - Purpose-specific reviews
- “Labels are only useful when supported by sufficient consensus or authoritative guidance to remove ambiguity on methods and processes.”

1. Sutton, A. , Clowes, M. , Preston, L. and Booth, A. (2019), Meeting the review family: exploring review types and associated information retrieval requirements. Health Info Libr J, 36: 202-222., which has been published in final form at <https://doi.org/10.1111/hir.12276>.

What are reviews?

Broader terms

- Evidence synthesis
- Literature review

More specific terms

- Narrative review
 - Most [undergrad and beginning grad resources](#) will be about this type
 - This is a perfectly good type of review!
 - Grant and Booth (2009) one of few places that doesn't use this as a category
- Systematic reviews (multiple types)
 - “Regular” systematic review
 - Scoping/mapping review (statistics are essentially counts)
 - Meta-analysis (statistics beyond counts)
- Structured or systematized review
 - When you don't have a full team (2+)

What distinguishes a narrative review from these others?

- Less formal structure in methods reporting
- Lack of reproducibility
- What did you notice about the searching methods in review papers you've read before, if anything?

The worksheet

- Pick a paper! (Q1)
- Open the file/get out the printout!
- Get into a group with others who chose that paper, max 3-5 people per group
- Pick a note-taker and speaker
 - Rotate both so everyone gets practice

Classify your paper using Grant and Booth table 1 (Q2)

- Search
 - How the authors find literature
 - Terms used in field
- Appraisal
 - Assessment of literature quality
 - Inclusion/exclusion criteria
- Synthesis
 - Narrative
 - Graphical
 - Tabular
- Analysis
 - Narrative
 - Numerical

Strengths and weaknesses (Q3)

Put page numbers or sections or phrases from your paper

What did you think of the search strategies?

- How does your chosen paper compare to homework 2 search? (Q5)
- How does it help or hinder your ability to follow up on the research in the paper? (Q6)

Reproducibility

What is reproducibility and replicability?

- Have you tried reproducing or replicating methods from a paper (whether a review or empirical)?

RESEARCH DESIGN

What is reproducibility, officially?

- Well, it depends on your field¹

-“Replication crisis” has become a topic of discussion in and out of science/engineering/medicine²

1. Plesser HE. Reproducibility vs. Replicability: A Brief History of a Confused Terminology. Frontiers in Neuroinformatics 2018 Jan 18;11:76. doi: 10.3389/fninf.2017.00076
2. “3. Understanding Reproducibility and Replicability.” 2019. In Reproducibility and Replicability in Science. Washington, D.C.: National Academies Press. <https://doi.org/10.17226/25303>

Clearer terms proposed

- Goodman et al. (2016)¹ proposes
 - Methods reproducibility: Enough details to recreate procedures
 - Results reproducibility: Use methods reproducibility to replicate results
 - Inferential reproducibility: “Inferential reproducibility, not often recognized as a separate concept, is the making of knowledge claims of similar strength from a study replication or reanalysis.”
 - Not getting into this today but important!

1. Goodman S. N., Fanelli D., Ioannidis J. P. A. (2016). What does research reproducibility mean? Sci. Transl. Med. 8:341ps12.
10.1126/scitranslmed.aaf5027

How can we make a literature review, in particular, reproducible?

- When you give someone instructions, what would you include?
- Go back to what you found in Q5 and Q6

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Reporting frameworks

- Standardizing what methods we need to reproduce, honed over time and for different types of reviews¹
- PRISMA and its variations²
 - “Preferred Reporting Items for Systematic reviews and Meta-Analyses”
- ROSES³
 - “RepOrting standards for Systematic Evidence Syntheses in environmental research”
- NIRO-SR⁴
 - “Non-Interventional, Reproducible, and Open (NIRO) Systematic Reviews”

1. Evidence Synthesis Institute: Guidelines and Reporting Standards, access at <https://www.youtube.com/watch?v=Se9dktabypE>

2. prisma-statement.org

3. roses-reporting.com

4. niro-sr.netlify.app/

Making your own work reproducible and transparent

We have a search already, is it enough?

- What part of PRISMA does your search belong in?
- Is it comprehensive enough for your purpose?

Searching in depth

- This is a learned skill
- Places you can get, use, and cite existing searches (called search filters or search hedges)
 - searchRxiv, cabidigitallibrary.org/journal/searchrxiv
 - use very broad terms
 - [geography filters at ISSG](#)
 - [quality of life filters at ISSG](#)
 - [More filter links from University of South Australia](#)

Tools beyond Zotero

- Step-by-step process
 - Use a protocol template
 - PRISMA template
 - osf.io/nbyhk
 - Systematized (one person) template
 - osf.io/ezqpd
- [Covidence.org](https://covidence.org)
 - in one year pilot (12 months more if we don't renew)
 - Email me cmcurry@ou.edu to get an account
- [The Evidence Review Accelerator](#)

I'm not writing a systematic review, why should I care?

- You waste less time on searching the same thing repeatedly
- You spend less time skimming irrelevant literature
- You can evaluate reproducibility and transparency of other work
- You understand how the research methods can affect strength and weakness of synthesis conclusions (it's not just a list of objective facts)

Contact me to talk more!



Survey at QR or type URL: bitly.com/oulib-class

Email cmcurry@ou.edu

My appointment calendar libcal.ou.edu/appointments/cmcurry

