Advanced Literature Searching: Strategies and Techniques

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Learning objectives

● Understand characteristics of advanced literature searches.
● Learn to construct structured and sensitive search strategies.
● Identify resources as jumping off points for information seeking.
● Understand best practices for documenting and organizing your information.
Ongoing Collaboration

- Information seeking consultations
- Education and Instruction
- Scholarly Communication
- Connections to expertise across campus

Source: https://pixabay.com/en/feedback-group-communication-2044700/
Resource Selection: Matching Tool to Need
Taubman Health Sciences Library

Taubman Health Sciences Library supports the research and curricular needs of the university's health sciences schools, Michigan Medicine, and associated disciplines. Collaborate with an expert, get help with assessment and evaluation, and more.

Visit
- Library buildings are closed
- MLibrary@NCRC is our satellite location in the North Campus Research Complex

Hours
Today: Closed
View hours for all locations

lib.umich.edu/thl
Explore what the library has to offer.

Library Search
Search the catalog, articles, databases, online journals, and more.

Research Guides
Consult research resources and guides created by library experts.

Interlibrary Loan
Request materials for delivery or from other library systems. Login required.

Deep Blue Data
Share and access research data.

Deep Blue Documents
Share and access articles, chapters, dissertations, and more produced by the U-M community.

Browse Databases
Browse Online Journals
Citation Linker
Digital Collections A-Z
Online Exhibits
Library Blogs
Michigan Publishing
Research Guides as Jumping off Points

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<tr>
<th>Subjects</th>
<th>Date</th>
<th>Views</th>
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<tr>
<td>Health Sciences</td>
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<tr>
<td>Academic Integrity at SPH</td>
<td>Sep 28, 2017</td>
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<td>Allergy and Clinical Immunology</td>
<td>Feb 8, 2018</td>
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<td>Anesthesiology</td>
<td>Jan 25, 2018</td>
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<td>Biobanking</td>
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<td>Biographical and Historical Resources for Health Sciences</td>
<td>Nov 30, 2017</td>
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<td>Biological Chemistry</td>
<td>Nov 30, 2017</td>
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Health Services and Policy Research

This guide serves as a portal to key resources for the interdisciplinary field of health services and policy research.

Resource Spotlight: Overton Interdisciplinary Policy Database

**Overton** Provides the world's largest collection of policy documents, guidelines, think tank publications, and working papers.

Search 6,873,924 policy documents

['health equity' OR 'health inequity']

We'll search the titles and full text of the policy documents we index. You can use boolean operators AND, OR, NOT, phrase in quotes, the : operator and a number after phrases to allow word gaps, and parentheses. See our help page on advanced searches for more.

Example searches:

- Tobacco packaging
- covid-19 AND masks
- title:“World Development Report”
- Phillips Curve Netherlands"^40
<table>
<thead>
<tr>
<th>If you are looking for</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical literature, clinical studies, and reviews</td>
<td>PubMed (Medline is main component)</td>
</tr>
<tr>
<td>Health Policy Literature</td>
<td>Health Policy Reference Center, PubMed, Public Affairs Index, Research Institute Reports, Government Reports, News</td>
</tr>
<tr>
<td>Pharmaceutical and Pharmacological Literature</td>
<td>Embase</td>
</tr>
<tr>
<td>Psychology</td>
<td>PsycInfo</td>
</tr>
<tr>
<td>Nursing or allied health literature (including professional literature)</td>
<td>CINAHL</td>
</tr>
<tr>
<td>Systematic Reviews</td>
<td>Cochrane Database of Systematic Reviews</td>
</tr>
<tr>
<td>Interdisciplinary topics</td>
<td>Scopus, Web of Science, Google Scholar</td>
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Characteristics of Systematic Approaches
Evidence Synthesis Methodologies Fall Along a Spectrum

Narrative Review  Scoping Review  Systematic Review

Rapid Review

Least systematic  Entirely systematic

Characteristics of Systematic Approaches

1. Working with a team
2. Transparency in methodology and presentation
3. Search comprehensiveness
4. Predefined inclusion/exclusion criteria
5. Quality assessment
Working with a Team

• Establishing a team with multiple types of expertise is one way of reducing bias

• Minimum of two people (e.g., two clinical or other subject experts)

• All team members are co-authors and are responsible for the final manuscript
Transparency in methodology and presentation

- Clear reporting practices involves being explicit in every aspect of the review, starting with the protocol (e.g., search process, data extraction, presentation and synthesis of results, etc.)

- Clarity in reporting increases the accountability of your scholarship

- Transparency enables others to reproduce your work

Examples of Transparency:
- Examine other systematic reviews: [Cochrane Library](http://www.cochranelibrary.com)

- Reporting Guidelines:
Transparency Requires Tracking Throughout Your Project

- Level of transparency depends on type of literature review
  - However...prepare for current and future use.

- What to track:
  - Resources searched
  - Number of results
  - Date searched
  - Filters
    - Years
    - Types of studies
  - Inclusion and exclusion criteria
  - Screening process

Search Comprehensiveness

• Complete comprehensiveness requires finding all published studies regardless of geographic location

• Searching multiple databases of peer-reviewed literature

• Searching grey literature (e.g., research institute reports, government documents)

• Scanning Tables of Contents of journals, reference lists, citation tracking, speaking to experts
Predefined Inclusion and Exclusion Criteria

• Entails deciding *prior* to searching the set “rules” for the types of studies to include in the review

• In a systematic approach, the inclusion and exclusion criteria do not change in the course of the review

• Considerations for inclusion:
  – Date
  – Language
  – Study Design
  – Outcomes
  – Populations
Quality Assessment

• Assessment of individual studies that meet inclusion criteria

• Critically examining each study’s methodology and findings—strengths and flaws

• Tools exist to help with this process (e.g., Cochrane Risk of Bias tool, Newcastle-Ottawa Scale)
Questions to ask your research partners this summer

- **Purpose of review**
  To inform a project? Publish a literature review paper?
  Prepare for a grant submission?

- **Search Comprehensiveness**
  Looking for a selection of articles? Looking for all articles to answer research question?

- **Screening Process**
  Should you “cherry pick” articles? If so, what is the inclusion criteria? Or, do they want you to provide all search results and they will screen?

- **Delivery and organization**
  How do they want you to abstract the data from relevant citations? What (if any) citation management tool is your team using?
The Search Process: Start with Exploratory Searches
Initial Exploratory Searches

Why?
- To harvest terminology to help you develop your search.
- To see if others have already conducted similar research.

How?
- Conduct very basic searches and look at relevant citations
  - Examine terminology in titles and abstracts to identify synonyms
  - Look at subject headings of sentinel articles (e.g., MeSH terms in PubMed)
  - Open records and look at related citations
- Look for review articles
- Examine pre-existing search strategies (in review articles or in ready-made filters)
- Citation Track when you find a relevant article (Scopus, Google Scholar, Overton Interdisciplinary Policy Database)
Initial Exploratory Searches: Explore Pre-existing Search Methodologies

- Identify reviews on similar topics and adapt methodology (and cite)

- Places to search:
  - Cochrane Library
  - PubMed Clinical Queries

- PubMed Topic-Specific Queries

- Health Services Research PubMed Queries

- InterTASC Filters

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MEDLINE®/PubMed® Health Disparities and Minority Health Search Strategy

This query is not updated. Search strategy last updated: May 9, 2019.

Watch the video on How to Save PubMed Searches to learn how to save and maintain your own topic-specific PubMed searches. If you have questions, please contact NLM Customer Support at https://support-nlm-nih.gov.proxy.lib.umich.edu/

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MEDLINE®/PubMed® Health Disparities and Minority Health Search Strategy

Search Details

Creating Structured Searches

[after you’ve done exploratory pre-work!]
Search Construction: start with a searchable question

Which telehealth interventions are most effective with patients with dementia?
Breakdown Main Concept Areas to Search

Which telehealth interventions are most effective with patients with dementia?
Identify Synonyms and Combine with Boolean Operators (and, or)

dementia OR alzheimer’s OR mild cognitive impairment AND

telemedicine OR telehealth OR remote monitoring OR e-visits
Principles for Creating Structured Searches

Comprehensive search methodologies require:

**Database’s Subject Terms** (e.g., indexing/tagging) if available
- Databases don’t all use the same index terms
- Examples: PubMed uses MeSH, Embase uses EMTREE

**Keywords**
- Terminology and many synonyms that may show up in the title, abstract, or author-supplied keywords
Combine Concept Blocks with Boolean Operators (AND/OR)

**Dementia**

- dementia[Title/Abstract] **OR** alzheimers[Title/Abstract] **OR** "mild cognitive impairment"[Title/Abstract] **OR** "lewy body"[Title/Abstract] **OR** dementia[MeSH Terms]

**Telemedicine**

- telemedicine[Title/Abstract] **OR** telehealth[Title/Abstract] **OR** telecare[Title/Abstract] **OR** teleconsultation[Title/Abstract] **OR** telemonitor*[Title/Abstract] **OR** telepathology[Title/Abstract] **OR** telemedicine[MeSH Terms]

AND
Structured Searching: PubMed Demo

PubMed.gov

PubMed® comprises more than 30 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.

http://www.lib.umich.edu/database/link/9817
Comprehensive Searching

PubMed will likely be your core search. Finalize that search *then* translate the strategy to other core databases depending on your topic.

*These are just a few examples. There are numerous discipline focused databases.
Polyglot search translator will translate your search into a few databases. It translates your search into the database’s syntax. It does not translate controlled vocabulary (e.g., MeSH). You will need to look up these terms manually when you translate.
Capturing and Organizing Resources
[and citing them]
CITATION MANAGEMENT TOOLS

EndNote

Mendeley

Zotero
WHY USE A CITATION MANAGEMENT TOOL?

Organization and Documentation
• Organize your resources into one spot
• Automatically insert citations into documents and manuscripts
• Create bibliographies
• Share and collaborate
• Lessen chances for attribution errors

Choice considerations: No perfect tool!
• Collaborators: what do they use?
• Size of project
• Type of content
• Each has strengths and challenges.
Additional Resources

Advanced Literature Searching MOOC [free]
https://www.edx.org/course/advanced-literature-searching-in-the-health-scienc

Systematic Review Guide
http://guides.lib.umich.edu/sysreviews

Citation Management
http://guides.lib.umich.edu/citationmanagement

Yale Mesh Analyzer
http://mesh.med.yale.edu/
Thank you!

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