Researching for the literature review

SHELLEY MCKIBBON & MELISSA HELWIG, KELLOGG LIBRARY
Goals for today’s session

Increase your knowledge on types of literature reviews
Identify general steps in the literature review process
Know how to get your search started
Decrease panic over the Lit Review Process!
What is a literature review?
What is a literature review?

“As it is no easy matter to root out prejudices... it became requisite to exhibit a full and impartial view of what had hitherto been published... by which the sources of these mistakes may be detected. Indeed, before the subject could be set in a clear and proper light, it was necessary to remove a great deal of rubbish.” (James Lind, 1757)
What is a research literature review?

A research literature review is a systematic, explicit and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by research, scholars, and practitioners.

What is a literature review?

Writing about the literature is not just part of “what you have to do”, it is a valuable way to learn the literature, to get it “off the page and into your head”. And that is essential if you are to be able to think critically about your field. (DR Rowland)
What are the benefits?

Exposure to current research in your field/on your topic

Understanding of various research processes

Ability to evaluate those processes

Familiarity with the style of forms of academic and professional writing

(St. Mary’s)
Types of Literature

Reviews

... AND A LITTLE MORE ON SOME COMMON TYPES
## Types of Literature Reviews

<table>
<thead>
<tr>
<th>Overview</th>
<th>Rapid review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical review</td>
<td>Scoping review</td>
</tr>
<tr>
<td>Mapping review</td>
<td>State-of-the-art review</td>
</tr>
<tr>
<td>Meta-analysis</td>
<td>Systematic review</td>
</tr>
<tr>
<td>Mixed methods review</td>
<td>Systematized review</td>
</tr>
<tr>
<td>Qualitative systematic review</td>
<td>Umbrella review</td>
</tr>
</tbody>
</table>

See: Grant & Booth (2009) OR Booth & Sutton (2016 or 2012)
Overviews/narrative reviews

Any summary of the literature, whether systematically constructed or not.

“Narrative overviews are useful educational articles since they pull many pieces of information together into a readable format. They are helpful in presenting a broad perspective on a topic and often describe the history or development of a problem or its management.” (Green, Johnson & Adams, 2006)

“Perceived strengths. Overviews can provide a broad and often comprehensive summation of a topic area and, as such, have value for those coming to a subject for the first time. Perceived weaknesses. ... [T]he term ‘overview’ is frequently used as a non-discriminant word for reviews of varying rigour and quality.” (Grant and Booth, 2009)

“...Traditional unsystematic narrative reviews and opinions based on unsystematic observations usually are inconsistent with the evidence, lag behind the evidence, and disagree with each other.” (Montori, Swiontkowski, and Cook, 2003)
Scoping review

“.. [A] preliminary assessment of the potential size and scope of available research literature. It aims to identify the nature and extent of research evidence (usually including ongoing research.)”

Can inform policymakers whether a full systematic review is needed. Aims to be systematic, transparent, and replicable.

Typically does not assess the quality of included studies, but only reports on their existence. Therefore they cannot be used to recommend policy.

(Grant and Booth, 2009)
Systematic review

“...[S]eeks to systematically search for, appraise, and synthesize research evidence... It is transparent in the reporting of its methods to facilitate others to replicate the process.” (Grant and Booth, 2009)

An attempt to draw together all known knowledge on a specific, closely defined topic area.

“Systematic reviews ... address a specific clinical question, require a comprehensive literature search, use explicit selection criteria to identify relevant studies, assess the methodologic quality of included studies, explore differences among study results, and either qualitatively or quantitatively synthesize study results.” (Montori, Swiontkowski, and Cook, 2003)
Steps in the Literature Review
Whoops! The steps are out of order

Synthesizing the results  Choosing search terms
Selecting your sources  Selecting a research question
Running your search  Applying methodological screening criteria
Applying practical screening criteria
Steps in the literature review

1. Selecting a research question
2. Selecting your sources
3. Choosing search terms
4. Running your search
5. Applying practical screening criteria
6. Applying methodological screening criteria
7. Synthesizing the results
Your Research Question
First, though—background questions

- ask for general knowledge about a condition, event, thing
- have two essential components:
  - The root question (W5H) + verb, eg. what causes ...? [W5H = who, what, when, where, why, how]
  - Problem, eg. Influenza
Examples of background questions

◦ Where was Alex Colville born?
◦ When did Newfoundland become a Canadian province?
◦ Who was the first Canadian to win an Olympic gold medal?
◦ What is the age of “medical majority” in Nova Scotia?
Background answers can be found in:

Textbooks
Handbooks
Trusted or authoritative web sites

*You generally will not find recent research articles devoted to answering background questions. They’ve already been answered!*
Foreground questions

Specific, more complex, assume background knowledge

Does, For, How well, Can ... is often used in foreground questions

Answers can be in databases like PubMed, MLA International Bibliography, America: History & Life, Business Source Complete, Academic Search Premier (see Dal Libraries A to Z list)
Examples of Foreground questions

In young children with acute otitis media, is short-term antibiotic therapy as effective as long term antibiotic therapy?

How well does the literature of Michael Ondaatje capture themes of the immigrant experience?

How does government legislation in Canada and the Netherlands impact the ability of pharmaceutical companies to market drugs?
A good research question

Can be answered by collecting and analyzing data
Assumes the possibility of different outcomes or opinions
Is neither too broad nor too narrow
Is clear
Is a single question
Is built on sound assumptions (St. Mary’s)
Scenario

You are applying for a grant to support your research on “Pick a topic of your choice”

Think of a question related to this topic

(3 to 4 minutes)
Example 1:
You’re applying for a grant to support your research on management of patients with atrial fibrillation.

Broad Question:
◦ What is the prevalence of atrial fibrillation?

Narrow Question:
◦ What costs are associated with hospitalization for atrial fibrillation?

Very Narrow Question:
◦ What strategies have been utilized in Nova Scotia to reduce length of stay for patients with atrial fibrillation? (Featherstone, 2011)
Example 2:
You are applying for a grant to support your work on literature by Canadian women

Broad Question:
What themes are used by women writers in Canadian Literature?

Narrow:
What feminist messages can be found in the fiction of Margaret Atwood?

Very Narrow:
What is the feminist significance of food/eating in Margaret Atwood’s dystopian fiction?
Example 3:

Broad:
What impact can Human Resources have on corporate and employee development?

Narrow:
How can human resource management improve retention of employees who are parents?

Very Narrow:
What strategies or impact can human resources have to improve employee retention in law enforcement? (can add in location)
Go back to your question

Is your question
- Broad?
- Narrow?
- Or Very Narrow?

Think about your question and how it would look in terms of Broad, Narrow, and Very Narrow.

Next step:
Once you have a broad, narrow, and very narrow question on your topic, turn to your neighbor and share your questions.
How questions influence search results

- Broad Questions: High = lots of articles, Low = mostly irrelevant articles
- Narrow Questions: High = directly relevant articles, Low = very few articles

Retrieval (# of search results) vs. Relevancy
Where to search

STARTING POINT – DAL LIBRARIES A TO Z LIST
A to Z list:

**A-Z Databases**

Find the best library databases for your research.

[A search form with options for All Subjects, All Database Types, All Vendors / Providers, and a button to Search for Databases]
Where to search

Bibliographic databases (aka Databases): See A to Z list
◦ PubMed, America: History & Life, Oceanic Abstracts, etc.

Websites:
◦ Associations, organizations, Government

Grey Literature (see upcoming bootcamp session on May 23 – Searching for Grey Literature)
Searching the databases

SEE DAL LIBRARIES VIDEO TUTORIALS FOR MORE DETAILS OR BOOK AN APPOINTMENT WITH YOUR SUBJECT LIAISON LIBRARIAN OR STOP BY ANY OF OUR REFERENCE DESKS
Searching the databases

Databases list the articles published in a variety of journals, meaning that you can use one interface to search the content of hundreds or even thousands of journals.

Most databases do not include the full text of the article, but link to content in journals Dal subscribes to.

Look for the “Get It @ Dal” button.
Searching the databases

It is important for your search strategy to be **logical**, **transparent**, and **reproducible**

Take some time in advance to learn how the database works

Use a worksheet to plan what terms you will use in your search
Many databases allow you to search by **subject** (what the article is about) or by **text words** (words you believe the author used in the title or abstract of the article.)

Text word searching is simple, but has one major drawback:

- **Most databases will search for ONLY the words you enter.**
- **It’s important to think about other possible terms the author might have used.**
- **Remember that recognized terms can vary even across English-speaking countries.**
Selecting your search terms

Choose an appropriate database
Break your question into concepts
Identify subject headings for each concept
Identify text words for each concept

EXAMPLE: Does rehydration reduce delirium in terminally ill patients?

Tips:
◦ Use a “target article” to help identify search terms
◦ Use a worksheet to keep track of your terms
◦ Think of the question from different angles
What concepts are in your question?

<table>
<thead>
<tr>
<th>PubMed</th>
<th>Concept #1 (AND)</th>
<th>Concept #2 (AND)</th>
<th>Concept #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Heading OR</td>
<td>“Dehydration” [MeSH]</td>
<td></td>
<td>“Palliative Care” [MeSH]</td>
</tr>
<tr>
<td>Subject Heading OR</td>
<td></td>
<td></td>
<td>“Terminally Ill” [MeSH]</td>
</tr>
<tr>
<td>Text Words OR</td>
<td>Hydrat*</td>
<td>Delir*</td>
<td>“end of life”</td>
</tr>
<tr>
<td>Text Words</td>
<td>Rehydrat* ...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
Database operators

“Operators” are the database’s command words

Boolean: AND, OR, NOT

Some databases use “proximity operators”– check the Help menu in the database
Boolean operators

Boolean operators are used to combine ideas in a search

- $x \textbf{AND} y$ means BOTH $x$ and also $y$ need to be included in your results
- $x \textbf{OR} y$ means your results may contain $x$, $y$ or both. Use OR to make a search more broad.
- $x \textbf{NOT} y$ means the results will include $x$ but not $y$. 
Chocolate AND peanut:

Chocolate OR peanut:

Chocolate NOT peanut:
Wildcards

Expand words or replace letters in words
Often indicated by * or ?
Example: dress* = dress, dresses, dressed, dressing
Example: woman or women = wom?n
Check help menu in database
Proximity operators

- “Quotes”: search for exact phrase – “Meech Lake Accord”
- NEAR + #, ADJ + #, N + #: words are near each other regardless of order – physical NEAR/3 therap*
- Within + #, NEXT + # : words are near each other in specified order – physical NEXT/1 therap*
- Check database help menu for specifics
Running your search
Running your search

Start with your first concept
  ◦ Search for subject headings
  ◦ Search for text words
  ◦ Combine these searches using OR

Repeat for your second, third, etc concepts

Finally, combine each large results set using AND
Running your search(es)

Concept 1
Search #1 =
Search #2 =
Search #3 =
Search #4 =

Search #5 = #1 OR #2 OR #3 OR #4

Concept 2
Search #6 =
Search #7 =
Search #8 =
Search #9 =

Search #10 = #6 OR #7 OR #8 OR #9

Search #11 = #5 AND #10

Results

Featherstone (2011)
Search Demo
<table>
<thead>
<tr>
<th>#</th>
<th>Query</th>
<th>Limiters/Expanders</th>
<th>Last Run Via</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0</td>
<td>S4 AND S5</td>
<td>Expanders - Apply related words</td>
<td>Interface - EBSCOhost Research Databases</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search modes - Boolean/Phrase</td>
<td>Search Screen - Advanced Search</td>
<td></td>
</tr>
<tr>
<td>S5</td>
<td>Ti (student or learner) N3 (stress OR anxiety OR burden) OR AB (student or learner) N3 (stress OR anxiety OR burden)</td>
<td>Expanders - Apply related words</td>
<td>Database - Academic Search Premier</td>
<td>5,099</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search modes - Boolean/Phrase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S4</td>
<td>S2 OR S3</td>
<td>Expanders - Apply related words</td>
<td>Interface - EBSCOhost Research Databases</td>
<td>1,743</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search modes - Boolean/Phrase</td>
<td>Search Screen - Advanced Search</td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td>Ti (pet therapy or animal assisted therapy) OR AB (pet therapy or animal assisted therapy)</td>
<td>Expanders - Apply related words</td>
<td>Database - Academic Search Premier</td>
<td>1,448</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search modes - Boolean/Phrase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S2</td>
<td>DE &quot;PET therapy&quot;</td>
<td>Expanders - Apply related words</td>
<td>Interface - EBSCOhost Research Databases</td>
<td>458</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search modes - Boolean/Phrase</td>
<td>Search Screen - Advanced Search</td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td>(student stress OR student anxiety) AND (pet therapy or animal assisted therapy)</td>
<td>Expanders - Apply related words</td>
<td>Database - Academic Search Premier</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search modes - Boolean/Phrase</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Screening
Screening your search results

Two kinds: practical and methodological

◦ Use *practical* screening to identify a range of potentially useful studies

◦ Use *methodological* screening to identify the best available studies
Practical screening

Date of publication
  ◦ Last five years; 2007-2013

Participants or subjects
  ◦ Children aged 6-12; post-menopausal women

Publication language

Research design
  ◦ Randomized controlled trials; qualitative studies
Methodological screening

Some questions to ask:
◦ Is the study’s research design internally and externally valid?
◦ Are the data sources used in the study reliable and valid?
◦ Are the analytic methods appropriate?
◦ Are the results meaningful, practically and statistically?

Critical appraisal worksheets may be available
Working with your results

Save or export search results into a citation manager (Mendeley, EndNote, Zotero, etc)

Remove duplicates

Remove inappropriate results by applying methodological screens
Moving to another source

Retain as much of your original strategy as possible

Recognize that subject headings will be different (or non-existent) in the new database

Keep track of your search terms using new worksheets

Tip: Copy and paste your final search strategy into your worksheet
## Recording your search results

<table>
<thead>
<tr>
<th>Database</th>
<th>Dates Of coverage and execution</th>
<th>Notes</th>
<th>Strategy</th>
<th>P</th>
<th>I</th>
<th>C</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>PubMed</td>
<td>2005-2010</td>
<td>Citations in Refworks</td>
<td>Asthma Emergency department* Emergency services*</td>
<td></td>
<td></td>
<td></td>
<td>Metered Dose Inhalers Holding Chambers Spacers</td>
</tr>
<tr>
<td></td>
<td>Searched on July 31, 2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AND</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nebulization Nebulizers &amp; vaporizers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M - Qualitative</td>
<td>Diffusion of Innovation Knowledge Transfer Knowledge Uptake Organizational Innovation Attitude of Health Personnel Change* Barrier*</td>
</tr>
<tr>
<td>CINAHL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web of Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissertation &amp; Thesis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hand searching and final steps

Locate the reference lists of selected articles*

Identify new articles that have cited your selected articles*
  ◦ *Try Web of Science, Scopus, Google Scholar. Some specific databases may have this feature

Identify key journals and hand search issues

Test your search strategy to see if specific target articles appear in the results
Synthesizing your results

Use your results to...
◦ Describe current knowledge about your research topic
◦ Support the need for and significance of new research
◦ Explain research findings
◦ Describe the quality of a body of research
(Fink, 2014)
Sources to help with writing

Dalhousie Writing Centre:
https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Writing Guides (Dalhousie Libraries):
https://libraries.dal.ca/help/writing.html

Purdue OWL (Online Writing Lab):
https://owl.english.purdue.edu/owl/
Resources to help

Dalhousie Libraries– Subject Guides
◦ http://dal.ca.libguides.com

Search worksheet – See Research Bootcamp materials

Dalhousie Libraries – See Reference and Research Services or contact the librarian on your subject guide
◦ https://libraries.dal.ca/services/reference-research-services.html
◦ Services include help with database searching and citation management tools like RefWorks, general questions
References


Lind, J. (1757). A treatise on the scurvy: In three parts, containing an inquiry into the nature, causes and cure of that disease: Together with a critical and chronological view of what has been published on the subject. London: Printed for A. Millar.


Image credits

Images taken from:

Questions? Comments?

THANK YOU!