MDSC 308
Deepening Your Search Skills

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Lorraine Toews MLIS
Librarian, Bachelor of Health Sciences
UC Health Sciences Library ltoews@ucalgary.ca
libguides.ucalgary.ca/bhsc
By the end of today’s session you will be able to:

- Ask searchable questions
- Identify **coverage** of core research databases
- Effectively use **subject headings** in your search
- **Narrow** and broaden searches
- **Email/ Save a search strategy**
- Find **qualitative research** studies
- Conduct a **cited reference** search
- **Document literature searches** appropriately
As undergraduate students you may need to consult background information sources such as scholarly encyclopedias or review articles at the beginning of your search to get an overview of a topic including how various academic disciplines define issues, jargon, key researchers in the field.

I’ve listed several scholarly encyclopedias on the BHS section of the Health Sciences Library website at: libguides.ucalgary.ca/bhsc > Books tab > Background Information box
Literature Search Process

- Customize search strategy for each database
  - Subject headings or textword search
  - Limit search results

- Evaluate results, revise search
  - Broaden
  - Focus
  - Choose a different database

- Save search strategy & export search results to reference management software
Some of your assignments will require you to develop a topic

The search process & topic development is often a circular, iterative process

Takes time & can be frustrating

As you review background information & library database search results, check:
  • Terminology, jargon
  • Way concepts & issues are defined in different academic disciplines
  • Significance of topic
  • Context – where does it fit in the big picture of that discipline? Relationship to other disciplines?
  • Check how much, or little information you found
  • Key researchers for this topic

  • Use this to re-define your search question, your search terms, and your search strategy to get the most relevant results for your assignment
In order to find information on your topic, you need to “translate” your topic into one or more searchable questions

A searchable question identifies the key concepts that must be present in your search results ... you use it to build your search strategy
Define Your Topic as a Question

What do we know about the effectiveness of smoking cessation programs for adolescents?

You may need to modify your question after your pre-search....
PICO is a framework used to help define your key search concepts.

Not all research questions fit the PICO framework, but for any research question, it’s always important to define the top 2 or 3 concepts that must be present in your final search results.

You then build a search statement for each major concept. The ways that you do this are somewhat different from database to database, but the underlying principles are the same.
## Synonyms for Concepts

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Search terms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P = Population</strong></td>
<td>teens OR adolescents</td>
</tr>
<tr>
<td><strong>P = Problem</strong></td>
<td>smoking OR tobacco OR cigarettes</td>
</tr>
<tr>
<td><strong>I = Intervention</strong></td>
<td>cessation program</td>
</tr>
<tr>
<td><strong>C = Comparison Intervention</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>O = Clinical Outcome</strong></td>
<td>Effectiveness OR outcome OR evaluation</td>
</tr>
</tbody>
</table>
In addition to your key concepts, you may want to define what limits you want to place on your search results.

You may need to redefine these limits, depending on the initial search results that you find. It’s usually better to start with a broad subject search, scan your initial results, and only then apply additional limits.

The more conditions you require your search to meet, the fewer results you will get.

The reverse is also true ie. the less limits you apply, the more results you’ll get.

Define Search Limits

- Publication Date
- Language
- Type of document – review, RCT, qualitative study
- Age group
- Gender
- Geographic Location

Apply limits cautiously … you don’t want to remove relevant studies prematurely.
Select Appropriate Databases for Your Topic and Your Project
Library research databases are “finding tools” to help you find scholarly journal articles in the academic disciplines listed.

The key databases for each discipline are usually listed near the top of the list.

Databases for medicine, psychology, sociology, biological sciences, education and environmental science are most relevant for Bachelor of Health Sciences students.

Some of these databases also index grey literature such as professional society reports, dissertations, government documents.
**One of the most important decisions you need to make is which databases to search – can miss important info & waste time by searching the wrong databases**

For the BHSci program, these are the key databases for most of your projects

Depending on your topic, you may also need to use other databases from the Library website

Databases that support subject heading searching are asterisked *

If you are not sure where you should search, I can help – send me an email or book an appointment with me
Use Effective Search Strategies
Choice of Search Mode Depends on your Task

Use a **Textword search** when …
(Advanced Multi-Field or Advanced multiple search box)
- You do not need a comprehensive search
- Your topic has *precise* concepts & terminology
- Your topic is quite *new* in the research literature

Use a **Subject Heading search** when …
(Advanced in OVID or Thesaurus in other databases)
- You need a *systematic, comprehensive* search
- You can’t find *relevant* references with textword search
Use these strategies to narrow or focus your search

These can be used in most Library research databases

Study design filters are another way of narrowing a search – see Qualitative Studies slide below
Strategies to Broaden Searches

- Reframe your question to make it broader
- Use broader search terms
- Remove the least important concept
- Add synonyms *within a concept* (Boolean OR)
- Use truncation in textword searches – therap*
  retrieves therapy, therapist, therapeutic
- Apply fewer, or no limits
- Use the Explode feature

Use these strategies to broaden your search

These can be used in most Library research databases
**The logic used to broaden or narrow your search is critically important when searching library databases**

The more concepts you connect with AND the less results you will get

BUT, the more synonyms or similar terms you add WITHIN a concept the more results you will get
Search Mechanics

- Boolean Operators
  - AND, OR, NOT
- Group synonyms for a concept in parentheses
  - Search boxes in many databases do this automatically
- Exact phrase search
  - Varies depending on database
  - Many databases use quote marks “_” around a phrase
- Truncation
  - Symbol at end of word stem retrieves plurals, word variants - therap* retrieves therapy, therapist, therapeutic

The search “mechanics” and search strategies above apply to most Library research databases.

How you use these strategies varies somewhat between databases, so you may need to read the database Help section for details on how to use these features in a specific database.
**Boolean Operators**

**AND**
- Connects concepts
- Finds records with ALL search terms
- Narrows search
- Dementia AND treatment

**OR**
- Connects synonyms or similar terms within a concept
- Finds records with EITHER or BOTH search terms
- Broadens search
- Dementia OR Alzheimers

**NOT**
- Excludes all records that contain the term after NOT
- Narrows search
- Use with care
- Dementia NOT Alzheimers
Textword Search: ERIC
Many research databases have an Advanced search feature with multiple search boxes so you can enter search terms for each concept in a separate box. Connect synonyms *within one concept* with the Boolean OR.

The *different* concepts are connected with the Boolean AND. Some databases enter the AND for you, as noted above.
Subject Heading Search: PsycINFO
On the slide above are reasons why you might want to do a subject heading search:

<table>
<thead>
<tr>
<th>Subject Heading</th>
<th>Textword</th>
<th>Keyword</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is searched?</td>
<td>Search subject headings assigned by indexer</td>
<td>Search word(s) in title, abstract</td>
</tr>
<tr>
<td>Advantages</td>
<td>Retrieves more <strong>relevant</strong> results</td>
<td>Retrieves <strong>new</strong> topics in literature + very <strong>specific</strong> topics</td>
</tr>
<tr>
<td></td>
<td>Enables use of <strong>Explode &amp; Focus</strong> features</td>
<td><strong>Easier</strong> to learn and use</td>
</tr>
<tr>
<td></td>
<td>Enables retrieval <strong>abstract</strong>, <strong>multi-faceted</strong> concepts</td>
<td></td>
</tr>
<tr>
<td>Disadvantages</td>
<td>New terms (eg. New drugs) may not be in subject headings yet</td>
<td>Often retrieves <strong>more irrelevant</strong> records (word match)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Searcher must include synonyms, plurals, spelling variations in strategy</td>
</tr>
</tbody>
</table>
Subject headings account for the varying terminology authors use in their research for a given concept. I.e. Subject headings account for synonyms, plurals and alternate spelling (British vs. American English) ...

So searchers don’t need to enter all these variations as search terms. If you find the correct subject heading for your concept, the database will retrieve most of the studies on that topic, regardless of the terms authors used.
Subject headings also enable you to use powerful search functions in some databases … Explode and Focus

The OVID databases Medline, HealthStar, EMBASE and PsycINFO use Explode and Focus
The CINAHL database (EBSCO) also has Explode and Focus features

Explode retrieves all the narrower sub-concepts of your search term, enabling you to retrieve a whole set of related concepts without having to search for each separately

Focus retrieves only articles where your subject heading is the main topic of the article (ie. Not a peripheral topic)
Type in your first concept: smoking

If Map Term to Subject Heading is checked, the search software will map your term to the subject heading (index term) that is used in PsycINFO to index this concept.
The database maps your term to a list of subject headings (blue links)

Click directly on the subject heading that best describes the concept you are looking for
On the Thesaurus Tree page, you'll see your subject heading *Tobacco Smoking* and the broader and narrower terms related to it.

This gives you a range of options, so you can pick the most relevant subject headings.

Since you are not interested in the narrower term *Passive Smoking*, click in the box to the left of Tobacco Smoking, then click on Continue.
Type in your 2nd concept: evaluation
You likely want the subject headings “Program Evaluation” and “Treatment Effectiveness Evaluation”, but when you are not sure, it’s often good at the beginning of your search to select a more general term, such as “Evaluation”, in order to see the broader and narrower terms related to this.
The Explode command (if you checked the first box to the right of your term “Evaluation”) will retrieve all the narrower concept terms indented below Evaluation. Using Explode broadens your search, so you retrieve a lot more results.

This allows you to retrieve a whole set of sub-concepts automatically without having to search separately for all of them.

However, for our topic, click only in the box to the left of “Treatment Effectiveness Evaluation” and “Program Evaluation”.

The Focus command (boxes on far right of screen) retrieves only records where your term is the main idea of the paper (not a peripheral topic). Using Focus narrows your search, so you get less results.
Combine sets 1 and 2 with the Boolean AND

Click on Additional Limits to limit your search
Limit your search to:
• English language
• Qualitative studies (in Clinical Queries box above)
• Peer reviewed journals

Limit options are different for each database, so you will not always have this same set of limit options
Finding Qualitative Studies

- Use the database qualitative research filter (under Limits)
  Example: PsycINFO’s Qualitative Studies limit

- Do a title/abstract search for textwords related to qualitative research. Combine terms with OR
- Combine this set with your final subject search using AND

<table>
<thead>
<tr>
<th>action research</th>
<th>Lived experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment*</td>
<td>narrative analys*</td>
</tr>
<tr>
<td>content analys*</td>
<td>perception*</td>
</tr>
<tr>
<td>ethnol*</td>
<td>quality of life</td>
</tr>
<tr>
<td>ethnog*</td>
<td>phenomenolog*</td>
</tr>
<tr>
<td>focus group*</td>
<td>probabilit*</td>
</tr>
<tr>
<td>grounded theory</td>
<td>qualitat*</td>
</tr>
<tr>
<td>interview*</td>
<td>thematic analys*</td>
</tr>
</tbody>
</table>

First, complete your subject search

To find qualitative studies, use the limit option if that database has a qualitative studies limit

If the database does not have a limit, search for textwords on the kind of qualitative studies you want, then combine this set with your final subject set using AND
In all research databases you can print, save to USB/hard drive or email references (the full text article is not attached to these ... you need to do that separately)
This is what a Search History (this one from OVID Medline) typically looks like

<table>
<thead>
<tr>
<th># Searches</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Smoking cessation/</td>
<td>17792</td>
</tr>
<tr>
<td>2 Treatment effectiveness evaluation/ or Program evaluation/</td>
<td>41759</td>
</tr>
<tr>
<td>3 1 and 2</td>
<td>683</td>
</tr>
<tr>
<td>4 limit 3 to &quot;qualitative (maximizes sensitivity)&quot;</td>
<td>683</td>
</tr>
<tr>
<td>5 Qualitative research/</td>
<td>13966</td>
</tr>
<tr>
<td>6 3 and 5</td>
<td>10</td>
</tr>
</tbody>
</table>
It is a good to get in the habit of emailing the search strategy (also called Search History) to yourself so you have a record of your search terms and the exact number of references found on the date you did the search. For some of your assignments you will be asked to include this information.

In most databases after clicking on the Email icon, you need to check a box beside the Search History to do this.
Most research databases also allow you to save your search history (search strategy) to an account you create within the database.

To create a database account, look for “My Account” or “My Folder” or “Sign In” near the top of the database screen.
In OVID databases, click on the Save Search History button (bottom right).

This gives you a record of the exact search terms and limits you used for each database search.

You can also re-run your search strategy at a later date if you want to update your search results.
To save search strategies, you first need to create a personal account in the database.

You will then be prompted to name your search strategy.
At a later date, you can re-run your strategy to update your results with new publications.
Interdisciplinary & Cited Reference Search: Scopus
Scopus is a large, multi-disciplinary database that is an excellent resource for interdisciplinary topics.

You can select the document types you want ... article or review is often a good starting point.
Scopus shows you the number of times a specific paper was cited – on the far right column

You can click on the citation number and see which authors cited the original paper
Most Library research databases have SFX links in the search results.

**SFX Citation linker**
- Links database search results with full-text articles
- Indicates if item is available in print in UC Library
- Interlibrary loan link if UC Library not have online or print

**Interlibrary Loan**
- Order articles or books UC Library does not have
- Journal articles desktop delivery 2-4 business days
- Must have email registered with Library
To access the full-text of a journal article, click on the SFX link in your database search results.

If the UC Library subscribes, you’ll see link(s) to the full-text.
If the UC Library does *not* subscribe, and we do not have the journal in print either, you’ll see an ILL (interlibrary loan) link: Request document via U of C Interlibrary Loan

When you click on that link, you’ll be asked to authenticate with the numbers from your U of C photoID card. Follow the directions on the authentication screen.
When you place an interlibrary loan via the SFX link in a database, the request form will automatically be filled in.

Just click the copyright box at the bottom of the form, then click on the Submit button at the bottom of the form.

You’ll receive an email with a link to the article PDF.

Delivery time is 2 to 4 business days, but usually within 1-2 days.
Document Searches and Cite Information
Keep track of your searches by recording this key information – email or print out search strategy

This info can be saved online in most databases – we’ll cover this in 2nd year tutorials

Getting in the habit of doing this will make writing large assignments such as your Honours Thesis much easier!

For database searches record:

- Name of database eg. Global Health
- Date search done
- Search terms used (email or print search strategy)
- Dates covered by search eg. 1990-present
- Limits applied eg. English, review articles
In MDSC 203 you will usually be searching research databases, not websites

Keep track of your searches by recording this key information

This info can be saved online in most databases – we’ll cover this in 2nd year tutorials

Getting in the habit of doing this will make writing large assignments such as your Honours Thesis much easier!
There are 2 main citation styles used in the BHSci program: APA & Uniform Requirements (Vancouver)

APA style – used a lot in social sciences

Full APA manual is only available in print

HSL reference shelves

Service Desk on Reserve – 2 hour loan

Web link does NOT have the full manual ... has tutorials, sample citations
Uniform Requirements for Manuscripts Submitted to Biomedical Journals (also called Vancouver Style)
http://www.icmje.org/urm_main.html

Sample Vancouver Style Citations
http://www.nlm.nih.gov/bsd/uniform_requirements.html

The Uniform Requirements style – used clinical medicine & life sciences

Manual is online - no print manual
Citation Management Programs
library.ucalgary.ca/citationmanagementtools

Citation Management Tools
RefWorks, EndNote, and Mendeley

Last Updated: Mar 4, 2013

CITATION MANAGEMENT TOOLS

ENDNOTE

RefWorks

Mendeley

REFWORKS, ENDOATE AND MENDELEY

Citation management software helps you collect create bibliographies.

The Health Sciences Library offers free hands-on and faculty in Health Sciences Library Room 14

All sessions are drop-in, no registration required.

Library Workshops

To view only Health Sciences Library workshops filter and check only the Health Sciences Library

Want help? Contact the Health Sciences Library

Email: hdlhn@ucalgary.ca
Phone: 403.220.6855
Your instructors strongly recommend that you use a citation management software to store & format references in your courses.

Site license Refworks – free for you

Not obligated to use RefWorks, EndNote, Mendeley ... there are others, but UC Library provides workshops & support for these 3

HSL & TFDL library provide drop-in workshops – schedule at link above
I’m here to help you … send me an email if you want to meet

Can usually meet with you in 1-2 days

Can meet with me more than once!

The HSLibrary Service Desk can provide basic help