

Performing a literature search

1. Introduction
2. Search strategies
3. Search features
4. Boolean operators
5. Optional features
6. Summary points
7. Useful databases
8. Further help

1. Introduction

Aim of the course

The aim of these pages is to guide you through the process of searching for high quality and relevant information from a bibliographic database. Some sections will only require reading, whilst others have questions to test your understanding.

Learning outcomes

By the end of these pages you should be able to:

- Put together an effective search strategy
- Identify relevant databases to search
- Know where to look for further help and resources

2. Search strategies

In order to find high quality and relevant references from a database search, it is worth taking some time to think about your search strategy beforehand. To help with this process download a "search strategy sheet" which will help to both guide you and keep you focused.

So, start by having a clear idea of the research question you are trying to answer and write this down in your own words.

For example: "Discuss the closure of residential care homes for older people".

You now need to break down this question into specific subject areas in order to be able to identify keywords, phrases, synonyms and alternative spellings.

In this case the subject areas are:

Topic 1: Closure

Topic 2: Care homes

Topic 3: Older people

Identifying keywords and synonyms

Keywords describe subject areas, and having a good set of keywords, will help you to minimize the number of irrelevant returns. There are many sources available which might help you in identifying keywords for your search. These include; using dictionaries, textbooks, lecture notes and asking your tutor for advice.

Synonyms

Synonyms are words which have the same or similar meaning.

Authors use different words and phrases to describe subject areas. You will need to ensure that you include all synonyms and keywords in your search strategy so that you do not miss potentially relevant documents.

For example:

Closure - clos\$, closing, health facility closure, service closure

Care homes - care home\$, residential home\$, old people's home\$

Older people - age\$, geriatric\$, frail elderly people, elderly, very old people

There are no doubt many others that you could add to the list.

Words to avoid

Do not use words which are either too general, are abstract or are stop words.

Examples of these might include: the, a, an, in, of, or, as well as words such as: management, analyse, importance, discuss etc.

3. Search features

Wildcards

Wildcards are a way of searching for alternative spellings of the same words. For instance, there are a number of words that are spelt differently in the US, including organisation (organization in the US) and paediatric (pediatric in the US).

To use the wildcard feature, you just need to substitute the wildcard symbol, which is often ? , to replace a missing letter.

For example, you could search for 'organi?ation' to capture both "organization" and "organisation".

Truncation

Truncation is a way to try and capture all relevant material by searching for words or phrases which use the same root.

To use the truncation feature, you just need to put the truncation symbol, which is often either \$ or * at the root of a word.

For example:

If you were looking for information on "elderly people" you could use **elder\$** as this would bring up;

- elder
- elderly
- elderly people

Note: Use truncation with caution as it can sometimes bring up irrelevant results. For example a search on commission\$ would bring up references on commissioning but also references on the "Commission for health improvement".

Limits

When constructing your question it is really important to think about other variables which you can use to "limit" your search results. This process will really help you to clarify the information you are looking for and so help you to find more focused results.

For example, ask yourself if you can limit your search by:

- **Publication date:** How far back do you want to search? Some databases go back to 1946, but you might only want information going back to the last 10 years.
- **Age:** Are you looking for information related to a certain age range? Some databases will allow you to limit your search by: infant, adult, adolescent, the elderly etc.
- **Material type:** What type of material are you hoping to retrieve? Are you specifically looking for: articles, RCTs, websites, statistics or grey literature? Most databases will allow you to limit your search by these publication types.
- **Language:** Do you only want to retrieve articles written in the English language? Most databases will let you limit your search by multiple languages.
- **Country of origin:** Are you looking for UK only based information? Most databases will allow you to limit your search by country, such as; UK, US or Europe.

4. Boolean operators

After identifying all the keywords, synonyms and phrases within a search, use the boolean operators **'AND'**, **'OR'** and **'NOT'** to combine your topics areas together.

Using OR

You can combine all the individual synonym searches together into one search using the **OR** operator
For example:

'old\$' **OR** 'age\$' **OR** 'elderly' **OR** 'geriatric\$'
'clos\$' **OR** 'service closure' **OR** 'health facility closure'
'care home\$' **OR** 'residential home\$' **OR** 'residential care\$'

The **OR** operator broadens your results by including references that have **ANY ONE** of the search terms within it.

Using AND

You can focus the search by combining searches using the **AND** operator.
For example:

{ 'old\$' OR 'aged' OR 'geriatric\$' }

AND

{ 'Clos\$' OR 'Service closure' OR 'Health facility closure' }

AND

{ 'care home\$' OR 'residential home\$' OR 'residential care\$' }

This search will find references that contain **ALL** of the three sets of synonyms.

Using NOT

You can eliminate items from the search further using **NOT**

For example:

```
{'old$' OR 'aged' OR 'geratric$'} AND {'Clos$' OR 'Service closure' OR 'Health facility closure'} AND {'care home$' OR 'residential home$' OR 'residential care$'}
```

NOT

```
{'United States' OR 'US' OR 'USA'}
```

This will remove all references relating to the USA from your results.

5. Optional features

Quotation marks

Quotation marks are another useful way of searching as they allow you to search for specific phrases. For example, searching for 'care home closure' will return results containing this exact phrase.

Using 'adjacent'

Using the word '**adj**' is a very effective way of searching which allows you to pick up items where two words are near to each other in any order. You can specify how near or far from each other you want the words to be.

For example:

The search 'elderly **adj3** care home\$' will return results in which the two words are within three words of each other.

To use the adjacent function use the feature **adj** within your search followed by the number of words you wish to limit it by.

Controlled Vocabulary (finding subject headings)

Databases often have their own thesaurus of subject headings that have been specifically developed to capture the nature of the references. Use this feature alongside your keywords to enhance the accuracy of the search results.

For example, within Medline, which has probably the most developed and sophisticated thesaurus, the subject heading assigned to what we call "general practice" is "family practice". Remember, by using these assigned subject headings alongside your keywords you will make your search more focussed.

Snowballing

Snowballing is a really effective way of identifying further keywords and synonyms for your search.

If on a database you find an article that is perfectly matched to your search criteria, then look at the bibliographic details for that article and note what indexed terms have been assigned to it. This will often give you ideas of further keywords/subjects headings to include in your search.

6. Summary points

Download a search strategy form from the library website and use it to guide you through the following:

- Define your search as clearly as you can before starting.
- Write down a list of keywords and synonyms.
- Investigate the database's thesaurus to gather further synonyms.
- Try snowballing to find further keywords, synonyms and subject headings.
- Plan where you can combine your searches to broaden or narrow your results using OR, AND and NOT.
- Plan where you can use wildcards and truncation to make your list of searches more concise.
- See if you can make use of proximity searching to optimise your search terms.
- Look at the limitation options available in the database to see if you can use them to focus your search results.

7. Useful databases

There are many databases for you to choose from, so where do you start?

The most commonly used databases are:

HMIC - comprising of the King's Fund and Department of Health databases, HMIC includes bibliographic references of articles, monographs, reports, government documents and grey literature all with a focus on UK health policy and management related information.

Business Source Premier - a full text business database covering; management, economics, finance, accounting, international business and marketing.

ASSIA - an indexing and abstracting tool covering health, social services, economics, politics, race relations and education.

Medline - the main medical database covering the international literature on biomedicine, including the allied health fields and the biological and physical sciences, humanities, and information science as they relate to medicine and health care.

Social Services Abstracts - a database of current research focused on social work, human services and related areas including social welfare, social policy and community development.

Social Science Citation Index - a multidisciplinary index to the journal literature of the social sciences.

Cinahl - the authoritative resource for nursing and allied health professionals, students, educators and researchers.

Note: It is good practice to search a number of different databases in order to get a broad range of results. However, it is not recommended to search multiple databases at the same time, as different databases index different terms differently. For example, the subject heading for information around "doctors" might be "Physicians" in the Medline database, but "General practitioners" in the HMIC database.

8. Further help

There is plenty of help out there.....

1. The HSMC Library team

Make an appointment through the library (hsmc-library@contacts.bham.ac.uk) for a literature search training session. These can be either in person or via a screensharing conference call.

2. Useful guides:

- [6 steps to a literature search](#)
- [Search strategy sheet](#)
- [Literature searching FAQs](#)
- [NHS Evidence help](#)

Useful links:

- [HSMC Library website](#)
- [HSMC Library - "help & training" section](#)
- [Findit](#)
- [NHS Evidence](#)