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West of England

Library Services
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Tips for Effective Searching



Library Services
for students and staff in the
Faculty of Health and Social Care

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Introduction

Almost anything you want to do in the Library will involve tackling an electronic database of some description. Examples include the **library catalogue**, which provides information about library holdings of books, journals and other materials. Other **databases** index the contents of journals within specialised subject areas, e.g. for nursing there is British Nursing Index and CINAHL.

The interface (what you see on the screen) and the search software for these databases can vary widely. However, some skills can be applied to most databases in order to ensure efficient retrieval of information. It can make the difference between finding two articles or twenty articles, or, alternatively, reduce a result of two hundred articles to a more manageable number!

1. Basic principles

The basic principles you need to learn are:

1. Defining your topic and breaking it down into component concepts.
2. Choosing keywords.
3. Combining keywords - using Boolean operators to structure the search.
4. Using truncation.
5. Using advanced techniques such as field searching, brackets and controlled vocabulary.
6. Refining search results.

2. Defining your topic

Be clear about the topic area. Write down exactly what you are interested in:

e.g. "Communication with relatives in terminal care".

It is important to break down your topic into keywords / concepts. Do not use long descriptive phrases when searching, as this will only find articles with that *exact* phrase in the title or abstract.

Key concepts for the topic above would be:

Communication.
Relatives.
Terminal care.

3. Choosing keywords

Consider all possible words or phrases (referred to as keywords) that might be used to describe your subject. These might include:

- Related terms.
- Variations in word endings (e.g. singular, plural, adjectives).
- Synonyms.
- Alternative terminology and spelling (US & UK).

Examples:

Patient satisfaction or Consumer satisfaction.
Clinical effectiveness or Treatment outcome.
Health education or Health promotion or Patient education.

4. Combining keywords - using Boolean Operators

To retrieve relevant information you need to be able to link concepts/keywords together. Most databases use Boolean operators to do this. There are three:

OR

Either one term or another is present. Used for synonyms, alternative terminology, alternative topics or alternative spellings. Increases the number of references and the sensitivity of the search, e.g.:

terminal care **OR** palliative care **OR** hospice care.

child **OR** adolescent.

AND

More than one keyword is present. Means that all terms must be present in your reference. Reduces the number of references and increases the specificity of the search, e.g.:

communication **AND** palliative care.

NOT

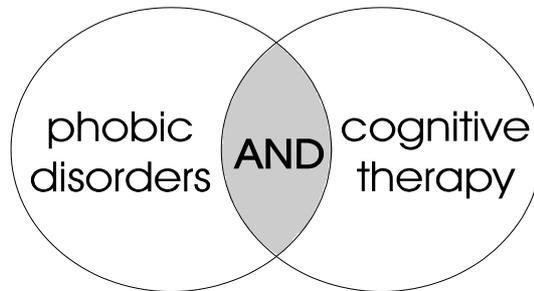
To specify that a term is not present. Reduces the number of references and increases the specificity of the search, e.g.:

child **NOT** adolescent.

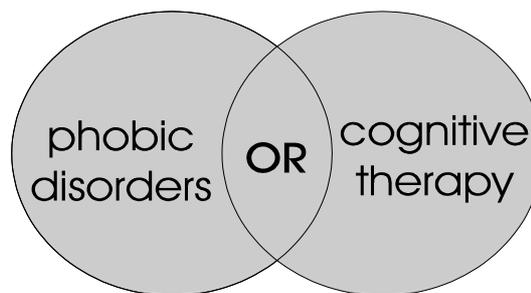
Terminal care **NOT** hospice.

NOT should be used with caution.

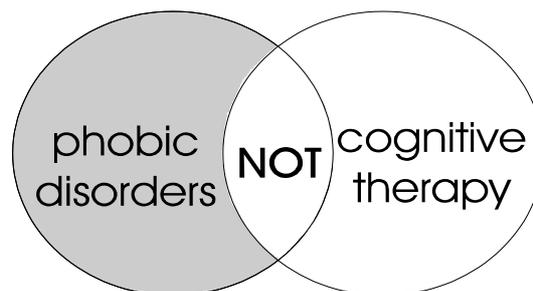
Diagrams illustrating how Boolean Operators work



includes both terms



either of these terms



phobic disorders excluding items
mentioning cognitive therapy

5. Truncation

Keywords may have variant endings - singular, plural and adjectives - all of which may be relevant to your subject. If you enter a keyword in the singular form, you will only retrieve records that have the word in that form. In order not to miss any references (and to reduce the amount of typing!) most databases use the technique of truncation.

Type in the word stem plus the truncation symbol (\$) or * depending on which database you are using) to retrieve all the variant forms of the word. Some examples:

Child\$	palliat\$	tumour\$	therap\$	communicat\$
Childhood	palliative	tumours	therapy	communicate
Children	palliate		therapies	communication
Childbirth	palliation		therapeutic	communicative
			therapeutics	

Use with care. Truncating can retrieve irrelevant information (known as false hits) e.g. child\$ would find childbirth as well as child, children or childhood.

Summary

- Think about the topic.
- Choose your keywords.
- Apply truncation where appropriate.
- Combine the keywords or thesaurus terms for the different concepts using the appropriate Boolean operators.

6. Advanced techniques

6.1 Field searching

References in a database are divided into different sections called fields e.g.:

Author.
Title.
Abstract.
Journal Title or Source.
Year of Publication.
Language.
Publication Type or Document Type.

Searching for information in specific fields can help to increase the precision of the search. You can look for articles written by a particular author, for keywords appearing only in the title or abstract fields; for keywords appearing in a particular

journal; for articles published in a particular year; or written in a particular language.

6.2. Brackets

In complex search statements involving the use of more than one Boolean operator it is necessary to use brackets, see example 1 below. Alternatively, keep search statements simple, and combine later, as in example 2 below.

For communication between professionals and families or patients in terminal or palliative care, a possible search statement would look like this:

Example 1

(communicat\$ OR interpersonal relation\$) AND (palliative care OR terminal care OR hospice care)

or like this:

Example 2

1. communicat\$ OR interpersonal relation\$
2. palliative care OR terminal care OR hospice care
3. 1 AND 2

6.3 Controlled vocabulary – thesaurus and subject headings

Many databases use **subject headings**. This is a way of ensuring that all articles on a particular topic have standard descriptors or subject headings assigned to them, even if terminology varies between authors.

The highly structured **thesaurus** in MEDLINE would tell you not to use the term 'cancer' but to use 'neoplasm' and to consider using 'carcinoma' and 'tumor'. You would find articles if you searched using the keyword 'cancer', but you would get more focused articles using the subject headings. Subject headings can help to ensure that you get relevant information, and reduce the number of "false hits".

When using the OVID databases you can 'map' your chosen keywords to the appropriate subject headings. If the mapping does not produce an appropriate subject heading, revert to keyword searching.

In OVID databases you can also "**Explode**" subject headings - the system will search for records with that term OR the more specific associated term(s). This widens the search to retrieve more references.

If you select "**Focus**", the search will find articles where the chosen term is a central/major concept.

Subheadings

A search using subject heading terms can be more narrowly focused by selecting one or more Subheadings assigned to each subject heading.

Subheadings attached to disease headings include:

Microbiology; Diagnosis; Radiography; Economics; Prevention & Control;
Epidemiology; Surgery ; Etiology; Therapy; Genetics.

Subheadings attached to drug terms include:

Adverse Effects; Contraindications; Poisoning; Toxicity.

7. Refining your search results

You may get too many articles, too few articles, no articles.

If you retrieve too many records you may need to narrow the focus to increase the precision of the search:

- add additional keywords with 'AND';
- use more specific keywords;
- use thesaurus terms in conjunction with focus and Subheading(s);
- limit to particular fields e.g. title or publication year or country of publication or language or publication types (e.g. reviews, meta-analyses or randomised controlled trials).

If you get too few articles or no articles you need to increase the sensitivity of the search to include all possible keywords/thesaurus terms:

- check your spelling;
- use truncation;
- use all possible synonyms, alternative terminology/spelling and combine these using 'OR'; check the thesaurus terms.

7.1. Snowballing

Once you have identified some, even one, useful references these can be used as tools to help you identify other similar references.

- Check the references cited.
- Check the subject headings used to describe the subject content and rerun the search using these terms.

8. Search strategy checklist

1. Define the topic.
2. Break it down into component concepts.
3. Decide on the words/phrases to describe concepts. Think of possible alternatives:
 - Terminology.
 - Spelling.
 - Synonyms.
4. Consider combining keywords and using truncation.
5. Try out the search.
6. Display results.
7. Refine search if necessary.

Appendix A. Example search strategy

Topic: *Communication with parents or relatives in palliative or terminal care*

<u>KEYWORDS</u>	<u>TRUNCATION</u>	<u>THESAURUS TERMS</u>	<u>BOOLEAN OPERATOR TO COMBINE TERMS</u>
communicate communication communicating	communicat\$	Interpersonal Relations Professional-Family Relations Communication Communication Barriers	OR

--- AND ---

<u>KEYWORDS</u>	<u>TRUNCATION</u>	<u>THESAURUS TERMS</u>	<u>BOOLEAN OPERATOR TO COMBINE TERMS</u>
family families relative relatives parent parents father/s mother/s	father* mother* (others might produce "false hits" e.g. familiar, parenting)	family parents	OR

--- AND ---

<u>KEYWORDS</u>	<u>TRUNCATION</u>	<u>THESAURUS TERMS</u>	<u>BOOLEAN OPERATOR TO COMBINE TERMS</u>
terminal disease/s terminal illness/es terminal care terminally ill palliative palliative care palliation	palliat\$ terminal (disease\$ or illness\$ or care)	terminal care palliative care hospice care	OR

A copy of this guide is available on the web at
www.uwe.ac.uk/library/resources/hea/docs/Tips_for_effective_searching.pdf

This guide can be made available in alternative formats on request

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