

# Understanding Research

## MODULE TWO



**SAHMRI**  
South Australian Health &  
Medical Research Institute



### Slide 1 – Module Two: Has the question already been answered?

Once the aim of the research as well as the specific questions or hypotheses has been clearly defined, the next step is to see if an answer already exists. There may not necessarily be a need to undertake additional research as others may have already completed the work for you. Details about finding and reviewing journal articles, study reports and other types of publications which may hold the key to answering your question or questions are provided in this chapter. Additionally, in this module we will also discuss the basic techniques for assessing the quality of any literature you find so that you know whether to trust the information that it contains.

## Module Two

Has the question already been  
answered?

Study Guide: Chapter Two

### Slide 2 – Types of literature

You don't have to only rely on journal articles to inform your question. There are many different types of literature which may hold the answer or could potentially contribute to answering your question including:

- Research reports
- Issue papers
- Conference proceedings
- Theses and dissertations
- Working papers
- Fact sheets
- Briefing papers
- Webpages

## Types of literature

Journal Articles,  
Research Reports,  
Issue Papers, Conference  
Proceedings, Theses and  
Dissertations, Working  
Papers, Fact Sheets,  
Briefing Papers,  
Webpages etc

### Slide 3 – Free Publication Databases

Publication databases and search engines are a great tool for finding peer reviewed and in some cases grey literature. They are helpful because they allow you to search and download articles from a number of journals at the same time.

While databases and search engines are particularly helpful as an online tool for identifying literature that may be useful, there are some downsides.

- First, there are many different types of databases and it is sometimes difficult to work out which one you should use.
- Second, in many cases you need to pay a subscription fee to use a database and even some search engines.

However, if you haven't subscribed to a database and don't have easy access to a research librarian, we suggest you may like to try some of the database which don't require a subscription for a basic level of use.

Unfortunately, just because you can access these databases and search their content doesn't necessarily mean you will be able to see the full-text of every article, report and/or other types of literature for free. In some cases you may only be able to see the title, authors and a short abstract or summary of the article before being directed to a fee for service webpage. However, a number of articles are provided free of charge and in other cases short summaries or abstracts of the article can be helpful. If you are really interested in reading the full text and it is not available, try emailing one of the authors as they will generally be happy to send out a full-text of the article upon request.

Free Publication Databases	Details	Link
PubMed	Over 22 million primarily peer-reviewed biomedical citations. Some with links to free full-text.	<a href="http://www.ncbi.nlm.nih.gov/pubmed">http://www.ncbi.nlm.nih.gov/pubmed</a>
Cochrane Database of Systematic Reviews	Peer-reviewed free full-text systematic reviews that have been prepared and supervised by a Cochrane Review Group.	<a href="http://onlinelibrary.wiley.com/cochranelibrary/search/">http://onlinelibrary.wiley.com/cochranelibrary/search/</a>
Google Scholar	Peer-reviewed and grey literature including journal articles, reports, theses and opinion papers. Some include links to free full-text.	<a href="http://scholar.google.com.au/">http://scholar.google.com.au/</a>
MedNar	Primarily used to search for grey literature including commercial databases, medical societies, National Institute of Health and government resources and patents.	<a href="http://mednar.com/mednar/search.html?ssid=5eebbc1f63a1405c766a66%3a-7bec">http://mednar.com/mednar/search.html?ssid=5eebbc1f63a1405c766a66%3a-7bec</a>
World Health Organisation	Contains links to World Health Organization projects, initiatives, activities, information, and contacts organised by health and development topics.	<a href="http://www.who.int/topics/en/">http://www.who.int/topics/en/</a>

### Slide 4 – Building a search

Rather than not finding enough literature, you may be faced with too much. The way to manage the billions of articles which could pertain to your question is to develop a search strategy which focuses on specifics relating to your particular question. To do this you need to:

**Step One:** Identify the key concepts in your question or hypothesis.

**Step Two:** Identify any alternative terms which could exist for these concepts.

**Step Three:** Decide whether you want to restrict your search in any way. For example, you could restrict your search to:

- a certain population or group,
- a specific age group; and/or
- a particular type of literature (e.g. journal article or book).

You may find it helps to clarify your thinking if you use a **logic grid**, in which you group related concepts or synonyms.



## Building a search

**Step One:** Identify key concepts in your question

**Step Two:** Identify alternative terms

**Step Three:** Decide whether you want to restrict your search in any way. For example:

- a certain population or group,
- a specific age group; and/or
- a particular type of literature (e.g. journal article or book).

Slide 5 – Are Aboriginal and Torres Strait Islander peoples who live in urban locations less likely to have an adult health check than those in rural or remote areas?

You may find it helps to clarify your thinking if you use a **logic grid**, in which you group related concepts or synonyms.

As there are three distinct concepts involved in this search (underlined above) we will use three columns.

Label each column with the concept and then list all of the terms which are could be used to describe the concept.

For the “Are Aboriginal and Torres Strait Islander peoples who live in urban locations less likely to have an adult health check than those in rural or remote areas?”, the logic grid may look something like this.

Are **Aboriginal and Torres Strait Islander peoples** who live in **urban locations** less likely to have an **adult health check** than those in **rural or remote areas**?

1. Population	2. Location	3. Intervention
Aboriginal	Rural	adult health check
Torres Strait Islander	remote	adult health screen
Indigenous Australian	urban metropolitan	MBS Item number

Slide 6 – How acceptable is the concept of outreach visits to Aboriginal and Torres Strait Islander peoples living with chronic disease?

The same process could be used for this question.

As there are three distinct concepts involved in this search (underlined above) we will use three columns. Label each column with the concept and then list all of the terms which are could be used to describe the concept.

**How acceptable is the concept of outreach visits to Aboriginal and Torres Strait Islander peoples living with chronic disease?**

<b>Phenomena of Interest</b>	<b>Population of Interest</b>	<b>Condition</b>
Out-reach	Aboriginal	Chronic disease
Outreach	Torres Strait Islander	Cardiovascular disease
Home visits	Indigenous Australian	Diabetes Respiratory disease Depression

### Slide 7 – Can I trust the literature?

However, not all of these types of literature are considered to be of equal quality. Instead there is a hierarchy of evidence.

## Can I trust the literature?

Just because something is published doesn't necessarily mean that the information it contains is always reliable or trustworthy. It is therefore important to consider the quality of the literature prior to relying on the evidence presented.

### Slide 9 – What type of literature are we looking at?

- **Primary Sources:** Journal Articles, Research Reports, Issue Papers, Conference Proceedings, Theses and Dissertations, Working Papers, Fact Sheets, Briefing Papers, Webpages etc. Peer reviewed literature involves a review by the researcher's peers prior to publishing. Be careful. Just because literature is published in a journal does not mean it is peer reviewed. Grey literature, on the other hand, has not been peer reviewed and is often published on websites, in newsletters and/or as a study report.
- **Secondary Sources:** Literature reviews, synthesis of findings etc.
- **Anecdotal Pieces:** Views and opinions of others



## What type of literature are we looking at?

### Hierarchy of Literature

1. **Primary Source** including research reports and published articles written by the researcher.

2. **Secondary Source** including review articles written by someone other than the researcher.

3. **Anecdotal Pieces** including views and opinions.

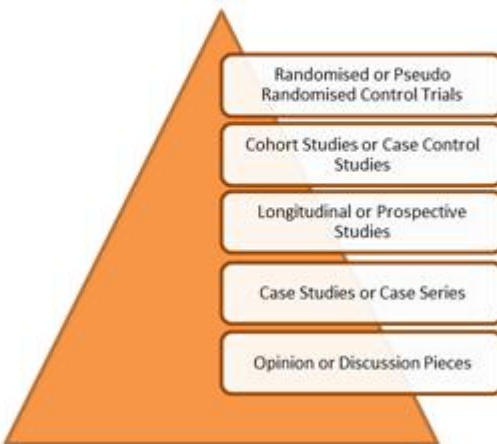
### Slide 9 – Quantitative literature

For quantitative studies people tend to think about a hierarchy of evidence which ranks by study design. Generally, the higher up the hierarchy, the more robust the study is assumed to be.

Concerns, however, have been raised about the ranking based on study design alone. For example, the link between smoking and lung cancer was discovered via cohort studies carried out in the 1950s rather than a randomised control trial.

In addition, although randomised control trials may be considered more robust, in some cases it is unethical to undertake a randomised control trial. For example, you couldn't justify a randomised control trial where one group was put on a diet high in processed sugar and the other group was given a diet with low sugar intake.

## Quantitative literature



### Slide 10 – Qualitative literature

Judging the quality of the qualitative literature is not quite as easy, primarily because different researchers hold very different views about what quality means. Some of the ways in which qualitative literature has been judged however include:

- **Validity:** Validity refers to how legitimate or valid the findings are. The types of questions that should be considered when assessing validity are:
  - Have the findings been corroborated either through the use of multiple data collection methods or data sources? For example, did observations support the findings from key informant interviews and were a range of different participant perspectives considered?
  - Have the findings been reviewed by the participants to establish whether they reflect the participants' views?
  - Has the method of data collection, analysis and interpretation been clearly explained?
  - Did the researcher/s reflect on how their own views and values may have influenced data collection, analysis and interpretation?
- **Relevance:** Relevance refers to the extent to which the study findings can be applied to situations beyond the immediate study. The types of questions that could be considered when assessing relevance are:
  - How well does the study add to, or increase the confidence of current knowledge about the topic?
  - Do you think that the findings could be applied to contexts or situations beyond what was considered in the original study?
- **Authenticity:** Authenticity relates to whether there is a general consensus by participants that the findings are a reflection of what is considered to be true. This does not mean there is only one reality but instead the findings capture the reality as it stands for the people involved in all of its inconsistency and complexity.

## Qualitative Literature

- **Validity:** how legitimate are the findings?
- **Relevance:** can the findings be applied to situations beyond the study?
- **Authenticity:** do a consensus of views consider it to be true?

### Slide 11 – Systematic Literature Reviews

It has been suggested that in order for health practitioners to keep abreast of the relevant literature they would need to read on average about 17 – 20 articles every day. Therefore, using systematic literature reviews which apply rigorous methods to identifying, assessing and interpreting literature related to a specific topic or question makes a lot of sense. However, similar to quantitative and qualitative literature, it is important to assess the quality of the systematic literature review before you decide to apply their findings.

You may wish to start by asking the following questions:

- Was there evidence that the systematic review was designed prior to beginning the review? (i.e. was the protocol or methodology published prior to commencing)
- Was the search comprehensive? (i.e. do you think they include all of the possible terms in the search)
- Did two independent reviewers select and extract the data? (and then compare and discuss any discrepancies)
- Was a list of studies and characteristics for each provided in the literature? (i.e. type of participants, any interventions and outcomes for each study)
- Was the scientific quality of the included studies assessed and documented? (i.e. assessed for quality in a similar way as discussed previously)
- Were the methods used to combine the extracted findings appropriate? (i.e. were the studies combined in a sensible way)
- Was the possibility of a conflict of interest acknowledged? (i.e. did the authors state any support received or alternatively clearly identify that there was no conflict of interest)

## Systematic Literature Reviews

In order for health practitioners to keep abreast of the relevant literature they would need to read on average about 17 – 20 articles every day.



### Slide 12 – Grey literature

Grey literature is considered to be literature that has not been published in a commercially published journal and may not be reviewed by the authors' peers. While it is a little more difficult to assess the quality of grey literature, particularly if presented online by an unknown or obscure source, there are still some questions that can be asked to identify whether you can rely on the information provided. For example:

- If it comes from a website, whose website is it? (i.e. you may be more inclined to trust information contained on the World Health Organization website than information provided by a private for profit company)
- Who has authored the information? (i.e. you may be more inclined to trust the information if it is authored by an expert in that particular field)
- When was it produced? (i.e. you may be more inclined to trust the information if it was produced recently rather than perhaps 10 or 20 years ago)
- Why was it produced? (i.e. you may be more inclined to trust the information if it was specifically produced for use by health practitioners rather than information for general consumption)



## Grey literature

- Who has authored the information?
- When was it produced?
- Why was it produced?

### Slide 13 – Key Messages

Key messages from module two are:

- Reviewing the literature will help you to find out if your research question has already been answered.
- In addition to journal articles you may also consider reviewing Research Reports, Issue Papers, Conference Proceedings, Theses and Dissertations, Working Papers, Fact Sheets, Briefing Papers and Webpages.
- In order to lessen the amount of work that can be involved in a literature review you should develop a search strategy based on the following three steps.

**Step One:** Identify the key concepts in your question or hypothesis.

**Step Two:** Identify any alternative terms which could exist for these concepts.

**Step Three:** Decide whether you want to restrict your search in any way. For example, you could restrict your search to a certain population or group, a specific age group; and/or a particular type of literature (e.g. journal article or book).

- Just because something is published doesn't necessarily mean that the information it contains is always reliable or trustworthy. Therefore, a care analysis of not only the content but also the source should be undertaken before the contents are utilised.

## Key Messages

- Reviewing the literature will help you to find out if your research question has already been answered.
- There are many different types of literature.
- A search strategy will help find the information you are looking for.
- Just because something is published doesn't mean that it should be trusted