Yarmouk University

Community Medicine

Lec. 3 - Searching literature using PubMed (Part 1)

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Searching literature using PubMed & defining your project

part -1

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What to consider when searching

- What terms to search for?

  (you have to be specific about each word you search)

- What types of database to search?

  (like PubMed, Google Scholar, Scopus ,Web of science)

- What countries?
- What languages?
- What time period?
- **These things help you to find something to be interesting in your research (why you did your research? what is the difference between it and other researches).**
- **يعني بشكل عام لازم تبين شو الاشي الجديد الي قدمته بالبحث تبعك وشو أضاف للliterature لإنه رح يزيد فرصة قبوله بالمجلات العالمية...**

Record: how to do systematic review??!

- ✓ look for more than one database (multiple databases is preferred).
- ✓ Search for keywords in each of them.
- ✓ Look for all literature you find.
- ✓ Remove duplications that are present in the databases.
- ✓ Then do screening depending on the title, is it relevant to my research question? If no remove it.
- ✓ Then move to the abstract, relevant or not.
- ✓ If you couldn't judge depending on the abstract move to the full text article and so on.
- ✓ In some cases you may need something called meta analysis??
- o for example: some researches say that aspirin increases risk of cancer and others say it decreases it while others say there is no association, so you do some calculations to find a single result

Record: difference between review and systematic review?

- Review: you have a certain question then you start reading about it, then you summaries what you read, this is called summarization or review , so it doesn't contain all literatures about the topic, it's a summarization of the literature about your topic.

- Systematic review: contains every thing that was published regarding your topic

Record: After choosing the research question what is the next step?

Planning to your research: here you start planning for your tools and methods, and from here comes the importance of doing literature review.

At this point the doctor started talking about proposal template in YU: check it from eLearning.

It contains:

1. the research question
2. Researchers' names :

✓ What is the difference between principle investigator and co-researcher:

شو الفرق بين الباحث الرئيس والباحث المشارك؟

Principle investigator started the research by bringing an idea, then he started writing the proposal, and then gained the fund for the research. (first author)

Co-researcher helped him in the research

Record: YU proposal template

3. Abstract:

- it could be structured or non-structured : either divided into background, method, results and conclusion or as a single paragraph.
- In our proposal for this course we don't have results so it's just a background, methods, and significance of the research (what's new in your research).

4. Introduction:

- Background information
- For example if you want to talk about association between some medications and cancer you don't move directly to the methods, rather than that you start saying for example some researches found that there is association and this research will look for it among the population etc.

Record: YU proposal template

5. Literature review:

- Is written in a scientific way, we will discuss it in the next lectures.
- To make it easy we use literature review table: this table is from slide 27..

Study (Author (year), location)	Design	Research question	Patients/population	Data collection tool/ exposure ascertainment	outcomes
e.g. Ahern et al (2014), US	e.g. Cohort		e.g. Nurses' Health study	e.g. Questionnaires & medical records	Findings with HR= 95%CI…..etc.
Hartz et al (2013), US	Cohort		Women's health initiative (PM)	Self-administered self-report	
Stenkvist (1980), Sweden	Case-Control		NR Not reported	Computerized population register	Findings with OR= 95%CI……
					Findings with P-value….etc.

Record: YU proposal template

- Let's talk about the table:
- For example you found 5 studies has the same idea of your research you start to compare between them to find the novelty of your study.
- Look for the design, research question (it maybe the same of your one, more variables etc.), population, data collection tools (survey, lab), outcomes.
- When you want to write the literature review section in the proposal what do you want to write? Depending on the table..

for example in **X** study which was published in … they used **Y** tool on **F** population and the found **M** outcomes

But for **S** study which was published in … they found that etc.

- And so on…
- More details about this topic will be discussed later on

Record: YU proposal template

Referencing software!!!

- It’s an important software for numbering the references.
- ليش مهم بما إنه بقدر أرقم المراجع ترقيم يدوي وخلص؟
- لإنه في بعض الأحيان بس ترقم وتخلص وتروح ع ال supervisor تبعك رح يحكيلك شيل هي المعلومة وحطها هون وهي المعلومة وحطها هون بالتالي كل المراجع ترتيبها اختلف بس هاد البرنامج رح ينقذك من هالوضع، كيف؟
- هو لحاله بيربط هي المعلومة بهاد الرقم (بيعملcitation) بالتالي بس تغير مكان الجملة بتعمل refresh ولحاله بيعيد الترتيب، وغير هيك بيعمل القائمة الي بآخر البحث لحاله فبتكون بالنهاية جاهزة.
- واحد من البرامج الي نصحت فيه الدكتورة هو **mendeley**
- ملاحظة انذكرت انه لازم نغير بطريقة كتابة المعلومة أو رح تعتبر سرقة علمية

Planning the search terms

- Divide the review into the eligibility components:
  1. Participants
  2. Interventions (including comparator)
  3. Outcomes
  4. Study designs

- The database you are searching will try to help you by only showing the things that you ask for. It might hide millions of other things.

Choosing the search terms

In listing terms for each component, consider:

1. Synonyms (from different times and places)
2. Other words and phrases that are related to what you're interested in
3. Words that are broader
4. Words that are more focused
5. Index terms or keywords

Combining search terms

Two main ways to link terms:

1. AND (decreases the number of hits, requires every item to be present).
2. OR (increases the number of hits, requires any of the items to be present).

Try to avoid NOT (it might remove records that actually are eligible)

Combining the components

- Within the component, use OR to combine the terms and then use AND to combine the components. But ...

- Do you need all the components?
- Are you confident that you have all the terms within each component?
- Which component is least likely to be relevant?
- Which component is most likely to be relevant?
- The ideal might be the component that is most likely to be relevant and has the highest proportion of good things amongst its hits.

Deciding where to search

- Choose databases that are likely to provide a worthwhile yield
- The components to focus on might vary between databases
- Index terms may be different in different databases

Planning a search

Extracting the data

after doing the research question you have to do data extraction

why we need to do that? Check slide 18

What is the effect of needle length on local reaction to vaccination in babies?

Data extraction – why?

- Reasons for doing data extraction:

1. Remembering the information
2. Organizing information into aparticular structure
3. Summarising the content of the reports
4. Ensuring that you look for the key things
5. Making it easier to compare different studies

Data extraction – how?

- Data extraction form
  1. Paper or electronic?
  2. Picklists or freetext?
  3. How much space do you need for each item?
  4. Do you want to record what was planned in a study, what happened, or the difference (eg for the study's eligibility criteria)?

- Think carefully about what you will use the data for.
  - For example, do you want to know the mean age, the age range, the number of people in different age groups, or the results for different age groups separately? Or do you just want to know that an article has a particular type of age data?
  - Do I want these data for comparison? or I want to use them as references by using there information in the background?
  - In our proposal we need it to write literature review section and as information in the introduction. But if we want to write a research we will need it for introduction and discussion.

- Do you need all the data?
- How much detail do you need?

What are the Big 4 Databases?

1. **MEDLINE (PubMed)**
2. **EMBASE**
3. **Web of Science**
4. **Scopus**

Other databases/resources are available, which you may need to use depending on the level, and subject focus, of your searches

For example:

CINAHL (nursing), PsycINFO (mental health)

But these 4 are a good place to start when looking for evidence, because their scope is so broad

Before you search…

Be **clear** about what you want to find:

Articles about dietary supplements to reduce symptoms of chronic pancreatitis

Identify the **key concepts** you need to search for:

1 2

Articles about dietary supplements to reduce symptoms of chronic pancreatitis

(Optional) Think of **alternative terms** for your concepts - search for these, too:

1 **Diet supplements**
Antioxidants
Multivitamins

2 **Inflammation of the pancreas**
Inflamed pancreas Pancreatic inflammation

Getting the right combination

AND/OR 2 main ways of combining searches

OR Combines searches on **similar topics** or on topics you wish to compare

AND Combines searches on **different topics**

So, the search statement -

Articles about dietary supplements to reduce symptoms of chronic pancreatitis

Dietary -equates to actual searches for: **Chronic pancreatitis**

supplements
OR
Diet supplements
OR
Antioxidants
OR
Multivitamins

AND

OR
Inflammation of the pancreas
OR
Inflamed pancreas
OR
Pancreatic inflammation

MEDLINE

What is MEDLIN?

- Database from United States National Library of Medicine (NLM) – funded by US Government
- 21 million+ biomedical and life sciences references
- Coverage back to 1946
- Citations from 5,600+ scholarly journals published around the world
- References tagged with Medical Subject Headings (MeSH terms **(keywords)**)

Why should you use MEDLINE?

- Good, broad medical, health and life sciences database

We need to talk about PubMed…

What is PubMed?

- ‘Free’ version of MEDLINE, also maintained by NLM
- Lists 21 million+ MEDLINE references and 2 million+ ‘extra’ references including e-books

Why should you use PubMed?

- Simply Google ‘PubMed’ or go to www.pubmed.gov
- For ‘quick and dirty’ searching i.e. if you’re not especially worried about it being systematic or reproducible
- To check for really recent references on a topic
  - ‘Ahead of print’ articles not yet in MEDLINE because they have still to be tagged with MeSH terms
- To keep track of topical information and monitor the prevalence/popularity of a condition/research topic

https://www.youtube.com/watch?v=0liIl6yUmk8

CONDUCTING A LITERATURE SEARCH USING PUBMED