Evidence based-practice (EBP)

“Literature reviews - level one”

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Reference notes:
Title: “Evidenced based-practice (EBP): Literature reviews - level one”
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Target Audience:
Undergraduate students
Introduction

- Evidence hierarchy
- Literature - Where to find it / how to find it
- Grey literature
- Background searching
- Foreground searching / how to build a research Q
- (PICO)
- MeSH searching
Introduction

- Inclusion / exclusion criteria
What types of evidence are there? Is there a preference?

*Figure 1: Hierarchy of Evidence*  
*Source: (Seattle Pacific University 2010).*
Where can we find evidence?

- In no particular order…

- (Medline) / PubMed / TRIPP Database / BNI / Embase
- CINAL/ NHS Evidence / Google Scholar / PsycINFO
- Journal databases / University databases / Research Gate
- Scopus / Web of Science / British Nursing Index
- DynaMed Plus

This is not an exhaustive list!
Grey Literature

• Might see this term when you are reading other reviews

• Grey lit can be very difficult to find – “under the radar”

• Important to consider + actively seek when it comes to post-graduate level systematic review

• Often includes unpublished work or privately published work (intra-organisational etc.)

• One method of seeking grey literature is to contact leading author(s) in field
Background Searching

• Start with background searching

• Is there a need to do a literature search on your topic? Has it already been done? Is it a waste of time?

• You must be able to justify it
• Is there a gap in the literature?
Foreground Searching  “use PICO!!”

- PICO = Technique used at University of Ox & UCL & NICE
- Created by Richardson *et al* (1995)
- Use to “Frame” / dissect a research Q
- Use to build a strong & focused Q / Adds Clarity
- Makes the Q answerable

- Construct PICO **before** you start searching

*To fit within the scope of this presentation*

*I will only go through PICO in relation to literature reviews*
Foreground Searching
An undergraduate topic (example)

- **P** - Patient(s)                  Pts with Colorectal Cancer
- **I** - Intervention               CT Imaging
- **C** - Comparator                 MRI
- **O** - Outcome                    Sensitivity

For the *majority* of circumstances it is important to be a specific as possible
Foreground Searching (Continued…)

- Follow your PICO when searching
- Use keywords

- Record, Record, Record!
  - Where you search
  - The date of search
  - No. of search results
Start big ➔ Narrow down

Initial search might yield 10,000+ articles

Want to reach a “manageable number” of good quality articles to critique (relevant, reputable)
Inclusion & Exclusion Criteria

• We can apply an explicit criteria to /filter no. results

• Year of publication
  \( \leq 5 \text{ years} = \text{ideal} \)
  \( \leq 10 \text{ years} = \text{cut off} \)
  \( >10 \text{ years} = \text{must justify use in-text} \)

• Any duplicate articles?
• Does the article truly relate to your PICO? (Particularly O – Outcome)
• Peer reviewed only?
• English language only?
Useful Filters

• Could filter it - to find keywords in the:
  • Abstract only  (recommended in most cases)
  • Title only          (?too strict )
  • Whole text   (?too lax- there might only be a mere mention of your search term)
Q How would you search using this PICO?

- **P** - Patient(s)  
  Pts with *Colorectal Cancer*

- **I** - Intervention  
  CT Imaging

- **C** - Comparator  
  MRI

- **O** - Outcome  
  Sensitivity
Options

- Colorectal cancer AND CT imaging AND MRI AND sensitivity?

- ✔ might find papers comparing both CT and MRI

- ✗ BUT Will exclude papers focusing on only x1 modality
  
  Will miss all studies that just address CT
  Will miss all studies that just address MRI
Options

- “Colorectal cancer AND CT imaging AND MRI AND sensitivity OR
  Colorectal cancer AND CT imaging AND Sensitivity OR Colorectal cancer AND MRI
  AND Sensitivity”

- ✓ Better = Will include papers that
  - have both CT and MRI
  - address CT (No MRI)
  - address just MRI (No CT)

- x BUT = In some databases,
  you could still miss a lot of relevant papers using this search.
Can anybody think why?
Answer:

- Variations (Synonyms & Spellings)

  - Colorectal cancer
  - Bowel cancer
  - Colorectal neoplasms
  - Cancer of the large intestine
  - Cancer of the ascending colon/descending/transverse/sigmoid/rectum
  - Cancer of the intestine (some papers could be very non-specific!)
  - GI cancer (ibid)

  etc…
Tips

• **Anticipate ahead**
  (Try and identify potential variations during your planning stages or background searching)

• **Look at the database guides**
  (Some databases will search + include some of the common variations in your results automatically)

• **Use MeSH searching to supplement your results**
MeSH (Medical Subject Headings)

- **A thesaurus feature** on the PubMed database.
- ‘Medical Subject Headings’ are used to index/label articles
- In essence they consist of ≥1 terms (keywords or phrases)
- For Twitter users, Medical Subject Headings are very similar to hash-tags in the way they can **group** items to a **particular topic**
Panniculectomy at the Time of Cesarean Section and Postoperative Wound Complications in Morbidly Obese Women.

Fennimore R, Fabbri S, Miranda-Seijo P.

Abstract
OBJECTIVE: To determine whether a modified abdominal panniculectomy at the time of cesarean delivery decreases wound complications in morbidly obese women.

STUDY DESIGN: This is a retrospective cohort study of 59 morbidly obese patients who delivered via cesarean section at a single center between 2003 and 2009. A total of 30 morbidly obese patients who underwent modified panniculectomy at cesarean section alone.

RESULTS: Of the 30 women who underwent modified panniculectomy at the time of cesarean, 35 required readmission. In the control group, 24% (n = 7) developed operative site infection (p = 0.03). There was no difference in the postpartum length of hospital stay, intraoperative blood loss, or postoperative complications. CONCLUSION: In our cohort, morbidly obese women who underwent panniculectomy at the time of cesarean section had no significant increase in operative time, hospital length of stay, and infant size. Cesarean section may be a useful adjunct in an effort to decrease postoperative infectious morbidity in obesity on long-term healing, future obstetric outcomes, and other medical conditions warrant further evaluation.
MeSH

• But as we have recently discovered, there are **many** different ways of writing out a term

• MeSH recognises this and links some of the common variations together

• *Let's give it a go....*
  
MeSH

• Enter the term in the MeSH box + press search

• MeSH will tell you which variation it prefers
  (Providing this variation is appropriate to you, this is the term you should use when you perform MeSH searches)

• Why should I use this? well.. let’s scroll down the page..
MeSH

• When you search using this preferred term (caesarean section)
• It will also search all of the Medical Subject Headings with the following terms:

US spelling

UK spelling

Synonym

Etc..

• These are some of the most common variations!
• This reduces the chance of excluding articles/search bias.
You can then combine this MeSH with other ones and/or with other searches.
MeSH

- ✓ can yield in more results/articles (that may have otherwise been missed)
- ✓ can combine one MeSH search with other ones
- X cannot rely on searching the medical subject headings only (need to consider searching the abstracts/titles/main body etc. as well)
An example of combining MeSH searches with conventional searches

NB:

I performed this search when I was given a MSc task to find out the risks & benefits associated with:

Vaginal Birth After Caesareans (VBAC) and Repeat Caesarean Sections (ERCS)
<table>
<thead>
<tr>
<th>Search term/phrase performed on PubMed (Detail)</th>
<th>Search term/phrase (Simple)</th>
<th>Date &amp; No of results</th>
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</table>

Search for articles with cesarean section repeat (in the Medical Subject Headings) AND Articles with vaginal birth after caesarean (in the Medical Subject Headings) AND Articles with elective surgical procedures (in the Medical Subject Headings) AND Search for articles with caesarean and section and repeat OR repeat caesarean section OR caesarean section and repeat in (TITLE AND ABSTRACT ONLY) AND vaginal birth after caesarean OR vaginal and birth and after and caesarean in (TITLE AND ABSTRACT ONLY) AND Search for elective and surgical and procedures OR elective surgical procedures OR elective in (TITLE AND ABSTRACT ONLY) ARTICLES MUST BE (In the English Language, Using human subjects, published within the last 10 years to ensure that information is current)
Breaking it down in colour

Pubmed – ‘Advance’ feature

• Writes/helps you build the long thread of code
• That you can use for searching
• Give it a go!
Document each search as you go along

• Yes is very long-winded – but is **widely regarded as best practice**

• Could dump it all in your appendices
  (To avoid taxing word counts)

• It makes your searches:
  Transparent / explicit / clear  (to the reader)

• Makes it easier for you to follow your own progress

• Allows you to build on your searching (e.g. narrowing down)

• Increases the reliability/validity of your work
A simple table
That you could implement to keep track of your searches

<table>
<thead>
<tr>
<th>Search no.</th>
<th>Search query</th>
<th>Date of Search</th>
<th>No. of search results</th>
<th>Notes</th>
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Any Questions?
Exercises
Exercise 1
Write a PICO for your literature review

• P =
• I =
• C =
• O =
Exercise 2
What database(s) will you use?
Exercise 3
Look at Pubmed’s MeSH – What variations are there to your search terms?
Exercise 4
If you decide to do some MeSH searches, what term will you search under? (Clue: What is the preferred term?)
Exercise 5
What searches will you perform?