Systematic Review – at a glance

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Outline

- Introduction
- The Systematic Review Process
- Searching Strategies - source to search
- Selecting studies – constructing a search strategy
- Reporting Guideline

INTRODUCTION

Hierarchy of evidence

THE COCHRANE LIBRARY??

An international not-for-profit organization which aims to help people make well-informed decision about healthcare by preparing, maintaining and promoting the accessibility of systematic reviews of the effects of health care interventions

Aiming to be:

- Collaborative, efficient
- Unbiased, reliable, up to date
- Relevant, accessible

The structure of Cochrane Library

More than 27,000 people in over 100 countries

- Almost all volunteers

Decentralisation structure

- 52 Cochrane Review Group (CRGs)
  - Specific areas of health care
  - First point of contact for authors
  - International and multidisciplinary

Largely funded by government grants

Systematic or Narrative Review: What's the difference?

Identify what you think distinguished a systematic review from a narrative review

What do you think are the advantages / disadvantages of a systematic review

Systematic Review

Proses mengidentifikasi, mengevaluasi dan menafsirkan semua penelitian yang tersedia yang relevan dengan pertanyaan penelitian tertentu, atau bidang topik, atau fenomena yang menarik.

Individual studies contributing to a systematic review are called *primary studies*; a systematic review is a form a *secondary* study.

Why systematic reviews?

Efficient way to access the body of research
- Saves time required for searching
- Critical appraisal
- Interpretation of results

Explore differences between studies

Reliable basis for decision making
- Unbiased selection of relevant information
- Useful for health care, policy, future research

Overview of the systematic review process

- Research question and Title
- Background
- Objectives
- Criteria for considering studies in the review
- Search strategy for including studies in the review
- Methods
- Data Synthesis (results)
- Discussion

The Systematic Review Process

DEFINING A RESEARCH QUESTION AND TITLE

Planning your topic and scope

- Address a question of importance and relevance
  - Impact of health issue – population and individual
  - Possible impact of intervention
- Address real choices faced in decision-making
- Consider an international perspective

Defining your question

- **Essential first step for your review** – absolutely crucial!
- **Guides many aspects of your methods**
  - Eligibility criteria
  - Search strategy
  - Data collection and analysis
- **Think carefully in advance**
  - Plan your work
  - Avoid bias

Question Development

- **How you frame the question will depend on the focus of the problem**
- **Types of questions**
  - Diagnosis and prognosis → Cohort Studies
  - Intervention → RCTs
  - Risk / etiology → Cohort studies / case control
  - Patient / client perspectives → Qualitative
  - Efficiency → RCTs
  - Cost effectiveness → RCTs

The type of question developed will influence the type of evidence found

Components of a question

- Consider variations you may wish to explore in the review
- Needs to contain all elements of **PICO, PEO, PIO**
  - **P** types of participants / population
  - I types of interventions
  - C types of comparative groups
  - O types of outcome measures
  - T types of study (designs)
- OR
  - **P** types of participants / population
  - E types of exposure (or Issue)
  - O types of outcome measures
  - T types of study (designs)
- Before **FINALISING** your question do make sure that you have checked that there are **enough primary research papers** on the topic!

A broad or narrow question?

	Narrow	Broad
Advantages	• Easy to write • Easy to read	• Comprehensive • Generalizable
Disadvantages	• Need multiple reviews • May be selectively defined	• Complex • May miss subgroup effects • Overview of reviews may be preferable

Eligibility Criteria

Rules to decide which studies are included in the review

Based on:

- Some or all your PICO components

  plus

- Definition of eligible study designs

Population

- Clear definition to identify people of interest
- Two aspects to consider
  - Health condition
    - Diagnosed how, by whom?
  - Population and setting

- Any limits should have a clear rationale
  - Alternative is to include and explore in subgroup analysis

Equity and special populations

Sex, age, ethnicity, geographic, economic, education, diagnosis, severity of disease, etc

You need to describe your population (patient group)

Why?

- Different prevalence, progress and impact of disease
- Different effects or safety of the intervention
- Different outcomes of importance

Intervention

- **Define intervention you will be using**
- **Give as much detail as possible**
  - Formulation
  - Dose, intensity
  - Delivery
  - Timing, frequency, duration
  - Equipment
  - Personnel (qualifications, training)
  - Location, context
  - Alone or in combination with other intervention(s)
- **Any limits should have a clear rationale**
  - Alternative is to include and explore in subgroup analysis

Intervention

- If using more than one intervention – need to say what criteria will be used to include studies
- Ideally all papers should be selected that meet selection criteria (as assessed by more than 1 person)
- Need to describe which types of intervention will be excluded

Location and context

Interventions may work in some contexts but not others

- Availability and accessibility
- Equipment
- Experience and expertise of the available staff
- Local competing priorities
- Fee or payment structure
- Cultural and linguistic diversity
- Socioeconomic position
- Rural/urban setting

Comparison

Based on the objective of your review

- Define specific active comparisons in as much detail as the intervention
- Be clear what you mean by 'no intervention'
  - E.g. no intervention, placebo, usual care, etc
- **Can remain open to any comparisons found, but be explicit**

Outcomes

- Rarely part of the eligibility criteria
- Excluding studies on the basis of outcomes reported may introduce bias
  - Outcomes may be selectively reported by trial authors
  - Additional information may be available
- May be appropriate if outcomes are important to the definition of your question
  - E.g. prevention vs treatment, interventions used for more than one condition
- If qualitative review, e.g. **experiences** of subjects
- Be clear in your protocol

Outcomes

Identify meaningful outcomes

- For consumers, health professionals, policy makers
- Include adverse effects
- Relevant to different populations
- Key time points
- Measurement options, validation

Consider outcomes used by reviews of related topics

Important outcomes should be included in the protocol and the review whether or not data are likely to be found

Prioritising outcomes

Primary outcomes (max 3)

Secondary outcomes

- Remaining main outcomes
- Additional outcomes, e.g. surrogate outcomes, process outcomes explaining the effects

Main outcomes (max 7)

- Essential for decision making
- Form the basis of analysis and summaries

Study designs

- Select the most appropriate design for the question
- For most Cochrane reviews:
  - RCTs
    - Prevents systematic differences between groups
  - Sometimes also CCTs (quasi-randomised)

Non-randomised studies?

- Rare but possible
- Clear rationale
  - RCTs are not appropriate or unlikely to be practical
    - E.g. public health, complex health system topics
  - To measure particular outcomes
    - E.g. adverse effects, economics, qualitative outcomes
  - Not just because RCTs are not available!
- Specific designs preferred
- Or other designs (OD) such as patient series, cohort or maybe only qualitative studies
- Be aware of increased risk of biased

Turning a question into a title

Title should be indicative of the content

Needs to a statement not a question

Make use of keywords

Should reflect research question

PICO/PEO/PIO

Research question and title should have the same or similar key words

Examples:

- Community-wide interventions for increasing physical activity
- Inhaled nitric oxide for respiratory failure in preterm infants
- Antibiotics for acute bronchitis

Before you start

- Need to make sure no other systematic review identical to yours has recently been conducted
- Need to make sure there is a need for a review
- Importance of writing protocol (or plan)
- Importance of a critical colleague panel or supervisor

Take home message

- Think through the scope of your review in detail before you begin (e.g. using the PICO model)
- Use this information to determine clear ad specific eligibility criteria
- This information will also help determine your search strategy, data collection and analysis

The Systematic Review Process

BACKGROUND AND OBJECTIVES

Background

- Needs to highlight importance of problem
- How do we do this? Operational definitions
- Cite research papers with stats of incidence
- Describe signs and symptoms of illness/problem
- Patients/Clients?
- Course of disease/pathophysiology

Background

- Intervention-how is disease usually managed?
- What are general outcome measures? Effects on patients life?
- Once you have discussed the problem's incidence, effect on patient`s life and management, ***we need to show that there is a gap in the reviews that have so far been done***
- This is very important as this shows that there is a need for further reviews ***you need to show (with refs), how even though all this research (reviews) have been done in this area no-one has yet done what YOU are going to do.***

Objective

- This needs to be stated clearly and concisely e.g. To examine the effectiveness of Nursing interventions in patients with cancer
- Do you see any problems with this?

The Systematic Review Process

CRITERIA FOR CONSIDERING STUDIES IN THE REVIEW

Criteria for considering studies in the review

- Should follow from research question as discussed previously: PICO or PEO (PIO)
- **Types of participants that will be included**
  - You need to describe your population (patient group)
  - diagnosis
  - severity of disease
  - age range
  - others
  - who will be excluded?

Criteria for considering studies in the review

Types of Intervention/s

- Define intervention you will be using
- If using more than one intervention-need to say what criteria will be used to include studies
- Ideally all papers should be selected that meet selection criteria (as assessed by more than 1 person)
- Need to describe which types of intervention will be excluded.

Criteria for considering studies in the review

Types of Exposure or Issue

- Nurses/ family Experiences of Witness resuscitation
- Experiences of Domestic violence
- Experiences of Living with a particular condition
- Patient/Nurses experiences of a critical care environment?

Criteria for considering studies in the review

Need to state what type of outcome measures will be included:

- **body structures and functions**- weight, pain, fatigue
- **activities**- like functional abilities- dexterity
- **participation**: physical independence, QOL
- **Process measures**- compliance, strength,
- **Others-**eg rates of domestic violence
- **If qualitative review-** eg- **experiences** of subjects

Criteria for considering studies in the review

Type of Studies

- Need to state which type of study designs you will be including:
- e.g. RCT, CCT
- or other designs (OD) such as patient series, cohort or maybe only qualitative studies

The Systematic Review Process

SEARCH STRATEGY FOR INCLUDING STUDIES IN THE REVIEW

SEARCHING STRATEGIES

SOURCES TO SEARCH

Search strategy

- The aim is to try and find everything out there to answer your specific question
- Needs to specify **keywords** and which databases and other sources will be selected
- Based on components of review question

Search strategy

Need to write down **specific key words** from research question

Need to say **which databases with dates that you will search** (re: you need to find all the work in the area that you can)

Need to **check the refs of all the papers** you find to make sure you have not missed any relevant work

Grey literature: conference presentations, unpublished work

Hand searching

Personal communications: authors of papers (if possible)

- Really good SOURCE for finding studies Centre for Reviews and Dissemination (https://www.york.ac.uk/crd/)

Electronic databases with peer-reviewed articles

- **PubMed or MEDLINE** – free health literature database through National Library of Medicine
- **EMBASE** – must pay to have this database and is expensive. Has more European journals indexed than PubMed and more pharmaceutical literature. Hence, the importance of including both when possible
- **Cochrane library** – high quality standards systematic reviews and meta analysis
- **CINAHL** – this is a nursing and allied health database
- **ERIC** – Educational database
- **CancerLit** – Cancer literature database
- **PsycInfo** – Psychiatric literature database etc
- **IPA** – International Pharmaceutical abstract

Sources to search: overview

Bibliographic databases

- Likely to identify the majority of your included studies
- Cochrane Central Registered of Controlled Trials (CENTRAL)
- MEDLINE
- Embase
- Cochrane Specialised Registers
- And others if appropriate

Other sources

- Journals and other databases
- Unpublished and ongoing studies

Start here

Work down

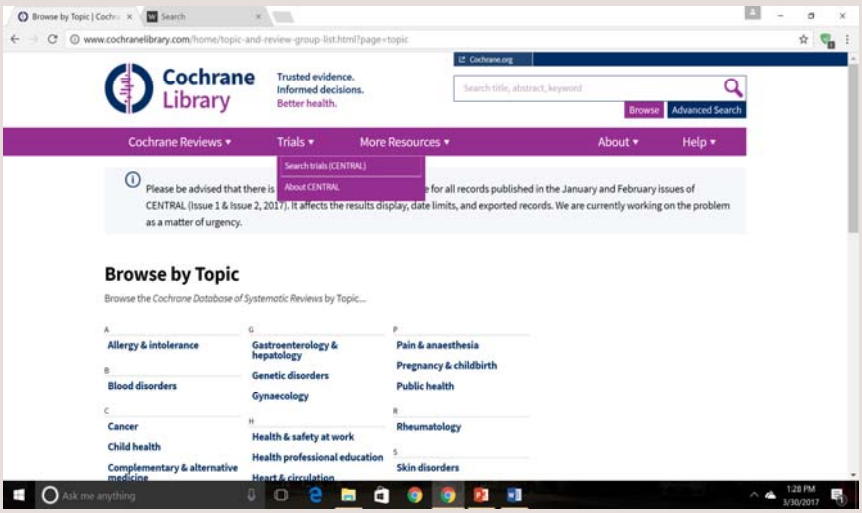
Cochrane Central Register of Controlled Trials

Access via The Cochrane Library

RCTs and quasi-RCTs

Includes MEDLINE and EMBASE records

Records from hand searching journals and conferences



http://www.cochranelibrary.com/home/topic-and-review-group-list.html?page=topic

Searching for MEDLINE and Embase

Avoid duplication!

What's already included in CENTRAL?

- MEDLINE: records indexed as RCTs and CCTs back to 1966, updated quarterly
- Embase: RCTs and quasi-RCTs identified back to 1974, updated annually

Ask for advice on additional searching

- E.g. recent records not yet in CENTRAL, non-RCTs, etc

Other bibliographic databases

National and regional databases

- E.g. AIM (African Index Medicus), LILACS (Latin America and the Caribbean)

Subject specific databases

- E.g. AMED (Allied and Complementary Medicine), PsyINFO

Dissertation databases

- E.g. Proquest Dissertation and Theses Databases

Grey literature databases *(technical reports, work in progress)*

- E.g. OpenGrey, NTIS (National Technical Information Service), FDA website, Google

Other sources

Consults first

Conference abstract and proceedings

Reviews and guidelines

- E.g. DARE (The Database of Abstract and Reviews of Effects), National Guideline Clearinghouse

Reference lists, citations and related articles

- E.g. Social science citation Index, Scopus

And possibly

- Individual journals (avoid duplication)
- Search engine (e.g. Google Scholar, TRIP – free clinical search engine)
- Web searching (low efficiency)

Unpublished and ongoing studies

- Very important to minimise bias
- Contact colleagues, industry, other known researchers
- **Trials registers / trials results registers**
  - National and international
  - Subject-specific
  - Pharmaceutical industry
  - Regulatory agencies, etc.

DATABASES APA YANG SERING ANDA GUNAKAN SAAT MENCARI LITERATURE?

SEARCHING STRATEGIES

CONSTRUCTING A SEARCH STRATEGY

Structure of a search strategy

- Based on your eligibility criteria
- Start with the 2 or 3 most important concepts
- Focus on those most likely to be found in title and abstract
  - **P** participants
  - **I** intervention
  - ~~**C** comparison~~
  - ~~**O** outcomes~~
  - **S** study design

Turning concepts into search terms

- **Aim for high sensitivity**
  - Express each concept in as many ways as possible
  - Minimise the risk of missing a relevant study
  - Will lead to lower precision – find a balance
- **Use both text words and controlled vocabulary**
- **Preliminary searching may help test your strategy**
- **Strategies must be translated for every database or interface**

Text words

- Words appearing in title and/or abstract of the record
- Include synonyms, related terms, opposites, international terms, alternative spellings, plurals
  - E.g. brain injury, head injury, skull fracture
- Truncation and wildcards - * $?
  - Protect* = protects, protective, protection
  - But beware: car* = cars (but also carcinoma)
- Proximity operations – NEAR, NEXT, ADJ
  - E.g. liver ADJ3 cancer = liver cancer, liver and bowel cancer
- Syntax must be translated for each interface

Wildcards

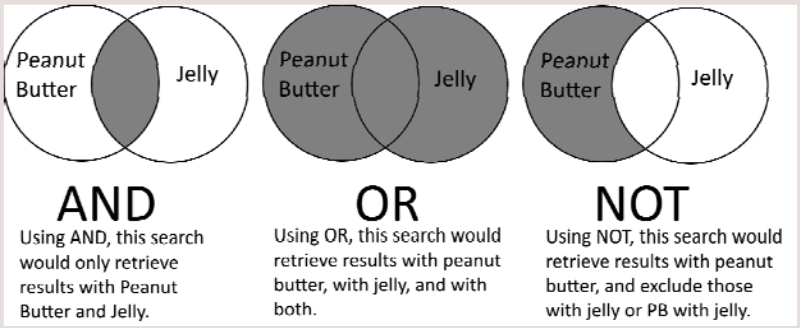
- Wildcards can be used in all search fields that allow words and phrases. They can be used in a search query to represent unknown characters.
- The asterisk (*) represents any group of characters, including no character. e.g.: **s*food** matches: seafood, soyfood
- The question mark (?) represents any single character. e.g: **wom?n** matches: woman, women
- The dollar sign ($) represents zero or one character (useful when searching for expressions).e.g. **colo$r** matches: color
  colour
- **multi-wildcard:**

organi?ation* matches:
organisation
organisations
organisational
organization
organizations
organizational

Controlled vocabulary

- **Standardised subject terms assigned by indexers**
  - E.g. Medline – MeSH, Embase = EMTREE
  - Identifies relevant articles even if different terms are used for the same concept
  - 'explode' to include all narrower terms
  - Caution – indexers may not be subject experts, and authors may not describe their study very well
- Check the terms applied to relevant papers for ideas
- Use database tools to map words to subject terms
- Controlled vocabulary must be translated for each database

Boolean operator



Study design filters

A set of search terms to limit your results to specific study designs (e.g. RCTs)

Research has been done to identify the most sensitive and efficient search terms

Select according to:

- Database and interface to be searched
- Study deigns needed for your review

Do not use and RCT filters when searching CENTRAL

Limits and restrictions

To avoid bias, do not limit by:

- Language – ask for translation
- Year – unless there is a clear point of change or availability
- Format – may be additional information about a study in letters, etc

Copyright and licensing

You should always:

- Adhere to copyright
  - Obtaining copies of publications
- Adhere to terms of database licensing
  - Searching databases
  - Downloading records

Ask advice or local librarians for advice

Managing your search results

Store results from each source

- Download all available fields for each record

Use bibliographic or reference management software

- E.g. EndNote, Mendeley, ProCite, Reference Manager, RefWorks, Zotero
- Ask for help with configuration files and import filters
- Additional fields can be used for notes., e.g. sources, assessment

Collate and de-duplicate

Documenting the search

Important to document everything

- To report transparently what you've done in your review
- To reproduce or update in future

You need to document

- What (database and interface)
- When (date of search, date limits)
- How (copy and paste exact strategies, limits, set numbers, no of results)

Keep copies of everything

- Save locally or on paper
- Don't rely on internet bookmarks or saved searches
- Save exported text files and reference management databases

Example

Research Question: Family Presence during Resuscitation / Invasive Procedures: The lived experience of patients, family members and health care professionals.

Population1	Population2	Population3	Exposure	Outcome
Adult patient >18 years of age.	Family member	Healthcare professional	Resuscitation and/or Invasive procedure	Experience/s

School of Health & Social Care

Database searched: CINAHL	Components of Research Question and Keywords				
	STRING 1: *Population 1 Patient/ Problem*	STRING 2: *Population 2 Family member/ Problem*	STRING 3: *Population 3 Health care professional / Problem*	STRING 4: *Exposure/ Witness Resuscitation and/or Invasive Procedures*	STRING 5: *Outcome*
Boolean Operators	AND	AND	AND	AND	AND
OR	Adult$	Family$	Nurse$	Witness	Experience$
OR	Patient	Family member	Charge nurse	Observe	„lived experience"
OR	Client	Relative	Emergency nurse	View	View
OR	Invalid	Spouse	Nurse practitioner	Onlooker	Perception
OR		Partner	Ward sister	„witness resuscitation"	Observation
OR		Close friend	Doctor	„cardiopulmonary resuscitation"	
OR		Sibling	Consultant	Resuscitation	
OR		Son	Junior doctor	Resus$	
OR		Daughter	Specialist	CPR	
OR		Next of kin	Registrar	„invasive procedure"	
OR		Significant other	Priest		
OR			Clergyman		
OR			Physiotherapist		
OR			Occupational therapist		
OR			Health care professional		

Search Strategy List

•Patient
•Client
•Invalid
•**COMBINE 1 or 2 or 3 or 4**
•Family**$**
•Family member
•RelaAdult**$**
•tive
•Spouse
•Partner
•Close friend
•Sibling
•Son
•Daughter
•Next of kin
•Significant other
•**COMBINE 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16**
•Nurse**$**
•Charge nurse
•Emergency nurse
•Nurse practitioner
•Ward sister
•Doctor
•Consultant
•Junior doctor
•Specialist
•Registrar
•Priest
•Clergyman
•Physiotherapist
•Occupational Therapist
•Health care professional
•**COMBINE 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32**
•Witness
•Observe
•View
•Onlooker
•'witness resuscitation'
•'cardiopulmonary resuscitation'
•Resuscitation
•Resus$
•CPR
•'invasive procedure'
•**COMBINE 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43**
•Experience**$**
•'lived experience'
•View
•Perception
•Observation
•**COMBINE 45 or 46 or 47 or 48 or 49**
•**COMBINE 5 AND 17 AND 33 AND 44 AND 50**

Reporting the search in your review

For your protocol:

- Methods: describe your planned sources and limits
- You may also be asked to include at least one detailed (line by line) sample search strategy (e.g. CENTRAL)

For your review:

- Dates – date of search
- Abstract – sources, dates, limits
- Methods – detailed description of sources, dates, limits
- Results – no of results found
- Figures – PRISMA flowchart
- Appendix – all detailed (line by line) search strategies

Updating your search

- Writing a review can take some time
- You may need to update your search before completing the review
- The most recent search should typically be run ≤ 6 months before the review is submitted
- A well-documented search will make this easier
- Check for changes to databases and terms before searching

Take home message

- Work closely with your team / expert from the start
- Plan a systematic search, balancing sensitivity and efficiency
- Start with CENTRAL, your specialised topic registers, MEDLINE and Embase – then consider other appropriate
- Think about the key concepts of your questions, and how they might be described
- Search strategy must be translated for every database and interface
- Set up s system to manage your results and keep careful records

The Systematic Review Process

METHODS OF REVIEW

METHODS OF REVIEW

Need to give details of the following 3 separate stages

1. The process of selection for inclusion in review
2. How the assessment of methodological quality will be carried out
3. Data extraction strategy

Before you start

A standardized form needs to be made for ALL steps

This is important to standardize assessments between one paper and another (i.e. improves inter and intra rater reliability)

Stage 1 - Step 1: Selection of studies for inclusion in review- **(Titles and abstracts only)**

At this point you have a large collection of abstracts, articles and papers from your review

1st step – this selection is based on titles and abstracts **ONLY considering the criteria of:**

- Type of study
- Participants
- Intervention
- Comparative groups
- Outcome measures using the form **Remember PICO !**

1st selection can result in – **exclusion, inclusion or no decision**

Table 1. First selection of papers based on title and abstract only

Abstract Number:	1	2	3	4	5	6	7	8	9	10	11	12
POPULATION												
Adult Patients Age >18 OR												
Family member OR												
Health care professionals												
EXPOSURE												
Witnessing cardiopulmonary resuscitation and / or invasive procedures												
OUTCOME												
Patient experience of exposure												
Family member experience of exposure												
Health care professionals experience of exposure												
TYPE OF STUDY												
Qualitative Research												
*ACTION												

*ACTION - RATIONALE: Y – YES: FITS CRITERIA N – NO: DOES NOT FIT CRITERIA
U – UNSURE: READ PAPER

Stage 1 - Step 2: Selection of studies for inclusion in review – **(full paper)**

- done using full reports
- considering criteria above
- using standardized forms

Stage 2 – Assessment of Methodological Quality

- Choose appropriate **framework** (related to study design eg RCT, CCT, Quals)
- If you are only including one study design in your study- use 1 quality assessment tool
- 3 different designs require 3 different assessment tools

FRAMEWORKS

- CASP (Critical Appraisal Skills Programme) - https://casp-uk.net/casp-tools-checklists/
- Cochrane risk of bias: https://sites.google.com/site/riskofbiastool/
- SIGN-Scottish Intercollegiate guidelines network (http://www.sign.ac.uk/methodology)
- McMaster University Framework

Stage 3 – Data extraction

- Think about what data you need to extract from your included studies to answer your question
- Pilot the draft data extraction form on a few papers

Stage 3 – Data extraction examples of study characteristics you could include

Use PICO or PEO or PIO

Population
- No of patients
- Diagnosis
- Severity of disease

Intervention / exposure / issue
- **Type of experimental treatment**
- **Features of interventions eg duration, frequency, setting, no of drop-outs**

Comparative group (if relevant)

Outcome

Outcome and process (Outcomes)

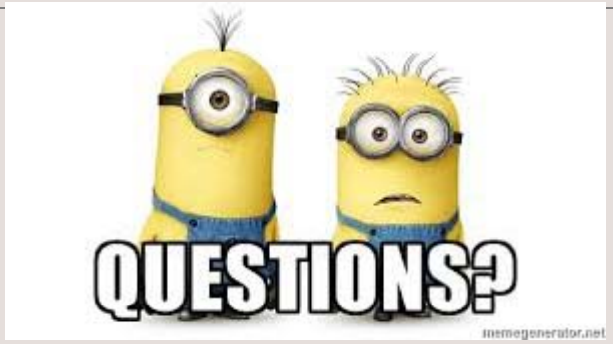
measurable outcomes specified initially

Quantitative outcomes eg strength, temperature,no of bacteria

Qualitative outcomes measures- experiences of abuse, illness, deformity

- **Can also include (depending on your study):**
- continuous variables means and SD

And/or
- dichotomous variables **eg** yes/no



The Systematic Review Process

RESULTS (DATA SYNTHESIS)

Results (data synthesis)

1. The results of the search
2. The results of studies included based on titles and abstract only
3. The results of studies included based on reading the whole paper
4. A PICO (or PEO) description of all the studies included in your review
5. A summary of methodological quality of each paper
6. A summary of the results of the data extracted from each paper

Section 1 – the results of the search

You can use a number of different ways:

- Either in words
- Table

Database or method (examples)	No of articles found from search	No of articles discarded due to irrelevant title	No of articles duplicated from another database	No of articles to review by title and abstract
CINAHL (1982 – 2004)				
MEDLINE (1980 – 2004)	1363	1000	590	100
Hand searched articles				
Grey literature				
Reference lists etc..				

Section 2 –results of included studies based on titles and abstract only

You can use a number of different ways:

- Either in words
- Table

Study	C1 – women >18	C2 – DV experience	C3 – advocacy	Action: include, exclude, read full study
Lim et al (2011)				
George et al (2016)				
etc				
etc				

Section 3 –results of inclusion based on reading the full article

You can use a number of different ways:

- Either in words
- Table

Study	C1 – women >18	C2 – DV experience	C3 – advocacy	Action: include, exclude, read full study
Lim et al (2011)				
George et al (2016)				
etc				

Section 4 –description of all the studies included in your review

- This can be done either in essay format
- Or in tabular format
- Using either the PICO or PEO framework
- Make sure you include the results of the studies

Section 5 –results of the quality of included studies

Again you can do this either in essay format or in tabular format

Q = question

Best to write in full (McMaser University Review Form)

Study	Q1	Q2	Q3	Q4
Lim et al (2011)				
George et al (2016)				
etc				

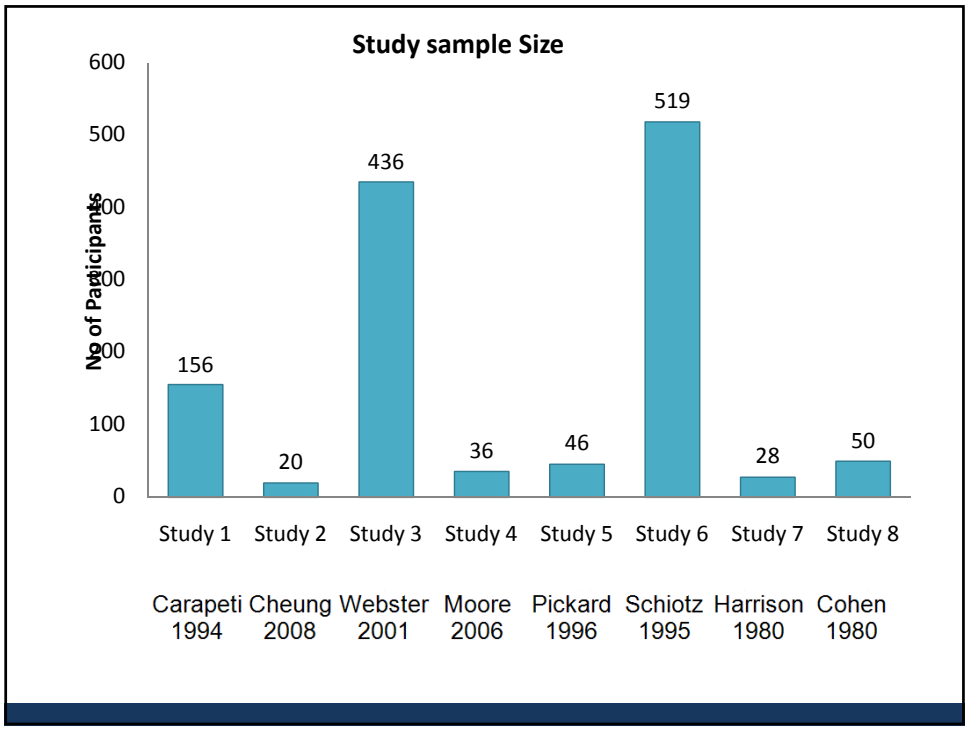
Section 3 – a summary of the results of the data extracted from each paper

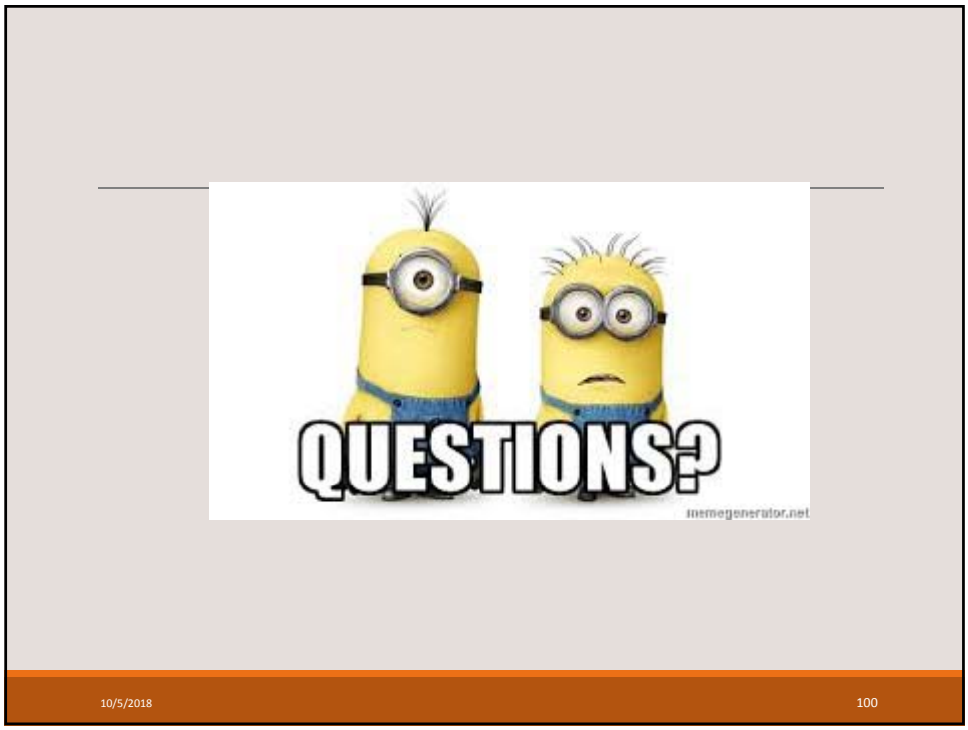
- There are a number of different ways of presenting this
- Themes (qualitative)
  - Or in a Table
  - Or as a histogram
  - Or a pie chart

RESULTS of the QUALITY of INCLUDED STUDIES 1 & 2

(McMaster University Review Form)

STUDY		QUESTIONS		
		STUDY PURPOSE	LITERATURE	STUDY DESIGN
No	TITLE	Was the purpose stated clearly?	Was relevant background Literature reviewed?	RC Trial, Cohort, Single case Design, Before & after Case-Control, Cross-Sectional study
1	Carapeti et al (1994)	To assess the rate of UTI after short-term preoperative urethral catheterisation using two different insertion techniques – sterile and non-sterile – and to compare costs.	Very brief background; however it clearly justifies the need of the study; „urethral catheterisation remains the most common cause of nosocomial infection in medical practice". Statistically UTI account for 40% of all nosocomial infection all associated with indwelling catheterisation. Clearly indicated that there are no studies investigating the effect of insertion technique prior to this study.	**Prospective RC Study**: included all patients undergoing surgery and who needed to be catheterized; randomisation by Throw of a coin; No stratification and no blinding reported. Study group: Sterile catheter Insertion Control group: Non-sterile/ Clean catheter insertion. No indication of reason for catheterisation.
2	Cheung et al (2008)	To assess the risk of acquiring symptomatic urinary tract infections (UTI) through the conventional practice of using 0.05% chlorhexidine gluconate (CHG) versus sterile water for periurethral cleansing before catheterisation.	Previous similar research was lacking; some hospital based studies had shown that nonsterile catherisation had the same risk of CAUTI as the sterile technique. More patients requiring catheterisation in the home or nursing home (Aging population and shorter hospital stay). This study aimed to establish that nonsterile technique was also equally effective in elderly patients in the care-home setting. Its cost-saving implications and along with its potential to inspire further relevant research are pointed out.	A **randomized controlled study** where subjects were randomly allocated to either the sterile water group or the 0.05% chlorhexidine Gluconate (CHG) group. The method of randomisation is described as simple (as suggested by Simon). No stratification and no blinding reported. Biases that may have been operating and the direction of their influence on the results: Selection was on a voluntary basis and randomisation was possibly too simple; these along with the small sample size render the sample not representative.


Study sample Size
No of Participants
600
500
400
300
200
100
0
156
20
436
36
46
519
28
50
Study 1
Study 2
Study 3
Study 4
Study 5
Study 6
Study 7
Study 8
Carapeti 1994
Cheung 2008
Webster 2001
Moore 2006
Pickard 1996
Schiotz 1995
Harrison 1980
Cohen 1980


QUESTIONS?
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The Systematic Review Process

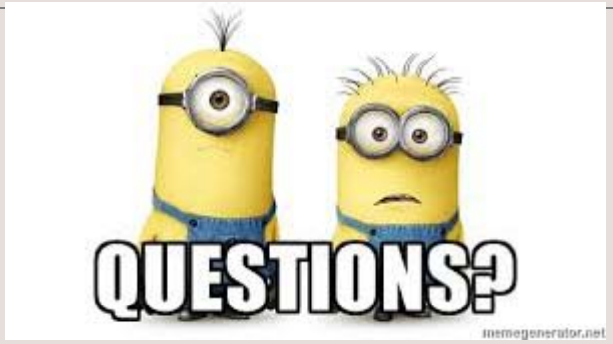
DISCUSSION, WRITING AND PUBLISHING

Discussion, writing up and publishing

- Summarise findings
- Develop and/or discuss the theory/s
- Compare and contrast the findings
- Discus the overall quality of included studies (does the quality of the included studies affect the outcome of your results? i.e. if the methods of a particular study are very 'poor' can you still believe the results and apply them to practice?)
- Relate the results back to the aims
- Interpret the findings in relation to the literature reviewed
- Support a particular theory or model
- Point o any methodological shortcomings may or flaws in your systematic review

Discussion, writing up and publishing

- Recommendations on how these shortcomings may be rectified in future studies would be beneficial
- Suggest any implications for existing theory / research
- Discuss the findings with respect to practice
- Discuss the ethical aspects of the included studies
- Discuss whether or not you would change your practice as a result of your review giving your rationale
- Reveal questions for future research on this topic
- Your discussion should finish by stating some overall conclusions about the study



REPORTING GUIDELINE

PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses

- **PRISMA** is an evidence-based minimum set of items for reporting in systematic reviews and meta-analyses
- **Who should use PRISMA?**
  - Authors: PRISMA aims to help authors improve the reporting of systematic reviews and meta-analyses.
  - Journal Peer reviewers and editors: PRISMA may also be useful for critical appraisal of published systematic reviews, although it is not a quality assessment instrument to gauge the quality of a systematic review.

Table 1. Checklist of items to include when reporting a systematic review or meta-analysis.

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009) Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLOS Medicine 6(7): e1000097. doi:10.1371/journal.pmed.1000097
http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000097

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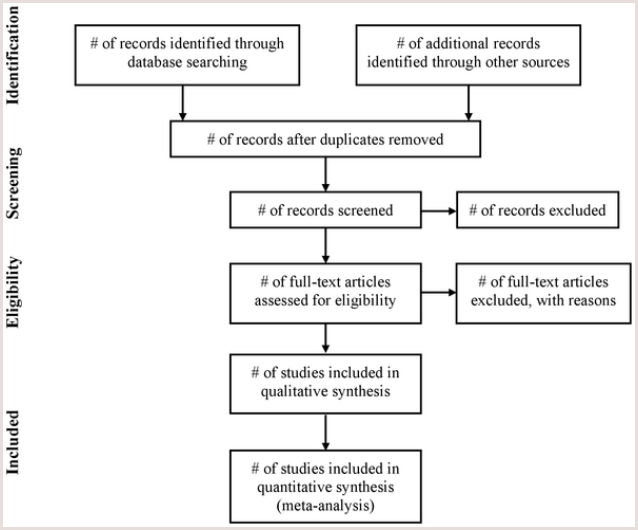
Figure 1. Flow of information through the different phases of a systematic review.



Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009) Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLOS Medicine 6(7): e1000097. doi:10.1371/journal.pmed.1000097
http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000097

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Take home message

Take a systematic approach to screening abstracts and full text reports against your eligibility criteria

This process should be done independently by two authors to minimise error and bias

References

Cochrane Training Workshop – Introduction to Cochrane Systematic Review, Sydey 1 – 2 December 2011

Green S, Higgins JPT (editors). Chapter 2: Preparing a Cochrane Review/ In: Higgins JPT, Green S (editors). Cochrane Handbook for Systematic Revies of Interventions Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.Cochrane-handbook.org

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009) Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLOS Medicine 6(7): e1000097. doi:10.1371/journal.pmed.1000097http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000097

WORK IN PAIR

Tuliskan topik / judul systematic review yang anda akan lakukan berdasarkan PICO / PICOT form yang ada