Practical session: Planning and conducting a systematic literature review.

Tutors: Teresa Norat, Doris Chan

* **Purpose of the practice:**

To train the students in the preparation of a plan of a systematic literature review.

* **Practice development**

The students will receive a list of topics for review. Groups of 4-5 people will be formed. Each group will select one of the suggested topics and draft a plan of a systematic literature review.

You will have approximately 1 hour to work on the plan. During the last 30 minutes of the practical session, the plans will be presented to the entire class and commented.

You can use for guidance the notes from the Lecture on Systematic Reviews and the Notes at the end of this document. The tutors will be in the class to assist you in the preparation of your plans.

* **Suggested topics of systematic literature reviews:**

-Smoking cessation and weight change prevention

-Micronutrient supplementation during pregnancy and infant outcome

-Prevention of alcohol abuse in young adults

-Exercise and quality of life in breast cancer survivors

**Notes:**

The stages for conducting and reporting a literature review parallel the process for conducting primary research:

1. Problem formulation: What evidence should be included in the review?

The question is usually framed around:

* The population
* The exposure/intervention
* The outcomes
* The study designs

1. Data collection: What procedures should be used to find relevant evidence?

* Clearly defined search criteria

MeSH (Medical Subject headings) and free text words in combination with Boolean operators

* Search the published medical literature

Electronic databases such as Cochrane Central Register of Trials, Medline, EMBASE

* Search other sources
  + - Reference lists/citation searches
    - Conference proceedings/grey literature
* Contacting established researchers in the field to identify unpublished studies

1. Data extraction and evaluation: What retrieved evidence should be included in the review?

* Eligibility/Inclusion criteria may be based on*:*
* Study design: controlled trials, cohort studies, case-control studies etc.
* Year of study:only studies carried out after a specific date.
* Publication language:However language shouldn’t be a barrier!
* Study population: e.g. women/men only, among smokers etc.
* Sample-size/precision: Only trials with more than X number of patients.
* Specific exposure/intervention: e.g. search for a specific diagnosis, but only include studies using a specific diagnostic method.
* Specific outcome:e.g. search for outcome (e.g. lung cancer), but only include a specific subset (e.g. primary tumours).
* Completeness of information. Paper must provide details of response rate/take-up rate, loss to follow-up/attrition…
* You need to obtain information to assess study quality according to recognized or user-defined criteria:

Quality criteria should assess various biases in study design:

* + Selection bias
  + Measurement bias (in exposure and/or outcome assessment)
  + Attrition bias/loss to follow-up
* Study design quality should preferably be assessed before study results known, and should ideally be assessed independently by more than one assessor

1. Analysis and interpretation: What procedures should be used to make inferences about the literature as a whole?

* Narrative review
* Meta-analysis

1. Dissemination: What information should be included in the review report?

* Flowchart of literature search: what databases have been searched, for what period, and numbers of articles identified, included and excluded
* Study details tabulated in a meaningful way.
* Should include details of:
  + the populations
  + the interventions/exposure
  + the outcomes
  + the study design
* Often includes a summary of findings, study bias assessment, differences across study results, publication bias.