<table>
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<th>DESIGN</th>
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| CASE-CONTROL | - Observational, analytical study  
- **Outcome has already occurred**  
- Data usually from records or questionnaires  
→ Recruit group of people that already have the disease of interest (cases)  
→ Group of people from same pop. without the disease (controls)  
→ Comparison case vs. control | - Selection bias: representative sample + control group from same pop. as case group  
- Information bias: Someone that already has the disease is more likely to recall exposure  
- **Reverse causality:** has exposure followed or preceded outcome? |
| COHORT | - Observational, analytical + descriptive study  
- **Outcome has not occurred** at start of investigation  
→ People with and without exposure are followed up  
→ Comparison cases vs. control with odds and odds ratio | - Follow-ups are essential |
| NESTED CASE-CONTROL | Used when cases of disease occur within a cohort study  
→ Efficient since cases and control are from the same cohort  
→ Reduces information bias |  |
| TRIALS | - Experimental, analytical  
- Used for evaluating interventions  
- **Randomized control trial:** Allocation of participants to group (drug vs. placebo) is random  
- **Non-randomized control trial:** Allocation may be predictable (not random)  
- **Cross-over trial:** Each group gets both intervention and placebo | GOOD TRIAL:  
- Randomization  
- Blinding (who received treatment is unknown by participants + evtl. Investigator) – single blind/ double blind  
- Follow-up  
- Intention-to-treat analysis |
| SYSTEMATIC REVIEW | - Non-empirical, observational, descriptive  
- Summarizes results of available studies (controlled trials)  
→ Provide high level of evidence on the effectiveness of interventions | - Publication bias: Studies reporting positive outcomes are more likely to be published (Funnel plot can help) |
| META ANALYSIS | - Statistical technique for quantitively pooling the results of individual studies  
- May come from systematic review, but don’t have to  
- Shown in a forest plot | - Studies should only be combined if sufficiently similar (risk of heterogeneity) |
should have a stated aim with specific objectives and involve implementation of one or more well-defined, evidence-based interventions, delivered to a specified target population in a particular setting, with clearly defined outcomes (immediate and longer-term outcomes)

Changing behaviour

- **Health education** to raise people’s knowledge and awareness in form of posters, campaigns etc.
  → Such information essential, but not enough on its own to reliably change behavior, which is strongly influenced by external, environmental and social factors

- **Working with individuals**
  - Knowledge-attitude-behaviour:
    - Knowledge of a health risk and how to avoid it
    - Gap between knowledge and action (smoking is bad, still smoke)
  - Health belief:
    - People change behavior if they believe that the risk is serious and that they are likely to get the condition themselves
    - + there is action they could take to avoid or minimize the risk = benefits outweigh the costs
  - Transtheoretical model → see fig

- **Working with communities**:
  - Diffusion of innovation
    - Describes how new ideas are adopted in a community (first innovators, then small proportion, then early adopters etc.)
    - Health problems more likely to be adopted if they offer an advantage over existing practice, are compatible with the community’s social and cultural values, simple, flexible and reversible

- **Working with organisations**:
  - Work similar to communities – diffusion of innovation theory can be applied as well
  - Organizations can work together through networks, partnerships, collaboration etc.

- **Working with policy-makers**:
  - Included are politicians, bureaucrats/civil servants (formulate the policies)
    + influence by lobby groups, media, public

- **Social marketing**:
  - Commercial marketing to target audience for health promotion
    = make health interventions appeal to certain audience
Healthcare systems
= An arrangement of institutions, resources and people (on a national level)
- Directed to improve the health of population
- Through a variety of activities
- In accordance with established policies

• **Aims:**
  - Accessibility of health care
  - Affordability (= cost-effective)
  - Quality and safety (= patient-centered)

• **Public healthcare:**
  - Government control or ownership

• **Private healthcare:**
  - Non-government

• **3 traditional models:**
  1. **Tax-based system** (e.g. in Scandinavian countries)
     - Financed with taxes
     - Plan-based: collective decision-making & financing
     - National and regional health authorities
     - Possible to contract private provider
     - **Focus:** Accessibility
     - **Problem:** Quality? + subject to political interference

  2. **Social insurance system** (e.g. in Germany)
     - Compulsory insurance (through sick fund / insurances)
     - Combination plan-based and market-based
     - Income dependent insurance premium
     - Paid by employers and employees
     - Decentralised and limited role for government
     - **Focus:** Quality
     - **Problem:** Affordability

  3. **Regulated market/ private health insurance-based system** (e.g. in the U.S.)
     - Compulsory insurance – fixed price (private providers)
     - Competition with ‘additional insurance products’
     - Patients can choose new insurance company every year
     - Premium paid by employers and employees
     - Limited role for government
     - **Problem:** Accessibility + Affordability

Planning health services
• **Plan (or policy)** = authoritative written statement of intent to aim for certain goals, to make certain organisational changes or to commit resources to particular types of activity

• **Planning** = process of developing and disseminating such plans or policies

• **Targets** = numerical policy goals
  → some are evidence-based and relate to desirable public health outcomes (e.g. breastfeeding), others focus on process measures (e.g. waiting times)

  - It’s necessary to monitor targets + regularly assess needs and evidence of effectiveness of interventions