Evidence Informed Health Practice Exam Notes

Evidence Informed Health Practice

Definition/General Information

- Evidence informed health practice (EIHP) is all about ensuring that services, from systematic planning to individual cases, are built on a solid foundation of evidence in all its forms.
- EIHP requires that those in the healthcare field look for the most current evidence to help their patients.
- EIHP is explicit and conscientious attempts to find the best available research evidence to assist health professionals to make the best decisions for their patients.
- The purpose of EIHP is to assist in clinical decision making.
- Nowadays one of the most frequently used and widely known definitions of EIHP acknowledges that it involves the integration of the best research evidence with clinical expertise and the patient's unique values and circumstances. It also requires the health professional to take into account characteristics of the practice context in which they work.
- The main reason why evidence-based practice is important is because it aims to provide the most effective care that is available, with the aim of improving patient outcomes.
- Rather than being just a vague concept that is difficult to incorporate into everyday clinical practice, the process of evidence-based practice is actually quite structured. The process can be viewed as a number of steps that health professionals need to perform when an information need (that can be answered by research evidence arises):
    - 1. Convert your information needs into an answerable clinical question (ask a question).
    - 2. Find the best evidence to answer your clinical question (access the information).
    - 3. Critically appraise the evidence for its validity, impact and applicability (appraise the articles found).
    - 4. Integrate the evidence with clinical expertise, the patient's values and circumstances, and information from the practice context (apply the information).
    - 5. Evaluate the effectiveness and efficiency with which steps 1-4 were carried out and think about ways to improve your performance of them next time (audit).

Components

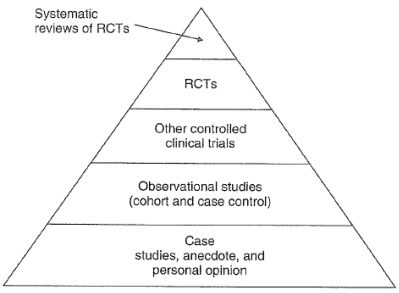
- **Research evidence**. Research from journals, books, etc. Evidence that is valid and reliable.
- **Practitioner expert knowledge and experience**. Drawing upon your clinical expertise (gained through classes, clinicals and in your practice), education, skills and experience as you determine the best approach in a given situation.
- The **patient's circumstances, practices, beliefs, preferences and value**s.
- Possible fourth component: the **resources available**.

Types of Questions

- **Descriptive** – describe what is going on.
    - E.g., how many calories do Australians consume per day?
- **Relational** – relationship between two variables.
    - Observational studies = correlational studies, case control, cohort, cross-sectional.
- **Causal** – determine if one or more variables cause or affect one or more outcome variables.
    - Experimental studies = RCTs and quasi.
        - RCT = randomised, variable manipulated.
        - Quasi not randomised due to ethics.

Levels of Evidence

- The term *level of evidence* refers to what degree that information can be trusted, based on study design. Traditionally, and considering the commonest type of question (relating to therapy), levels of evidence are represented as a pyramid with systematic reviews positioned grandly at the top, followed by well-designed randomised controlled trials, then observational studies such as cohort studies or case-control studies, with case studies, bench (laboratory) studies and 'expert opinion' somewhere near the bottom.



- **1. Systematic reviews of RCTs**.
    - Smallest amount of bias.
    - Also known as a meta-analysis.
    - Is a large literature review of RCTs.

- Is neither observational nor experimental design.
- **2. Randomised controlled trials (RCTs)**.
  - Participants are randomly chosen and allocated to two groups.
  - Experimental study design.
- **3. Other controlled clinical trials (quasi)**.
  - Main difference between a RCT and a quasi is that quasis are not randomly allocated. The researchers purposefully find the population and then randomly allocate the participants into the groups.
  - Experimental study design.
- **4. Observational studies (cohort and case control)**.
  - Typically cohort looks forward in time – following a group of people over time.
  - Whereas case control takes people who have developed something, e.g. people who have developed lung cancer, and people who haven't developed lung cancer, and we go back in time to see what was the difference between those two people. Why did one get lung cancer and one didn't?
  - Observational study design.
- **5. Case studies, anecdotes, correlation, cross-sectional, and personal opinions**.
  - Case studies are typically one case study. Something odd has occurred. A client or a patient has presented to you and you need to study them. So that's the one that you write up about.
  - Anecdotes is oh I've tried this and it's worked so you should.
  - A correlation is a relationship between two variables.
  - Cross-sectional is a snapshot of a population. A large one that we currently have in Australia is the Census.
  - Personal opinions are your own opinion on a particular subject.

Searching the Literature

- A searcher may approach medical (and, more broadly, health science) literature for three broad purposes:
  - Informally, almost recreationally, browsing to keep current and to satisfy our intrinsic curiosity;
  - Focused, looking for answers, perhaps related to questions that have occurred in clinic or that arise for individual patients and their questions;
  - Surveying the existing literature, perhaps before embarking on a research project.
- **Systematic reviews** are perhaps the oldest and best known of the synthesised sources. The original efforts to search broadly for clinical trials on a topic and pool their results statistically grew into the Cochrane Library in the mid-1990s; Cochrane Reviews became the gold standard for systematic reviews and the Cochrane Collaboration is the premier force for developing and improving review methodology.

Cochrane Collaboration

- Systematic reviews.
- The bulk of a Cochrane Review consists of methodological discussion: the gist of it can be gleaned by jumping to the 'Plain Language Summary', always to be found directly following the abstract. Alternatively, you can gain a quick and accurate summary by looking at the pictures – especially something called a forest plot, which graphically displays the results of each of the primary studies along with the combined result.
- Cochrane Reviews are only published electronically, but other systematic reviews appear throughout the clinical literature. They are most easily accessed via the Cochrane Library, which published Cochrane Reviews, DARA (Database of Abstracts of Reviews of Effects, listed in Cochrane Library as 'Other reviews'), and a database of Health Technology Assessments (HTAs). DARE provides not only a bibliography of systematic reviews but also a critical appraisal of most of the reviews included, making this a 'pre-appraised source' for systematic reviews. HTAs are essentially systematic reviews but range further to consider economic and policy implications of drugs, technologies and health systems. All may be searched relatively simply and simultaneously via the Cochrane Library.
- In the past, Cochrane Reviews focused mainly on questions of therapy or prevention, but since 2008, considerable effort has gone into producing systematic reviews of diagnostic tests.

Johanna Briggs Institute (JBI)

- Best practice.

Probability Values (P-Values)

- Determines if a relationship between two variables is statistically significant or not.
- Tell us the probability of a result being due to chance; the lower the p-value the less likely it is that the result is due to chance.