



Evidence-Based Practice in Occupational Therapy: An Introduction

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Evidence based practice defined.....

'The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.'

Sackett, D. L., Rosenberg, W. M., Gray, J. A., Haynes, R. B., & Richardson, W. S. (1996). Evidence based medicine: what it is and what it isn't. *British Medical Journal*, 312 (7023) ,71-72.

Evidence-based practice is the *integration* of:

n clinical expertise

with the best available external evidence from

n systematic research and

n patients' preferences and goals

Sackett, D. L., Straus, S. E., Richardson, W. S.,
Rosenberg, W., & Haynes, R. B. (2000).
*Evidence based medicine: How to practice and teach
EBM* (2nd ed.). London: Churchill Livingstone.



Context of EBP

Increasing choices in healthcare and treatments

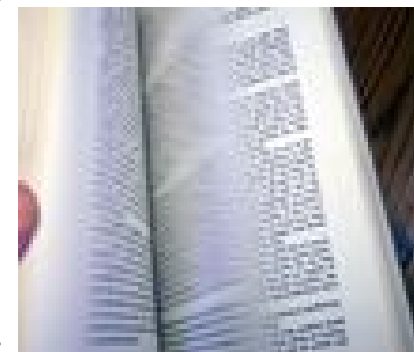
Clients' expectations of healthcare is increasing

Vast quantity of research literature of varied quality

- n Large number of sources of information
- n Much is out of date
- n Scientific quality varied
- n Limited time available for reading
- n Continuing education programs are helpful but not sufficient sources of information

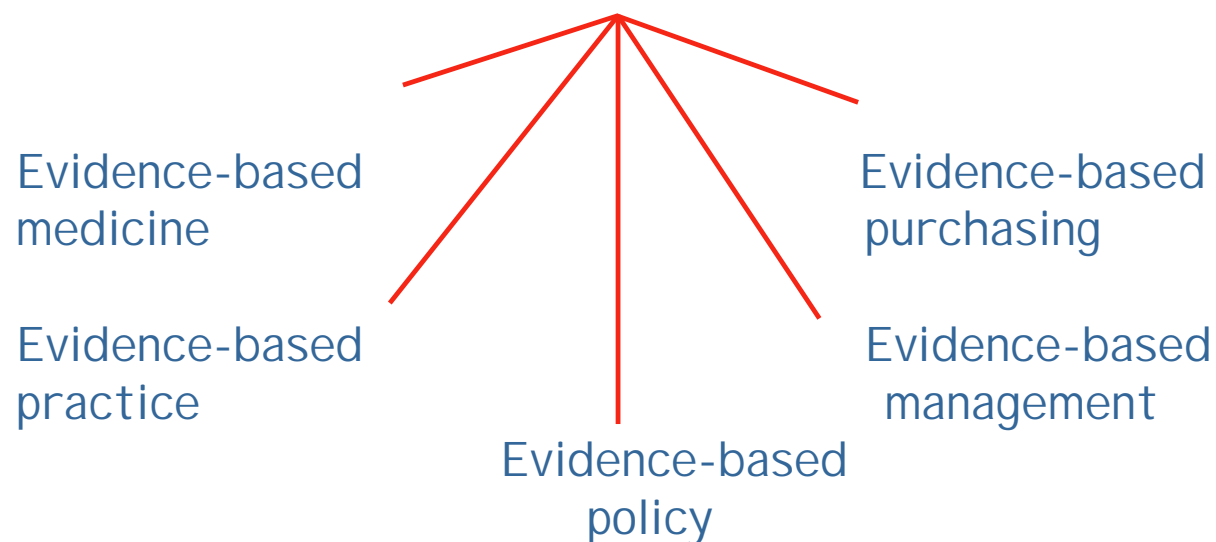


Very hard to stay up to date



Evidence based practice helps clinicians stay current

Evidence-Based Healthcare



Adapted from Bury, T. (1998). Evidence-based healthcare explained. In Bury & Mead (Eds) Evidence-based Healthcare. Oxford: Butterworth Heinemann.

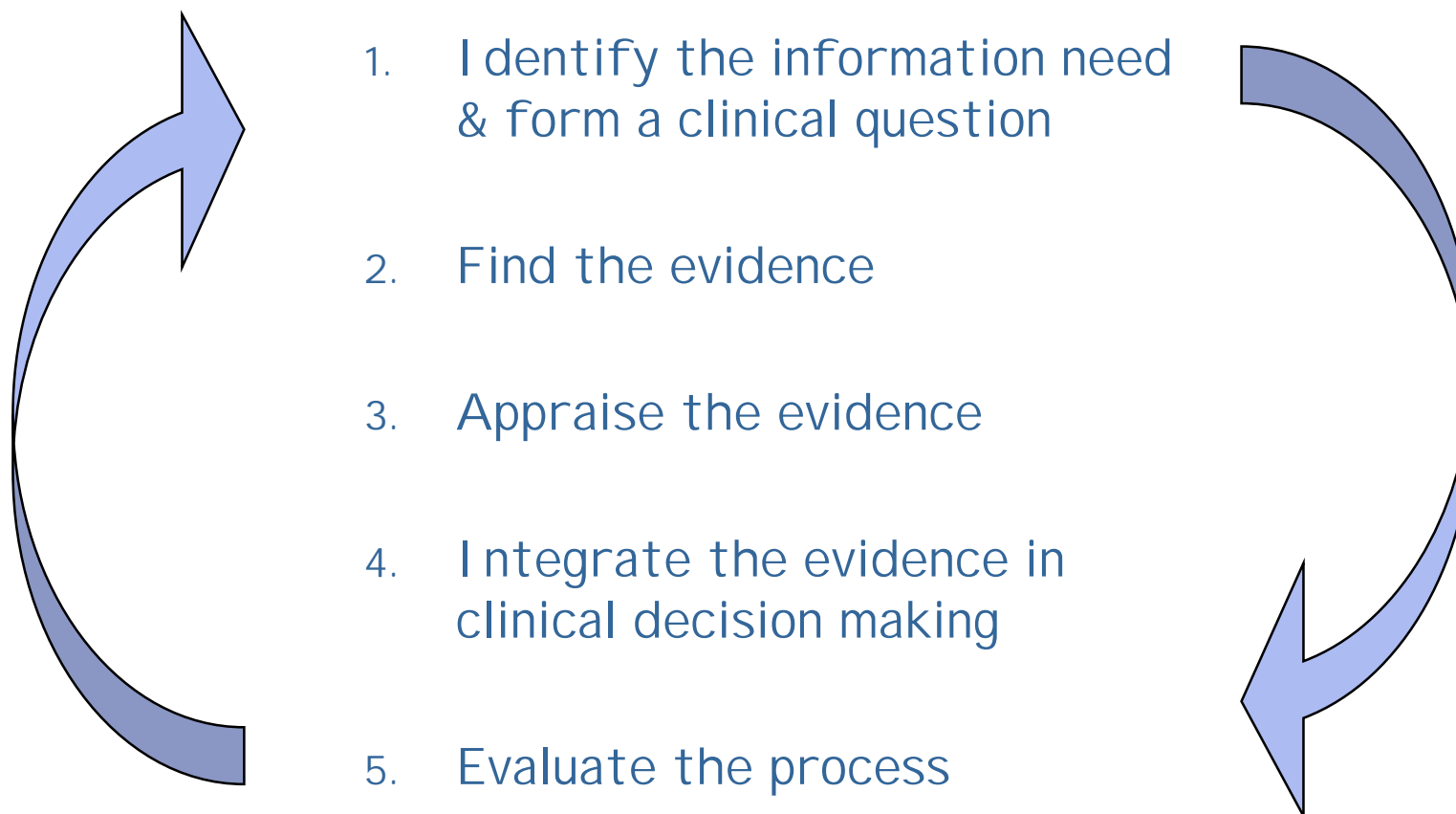


"I'm sorry to say you've been affected by a paradigm shift"

Why is EBP important?

- n Main aim is to improve client outcomes
 - n Clients expect it
 - n Improves clinician's knowledge
 - n Communicates a profession's research base
 - n Stimulates clinically relevant research
 - n Accountability
-

EBP: The Process



Evidence-Based Medicine. A new approach to teaching the practice of medicine.
Evidence-based Medicine Working Group. JAMA. 1992;268:2420-2425.

1. Clinical Questions

- n EBP is a problem-based approach
- n Learning stems from our clinical information needs
- n Form clinical questions based on these information needs



Which information needs can be informed by research?

- n Some information needs are general knowledge or BACKGROUND questions eg. What is a Colles fracture?
 - n Other information needs must be met by interaction with the client eg. Are any home modifications necessary?
 - n Research can provide information about the management and experiences of clients.
-

Types of clinical questions

Many different types of information needs Eg:

What is the most appropriate/accurate assessment ?

What is likely course of disease/disability?

Which treatments are most effective ?

Which preventive strategy to use?

What is the cost-effectiveness of treatments?

What are patient experiences/concerns? ETC...



- n Form specific clinical questions based on these information needs

Information need example:

You want to know if there is evidence to support joint protection education for people with rheumatoid arthritis.....



<http://www.flickr.com/>

Forming a clinical question: (PICO)

- P A patient, population or problem being considered
- I An intervention, prognostic factor, assessment etc
- C A comparison intervention (if relevant)
- O An outcome or outcomes of interest

Sackett et al, 2000

Example: Does joint protection education (I) improve function and reduce stiffness (O) for people with rheumatoid arthritis (P) compared with standard arthritis education (C)?

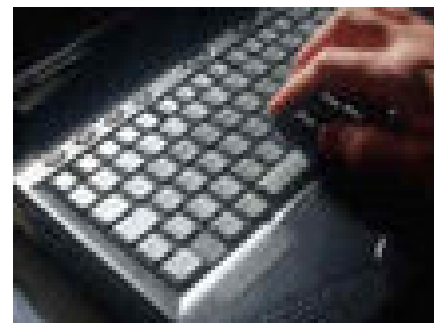
Type of question?

→ Treatment

2. Finding Research Evidence to Answer Questions

n What sort of research evidence?

n How do I find it?



Different types of research provide
'best' answers for different types of questions:

EG:

- n Treatment: eg. Systematic Reviews, Randomised Controlled Trials, in some cases single-case experimental studies
- n Patient experiences/concerns: Qualitative
- n Likely course of disease/disability: Cohort/ follow-up studies
- n Cost-effectiveness: Economic studies comparing all outcomes against costs

Bennett JW, Glasziou P. Evidence-based practice: what does it really mean? Disease Manage Health Outcomes 1997; 1: 277-85.

Searching for evidence: Tips

- n Aim to find clinical research evidence
- n Aim to find papers using the best methods for a particular type of clinical question (not just RCTs!)
- n Keep searching until the BEST AVAILABLE evidence is located



Searching for evidence



Use of specialist databases/journals/websites of pre-appraised research

Eg.

- q Cochrane library
- q OTseeker (www.otseeker.com)
- q PEDRO (Physiotherapy Evidence Database)
- q Critically appraised papers:
 - n www.OTCATS.com
 - n The Australian Occupational Therapy Journal
 - n OT Now (CAOT)
 - n AOTA's Evidence Brief Series
- q Evidence Based Medicine Journal series
- q Clinical Evidence



OR



Use of traditional databases eg.

PubMed, MEDLINE, Embase, CINAHL, PsycINFO etc

Searching...



- n Does joint protection education (intervention) improve function and reduce stiffness for those with rheumatoid arthritis (population) compared with standard medical care?
 - n Treatment question (Look for systematic reviews/ RCTs initially)
 - n Which databases?
 - q Look in OTseeker & Cochrane library then PubMed (free)
 - q Benefits of OTseeker: papers have already been appraised
 - q If nothing found, look in other databases
-



Occupational Therapy Systematic Evaluation of Evidence

Welcome to OTseeker

OTseeker is a database that contains abstracts of systematic reviews and randomised controlled trials relevant to occupational therapy. Trials have been critically appraised and rated to assist you to evaluate their validity and interpretability. These ratings will help you to judge the quality and usefulness of trials for informing clinical interventions. In one database, OTseeker provides you with fast and easy access to trials from a wide range of sources.

Search	Search the database. On the search page you will have the choice of doing a keyword and/or category search.
About	Read about the origin and development of the OTseeker database.
Questions	Find answers to questions such as 'How are the trials rated?' and 'How were the trials located?'
Tutorial	Learn about evidence-based practice, systematic reviews, randomised controlled trials and critical appraisal.
Acknowledgments	See who has supported the development of OTseeker.
Contact	Find out how to contact us .
Links	Discover links to other sites about evidence - based practice.



Search

[Print Page](#) | [Refine Search](#) | [New Search](#)

Title	Method	Internal Validity Score (0 - 8)	Statistical Reporting Score (0 - 2)
<input type="checkbox"/> Occupational therapy for rheumatoid arthritis	Systematic Review	N/A	N/A
<input type="checkbox"/> A 12-month randomized controlled trial of patient education on radiographic changes and quality of life in early rheumatoid arthritis.	Clinical Trial	6	2
<input type="checkbox"/> One-year outcomes of a randomized controlled trial of an educational-behavioural joint protection programme for people with rheumatoid arthritis	Clinical Trial	5	2
<input type="checkbox"/> The long-term outcomes from a randomized controlled trial of an educational-behavioural joint protection programme for people with rheumatoid arthritis [with consumer summary]	Clinical Trial	4	2
<input type="checkbox"/> Effects of patient education on compliance with basic treatment regimens and health in recent onset active rheumatoid arthritis	Clinical Trial	4	2
<input type="checkbox"/> Joint protection and home hand exercises improve hand function in patients with hand osteoarthritis: a randomized controlled trial	Clinical Trial	4	2
<input type="checkbox"/> Impact of an exercise and walking protocol on quality of life for elderly people with OA of the knee	Clinical Trial	4	2
<input type="checkbox"/> Clinical applicability of an educational-behavioural joint protection programme for people with rheumatoid arthritis	Clinical Trial	3	2
<input type="checkbox"/> A problem-based education program for patients with rheumatoid arthritis: evaluation after three and twelve months	Clinical Trial	3	1
<input type="checkbox"/> Persistent functional and social benefit 5 years after a multidisciplinary arthritis training program.	Clinical Trial	3	1
<input type="checkbox"/> Promoting self-care in clients with arthritis.	Clinical Trial	2	2
<input type="checkbox"/> Effects of self-care education on the health status of inner-city patients with osteoarthritis of the knee	Clinical Trial	2	2
<input type="checkbox"/> A program for improving energy conservation behaviors in adults with rheumatoid arthritis	Clinical Trial	1	2

Detailed Search Results

[Return to Search Page](#)

This trial has been rated according to reported aspects of its internal validity and interpretability. To make decisions about the application of the trial to clinical practice it is necessary to obtain and read the full article.

The long-term outcomes from a randomized controlled trial of an educational-behavioural joint protection programme for people with rheumatoid arthritis [with consumer summary]

A. Hammond and K. Freeman (2004)

Journal Title: Clinical Rehabilitation
Volume 18; Issue 5; Pages 520-528

Method: Clinical Trial

Internal Validity Score: 4/8

Statistical Reporting Score: 2/2

- Random allocation: Yes
- Concealed allocation: No
- Baseline comparability: Yes
- Blind assessors: Yes
- Blind subjects: No
- Blind therapists: No
- Adequate follow-up: No
- Intention-to-treat analysis: Yes
- Between-group comparisons: Yes
- Point estimates and variability: Yes

Critical appraisal details

Eligibility Criteria Specified: Yes

Rating Status:

Abstract

OBJECTIVE: To evaluate the long-term effects of joint protection on health status of people with early rheumatoid arthritis (RA). **DESIGN:** A four-year follow-up of a randomized, controlled, assessor-blinded trial was conducted. **SETTING:** Two rheumatology outpatient departments. **PARTICIPANTS:** People with rheumatoid arthritis less than five years since diagnosis. **INTERVENTIONS:** Two 8-hour interventions were originally compared: a standard arthritis education programme, including 2(1/2) hours of joint protection based on typical UK occupational therapy practice (plus 5(1/2) hours on RA, exercise, pain management, diet and foot care); and a joint protection programme, using educational-behavioural training. **MAIN MEASURES:** Adherence to joint protection, pain, hand pain on activity, Arthritis Impact Measurement Scales 2 and Arthritis Self-efficacy were recorded at 0 and 4 years. **RESULTS:** Sixty-five people attended the joint protection and 62 the standard programmes. Groups at entry were similar in age (51 years; 49 years), disease duration (21 months; 17.5 months) and use of nonsteroidal anti-inflammatory and disease-modifying drugs. At four years, the joint protection group continued to have significantly better: joint protection adherence ($p=0.001$); early morning stiffness ($p=0.01$); AIMS2 activities of daily living (ADL) scores ($p=0.04$) compared with the standard group. The joint protection group also had significantly fewer hand deformities: metacarpophalangeal (MCP) ($p=0.02$) and wrist joints ($p=0.04$). **CONCLUSION:** Attending an educational-behavioural joint protection programme significantly improves joint protection adherence and maintains functional ability long term. This approach is more effective than standard methods of training and should be more widely adopted.

If this record is indexed on MEDLINE you may be able to obtain the full text of this article by visiting the [PubMed](#) web site.



Collection of Databases:

- n The Cochrane Database of Systematic Reviews
- n Database of Abstracts of Reviews of Effectiveness (DARE)
(Abstracts of systematic reviews)
- n CENTRAL - (register of controlled trials) 470,000+ RCTs &
controlled trials
- n The Cochrane Methodology Register
- n ++more



The Cochrane Library 2006, Issue 1

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[Review]
Patient education for adults with rheumatoid arthritis

[PDF \(Size 560K\)](#)

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- [Characteristics of included studies](#)
- [Characteristics of excluded](#)

[Review]
Patient education for adults with rheumatoid arthritis

RP Riemsma, J Kirwan, J Rasker, E Taal

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Date of Most Recent Substantive Amendment: 21 February 2003

This record should be cited as: Riemsma RP, Kirwan J, Rasker J, Taal E. Patient education for adults with rheumatoid arthritis. *The Cochrane Database of Systematic Reviews* 2003, Issue 2. Art. No.: CD003688. DOI: 10.1002/14651858.CD003688.

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Abstract

Background

Because of the unpredictability people with arthritis face on a daily basis, patient education programmes have become an effective complement to traditional medical treatment giving people with arthritis the strategies and the tools necessary to make daily decisions to cope with the disease.

Objectives

To assess the effectiveness of patient education interventions on health status in patients with rheumatoid arthritis.

Search strategy

We searched MEDLINE, EMBASE and PsycINFO and the Cochrane Controlled Trials Register. A selection of review articles (see references) were examined to identify further relevant publications. There was no language restriction.

Selection criteria

Randomised controlled trials (RCT's) evaluating patient education interventions that included an instructional component and a

What about qualitative research??

Example:

How do people with rheumatoid arthritis adapt to occupational challenges related to arthritis?



This is a question about a client's experiences:

- ∅ Look for qualitative research evidence.

<http://www.bigfoto.com/>

Challenges of finding qualitative research



- n May need to search across multiple databases: CINAHL, MEDLINE, PsycInfo, EMBASE etc
- n Need to redesign search for each database
- n Use thesaurus terms, free text and broad-based searches

Shaw et al, (2004). Finding qualitative research: an evaluation of search strategies
BMC Medical Research Methodology, 4:5 doi:10.1186/1471-2288-4-5

- n Best multiple term strategy with optimization of sensitivity and specificity in MEDLINE = interview:.mp. OR experience:.mp. OR qualitative.tw.

Wong S., Wilczynski, N., & Haynes, R.B. (2004). Developing Optimal Search Strategies for Detecting Clinically Relevant Qualitative Studies in MEDLINE. MEDINFO 2004. 11(Pt 1):311-6.

Search PubMed for

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All: 1 Review: 0 

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 - Help | FAQ
 - Tutorials
 - New/Noteworthy
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- PubMed Services
 - Journals Database
 - MeSH Database
 - Single Citation Matcher
 - Batch Citation Matcher
 - Clinical Queries
 - Special Queries
 - LinkOut
 - My NCBI
- Related Resources
 - Order Documents
 - NLM Mobile
 - NLM Catalog
 - NLM Gateway
 - TOXNET
 - Consumer Health
 - Clinical Alerts
 - ClinicalTrials.gov
 - PubMed Central

1: [Am J Occup Ther.](#) 2004 Jul-Aug;58(4):398-407. [Related Articles, Links](#)

Transformation of meaning perspectives in clients with rheumatoid arthritis.

[Dubouloz CJ](#), [Laporte D](#), [Hall M](#), [Ashe B](#), [Smith CD](#).

School of Rehabilitation Sciences, and Faculty of Health Sciences, University of Ottawa, 451 Smyth Road, Ottawa, Ontario K1H 8L5, Canada. dubouloz@uottawa.ca

The purpose of this qualitative study was to examine the process of transformation of personal beliefs, values, feelings, and knowledge (meaning perspectives) underlying occupational change in a small group of clients with rheumatoid arthritis during home-based rehabilitation. A grounded theory approach used to collect and analyze data concurrently included: (1) a sample of five adult clients diagnosed with rheumatoid arthritis in occupational therapy, (2) data collection through 28 semi-directed interviews, and (3) data analysis using the constant comparison method. The study identified meaning perspectives of these clients with rheumatoid arthritis and explored the transformation of perspectives related to the modification of occupational performance. The study suggests that the exploration of meaning perspective transformation by clients and therapists could be a potential part of rehabilitation intervention.

PMID: 15315246 [PubMed - indexed for MEDLINE]

Display Abstract Show 20 Sort by Send to

3. Critical Appraisal of the Evidence:

“Critical appraisal is a process of reviewing a paper in order to find information of value.”

Crombie, I.K. (1996). The Pocket Guide to Critical Appraisal. BMJ Books.

- n Decide whether the evidence is valid
- n Decide whether the evidence is important



Is the evidence valid ?

Checklists prompt you to think about issues such as:

- q Was the method appropriate to the question?
- q Was the sampling strategy appropriate?
- q Were all participants who entered the study properly accounted for at its conclusion?
- q Were measures taken to reduce bias and confounding?
- q Were the methods for data analysis appropriate?

Critical Appraisal Skills Programme (CASP)

http://www.phru.nhs.uk/casp/critical_appraisal_tools.htm

Occupational therapy evidence-based practice research

<http://www.fhs.mcmaster.ca/rehab/ebp/>



Is the evidence important ?

- n Are outcomes that matter to clients considered?
- n Need to look at the results/findings of the study
- n For treatment studies: Consider clinical significance of the results. I.e. How large an effect was shown? (differs from statistical significance).
- n Summary statistics eg. mean differences, effect sizes, numbers needed to treat.

www.statswatch.com

**Meaningless statistics
have risen by 0.23% in the
last month.....**

Strength of evidence about treatment



- n For studies about treatment effectiveness strength of evidence is determined by:
 - q Size of the effect
 - q How confident we are of the observed effect (Look at confidence intervals)
 - q Number of studies confirming result
 - n Findings from other study types (eg. qualitative) are considered in a different way
-

Using findings from qualitative research



Findings from qualitative research help clinicians and clients understand the meaning of roles, relationships and experiences

They provide models that can be used to understand similar situations and can facilitate greater insight and sensitivity

Giacomini, M & Cook, D. (2000). A User's Guide to Qualitative Research in Health Care. JAMA. 26;284 (4):478-82

4. Application of Evidence: Key Issues

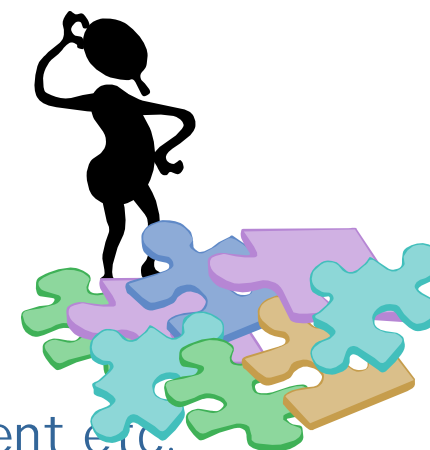
1. Could these results/findings apply to your client?

2. Does it fit in with your client's context?

- Consider values, preferences, goals, environment etc.
- Can it improve your understanding of a client's situation (qual research)

3. Consider the context of practice. Eg. Are there resources available to implement a treatment?

Sackett et al, 2000



Implementing EBP



- n Many barriers to EBP: Lack of time, access, and skills.
- n Requires significant behaviour and systems change
- n Use change management principles
- n Once people are aware of the evidence it still needs to be accepted, applicable, available, acted on, agreed to, and adhered to.

Glasziou & Haynes (2005). The paths from research to improved health outcomes. Evidence-Based Medicine 2005; 10:4-7

- n Clinicians need access, time, employer support and modeling of skills.
-

Clinical Reasoning and EBP



'Medicine seems to consist of a few things we know, a few things we think we know (but probably don't), and lots of things we don't know at all'

'Clinical reasoning, with its reliance on experience, analogy, and extrapolation, must be applied to traverse the many grey zones of practice.'

Naylor, (1995) Grey zones of clinical practice: some limits to evidence-based medicine. Lancet;345:840-2.

EBP in Summary



- n EBP is a process for making informed clinical decisions
 - n EBP is about USING research - not doing it
 - n EBP involves clinical reasoning to integrate:
 - q clinical experience
 - q clients' preferences
 - q highest quality evidence available (both quantitative and qualitative)
-