

1: Introduction

'Evidence-based practice' (EBP) was one of the buzzwords (or buzz terms) of health and social care practice in the 1990s (Taylor 2000). However, unlike other trends or fashions, EBP has not gone away; in fact it has become embedded within the fabric and regulation of professional practice. But what *is* evidence-based practice, where did the term come from and how can it help the overworked occupational therapist to make decisions about the effectiveness of her or his practice? This chapter will attempt to answer these questions.

The chapter begins by defining the term 'evidence-based practice' and then outlines the background to, and the need for, an evidence-based approach to occupational therapy (OT) practice. There is often confusion over what is 'research', what is 'audit' and what is 'evidence-based practice'. This chapter will attempt to clarify the differences between these three approaches to finding and using information to improve practice. Having established what evidence-based practice is, and what it is not, the chapter will then outline the process; in other words, how to implement EBP. The nature of evidence will be explored and the debates about types and levels of evidence within health and social care practice will be outlined. The chapter will conclude with an overview of how to use this book as a practical guide to evidence-based practice.

What is evidence-based practice?

The term 'evidence-based *medicine*' was coined at McMaster University medical school in the 1980s as a way of describing a process of problem-based clinical teaching and learning that involved students and clinicians in searching for and evaluating the evidence for clinical practice (Bennett *et al.* 1987; Shin *et al.* 1993). Its philosophical origins, however, can be found in mid-nineteenth-century Paris (Sackett *et al.* 1996), where Pierre Charles Alexandre Louis used statistical analysis to demonstrate that blood letting had no value as a clinical intervention. A key impetus to the development of evidence-based medicine was the work of Archie Cochrane, an epidemiologist, who championed the use of the randomized controlled trial (RCT) (see Chapter 3 for more on RCTs) and systematic reviews (see

Chapter 4) as tools for ensuring that interventions were both effective and efficient (Cochrane 1972).

Sackett *et al.* (1996, p. 71) have defined evidence-based medicine as:

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

Although 'evidence-based *medicine*' is still a commonly used term, the evidence-based process has broadened and evolved and now 'evidence-based *practice*' is seen as a more appropriate term. The complexity of evidence-based practice and the blending of both the art and sciences of practice within the decision-making process is demonstrated by use of the term 'evidence-informed practice' (Atherton *et al.* 2005), which highlights the need for decision-making to be informed by, but not dominated by, evidence.

The concern most frequently expressed about evidence-based practice is that it will become prescriptive and will lead to cost cutting and 'cook-book' practice (Sackett *et al.* 1996), where there is one recognized, cheap intervention for a specific problem. In OT this would mean a return to the days of *Refer to Occupational Therapy* (Shopland *et al.* 1975), that neat, pocket-sized book that listed all the things the basic grade OT needed to know in order to be able to treat any stroke, head injury, total hip, etc. and remove the need for thinking or clinical reasoning on the part of the OT. Sackett *et al.* (1996) argue strongly that evidence-based practice is only a part of the clinical decision-making process and that any judgments and clinical decisions are based on a mix of clinical expertise and the best available evidence. The aim is to ensure that the interventions used are the most effective and the safest options. External evidence is just one strand of the process and must be blended with clinical judgment and patient preference.

The essence of evidence-based practice is that the decision process is explicit and therefore clearly articulated so that decisions can be explained to the patient/client and justified to colleagues and managers. Evidence is gathered conscientiously but it is used judiciously so that the experience of the OT, the needs of the patient/client, the demands of the system and the up-to-date best evidence are weighed together so that the best care is given. Evidence-based practice should be viewed as a way of thinking critically about every intervention and action and, as such, is just one of the tools of clinical reasoning and reflective practice. However, because of the use of up-to-date best evidence, evidence-based practice is a powerful tool.

The background to evidence-based practice

Gray (2001) proposes that the management of healthcare over the last three decades has developed from the principles of efficiency and quality. Efficiency can be translated into 'doing things cheaply', whilst quality can be translated as 'doing things better'. This has led to a management philosophy of 'doing things right'. This, however, has not always meant using the 'right' or the 'best' intervention. This may sometimes conflict with the health and social care practitioner's

philosophy of doing the right thing, in other words doing 'good' instead of 'harm'. Whilst health and social care practice has attempted to do 'good' and the 'right' thing it has not always been possible to argue that the 'right' intervention is based on anything other than common sense. Cochrane (1972) highlighted medicine's collective ignorance on the effects and effectiveness of healthcare. He proposed that less than 15% of all medical interventions were based on clear clinical trials of effectiveness.

Gray (2001) argues that the philosophy of healthcare management for the twenty-first century will be 'doing the right things right' and that this will mean making decisions about interventions that are based on good evidence and that may have a profound effect on the nature of clinical practice. Research and practice need to be drawn together so that practice is underpinned by sound evidence, and so that clinicians can demonstrate to service managers that they are 'doing the right things right' (Gray 2001, p. 20). The problem for occupational therapists, very often, is defining and measuring what 'good' and 'sound' evidence actually means.

The development of evidence-based OT

The medical roots and philosophy of evidence-based practice might appear to sit uncomfortably with the growing acceptance of the social model philosophy within OT and the focus on a client-centred model of practice. However, evidence-based practice has been explored and discussed in the OT literature for some time, with special issues of various OT journals dedicated to EBP (e.g. *British Journal of Occupational Therapy* 1997, 2001; *Canadian Journal of Occupational Therapy* 1998; see Further reading), books (e.g. Taylor 2000; Law 2002) and articles on implementing EBP (e.g. Brown & Rodgers 1999). A note of caution has been raised by Blair and Robertson (2005, p. 272), who argue that OT has adopted 'a predominantly pragmatic and acquiescent approach' and needs to have a more thoughtful and critical understanding of the philosophy and implications of a truly evidence-based approach to practice.

As Dubouloz *et al.* (1999) pointed out, occupational therapists have been slow to integrate research evidence into their clinical decision-making processes. Client-centred evidence and research evidence were seen as incompatible. In order to recognize the range of evidence available to the occupational therapist, evidence-based OT has been defined as:

Client-centred enablement of occupation, based on client information and a critical review of relevant research, expert consensus and past experience
(Canadian Association of Occupational Therapists *et al.* 1999, p. 267).

Whilst the Canadian definition of evidence-based OT highlights the breadth of evidence available to us, Cusick (2001, p. 103) argued that evidence-based OT was more than using a range of evidence to ensure that interventions are effective. She argued that evidence-based OT was about 'asking the right questions':

When we practice with evidence, it means we should ask ourselves the following question: 'am I doing the right thing in the right way with the right person at the right time in the right place for the right result – and am I the right person to be doing it?'

These are challenging questions, which will make us look at all aspects of our practice in a new and critical light; we will need the courage to change practices that are shown to be ineffective or even harmful. EBP will, however, also give us the tools to ensure that OT practice is seen as effective and valuable within the current political climate.

Thus, evidence-based OT is a way of thinking critically about all aspects of OT interventions and using the breadth of potential sources of 'evidence' conscientiously, judiciously, explicitly *and* critically, within a framework of reflection and clinical reasoning.

Whilst the main focus of this book is the use and critical appraisal of the research evidence, the other sources of evidence will not be ignored as we explore the skills and activities that can enable us to become evidence-based occupational therapists.

Comparison of research, audit and evidence-based practice

The terms 'research', 'audit' and 'evidence-based practice' are liberally used within the healthcare literature, but how well do practitioners understand exactly what the different terms mean? This section will attempt to tease out the differences and similarities between research, audit and evidence-based practice.

Defining the terms

'Research' has been defined as:

a systematic process of gathering and synthesising empirical data so as to generate knowledge about a given population for a selected topic

(Bailey 1991, p. 1).

Whilst 'audit' has been defined as:

the systematic critical analysis of the quality of medical care, including the procedures used in diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the patient

(Sale 1996, p. 71).

Finally, as stated earlier, 'evidence-based practice' has been defined as:

the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individuals

(Sackett *et al.* 1996, p. 71).

Similarities and differences

There are many similarities between research, audit and evidence-based practice. There are also some crucial differences. These are summarized in Table 1.1.

Research, audit and evidence-based practice are all *systematic* processes for finding information to improve and refine interventions and practice. But, whilst research aims to generate new knowledge, both audit and evidence-based practice use existing practice and existing knowledge to review and improve interventions.

The outcomes of research may change practice throughout the world. The outcomes of audit may change practice within one particular setting. The outcomes of evidence-based practice may influence the interventions used with one person, within one department, or at a regional or national level if clinical guidelines are developed.

Research is about generating evidence, audit is about assessing practice, and evidence-based practice is about putting evidence into current practice. As already mentioned, Gray (2001, p. 20) talks about evidence-based practice as 'doing the right things right'. Research is used to tell us what the right things are; audit tells us if we are doing those things right; and evidence-based practice draws these two strands together to help the clinician to use the right intervention properly.

The OT process is essentially the same as the processes of research, audit and evidence-based practice in that a problem needs to be identified, an intervention must be planned and carried out, and the outcome must be assessed and evaluated.

Table 1.1 Similarities and differences of research, audit and evidence-based practice.

Research	Audit	Evidence-based practice
Systematic investigation to increase the sum of knowledge	Systematic approach to identify possible improvements and mechanisms to bring them about	Systematic review of evidence to guide clinical interventions
Aims to identify the most effective form of treatment	Aims to compare actual performance against agreed standards of practice	Aims to use evidence to underpin clinical decision-making
Results extend to the general population	Results apply only to the population examined	Results apply to a particular problem, intervention and outcome
May be a one-off study	The process is ongoing and continuous	Provides a philosophy for decision-making
Data collection is complex, with new data being collected	Data collection is via records and follow-up of patients	Data are drawn from existing research and other sources

The need for an evidence-based approach to practice

As occupational therapists, in order to survive in the current health and social care climate, we need to demonstrate that our interventions are effective both clinically and economically. But where do we find the evidence to support our claims to clinical effectiveness and cost effectiveness? As Table 1.2 illustrates, the range of published literature available that *might* contain the evidence for practice is vast and ever growing.

This list is by no means exhaustive. Nor does it include what is known as 'grey' literature. The 'grey' literature is literature that has been published or is in the public domain that lacks an ISBN (International Standard Book Number) in the case of a book or an International Standard Serial Number (ISSN) in the case of a serial publication such as a journal. This means, therefore, that the grey literature is not easily accessed from databases. Grey literature includes theses and dissertations, which are held in university and departmental libraries; conference presentations and proceedings, which may not be fully reported; and all manner of other material on research and projects that has been written up but goes no further than a library shelf. As well as the grey literature the web also gives access to a vast amount of literature, some of which will be useful evidence whilst some will reflect one person's opinion (Chapter 6 will explore the value of the web for the evidence-based OT). Occupational therapists in the UK are now being educated at degree level, with a growing number undertaking postgraduate studies. They are all spending long hours researching and writing dissertations and yet few of these will be published or become available to a wider audience. Many of these, on well-worn topics, may not be of great value to a wider audience, such as:

- how nurses/doctors/GPs/the multidisciplinary team (MDT) view the role of OT;
- the role of OT within mental health.

Others, though, provide useful evidence and deserve to be available to a wider audience; for example:

- homophobia amongst OT students: issues, incidence and implications (Haddon-Silver 1993);
- does the Rivermead Extended ADL Score indicate a patient's level of independence after discharge? (Cooper 1995);
- do OT students consider sexual orientation when implementing treatment? (Littlewood 1997);
- an audit of the reliability of the Frenchay Activities Index (Piercy 1998).

The College of Occupational Therapists' (COT) library holds copies of many masters and doctoral theses produced by occupational therapists. However, too much valuable OT evidence remains as grey literature and, as such, is unavailable to the occupational therapist who wishes to become more evidence-based and might be struggling to find relevant research evidence within their practice area.

Table 1.2 Journals with the potential for providing the evidence base for OT interventions.

<i>Access by Design</i>
<i>American Journal of Occupational Therapy</i>
<i>American Journal of Physical Medicine and Rehabilitation</i>
<i>American Rehabilitation</i>
<i>Archives of Physical Medicine and Rehabilitation</i>
<i>Australian Occupational Therapy Journal</i>
<i>British Journal of Learning Disabilities</i>
<i>British Journal of Occupational Therapy</i>
<i>Canadian Journal of Occupational Therapy</i>
<i>Clinical Rehabilitation</i>
<i>Disability and Rehabilitation</i>
<i>Disability and Society</i>
<i>Evidence-based Mental Health</i>
<i>Health Service Journal</i>
<i>International Journal of Rehabilitation Research</i>
<i>Irish Occupational Therapy Journal</i>
<i>International Journal of Therapy and Rehabilitation</i>
<i>Israeli Journal of Occupational Therapy</i>
<i>Journal of Allied Health</i>
<i>Journal of Applied Research in Intellectual Abilities</i>
<i>Journal of Evaluation in Clinical Practice</i>
<i>Journal of Hand Therapy</i>
<i>Journal of Head Trauma Rehabilitation</i>
<i>Journal of Interprofessional Care</i>
<i>Journal of Occupational Science: Australia</i>
<i>Journal of Rehabilitation</i>
<i>Journal of Rehabilitation Research and Development</i>
<i>Neuropsychology Rehabilitation</i>
<i>New Zealand Journal of Occupational Therapy</i>
<i>Occupational Therapy in Health Care</i>
<i>Occupational Therapy in Mental Health</i>
<i>Occupational Therapy International</i>
<i>Occupational Therapy Journal of Research: Participation, Occupation and Health</i>
<i>Occupational Therapy News</i>
<i>Occupational Therapy Practice</i>
<i>Physical and Occupational Therapy in Geriatrics</i>
<i>Physical and Occupational Therapy in Pediatrics</i>
<i>Scandinavian Journal of Occupational Therapy</i>
<i>Scandinavian Journal of Rehabilitation Medicine</i>
<i>Social Science and Medicine</i>
<i>South African Journal of Occupational Therapy</i>

Busy occupational therapists cannot hope to keep up to date with all the possible sources of evidence, nor can they read and critically appraise all of the articles relevant to their practice. This is why an evidence-based approach to practice is needed. Evidence-based practice provides occupational therapists with a

systematic framework for reviewing the evidence to underpin their practice. Sackett (1997) has shown that in the majority of cases an evidence-based approach does not, in fact, change the intervention decision. What evidence-based practice does, however, is give occupational therapists the tools and the evidence to justify that intervention to themselves, the patient/client and the management.

The process of evidence-based practice

Evidence-based practice is a process, which is essentially the same as both the research process and the OT process. All of these processes are based on a number of stages, which include:

- identify a problem;
- plan/design an intervention/action;
- carry out the intervention/action;
- evaluate the process and the outcome.

Rosenberg and Donald (1995) have identified four stages in the evidence-based practice process:

- formulate a clear clinical question based on the patient's problem;
- search the literature for relevant clinical articles/evidence;
- evaluate (critically appraise) this evidence for its validity and usefulness;
- implement useful findings in clinical practice.

Sackett *et al.* (2000) added a fifth and final stage:

- evaluate the outcome.

Having established what the patient's/client's problems are, evidence-based practice can be initiated by asking 'clinical' questions related to diagnosis, prognosis, treatment, iatrogenic harm, quality of care and health economics (Rosenberg & Donald 1995). The question should focus on the problem, the intervention and the outcome. Evidence-based questions are usually articulated in terms of:

What is the evidence for the effectiveness of x (the intervention) for y (the outcome) in a patient with z (the problem or diagnosis)?

This might fit very nicely into medical practice when thinking about whether treatment with aspirin and warfarin will reduce the risk of stroke in an elderly lady with hypertension, but how can it relate to the complexities of OT practice?

Herbert *et al.* (2005, p. 12) expand the notion of the clinical question to include:

- effects of intervention;
- patients' experiences;
- the course of the condition, or life-course (prognosis);
- the accuracy of diagnostic tests or assessments.

Whilst broadening the idea of the clinical question beyond assessing the potential effectiveness of an intervention, this approach still does not address the totality of OT practice. However, with the basic OT skills of creative thinking, it is perfectly possible to focus on a problem, an intervention and an outcome and thus initiate evidence-based practice.

If we adopt Cusick's (2001) approach of asking the right questions, we can utilize an evidence-based approach to all stages of the OT process, for example:

- Are we the right people?
Should this person have been referred to OT?
- Are we doing the right thing?
Not only is this the right intervention, but also is this the right assessment tool?
- Are we doing it the right way?
What is the most effective model or frame of reference?
- Are we doing it with the right clients?
Do *all* patients/clients with this problem need to be seen by an occupational therapist, or just those with other particular problems?
- Are we doing it at the right time?
Should I see this client in the morning or the afternoon?
Should I see them every day or just once a month?
- Is it being done in the right place?
Would I be better working with this patient/client in their own home rather than in hospital?

Bennett and Bennett (2000) developed a framework for the use of evidence-based practice in OT (see Fig. 1.1). They show evidence-based practice to be an approach that can be used at every stage of the OT process. The search for, and appraisal of, relevant evidence can be used to support the clinical decisions that are made at each stage of the OT process. Bennett and Bennett's framework highlights the importance of both research evidence and evidence drawn from other sources, such as the therapist's experiential evidence and the client's preferences and values.

By blending Cusick's (2001) series of 'right' questions with Bennett and Bennett's (2000) framework we have a clear overview of the ways in which evidence-based practice can be used throughout the OT process to explore and support the effectiveness of our actions and interventions as occupational therapists.

Each stage of the evidence-based practice process will be explored in this book. Asking and formulating a 'clear clinical question from the patient's problem' will be discussed below. The three remaining stages of finding, appraising and using evidence will form the basis of the remaining chapters. The final stage (evaluating the outcome), whilst important, is beyond the scope of this introductory text.

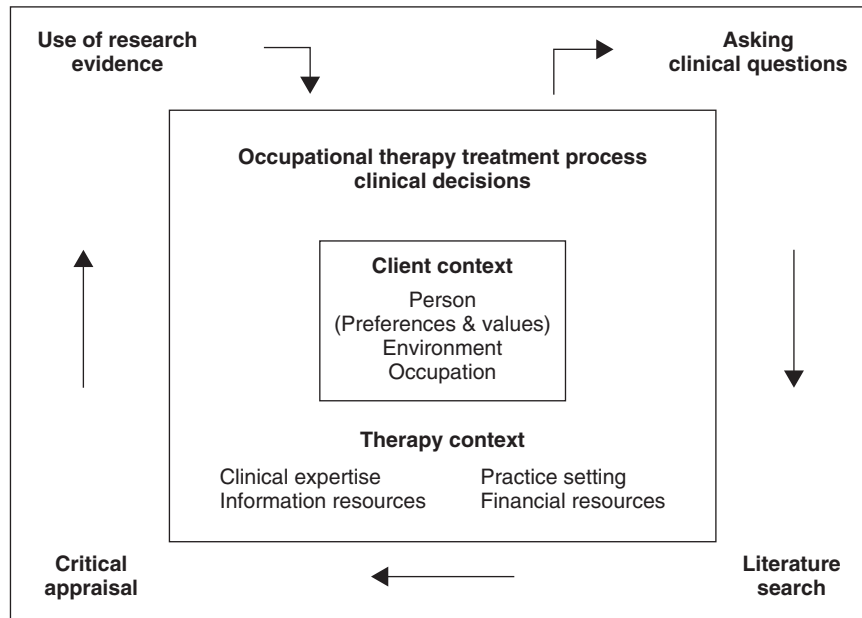


Figure 1.1 Bennett and Bennett's framework for evidence-based occupational therapy. (From Bennett, S. & Bennett, J.W. (2000) The process of evidence-based practice in occupational therapy: informing clinical decisions. *Australian Occupational Therapy Journal* 172, 171–178. Reproduced with permission from Blackwell Publishing Ltd.)

Asking useful questions

The first stage in the search for evidence to underpin practice is to ask a clear question. This question will be used to guide the search for evidence and so must be clear and specific, otherwise a vast amount of evidence may be found that has little, if any, relevance to the initial question. A great deal of time can be wasted down the interesting side tracks this may produce. However, getting side-tracked will not answer the original question and may reinforce negative assumptions about the value, or lack of value, of an evidence-based approach to practice.

As outlined above, a useful question consists of:

- a problem;
- an intervention;
- an outcome.

In other words, you must identify:

- 'who' – i.e. a patient or client group with a particular occupational or clinical problem;
- 'what' – i.e. the intervention/assessment/task you think might be of value for this problem;
- 'why' – i.e. the outcome or reason for using the intervention/assessment/task.

Without the outcome the question can become vague and woolly and any evidence found will have limited value in answering the question. The more time you spend formulating your question the easier the task of finding the right evidence specific to your needs.

Some authors (Richardson *et al.* 1995) argue that a 'well-built' question should include not just an intervention but also a comparative intervention. This is common practice when looking at treatment interventions within a medical context when the effectiveness of drug A is compared with that of drug B. This comparative approach may have relevance to some evidence-based practitioners in OT; however, for many OT problems comparison of interventions may not be appropriate or useful.

Richardson *et al.* (1995) refer to the elements of the question (the problem, the intervention/comparison, the outcome) as the 'anatomy' of an evidence-based question. As we will see in Chapter 2 (Finding the evidence), the clearer you are about each element of the question and the components of each element, the more successful you will be in finding evidence and answering your question. Table 1.3 outlines the four elements of an evidence-based question.

Practical applications of this process will now be discussed. Scenarios will be used to create evidence-based questions. A flexible approach to the development of evidence-based questions has been adopted, allowing for a range of applications of evidence-based practice to be illustrated. These scenarios and questions will be used in later chapters to illustrate the application of evidence-based practice for OT.

Table 1.3 Elements of a well-built evidence-based question.

Problem	Intervention	Comparative intervention	Outcome
Describe your patient/client/client group and her/his/their problem. This may be a diagnosis, a functional problem or an occupational performance problem. The description should also include all key information, e.g. age, sex, occupational status	Describe the main intervention/assessment/task	<i>If applicable</i> Describe the comparative or alternative intervention/assessment/task. This may also take the form of alternative approaches to the intervention, e.g. group or individual sessions; different frequency of intervention	Describe what you hope to achieve or what effect the intervention may have on your patient/client/client group

After the scenario is described, the problem, intervention and outcome will be highlighted and an evidence-based question will be developed.

■ Scenario 1.1 ■

You have recently been appointed to a post that includes a unit specializing in the care of people who are HIV-positive or who have AIDS. You are exploring potential areas of OT intervention. You notice that many of the clients appear to be experiencing high levels of anxiety, which limits their occupational performance. You have also read that levels of anxiety may affect the body's immune responses. You feel that an area of OT intervention might be in anxiety management. However, before embarking on designing an anxiety management programme you decide to explore whether this is an effective intervention and what evidence exists to support your proposal for establishing anxiety management as part of the OT intervention on the unit.

<i>Problem</i>	<i>Intervention</i>	<i>Outcome</i>
Anxiety in clients with HIV/AIDS	Anxiety management	Improved function and occupational performance; improved immunity; improved quality of life

What is the evidence for the value of anxiety management as a means of improving function/occupational performance/immunity/quality of life in clients who are HIV-positive or who have AIDS?

■ Scenario 1.2 ■

You have been running an outpatient group and course on joint protection and energy conservation for clients with rheumatoid arthritis (RA). The energy conservation aspect of the group seems to be particularly successful. You are preparing a proposal to extend the energy conservation group to include other clients who experience periods of fatigue, such as people with multiple sclerosis (MS) or AIDS. You decide to explore the evidence base for using energy conservation education as a way of decreasing fatigue with these client groups. You are also interested to explore whether group or individual sessions are more effective or whether sessions should focus solely on information or should include discussion and a self-help focus.

<i>Problem</i>	<i>Intervention</i>	<i>Alternative interventions</i>	<i>Outcome</i>
Fatigue associated with: ■ MS ■ HIV/AIDS ■ RA	Energy conservation	Individual or group session; length of course; handouts and/or discussion; self-help	Improved quality of life; increased occupational performance; decreased fatigue

What is the evidence for the value of energy conservation as a means of improving quality of life/occupational performance and decreasing levels of fatigue in clients who experience high levels of fatigue associated with chronic illnesses such as MS, AIDS and RA?

■ Scenario 1.3 ■

As a final-year OT student you are expected to carry out either a piece of empirical research or a systematic review of the literature pertinent to an area of OT practice. One of your fieldwork placements was spent at a specialist rehabilitation unit for people who have suffered brain injury. Whilst at the unit you noticed that many of the clients had memory impairments. The approach used with these clients was to give each client a variety of memory aids. Working with a number of clients, you had begun to explore alternative approaches such as using activities and groups as well as aids and education to improve memory function. You decide, for your final-year project, to carry out a systematic review of the evidence into the effectiveness of a number of approaches to improving memory function.

<i>Problem</i>	<i>Intervention</i>	<i>Alternative interventions</i>	<i>Outcome</i>
Memory impairment following brain injury	Memory aids	Group or individual sessions; education or activity	Decrease in confusion; increase in memory function; increase in occupational performance

What is the evidence for the value of memory aids as a means of decreasing confusion and improving memory function and occupational performance in clients with memory impairment as a result of brain injury?

These three scenarios are examples of what might be considered the traditional approach to evidence-based questions, with a clear problem, intervention and outcome. However, as the next three scenarios show, evidence-based practice can also be applied to more general topics or as a preparatory tool for developing research questions.

■ Scenario 1.4 ■

You are the OT manager for a mental health trust. You are beginning to explore evidence-based practice and are wondering how an evidence-based approach might be applied to your service. Because of economic and service constraints you are reviewing the value and effectiveness of a number of OT interventions and areas of practice. You are particularly concerned about the value of some of the activity groups within the main OT department. Rather than focusing on one particular activity you decide to adopt a broad evidence-based approach. You decide to explore the concept of 'activity' within a specific diagnostic and symptom context. The majority of clients who attend the various activity groups have some level of depression.

<i>Problem</i>	<i>Intervention</i>	<i>Outcome</i>
Depression	Activity, which could be subdivided to include, e.g.: <ul style="list-style-type: none"> ■ exercise ■ creative writing ■ pottery 	Improved mood

What is the evidence for the value of activity as a means of improving mood in clients with depression?

■ Scenario 1.5 ■

Recently you have been running a horticulture group as part of the activity programme for the eating disorders unit you work on. The group has proved to be remarkably successful. You are keen to carry out some research into the value of horticulture as a purposeful activity, but are unsure about how to start this research. As a way of helping to develop your research ideas you decide to carry out an evidence-based review of the value of horticulture as a purposeful activity.

<i>Problem</i>	<i>Intervention</i>	<i>Outcome</i>
Eating disorders: ■ anorexia ■ bulimia	Horticulture	Improve self-esteem: ■ increase confidence in self ■ increase confidence in abilities

What is the evidence for the value of horticulture as a purposeful activity and means of improving self-esteem and confidence in clients with eating disorders?

■ Scenario 1.6 ■

You have been asked to co-facilitate a support group for people who are carers of patients with Alzheimer's disease. You have some ideas about the potential support needs of carers but are unclear about the specific needs of this particular group of carers. You decide to collect evidence from a range of sources to inform your planning for the support group and its activities. You also hope that the evidence will give you ideas about assessing the outcomes and the success of the group.

<i>Problem</i>	<i>Intervention</i>	<i>Outcome</i>
Support needs/issues of people caring for someone with Alzheimer's disease	A range of interventions including: ■ support groups ■ group work ■ self-help ■ educational group	Guidelines for facilitating a support group

What information can be derived from a range of evidence into the support needs of people caring for someone who has Alzheimer's disease, in order to facilitate a support group?

Whilst some of these questions may appear vague, the aim for all of these questions and scenarios is to use them as tools to illustrate the practical application of evidence-based practice for occupational therapists. The scenarios and questions aim to cover a broad spectrum of OT practice. However, the author acknowledges that it is not practical to explore the totality of OT interventions within one small text.

The nature of 'best evidence'

The Sackett *et al.* (1996) definition of evidence-based practice talks about the use of 'best evidence' to support the clinical decision-making process. However, the

nature of 'best evidence' is perhaps the most contentious and debated area of evidence-based practice (Sackett & Wennberg 1997). The traditional view, drawn from evidence-based medicine, has been to adopt a rigid approach to evidence founded on a perception of a hierarchy and levels of research evidence. Table 1.4 outlines the hierarchy of evidence. The origin of this hierarchy is in the work of Fletcher and Sackett (Canadian Task Force on the Periodic Health Examination 1979) whilst current discussion of levels of evidence can be found on the Centre for Evidence-based Medicine website (http://www.cebm.net/levels_of_evidence.asp).

However, this approach ignores two major factors. The first is that there is a breadth of potential research approaches, which might be appropriately viewed as 'best evidence'. The second is that many definitions of evidence-based practice include not only research but also the therapist's experiential knowledge and the client's perspective as potential sources of evidence.

The potential range of research approaches and types that might be seen as evidence includes:

- randomized controlled trials (RCTs);
- systematic reviews of RCTs;
- controlled clinical trials;
- nonrandomized experimental studies;
- single-case design studies
- cohort studies;
- cross-sectional studies;
- longitudinal studies;
- correlational studies;
- qualitative research studies;
- systematic reviews of qualitative research;
- surveys;
- delphi studies;
- consensus studies;
- case studies.

The question for the evidence-based occupational therapist is, which of this long list might be the 'best evidence' for me to use to address my particular evidence-based question? As Sackett (1998) and Sackett and Wennberg (1997) argue, the

Table 1.4 Levels of evidence.

Systematic reviews and meta-analyses of randomized controlled trials
Randomized controlled trials
Nonrandomized experimental studies
Nonexperimental studies
Descriptive studies
Respected opinion, expert discussion

nature of the 'best evidence' depends upon the type of evidence-based question being asked. Table 1.5 gives an overview of the types of research evidence that might be appropriate for the different types of evidence-based question.

Having established a list of the potential types of research evidence to address a particular question, the evidence-based occupational therapist's next task is to decide whether there is a particular order of hierarchy of the types of evidence, to ensure that the 'best' evidence is found.

Developing a hierarchy of the most appropriate evidence for the effectiveness of interventions is relatively straightforward. The hierarchy outlined in Table 1.4 was developed to show the value and weighting of evidence for the effectiveness of interventions, with systematic reviews of RCTs seen as the most rigorous and reliable form of evidence. The Centre for Evidence-based Medicine (CEBM) has developed similar hierarchies for the following (Phillips *et al.* 2001):

- therapy/prevention/aetiology/harm questions;
- prognosis questions;
- diagnosis questions;
- differential diagnosis/symptoms questions;
- economic questions.

The appropriateness and value of a similar hierarchy for qualitative research is much more questionable, with many authors (e.g. Barbour 2001; Pawson *et al.* 2003) arguing that, whilst it might be possible critically to appraise the rigour and strength of a particular qualitative study it is neither possible nor appropriate to locate different types of qualitative studies and approaches within a hierarchy.

Table 1.5 Appropriate research evidence for particular types of evidence-based questions.

Effectiveness of interventions

Systematic reviews of RCTs

RCTs

Other experimental designs, e.g. controlled clinical trials

Single subject design studies

Client's experiences and perceptions

Qualitative research studies

Descriptive research studies, e.g. surveys

Systematic reviews of qualitative research

Appropriateness of assessments

Cross-sectional studies

Measurement studies

Prognosis and life-course

Cohort studies

Longitudinal studies

Correlational studies

Developing a hierarchy of potential evidence should help to narrow the focus of the search to a specific type of research evidence that will address the particular evidence-based question (the topic of searching is dealt with in Chapter 2). Once a research paper has been found, it may still not provide the 'best' evidence. Deciding whether any research paper is 'best' or 'good' is achieved through critically appraising the quality of the research against a series of questions or criteria (Chapters 3, 4 and 5 deal with the critical appraisal of the main types of research evidence).

The identification of the 'best' evidence is a complex task. The potential range of evidence is broad and should not solely focus on research evidence. Using specific types of research evidence to address particular evidence-based questions may seem the most useful approach. However, it may also act as a constraint, if not a straightjacket, to the development of a broad perspective on the 'best evidence' with which to answer evidence-based questions. Certainly an RCT or a systematic review should provide powerful evidence for the effectiveness of a particular intervention; it should not, however, be the only evidence required for clinical reasoning and decision-making. Pawson *et al.* (2003) argue, from a social care perspective, that evidence should include:

- organizational knowledge
- practitioner knowledge
- user knowledge
- research knowledge
- policy knowledge

thus acknowledging the breadth and complexity of evidence to be considered, especially within a social care context.

Evidence from research studies can only give a partial answer to any evidence-based question. The research evidence must be balanced with information from the client about their values and perspectives, as well as the therapist's experiential knowledge. The intervention or action decision will also be influenced by contextual factors such as service priorities and resources, as well as local and national policies. Evidence should not be seen in terms of a hierarchy but in terms of pieces of a complex jigsaw, which together provide the 'best evidence' to answer any evidence-based question. Figure 1.2 attempts to draw together the threads that underpin the decision-making process that focuses on any particular evidence-based question.

How to use this book

The main aim of this book is to make evidence-based practice accessible to occupational therapists. The scenarios and questions outlined in this chapter will be used later in the book as practical illustrations of finding, appraising and using evidence to review the effectiveness of OT interventions and practice. Each chapter will also include activities to help you consolidate your evidence-based practice skills.

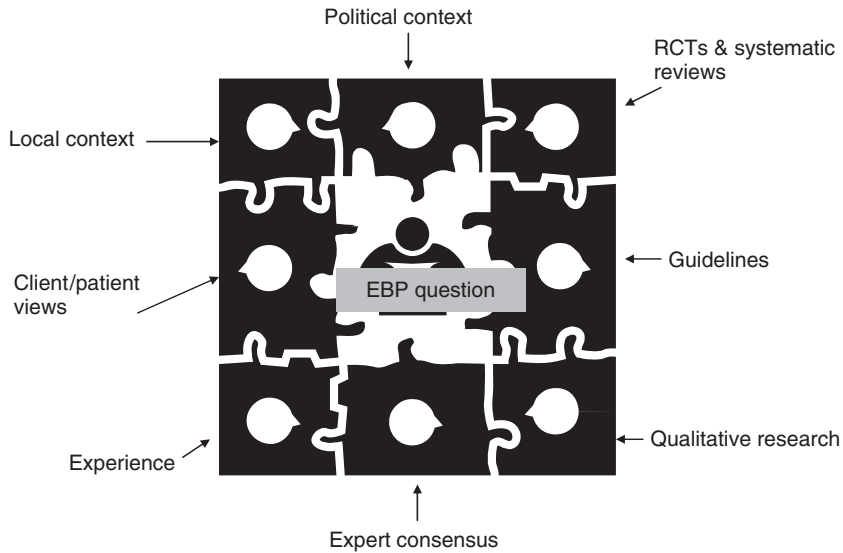


Figure 1.2 The jigsaw of evidence. EBP, evidence-based practice.

The book will explore each stage of the evidence-based practice process in turn – beginning with finding the evidence, then looking at appraising various types of research evidence (RCTs, systematic reviews, qualitative research and other types of evidence) before considering how evidence-based practice might work in OT practice settings. The book concludes by giving an annotated listing of a variety of resources that might be helpful to the evidence-based practitioner. Whilst the flow of the book follows the stages of the evidence-based practice process, it is the author’s intention that each chapter can stand alone and can be read separately. It is not the author’s intention that the reader starts at page 1 and reads studiously and conscientiously to the end of the book. However, it is the author’s intention that, when you finish working through this book, you should have a clear and practical grasp of how an evidence-based approach can help occupational therapists to explore and evaluate the effectiveness of their practice.



Activity

- Think of a client/patient or scenario from your practice.
- Look at the client/scenario in terms of the elements of evidence-based practice:
 - problem;
 - intervention/alternative intervention;
 - outcome(s).
- Outline the components of each of these elements for your client/scenario.
- Write an evidence-based question, using the elements you have identified.



Further reading

The following references will be useful for the reader who wishes to explore the background to evidence-based practice further, or who wishes to explore wider issues within the remit of evidence-based practice.

American Occupational Therapy Association (1999 onwards) *American Occupational Therapy Journal* **53**(5 onwards) [Since 1999 the AOTA has published an 'Evidence-based Practice Forum' to explore and convey information about the nature and process of evidence-based practice within occupational therapy.]

British Journal of Therapy and Rehabilitation (1996) Supplement on evidence-based practice and mental health. *British Journal of Therapy and Rehabilitation* **3**(12), 659–670.

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Straus, S., Richardson, W.S., Glasziou, P. & Haynes, R.B. (2005) *Evidence-based Medicine: How to Practice and Teach EBM*, 3rd edn. Edinburgh: Elsevier Churchill Livingstone.

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