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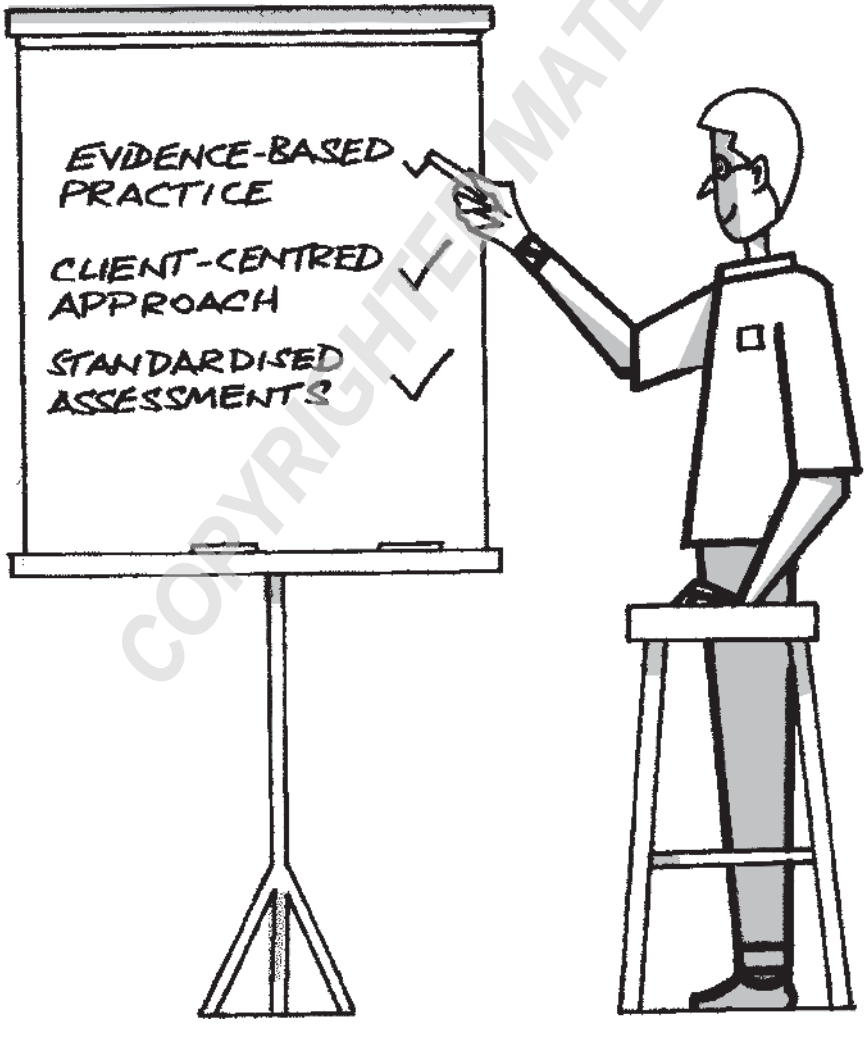
The Importance of Accurate Assessment and Outcome Measurement



CHAPTER SUMMARY

This chapter focuses on the requirement of therapists to undertake thorough and accurate assessment and measurement. The chapter will describe some developments and policy directions in health and social care practice that have affected occupational therapy and physiotherapy assessment, including:

- a demand for evidence-based practice
- a shift towards the use of standardised assessments
- a requirement to measure outcomes and demonstrate effectiveness
- a focus on client-centred practice
- a demand for robust clinical governance and clinical audit activities
- the use of standards, care pathways, protocols and guidelines.

It also examines the impact of such developments on physiotherapy and occupational therapy assessment, for example the emphasis on demonstrating that intervention is effective leads to a need for reliable, valid and sensitive outcome measures that enable therapists to measure clinically relevant change. In light of a call for standardised measurement, the chapter will discuss some of the advantages and limitations of standardised versus non-standardised tests. This introductory chapter will also explore the complexity of assessment, including the challenges of measuring human behaviour and the impact of the environment, and reflect upon how such complexities influence what can be measured by therapists and the adequacy of these measurements. The chapter concludes by presenting a series of questions about assessment and measurement, which will then be addressed in detail in the following chapters.

ASSESSMENT AS A CORE PART OF THE THERAPY PROCESS

Assessment was defined in the Introduction as the overall process of selecting and using multiple data-collection tools and various sources of information to inform decisions required for guiding therapeutic intervention during the whole therapy process. Assessment involves interpreting information collected to make clinical decisions related to the needs of the person and the appropriateness and nature of their therapy. Assessment involves the evaluation of the outcomes of therapeutic interventions.

Assessment is a core component of health care and therapy processes. It is recognised by health care professionals that assessment is an essential part of a quality service, for example the Royal College of Physicians (RCP; 2002) states that ‘assessment is central to the management of any disability’. Assessment is embedded as an essential component of the health care process. The health care process can be simply described as the (Austin and Clark, 1993):

- needs analysis of the client
- identification of what service needs to be provided
- identification of the provider of the service
- provision of the service
- evaluation of the service provided.

Assessment is the first step in the health care process and provides the foundation for effective treatment. Assessment occurs again at the end of the health care process in the form of evaluation. It is also necessary to undertake a re-assessment at several stages during stage four of the process, service provision, because without thorough and accurate assessment the intervention selected may prove inappropriate and/or ineffective.

THE IMPACT OF HEALTH AND SOCIAL CARE POLICY ON ASSESSMENT PRACTICE

The organisational and policy context for health and social care has been under frequent change and reform, particularly over the last decade. In recent years, the provision of health and social care has been exposed to a more market-orientated approach in which government fund-holders and organisations who purchase therapy services have become more concerned about value for money and require assurances that the service provided is both clinically effective and cost-effective. The demand for cost-effective health care is forcing rehabilitation professionals to be able to prove the efficacy and efficiency of their interventions. In the current policy context that focuses on quality, national standards, best value and evidence-based practice (EBP), the ability to demonstrate service outcomes has become increasingly important; for example, the Department of Health (DoH; 1998a) states that the modernisation of care 'moves the focus away from who provides the care, and places it firmly on the quality of services experienced by, and the outcomes achieved for, individuals and their carers and families' (paragraph 1.7).

An emphasis on clinical governance means that therapists are more overtly responsible for the quality of their practice, and this is reflected in an increased interest in EBP. Sheelagh Richards, Secretary of the College of Occupational Therapists (COT), states:

> Now critical appraisal, reflective practice, systematic audit, peer review, best value review, service evaluation, clinical governance and a host of other methodologies are accepted parts of the professional's landscape. The need to deliver evidence-based practice is well understood and all professionals have to play their part in the 'total quality management' of service delivery. (Richards, 2002, p. xvii)

The Chartered Society of Physiotherapy (CSP; 2001a) also highlights these changes to its members and recognises that therapists, and all health care practitioners, are being put under increasing 'pressure to demonstrate the added value of the service they provide' (p. 2). The CSP appreciates that the clinical governance agenda has led to an increased demand for results and proven outcomes and that this helps to inform required service improvements. In order to meet these demands, physiotherapists are being encouraged to learn about measurement and to adopt appropriate outcome measures in their daily practice. This has been made explicit through the introduction of the use of outcome measures into the CSP's revised standards of practice (Chartered Society of Physiotherapy, 2000), and this is helping to raise the profile of outcome measurement within the physiotherapy profession. For occupational therapists, the COT on its website states:

> Every individual providing an occupational therapy service has a responsibility to maintain and improve effectiveness and efficiency through the use of outcomes measures and audit. Occupational therapists should employ a range of quality activities including: evidence-based practice, adherence to national and professional standards and guidelines, risk-management, continuing professional development and listening to the views of those who use the service. (http://www.cot.org.uk/members/profpractice/quality/intro.php, accessed 4.12.05)

In a paper on the use of standardised assessments by physiotherapists, Stokes and O'Neill (1999) state that 'clinical effectiveness, evidence-based practice, outcome measures and clinical audit are the "buzz words" of today's researcher and practitioner. They are the markers of an aspiration for accountability, productivity and objectivity within the provision of health care' (p. 560). This continues to be true today.

Therapists need to be aware of the reasons that drive their practice. It is only reasonable to be influenced by financial and political drivers when the resultant change in practice yields

true benefits for clients. Unsworth (2000) notes: 'current pressures to document outcomes and demonstrate the efficacy of occupational therapy intervention arise from fiscal restraints as much as from the humanitarian desire to provide the best quality health care to consumers. However, measuring outcomes is important in facilitating mutual goal setting, increasing the focus of therapy on the client, monitoring client progress, as well as demonstrating that therapy is valuable' (p. 147).

THE DEMAND FOR EVIDENCE-BASED PRACTICE

The World Confederation of Physical Therapy (WCPT), which was founded in 1951 to represent physical therapists internationally, 'champions the principle that every individual is entitled to the highest possible standard of culturally-appropriate health care provided in an atmosphere of trust and respect for human dignity and underpinned by sound clinical reasoning and scientific evidence' (World Confederation for Physical Therapy, 2006a). In its description of physical therapy the WCPT lists 'principles' supporting the description of physical therapy, and these include emphasising 'the need for practice to be evidence based whenever possible' (http://www.fisionline.org/WCPT.html#Iniziale2, accessed 27.10.05). The CSP, in the effective practice section of its website, begins by telling therapists that 'whatever your occupational role – clinical physiotherapist, assistant, manager, researcher, educator or student – you need to use the best available evidence to inform your practice' (http://www.csp.org.uk/director/effectivepractice.cfm, accessed 27.11.05). While the COT states that 'occupational therapists should be delivering effective practice that is evidence-based where possible' (College of Occupational Therapists, 2005c, p. 1).

SO WHAT IS EVIDENCE-BASED MEDICINE?

Therapists should explicitly be working towards achieving EBP in all areas of their practice. EBP has developed from work on evidence-based medicine (EBM), and expands the concept of EBM to apply across all health care professionals. *EBM* has been defined as:

> the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. (Sackett *et al*., 1996, p. 71)

Sackett and his colleagues further describe individual clinical expertise as the 'proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice' (p. 71). They state that a clinician's increasing expertise can be demonstrated in a number of ways 'especially in more effective and efficient diagnosis and in the more thoughtful identification and compassionate use of individual patients' predicaments, rights, and preferences in making clinical decisions about their care' (p. 71). Belsey and Snell (2003) have written a useful fact sheet, *What is evidence-based medicine?*, which can be downloaded as a free pdf file from the EBM website at: www.evidence-based-medicine.co.uk/ebmfiles/whatisebm.pdf (accessed, 15.12.05). Belsey and Snell describe EBM as a 'multifaceted process of assuring clinical effectiveness' (p. 1) and describe four main elements:

- 'Production of evidence through research and scientific review.
- Production and dissemination of evidence-based clinical guidelines.
- Implementation of evidence-based, cost-effective practice through education and management of change.
- Evaluation of compliance with agreed practice guidance and patient outcomes – this process includes clinical audit.'

SO WHAT IS EVIDENCE-BASED PRACTICE?

The College of Occupational Therapists Research and Development Group has defined EBP as the explicit use of the best evidence of clinical and cost-effectiveness when working with a particular client. It combines clinical reasoning, existing research and client choice (Research and Development Group, 1997). 'Evidence-based practice encourages the integration of high quality quantitative and qualitative research, with the clinician's clinical expertise and the client's background, preferences and values. It involves the client in making informed decisions and should build on, not replace, clinical judgement and experience' (OTseeker, 2005).

To identify the best available external clinical evidence, clinicians need to seek clinically relevant research, and therapists should particularly seek client-centred clinical research into the accuracy and precision of standardised tests and the efficacy of therapeutic interventions. When new evidence is acknowledged, it sometimes can invalidate previously accepted tests and treatments, and therapists are beholden to replace old unsubstantiated practices with evidence-based practices that are more effective, more accurate, more efficacious and safer (Sackett *et al*., 1996).

The WCPT provides a two-page overview on EBP for physiotherapists (World Confederation for Physical Therapy, 2003). This document equally applies to occupational therapists and is a good starting point. Like EBM, EBP is achieved through the integration of three factors, which are:

- the best available research
- clinical experience
- client's beliefs and values.

This means that EBP 'requires a combination of art and science' (p. 2). The WCPT describes the rationale for EBP and asserts that undertaking EBP helps therapists to:

- 'improve the care of patients, carers and communities
- reduce variations in practice
- use evidence from high quality research to inform practice, balancing known benefits and risks
- challenge views based on beliefs rather than evidence
- make decision making more transparent
- integrate patient preferences into decision-making
- ensure that knowledge continues to inform practice through life-long learning' (World Confederation for Physical Therapy, 2003, p. 1).

IMPLEMENTATION OF EVIDENCE-BASED PRACTICE

In busy clinical settings, implementing EBP may be difficult. There are many potential barriers to the full implementation of EBP, including lack of time, lack of access to literature and lack of skills in finding and interpreting research. Some of the strategies that have been suggested (OTseeker, 2005) for supporting EBP in clinical environments include:

- fostering a supportive environment in the workplace for EBP
- providing continuing education to develop skills in literature searching, critical appraisal and research methods
- collaborating/participating in research evaluating therapy interventions
- participating in or establishing a journal club
- focusing on reading research articles that have a rigorous study design or reviews that have been critically appraised
- seeking out evidence-based clinical guidelines.

In order to use evidence, it is necessary to undertake a number of tasks.

- Search for and locate the evidence related to a specific clinical question.
- Appraise the evidence collected.
- Store and retrieve the evidence when required.
- Ensure the body of evidence used to inform clinical decisions is kept updated.
- Communicate the findings from the evidence and use these findings in clinical practice. (Belsey and Snell, 2003)

SO HOW DO YOU TRACK DOWN THE BEST EVIDENCE?

The COT has published a guide on finding and using evidence bases (Mountain and Lepley, 1998) that provides a useful starting point for therapists.

THE COCHRANE LIBRARY

In terms of databases, a good place to start is the Cochrane Library, which provides a collection of separate databases. Five of these provide coverage of EBM, and the other two provide information on research methodology. The databases are:

- the Cochrane Database of Systematic Reviews
- the Database of Abstracts of Reviews of Effectiveness (DARE)
- the Cochrane Controlled Trials Register
- the Cochrane Database of Methodology Reviews
- the Cochrane Methodology Register
- the Health Technology Assessment Database
- the NHS Economic Evaluation Database.

DARE includes structured abstracts of systematic reviews that have been critically appraised by reviewers at the NHS Centre for Reviews and Dissemination in York and by other people, for example from the American College of Physicians' Journal Club and the journal *Evidence-Based Medicine*.

THE SCOTTISH INTERCOLLEGIATE GUIDELINES NETWORK (SIGN)

The SIGN has published over 80 clinical guidelines, some of which are of relevance to occupational therapists and/or physiotherapists. These can be accessed at: http://www.sign.ac.uk/ (accessed 10.12.05). For example, the guideline for the prevention and management of hip fracture on older people, 'Section 9: rehabilitation and discharge' states:

> 9.1 Early assessment: Early assessment by medical and nursing staff, physiotherapist and occupational therapist to formulate appropriate preliminary rehabilitation plans has been shown to facilitate rehabilitation and discharge. *Evidence level 2+*. (http://www.sign.ac.uk/guidelines/fulltext/56/section9.html, accessed 10.12.05)

The role of the physiotherapist and occupational therapist is also indicated in Section 9.22: 'multidisciplinary rehabilitation', which states:

> Multidisciplinary team working is generally considered to be effective in the delivery of hip fracture rehabilitation. The professions, grades and interrelationships of members of the 'multidisciplinary team' vary between studies and, because these characteristics are rarely described in detail, the effectiveness of different approaches

> to team working is not yet well understood. Rehabilitation should be commenced early to promote independent mobility and function. The initial emphasis should be on walking and activities of daily living (ADL) e.g. transferring, washing, dressing, and toileting. Balance and gait are essential components of mobility and are useful predictors in the assessment of functional independence. *Evidence level 2++*. (http://www.sign.ac.uk/guidelines/fulltext/56/section9.html, accessed 10.12.05)

OCCUPATIONAL THERAPY SYSTEMATIC EVALUATION OF EVIDENCE (OTseeker)

OTseeker is a database that contains abstracts of systematic reviews and randomised controlled trials relevant to occupational therapy. It provides therapists with easy access to trials from a wide range of sources. The trials included have been critically appraised and rated to assist therapists to evaluate their validity and interpretability. These ratings will help therapists to judge the quality and usefulness of trials for informing their clinical interventions (http://www.otseeker.com/, accessed 26.10.05).

PHYSIOTHERAPY EVIDENCE DATABASE (PEDro)

PEDro is an initiative of the Centre for Evidence-Based Physiotherapy (CEBP). It has been developed to give rapid access to bibliographic details and abstracts of randomised controlled trials, systematic reviews and evidence-based clinical practice guidelines in physiotherapy. Most trials on the database have been rated for quality to help therapists quickly discriminate between trials that are likely to be valid and interpretable and those that are not. The PEDro site has been supported by a number of organisations, including the Australian Physiotherapy Association, the School of Physiotherapy at the University of Sydney, the Cochrane Collaboration and New South Wales' Department of Health. The site can be found at: http://www.pedro.fhs.usyd.edu.au/index.html (accessed 26.10.05). It also contains two useful tutorials:

- Part I: Are the findings of this trial likely to be valid?
- Part II: Is the therapy clinically useful?

Do not forget that a significant amount of therapy research still remains unpublished but may be accessible, for example the COT's library holds a significant number of occupational therapy PhD and Master's theses and offers a loan service. Carr (1999) examines this collection in her publication *Thesis Collection: The National Collection of Unpublished Occupational Therapy Research*.

LEVELS OF EVIDENCE AND GRADES OF RECOMMENDATIONS

When examining and reporting on evidence, researchers and clinicians apply a grading system, for example the system proposed by Muir Gray (2001):

- Level I: systematic review of multiple well-designed randomised controlled trials (RCTs); the term meta-analysis is used to describe quantitative approaches to synthesising evidence from multiple RCTs
- Level II: one properly designed RCT of appropriate size
- Level III: well-designed trials without randomisation single group pre- and post-cohort, time series or matched control studies
- Level IV: well-designed non-experimental studies from more than one centre or research group
- Level V: opinions of respected authorities, based on clinical evidence, descriptive studies or reports of expert committees

Muir Gray's system has been used in a number of therapy guidelines, such as those produced by the National Association of Rheumatology Occupational Therapists (NAROT; 2005).

The key to using the evidence is the ability to critically appraise the evidence and make decisions as to whether the evidence is robust and whether it applies to your clinical situation and should be used to influence your practice. Critical appraisal has been defined as 'a method of assessing and interpreting the evidence by systematically considering its validity, results and relevance to the area of work considered' (Belsey and Snell, 2003, p. 2). Criteria for examining the quality of research studies in order to assess the evidence are provided by the SIGN (www.sign.ac.uk, accessed 10.12.05) and are:

- clear aim stated
- appropriate sampling strategy applied
- valid and reliable measurement tools used
- adequate literature review provided
- all participants accounted for adequately
- statistical methods described fully and were appropriate
- statistical significance assessed
- outcomes clearly stated
- population similar to the clinical group of interest
- bias addressed.

Assessment is complex, and the therapist needs to take many inter-relating factors into consideration. Therefore, assessment requires careful planning and conscious decision-making in order to select the optimum assessment strategy for a particular client's needs. No one assessment strategy will be suitable for all people with a particular diagnosis; so the therapist needs to combine the best evidence with a client-centred approach. Now we have explored what EBP is, you can reflect upon your own assessment practice, or the assessment approaches you have observed while on clinical placement if you are a student. To assist you with reflecting on how much your practice is based on evidence, please turn to Worksheet 1: Evidence-based practice, which you will find towards the end of this book (page 396).

THE APPLICATION OF STANDARDISED ASSESSMENTS

Standardisation is defined by the American Occupational Therapy Association (AOTA) as:

> made standard or uniform; to be used without variation; suggests an invariable way in which a test is to be used, as well as denoting the extent to which the results of the test may be considered to be both valid and reliable. (Hopkins and Smith, 1993b, p. 914)

Standardised test/measure/assessment/instrument is defined as a:

> published measurement tool, designed for a specific purpose in a given population, with detailed instructions provided as to when and how it is to be administered and scored, interpretation of the scores, and results of investigations or reliability and validity. (Cole *et al*., 1995, p. 22)

A standardised assessment 'has a set, unchanging procedure' (College of Occupational Therapists, 2005c, p. 1) that the therapist must follow precisely when administering it, and standardised assessments also require 'a consistent system for scoring' (p. 1). The use of standardised assessments helps to 'ensure minimal variation in the way [tests are] carried out at different times and by different testers' (p. 1). Reducing the amount of variation in test administration helps to make a test more reliable when it is applied over time or used by different

therapists. Test scores need to be stable over time and across therapist testers if the results are to be used to measure clinical change in order to evaluate therapy outcomes. (For more details about standardisation see Chapter 5.)

The last decade has seen considerable changes in physiotherapy and occupational therapy assessment practice. For example, historically, therapists have favoured the use of non-standardised assessments, particularly informal interview and unstructured observation (for example of movements, posture and the performance of ADL). Therapists have adapted existing standardised tests to suit their clinical environment (for example see Shanahan, 1992). There has been a trend towards the development of assessments on an individual department or service basis. This has the advantage that the assessment process can be tailored to the particular client group and to the practice environment. However, a major limitation is that majority assessments 'home grown' in individual physiotherapy and occupational therapy departments are not rigorously standardised, nor are they backed by research that examines their reliability and validity.

In the current environment of EBP, therapists are being encouraged to utilise more standardised assessments in their practice in order to ensure that their assessments are as valid and reliable as possible and to enable the measurement of treatment outcomes. Previously, many of the standardised tests that therapists adopted were not developed by occupational therapists or physiotherapists and were borrowed from other fields, such as experimental and clinical psychology (for example see McFayden and Pratt, 1997). A disadvantage of this practice of borrowing tests from other disciplines was that the tests did not always fit well with therapists' philosophies and practices, and the use of standardised tests was often rejected because they lacked good clinical utility and face validity (see Chapter 6). As a result, there was a need for therapists to develop valid, reliable, sensitive and clinically useful assessments of people's functional performance (Fisher and Short-DeGraff, 1993). The last decade has seen developments in both physiotherapy and occupational therapy research that has led to an increase in the number of standardised assessments that have been developed by therapists. Clinicians now have a much wider choice of suitable standardised assessments from which to select appropriate measures for their client group.

In the past, therapists have tended to undertake a formal assessment on referral and then informally monitor the person's progress during treatment. With the emphasis on EBP, it is no longer sufficient for therapists to undertake one assessment to provide a baseline from which to plan treatment; ongoing evaluative assessment also is required to monitor the effectiveness of intervention in a reliable and sensitive manner.

THE USE OF STANDARDISED VERSUS NON-STANDARDISED ASSESSMENTS

In the past, each therapist or institution often took responsibility for developing their own assessment tasks and protocols. Assessment was subjective and decentralised and 'the norms against which the patient's performance was judged were based upon the therapist's testing and treatment experiences with previous patients' (Borg and Bruce, 1991, p. 541). As the therapy professions developed and strived to build a more scientific foundation for practice, there was an identified need for assessment processes to become standardised, evidence-based and more centralised. However, even today a significant proportion of therapists continue to adopt predominately non-standardised forms of assessment. Several authors (for example Eakin, 1989a; McAvoy, 1991) have discussed the trend for therapists to continually re-invent the wheel in terms of the assessment tools they use. This is exemplified by the numerous home-grown checklists that litter our practice and the tendency to 'adaptation syndrome', whereby the standardised assessments that are used are altered almost at whim. There are a number of reasons why therapists continue to use non-standardised assessments. For example, therapists have reported the following reasons (Chia, 1996; Laver, 1994):

- a lack of appropriate standardised assessments
- poor resources limit their ability to purchase standardised measures
- standardised assessments can be lengthy to administer and therapists report they do not have the time or that the length makes the test too tiring for clients
- non-standardised assessments are flexible in terms of procedures, settings and the manner in which the assessment is administered and are, therefore, perceived as being more client-centred
- non-standardised assessments are seen as useful for observing functional ability in the person's home environment, for addressing the qualitative aspects of performance and for exploring the dynamics between the client and carer.

Tallis (1998, cited in Stokes and O'Neill, 1999) discusses the reasons why measurement was not being undertaken by rehabilitation therapists; these included: 'misplaced confidence; misinterpretation of negative findings; the length of time taken to use the measurement; ideological hostility, i.e. the perceived disparity between measurement and assessment; the difficulty identifying true change (signal to noise ratio); and the pitfalls of communicating assessment findings' (Stokes and O'Neill, 1999, p. 560).

Neale (2004) writes about why she has difficulty with standardised assessments and outcome measures. First, she reports that, in her work setting comprising a rehabilitation ward and stroke unit, her team 'use the Barthel ADL Index . . . which is completed at the weekly multi-disciplinary meeting . . . but it is not sensitive to the changes we see in patients during rehabilitation . . . the person can have the same score but still be showing marked improvement. We bemoan the Barthel, but the same difficulty arises with the other ADL assessments' (Neale, 2004, pp. 25–26). Second, she comments on the issue of time: 'using a test takes up at least one treatment session to administer and more time to evaluate' (p. 25).

However, she also provides an example of how the use of a standardised assessment helped to identify a previously undiagnosed deficit.

> I have acquired various standardised assessments for the department over the years. I do not use any with every patient. I learnt early that this may mean I miss things – when I first had the Balloons Test [Edgeworth, Robertson and McMillan, 1998], I practised on one 'well recovering' stroke patient. Neither she nor I had noticed any indication of inattention in hospital. The test showed she missed the bottom left quadrant – and she subsequently reported the effects when serving food/covering a pie when at home. (Neale, 2004, p. 25)

Standardised tests can help to confirm hypotheses or suspicions about underlying deficits indicated by the person's performance on unstandardised tasks: 'We have the Rivermead Perceptual Assessment Battery [Whiting *et al*., 1985] and I tend to use a shortened form [Lincoln and Edmans, 1989]. This is usually to confirm a suspicion I have formed during a functional activity, as it feels useful to have these suspicions confirmed' (Neale, 2004, p. 25).

Another common practice is to take different parts of standardised tests or individual test items and integrate these into a therapist-constructed, tailored assessment battery for a specific client group or service (Chia, 1996). However, once the standard procedure for test administration and scoring has been changed, even in a small way, the reliability and validity of that part of the test or test item can no longer be guaranteed. Therefore, although the test items might have been generated from a standardised test the ensuing therapist-made assessment cannot be viewed as being standardised. A further limitation of this practice, of using test items/parts drawn from standardised tests, is that the original source of, or reference for, the test item is rarely recorded on the tailored assessment and forms. This means that, once the therapists involved in developing the tailored assessment leave the service, the therapists

who replace them are unaware of the original sources and the rationale for the development of the tailored therapist-constructed assessment battery. Consequently, therapists using inherited therapist-constructed assessments can find it difficult to justify the reasons for carrying out these non-standardised assessments (Chia, 1996).

If therapists are to use non-standardised assessments, it is critical that they are fully aware of their limitations. The findings from a non-standardised assessment are open to interpretation and are, therefore, much more subjective than the findings gained from a standardised measure. Furthermore, because detailed procedures for administering and scoring the test are rarely available for non-standardised assessments, it is not possible for the therapist to reliably repeat the assessment with the client in order to evaluate the effects of treatment. It is even more unreliable if another therapist tries to repeat the assessment with the same client at a later date.

Therapists should not underestimate the consequences of continuing to use non-standardised assessments where standardised measures of the same construct or area of function exist. This has been demonstrated in a study by Stewart (1999). Stewart compared the results of a non-standardised assessment with a standardised measure of severity of disability in a group of elderly people. The purpose of her study was to examine if there were differences in outcomes and explore the consequences for service entitlement. The results of the study indicated that the non-standardised measure had 'restricted ability to identify and measure accurately the degree of disability of older people' and 'that because of the limited psychometric rigour of the [non-standardised measure] one consequence for service provision may be that a vulnerable group, elderly frail people, are denied services unnecessarily' (p. 422). Stewart concludes that 'when clinical judgement is based on objective assessment arising from the use of standardised instruments rather than intuitive guesswork, occupational therapists' decision making can be seen to be more rational and consequently defensible' (p. 422).

BENEFITS OF APPLYING STANDARDISED MEASURES

The use of improved, appropriate, sensitive and standardised measures within occupational therapy and physiotherapy research and clinical practice would aid these professions at several different levels (Stokes and O'Neill, 1999).

- Health care policy level: in a wide sense, the principles of current health care (clinical governance, EBP, demonstrable effectiveness) demand accountability and quality of service; funding for services is becoming increasingly linked to evidence of effectiveness and efficiency.
- Perception of the professions of occupational therapy and physiotherapy: it is essential that therapists present their assessment data, interventions and outcome data in a format that educates other professionals, clients and lay persons about the unique roles that occupational therapists and physiotherapists have in the interdisciplinary team.
- Research/theory–practice gap within the professions: both physiotherapy and occupational therapy continue to experience a gap between theory and related research and what is actually occurring in clinical practice.
- Standardised assessments and outcome measures: these are used in research and results are disseminated in professional literature; however, the findings of these studies may be incorporated into clinical practice more easily if similar scales are already in use in practice and therapists are comfortable with implementing different standardised tools.
- Clinical research endeavours: a vast majority of therapy research involves small sample sizes and research undertaken at a single site or in non-practice settings (for example simulated environments within university programmes); if outcomes measures were a routine aspect of therapy, then clinically based research and multicentre trials would be much easier to undertake.

- Therapist level: the use of standardised measures can improve communication among practitioners, foster consistency and reaffirm knowledge and skill (Lewis and Bottomley, 1994).
- Client level: the client receives an improved service in which assessment and outcome data are based on reliable, valid and sensitive measures.

In conclusion, many non-standardised, therapist-constructed assessments continue to be used in practice and have both strengths and limitations. Therapists should be clear as to the theoretical foundations of all their assessment procedures, including both standardised and non-standardised tests. Where components of standardised tests are used in a therapist-constructed assessment battery, therapists should be able to quote the original source and the rationale for the test item's use in the ensuing non-standardised assessment. In cases where non-standardised assessments are used without such theoretical underpinning or rationale, professional credibility and client welfare can be at risk. Inadequate, and even inaccurate, decisions may be made from non-standardised assessments that can have negative consequences for both individual client care and, where the effectiveness of physiotherapy and occupational therapy intervention cannot be reliably demonstrated, for the service provision as a whole.

THE REQUIREMENT TO DEMONSTRATE EFFECTIVENESS

SO WHAT DO WE MEAN BY THE TERM *EFFECTIVENESS*?

An effect is the power to produce an outcome or achieve a result. Effectiveness, in a clinical setting, relates to whether or not the anticipated therapeutic outcome is achieved during the therapeutic process. So the effect of therapy is the identifiable outcome that can be recorded at an agreed point (often the end) of the therapeutic process. Clinical effectiveness (also referred to as effective practice) 'is achieved when an action, intervention or system does what it is intended to do' (College of Occupational Therapists, 2005d, p. 1).

Two related, but significantly different, terms are *efficacy* and *efficiency*. These are also important for therapists to consider and are defined briefly, along with some other terms related to effectiveness and outcome measurement, in Table 1.1 (below).

WHY DO WE NEED TO DEMONSTRATE EFFECTIVENESS?

'All professions that hope to advance their practices must take three giant leaps forward to achieve their goals. They must first document the status and process of practice, then develop valid standards of practice and always they must test the outcome of their actions on behalf of their clients' (Cole *et al*., 1995, p. 2). As Cole *et al*. also point out, 'not everything we do in the name of therapy is successful or the final word' (p. 5). We may use practices that have been handed down from generation to generation of therapists because they appear beneficial and we feel they make a difference, but nowadays 'clients should be ensured some appropriate level of outcome measurement' (p. 4) and 'individual therapists must determine what procedures are truly beneficial and directly related to outcomes' (p. 5).

SO HOW DO WE DEMONSTRATE EFFECTIVENESS?

Standardised outcome measures are used to demonstrate whether or not your interventions are effective. Outcome data collected routinely will allow you to form a clearer idea over time about what aspects of your practice are effective and what aspects need to be changed so you can base future treatment on the results of your findings with similar clients. Outcome measurement is undertaken by administering an outcome measure on at least two occasions. This is done to document change over time in the agreed focus of therapy in order to establish whether it has been influenced by the intervention to the anticipated degree and has achieved the desired outcome.

Table 1.1 Definition of terms related to effectiveness and outcome measurement

Term	Definition
Effectiveness	Whether treatments do more good than harm in those to whom they are offered under the usual conditions of care, which may differ from those in the experimental situation. Effectiveness is the measure of the ability of a programme, project or work task to produce a specific desired effect or result that can be measured. Relates to outcomes, not the efficiency of performance (Centre for Advanced Palliative Care, 2005).
Clinical effectiveness	'The degree to which a therapeutic outcome is achieved in real-world patient populations under actual or average condition of treatment provision' (Maniadakis and Gray, 2004, p. 27).
Cost-effectiveness analysis	Is an analysis that 'compares the costs and health effects of an intervention to assess whether it is worth doing from the economic perspective' (Phillips and Thompson, 2003, p. 1). Costs are categorised as: *direct costs* for the service and patient, *service costs*: staff time, equipment, drugs, *patient costs*: transport, out-of-pocket expenses, *indirect costs*: production losses, other uses of time, *intangibles*: e.g. pain, suffering, adverse effects (p. 2).
Efficiency	Measure of production or productivity relative to input resources. Efficiency refers to operating a programme or project, or performing work tasks economically. Relates to resources expended or saved, not the effectiveness of performance.
Efficacy	This involves assessing whether a treatment actually works for those who receive it under ideal conditions and is the province of research. It has been defined as 'the degree to which a therapeutic outcome is achieved in a patient population under rigorously controlled and monitored circumstances, such as controlled clinical trials' (Maniadakis and Gray, 2004, p. 27).
Outcome measure	A standardised instrument used by therapists to establish whether their desired therapeutic outcomes have been achieved.
Outcome measurement	Is the process undertaken to establish the effects of an intervention on an individual or the effectiveness of a service on a defined aspect of the health or well-being of a specified population.
Performance measure	Generic term used to describe a particular value or characteristic designated to measure input, output, outcome, efficiency or effectiveness. Performance measures are composed of a number and a unit of measure. The number provides the magnitude (how much) and the unit is what gives the number its meaning (what) (Centre for Advanced Palliative Care, 2005).
Performance measurement	A management tool for enhancing decision-making and accountability. Performance measurement as a strategic process is used to assess accomplishment of organisational strategic goals and objectives (Centre for Advanced Palliative Care, 2005).

Cole *et al*. (1995) identify three basic standards for users of outcome measures, these are:

- 'selecting the appropriate measure for a given population based on scientific evidence
- administering the measure according to the developer's procedure
- interpreting the results consistent with evidence of reliability and validity, and comparison to empirically derived norms of comparison group' (p. 171).

(For more information see Chapter 3 and Chapter 8 of this book.)

A FOCUS ON CLIENT-CENTRED PRACTICE

The World Health Organization (WHO; 2002) emphasises that all health professionals should pay attention to insider perspectives of people with disability. In recent years, policy in the UK has had a greater focus on the client being given adequate information to make an informed choice about his health and/or social care. Health and social care professionals are mandated to listen to the needs of the client and respond to these identified needs as an integral part of any care package or therapeutic process (Clouston, 2003). A series of National Service Frameworks (NSFs) have been drawn up by the Department of Health (DoH) that put an emphasis on placing the client and his family at the centre of the health care process, and not just as a service recipient.

The COT (College of Occupational Therapists, 2003a) describes the 'principles of client-centred practice' as including:

- 'respecting diversity
- recognising the client has rights
- clarifying role expectations within the therapeutic encounter
- building collaborative therapist–client relationships
- focusing on the client's needs, problems and priorities
- negotiating problems and goals with the client and/or carer
- incorporating the client's perspective at all stages of intervention
- sharing power and decision making with the client and/or carer
- promoting client autonomy and choice through providing information
- ensuring that interventions are congruent with the client's life world and context' (p. 30).

Applying these principles means that the therapeutic intervention, while it may be influenced by guidelines, protocols or standards, is not the same for each client with the same diagnosis. Therapists now have to consistently use self-report and proxy assessment methods to seek information about the wishes, needs, priorities, problems and goals of the client (and where appropriate the carer). Therapists have to analyse traditional observational assessment data in the light of self-report and proxy data and then negotiate the desired outcomes and therapeutic approach with the person. Therapists have needed to develop client-centred outcome measures to capture self-report data reliably and provide robust evaluative measures of the client's and carer's perceptions and experience of the therapeutic outcome. (For more information see Chapter 2.)

THE DEMAND FOR ROBUST CLINICAL GOVERNANCE

'Clinical governance is a system for improving the standard of clinical practice' (Starey, 2003, p. 1). *Clinical governance* was first described by the DoH in the White Paper *The New NHS: Modern, Dependable* (1998b) in which it was described as a system to ensure that clinical standards were met and that processes were in place to ensure continuous improvement in service delivery. The DoH has since defined clinical governance as a framework 'through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care, by creating an environment in which clinical excellence will flourish' (Department of Health, 2004, p. 29). Clinical governance emphasises the responsibility that health organisations and their staff have to monitor the quality of their services and to continually work towards modernisation and improvement. Similar responsibilities are held by social care organisations and their staff, as outlined in Department of Health (1998a); this document outlines three main priorities: promoting independence, improving protection and raising standards. An aspect of this is *best value*, which means that staff have to provide their services based on clear standards related to both the quality and the cost of the service and that services have to be delivered in the most effective, economic and efficient way.

The COT summarises the 'core elements' of clinical governance as including:

- continued professional development and professional performance management
- implementation and monitoring of national standards
- research and development
- evidence-based practice including clinical and cost-effectiveness
- clinical audit
- risk management including critical incident reporting and complaints procedures
- learning from experience
- clear lines of responsibility and accountability
- team working
- participation in national 'confidential inquiries'
- appropriate safeguards to govern access and storage of confidential service user information (College of Occupational Therapists, 2005e, pp. 1–2).

For more information see the DoH's website (http://www.dh.gov.uk), and also the Clinical Governance Assessment Toolkit (CGAT), which has been produced by the NHS Information Authority (2003). The Health and Social Care Information Centre is a special health authority that became a statutory body on 1 April 2005. The authority took on some of the information related to functions of the former NHS Information Authority and some statistics and information management functions of the DoH, including social care. Its website can be accessed at: http://www.icservices.nhs.uk/servicecat/services.asp. Within this website is a useful section on clinical governance information. This part of the website defines who is likely to ask health and social care organisations for clinical governance information and describes the reporting arrangements in place. Links to all relevant information are held in one place, making it easier for therapists and managers of therapy services to find out what is relevant to their organisation. This part of the website can be accessed at: http://www.icservices.nhs.uk/clinicalgovernance.

CLINICAL AUDIT

Clinical audit has been defined as:

> a quality improvement process that seeks to improve patient care and outcomes through a systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes, and outcomes of care are selected and systematically evaluated against specific criteria. Where indicated, changes are implemented at an individual, team, or service level and further monitoring is used to confirm improvement in healthcare delivery. (Department of Health, 2004, p. 29)

Audit is the 'systematic and critical analysis of the quality of clinical care including diagnostic and treatment procedures, associated use of resources, outcomes and quality of life for clients' (College of Occupational Therapists, 2003a, p. 50). Audit is a quality process that compares actual performance in a specific setting against agreed standards of practice (Research and Development Group, 1997). For more information, the COT publishes the useful *Clinical Audit Information Pack* (Sealey, 1998).

THE USE OF STANDARDS, PROTOCOLS, GUIDELINES AND CARE PATHWAYS

What is the difference between a standard, a guideline and a protocol? These three terms are defined briefly, along with some other relevant terms, in Table 1.2 (below).

Guidelines, protocols and standards all provide explicit statements of expected practice performance (Bury and Mead, 1998).

Table 1.2 Definitions related to standards, protocols and guidelines

Term	Definition
Care pathway	Is 'a pathway for a specific user group which determines locally agreed, multidisciplinary health practice and is based on the available guidelines and evidence' (Department of Health, 2004, p. 29).
Standards	Are a basis for measurement. They provide a definite level of excellence. The Centre for Advanced Palliative Care (2005) defines a standard as an established measurable condition or state used as a basis for comparison for quality and quantity.
Protocols	Are plans of care for clients presenting with similar conditions, diagnoses or problems. The DoH (2001a) defines a protocol as 'a plan detailing the steps that will be taken in the care or treatment of an individual' (p. 158).
Guidelines	*Clinical* guidelines are systematically developed statements that assist clinicians and clients in making decisions about appropriate treatments for specific conditions (NHS Executive, 1996). *Preferred practice* guidelines provide the recommended approach to guide the provision of care related to a particular issue. They must be flexible to take into account the exceptions/variations needed to meet the wide range of client/family expectations and needs. Guidelines may be consensus- or evidence-based. (Centre for Advanced Palliative Care, 2005).
Care management	The DoH (2001a) defines this as 'a process whereby an individual's needs are assessed and evaluated, eligibility for service is determined, care plans are drafted and implemented, and needs are monitored and reassessed' (p. 152).
Care planning	Is 'a process based on an assessment of an individual's assessed need that involves determining the level and type of support to meet those needs, and the objectives and potential outcomes that can be achieved' (Department of Health, 2001a, p. 152).
Care package	Comprises 'a combination of services designed to meet a person's assessed needs' (Department of Health, 2001a, p. 152).

The term *standard* refers to a high level of quality, skill, ability or achievement by which someone is judged. Sykes (1983) defines it as a 'weight or measure to which others conform or by which the accuracy or quality of others is judged'.

A *guideline* is a systematically developed statement to assist clients' and therapists' decisions about appropriate health care for specific circumstances (Field and Lohr, 1992). Clinical guidelines are based on the best available evidence and provide recommendations for practice about specific clinical interventions for specific client populations.

A *protocol* is a step-by-step outline for undertaking a specific task. They normally have to be followed exactly, whereas with a guideline the recommendations need to be considered in the light of the particular client and setting as well as the strength of the evidence base (http://www.csp.org.uk/director/effectivepractice/standards.cfm, accessed 27.11.05).

CLINICAL PRACTICE GUIDELINES

Clinical practice guidelines form part of the evidence base from which therapists should work. They are written on a clearly defined topic and require a systematic search in order to be based on the best available evidence. The development of clinical practice guidelines involves the collection and review of:

- scientific evidence (literature reviews, meta-analyses, literature synthesis)
- professional opinions (experts)
- practice experience
- cost concerns.

Once this information has been collected, draft guidelines are drawn up and a consensus and refining process is undertaken. This might involve:

- the input of experts
- consensus conferences (usually involving representatives of the full range of stakeholders)
- methods for obtaining official commitment and sign-up from stakeholder organisations to the proposed guidelines
- seeking any additional evidence and adding value judgements.

The output from this process usually would comprise:

- the clinical guidelines being formatted as a written document
- publication and distribution of the guideline to all relevant staff/organisations
- an implementation strategy to ensure that the guidelines lead to changes in practice where required.

CRITERIA FOR ACCEPTABLE GUIDELINES

Reinauer (1998) cites the work of Lohr (1997), who gives the following criteria for judging the quality of guidelines:

- reliability and reproducibility
- scientific validity
- clinical applicability
- clinical flexibility
- clarity
- multidisciplinary approach
- scheduled review
- documentation of procedures, evidence etc.

Many clinical guidelines and statements of good practice highlight the importance of assessment. For example, the *National Clinical Guidelines for Stroke*, which were developed by the Intercollegiate Working Party for Stroke (Royal College of Physicians, 2002, section 4.1) state that:

- clinicians should use assessments or measures appropriate to their needs (i.e. to help make a clinical decision)
- where possible and available, clinicians should use assessments or measures that have been studied in terms of validity (appropriateness for the purpose) and reliability (extent of variability)
- routine assessments should be minimised, and each considered critically
- patients should be reassessed at appropriate intervals.

The CSP refers its members to physiotherapy guidelines found on its website and to the National Institute for Clinical Excellence (NICE) and SIGN (http://www.csp.org.uk/director/effectivepractice.cfm, accessed 27.11.05). Two examples of physiotherapy guidelines are:

- evidence-based clinical guidelines for the diagnosis, assessment and physiotherapy management of shoulder impingement syndrome. These guidelines address the clinical question: 'What is best practice in the physiotherapy diagnosis, assessment and management of shoulder impingement syndrome?'
- clinical guidelines for the physiotherapy management of whiplash-associated disorder (WAD). These clinical guidelines demonstrate how physiotherapy can be effective in

the management of people with whiplash injuries and are a valuable resource for doctors, patients, managers and other professionals.

These guidelines can be accessed from the CSP website (http://www.csp.org.uk/director/effectivepractice/clinicalguidelines.cfm, accessed 1.12.05).

An example of guidelines for occupational therapy is 'Occupational therapy in the management of inflammatory rheumatic diseases' produced by NAROT and available free to British Association of Occupational Therapists/COT members on the COT website at: http://www.cot.co.uk/members/publications/guidelines/pdf/inflamatory1.pdf (accessed 10.12.05).

The COT (2000) has developed a document for therapists entitled *Producing Clinical Guidelines for Occupational Therapy Practice*. This provides a step-by-step outline description of how to produce, test and apply clinical guidelines to occupational therapy practice. SIGN has developed the 'Guideline developers' handbook', which was last updated in May 2004 and can be accessed online at: http://www.sign.ac.uk/guidelines/fulltext/50/index.html (accessed 1.01.06).

The CSP has published *Standards of Physiotherapy Practice* (SOPP; Chartered Society of Physiotherapy, 2005b). These reflect the achievable standards for the practice of physiotherapy. Thus the SOPP allow therapists to measure their practice and from the results make decisions about how best to improve their practice in their own particular area of work. These standards provide a collection of documents that describe the professional consensus on the practice of physiotherapy for members of the CSP working in any occupational setting. They reflect the collective judgement of the profession at a given point in time. As the practice of physiotherapy is constantly developing, the standards will, by definition, change over time to reflect these developments. The CSP states that SOPP:

- make an important contribution to the excellence and consistency in clinical practice through clinical governance
- reflect all practice areas, settings and specialities
- set the national standards against which individuals and services can compare their performance
- provide audit tools to enable a measurement of compliance with the standards.

The SOPP pack comprises:

- core standards – the responsibility of individual members
- service standards – the responsibility of organisations and practices
- audit tools – tools to measure the implementation of the core standards.

THE COMPLEXITY OF ASSESSMENT

Physiotherapy and occupational therapy assessment involve highly complex skills that combine knowledge, experience, creativity and original thought. From an outsider's viewpoint, physiotherapy and occupational therapy assessment might look easy: an observer may think that it does not require a person to hold a degree in order to watch someone get dressed and to say whether he can do it or not, or to watch someone walk across a room and say whether he has problems with balance. Creek (1996a) discusses the complexity of simple everyday activities, such as making a cup of tea, and explains how the therapeutic use of such activities requires training at degree level. Therapy assessment is actually very multifaceted and intricate. The therapist needs to observe *how* the person performs and specify *where* and *when* he struggles. The therapist then hypothesises the underlying causes for the problems observed and records *how* the person responds to different prompts and cues. It is not enough to know that a person cannot manage a task; the therapist must also understand *why* in order to plan the appropriate treatment. For example, treatment will be very different for a person following

a stroke who cannot dress owing to spasticity and reduced sensation in one arm compared to a person unable to dress because of unilateral spatial neglect and body-scheme deficits, although at first glance both the diagnosis and the functional problem may appear similar. The therapist has to use all of the available information and observations to estimate the person's underlying capacity; she then considers her observations and proxy report data about the person's current function and forms hypotheses for any discrepancy between likely capacity and actual functional performance. Then the therapist plans an intervention to support the person to maximise his capacity and reach his full potential. When developing an intervention, the therapist has to predict future outcomes and plan *how* and *when* these outcomes will be measured in order to evaluate the effectiveness of the intervention.

There are several key reasons why physiotherapy and occupational therapy assessment is complex and needs to be multifaceted. These relate to the:

- nature of therapeutic practice
- nature of human occupation and occupational performance
- complexity of measuring human function
- influence of the level of task demand
- impact of familiarity on performance
- influence of environment on performance
- constraints of the practice setting.

These issues will now be explored briefly.

THE NATURE OF THERAPEUTIC PRACTICE

> The evolution of medicine and rehabilitation has been a mixture of science, philosophy, sociology, and intuition. Some of the finest practitioners may be some of the worst scientists. However, they may have an extraordinary intuitive science. Because of this fine mixture, it is difficult to quantify assessments, treatments, and outcomes. Nevertheless, this needs to be done. (Lewis and Bottomley, 1994, p. 139)

Physiotherapists and occupational therapists are focused upon rehabilitation and remediation. The rehabilitation of individuals with disabilities and the remediation of their functional deficits are addressed through therapeutic interventions. Physiotherapy and occupational therapy practice comprise a combination of art and science. Therefore, therapists tend to use both quantitative and qualitative approaches to assessment. Consequently, some aspects of therapy assessment are standardised, specific and meticulous, while other aspects are intuitive, fluid and creative. Therapists have to balance, reconcile and incorporate information from both approaches into the overall assessment process and resulting documentation. The proportion of art and science varies from therapist to therapist and is influenced by the emphasis of their pre-registration education and training, the influence of supervisors, mentors and peers, the nature of their continuing professional development (CPD), the clinical setting in which they work and the type of client group they serve.

Both physiotherapy and occupational therapy are holistic therapies in which the therapist is trying to consider the whole person during the assessment process. Therefore, the domain of concern for a therapy assessment is very broad and covers different levels of function from pathophysiology to societal limitation (see Chapter 9). A therapist considers macro issues, such as the person's environment, family support, roles and values, in addition to undertaking micro-level assessment of very specific areas, such as range of motion and muscle tone.

The therapeutic process is client-centred. This means that each assessment should be individually tailored to the client and should lead to an individualised intervention

programme. More frequently, services are developing protocols for people with similar diagnoses or problems, and therapists will use such protocols to guide their choice of assessment tools and interventions for a client group. The therapist needs to gain a clear picture of the individual, which includes his past life, present situation and hopes for the future, and his roles, motivation, locus of control, attitudes towards his condition and towards therapy. The therapist uses this information to understand how the medical diagnosis and prognosis may affect that person's quality of life. As the assessment progresses, and the unique aspects of the person's presentation emerge, the therapist refines the assessment in order to target the specific therapeutic needs and goals of the person.

Therapists work in a wide variety of practice settings; so they need to be able to conduct assessments in a range of environments. This might involve undertaking an assessment in a person's home or workplace, a hospital ward or outpatient clinic, a therapy department, a GP's practice, a school classroom or a nursing home. Therapists do not always have easy access to all the environments of relevance to a client and will use simulated environments for assessment. The accuracy of the simulated environment will have a significant impact on the usefulness of the assessment scores for the prediction of the person's likely functioning in his natural environment (Austin and Clark, 1993). For example, a mobility assessment undertaken on an expanse of level lino flooring in a physiotherapy department may not produce a good predictor of the person's safety when moving on different types of flooring in the cluttered environment of his home.

Physiotherapy and occupational therapy are frequently provided within a multidisciplinary context. Therapists needs to liaise with other professionals and share the assessment process and results obtained for each client and for the client group as a whole. When working in a team, it is important not to have too much overlap, such that the person is asked the same questions by several members of the team; nor should there be any gaps in the assessment, where members of the team assume that another professional has assessed that area. This means that good communication and a clear understanding of the role of each member of the team is critical for an efficient, effective and thorough multidisciplinary assessment. Another factor that complicates assessment in a multidisciplinary setting is that of attempting to evaluate therapy outcomes. How can you be sure that your therapy intervention has led to the observed changes in function, rather than the intervention performed by another team member or combination of interventions working in conjunction? This causes a real problem for therapists: on the one hand we are being encouraged to measure outcomes and demonstrate the effectiveness of our physiotherapy or occupational therapy intervention, but on the other hand, in many instances, we believe that our clients benefit from a multidisciplinary approach and that it would be unethical to withhold another intervention in order to limit potential confounding variables when measuring outcomes. The client's perspective in this has been well described by Sherr Klein (1997) in her book *Slow Dance*, in which she describes her experience after having suffered a stroke:

> After my exalted [physiotherapist] told me I should stop my acupuncture sessions with Bernard, I didn't have much faith in him either. 'If you do so many therapies at once, how can we tell which one is working?' he asked. 'I don't give a damn which one works,' I muttered to myself. 'I just want to get better.' It seemed like typical professional chauvinism. Bernard said no one thing was responsible for my progress; we were a team, all of us, including me. (Sherr Klein, 1997, p. 220)

THE NATURE OF HUMAN OCCUPATION AND OCCUPATIONAL PERFORMANCE

Human behaviour is organised by roles. A *role* is 'a part played or a position held in a social context that fulfils an expected and/or chosen function' (College of Occupational Therapists, 2005a, p. 2), and these roles are fulfilled through the performance of tasks, activities and occupations.

For therapists, *human occupation* means much more than the commonplace understanding of occupation meaning work or productivity (Watson and Fourie, 2004); therapists define occupation more broadly to include 'an activity or group of activities that engages a person in everyday life, has personal meaning and provides structure to time. Occupations are seen by the individual as part of her/his identity, and they can be categorised in terms of self-care, productivity and/or leisure occupations' (College of Occupational Therapists, 2005a, p. 9). An *activity* is 'a task or sequence of tasks performed by an individual or a group that may contribute to an occupation or occupations' (p. 2). While a *task* is defined as 'a self-contained stage in an activity; a definable piece of performance with a completed purpose or product; a constituent part of an activity' (College of Occupational Therapists, 2003a, p. 60).

Box 1.1 Relationship between occupation, activity and task

As an example, a person may have the *occupation* of providing meals for the family.

This occupation will be formed by a number of *activities*, such as planning meals for the week, shopping for ingredients, preparing and cooking meals and packing lunchboxes.

These activities will be formed by a number of *tasks*, such as peeling the vegetables, boiling the vegetables, making gravy, preparing the meat, roasting the meat, dishing up the meal onto plates and laying the table.

Occupational performance occurs during the interaction of the individual with the environment through the selection, planning and carrying out of activities that form occupations and contribute to roles (College of Occupational Therapists, 2005a). Like occupation, for therapists *environment* means much more than the commonplace understanding of environment as our physical surroundings; rather environment is defined as 'the set of circumstances and conditions (e.g. physical, social, cultural) in which a person lives, works and develops, that can shape and be shaped by occupational performance' (College of Occupational Therapists, 2005a, p. 2).

The performance of tasks, activities and occupations can form everyday routines, which are habitual chains of behaviour with a fixed sequence, such as getting up, washed, dressed and eating breakfast. Tasks, activities and occupations also contribute to less frequent life events, such as giving birth to a child, planning a marriage ceremony or achieving a qualification. Human behaviour is also organised in this way to enable some people to achieve exceptional things, such as a mountaineer climbing Everest, an athlete winning a race and becoming an Olympic medallist or a person fighting for their life in a war zone. The ordinary or extraordinary things that people engage in each day are central to the manner in which each person lives their life. There are many factors that influence the occupations, activities and tasks that people choose or feel compelled to do and which support or restrict their occupational performance. These factors include wider environmental factors, such as culture, norms and values and the person's social and physical environment, and personal factors, such as age, gender, personal capacity and the impact of illness and adversity (Watson, 2004). So not only must the therapist decide whether she will assess the person's ability through consideration of occupations and/or activities and/or tasks but also she has to assess the person's environment and evaluate the impact (whether supporting or limiting) of that environment on the person's ability to perform desired and necessary tasks, activities and occupations.

The tasks, activities and occupations we perform shape who we are, what we are, who we become and how we achieve our dreams and aspirations. However, the tasks, activities and occupations we end up doing can also limit our potential and prevent us from achieving our goals and fulfilling our potential. Sometimes this is our choice, but for many people this results from a lack of opportunity. The constraints of their physical and sociocultural environment limit the variety and choice of their occupations (Watson, 2004). As therapists, we obviously

need to consider how this affects our clients, but we should also consider how this influences the way in which we achieve our roles as therapists. For example, are we doing tasks and activities that could be delegated to a technician or support worker? Is there an expectation to discharge patients in a set time frame that limits a full and personalised assessment process for each client? Are the financial constraints of our organisation preventing us from purchasing a well-evidenced standardised assessment that we have identified as a valid and reliable outcome measure?

Each person enters therapy with a unique set of past experiences, values, norms and expectations, and these factors contribute to the nature of the therapeutic relationship formed between the client and therapist (Austin and Clark, 1993, p. 22). People come to therapy with a unique set of roles, occupations, activities and tasks. Although there are activities that everyone needs to do in some form or another, such as eating, sleeping, washing, toileting and finding a way to move around (see Maslow, 1943; for use of Maslow's hierarchy by therapists see Lewis and Bottomley, 1994, pp. 70–71), a large percentage of our activities are culturally and personally determined. This means that therapists need to tailor their assessments to individual clients' needs and cannot develop a standard process for assessment that can be applied in its entirety to every single client.

THE COMPLEXITY OF MEASURING HUMAN FUNCTION

For therapists, *function* is defined as the ability to perform tasks, activities and/or occupations to expected levels of competency. *Dysfunction* occurs when a person cannot perform tasks, activities and/or occupations to these normal standards of proficiency. Function is achieved through the interaction of performance components. These are subsystems within the individual, such as the motor system, the sensory system or the cognitive and perceptual systems. As the interaction between the motor, sensory, perceptual and cognitive systems is complex, the definition of each system implicitly refers to the functioning of other systems. For example, Allport (1955) defines *perception* as relating to our awareness of the objects or conditions about us and the impression objects make upon our senses. Perception relates to the way things look or the way they sound, feel, taste or smell. Perception involves, to some degree, an understanding awareness, a *meaning* or a *recognition* of objects and the awareness of complex environmental situations as well as single objects. This definition implicitly refers to both the sensory and cognitive systems, that is before an awareness of objects and conditions is registered sensory stimuli have been received from the environment and transmitted by the visual, auditory, gustatory, olfactory and/or somatic sensory systems to the brain, and the cognitive system is involved with accessing information, stored in the memory, required to recognise stimuli in the context of past experience. It appears that tightly defined experimental conditions are required in order to attempt to evaluate the discrete functioning of any one system. In clinical settings, where the aim is to assess the individual in their everyday context, the imposition of such experimental conditions impinges on the ecological validity of assessment. Therefore, during clinical evaluation, it is preferable to evaluate the motor, sensory, perceptual and cognitive systems together.

Function is dynamic, not static, and this can make it challenging to obtain a 'true' baseline of function at the start of the therapy process. Health professionals are being encouraged to embrace EBP. This means that therapists need to evaluate the effects of their intervention using outcome measures. When undertaking assessment to evaluate the effects of an intervention, the therapist needs to be aware that the person's scores on an outcome measure are open to a degree of error, and she will need to take any confounding variables into consideration when interpreting the person's performance on the outcome measure. A person's functioning can be influenced by several factors, for example:

- changing levels of pain
- concentration

- anxiety
- fatigue
- response to a drug regimen
- level of stiffness.

Therefore, a single assessment might not present a true and complete picture of the person's ability. Variability in a person's function can be more extreme for certain diagnoses. People with Parkinson's disease, for example, may have very different levels of functional independence depending on the timing and effects of their medication. A therapist should try to undertake different parts of the assessment on different occasions, varying the time of day and the assessment environment. Test anxiety can affect performance, and a client's performance often improves as their therapist becomes familiar and good rapport is established.

When evaluating the outcome of intervention, the therapist must be aware that a person's function may change for many reasons. For example, improvements may be observed as a result of a specific intervention or the success of a combination of interventions. This is important because physiotherapy, or occupational therapy, is rarely the sole intervention and often is provided in a multidisciplinary context. Other factors that might result in observed improvements in function include:

- belief/hope that change in function is possible
- placebo effect
- strong sense of locus of control
- good copying strategies
- high motivation
- good rapport with the therapist
- feelings of acceptance and support.

When undertaking assessment to provide an accurate baseline and/or evaluate the effects of an intervention, the therapist needs to define the specific area to be measured and will need to take any confounding variables into consideration when interpreting the person's performance on the outcome measure.

Another factor that can complicate the measurement of outcomes is the person's level of insight. The therapist needs to assess whether the person has insight into the nature and severity of his condition, because the need for insight is fundamental to the success of the therapeutic process. A lack of insight can affect the accuracy of any self-report data collected from the client and can hinder the negotiation of treatment goals and the formulation of an agreed plan for intervention. Insight may improve during the intervention, and this can enable a more realistic treatment plan to be renegotiated. However, when therapy goals are renegotiated mid-intervention, the baseline assessment, which founded the original treatment goals, may no longer be accurate or appropriate to the renegotiated treatment goals, and this can lead to serious complications in the interpretation of any measures of outcome (Austin and Clark, 1993).

Therapy sometimes spans several weeks, months or even years. Therapists should, therefore, be aware that habituation effects may affect self-report and proxy data when measuring outcomes over a long period. Some people progress through the intervention period constantly adapting to the changes in their ability or symptoms; because of these adaptations in response to treatment, the client and carer may lose sight of the client's original level of function and not notice the degree of change that has occurred since the baseline assessment (Austin and Clark, 1993).

Timing the evaluation is an important consideration. For example, if therapists are concerned with the long-term benefits of intervention for their clients, then a final assessment at discharge does not provide the whole picture when measuring outcomes. One must not assume that function will always plateau post discharge. Sometimes some of the progress achieved

during treatment can be lost post discharge when the client no longer has the therapist for support and encouragement or fails to keep up with an exercise programme once therapy is terminated. For other people, the skills, abilities and attitudes they acquired during the intervention period can inspire progress, and function continues to improve over time (Austin and Clark, 1993). When measuring outcomes, it is important to consider the intervention period or number of therapy sessions that are anticipated in order to obtain the desired change. The timings of measurements are critical, and the therapist needs to judge the spacing of measurement and not undertake the final measurement too early before the client has had the opportunity to gain the maximum change possible.

THE INFLUENCE OF THE LEVEL OF TASK DEMAND

Performance is affected by how demanding or difficult a task is and by the person's capacity, motivation, experience and knowledge. Therapists need to take these factors into account during assessment. Experience, knowledge and capacity are inter-related. This relationship is complex and subject to individual variation; so these factors are difficult to separate and assess in isolation. How the therapist structures the assessment and her reasoning behind her interpretation of assessment data is critical to her ability to untangle these complex influences upon performance. *Task demand* is defined as 'the amount of cognitive and physical skill required to perform the task' (Hilko Culler, 1993, p. 218). When a person goes to perform a task, he first obtains factual information about the demands of that task. From this information, he develops ideas, insights and beliefs related to the task, and he then creates strategies to complete the task more efficiently.

A person's capacity, defined in terms of the amount of information that the central nervous system can handle and process, is limited. The brain has limits for the quantity of sensory information (experienced through the visual, tactile, auditory, olfactory, gustatory and somatic sensory systems) that it can process at a time. For example, the auditory system can only process a certain amount of auditory stimulation at a time, which is why it is hard to concentrate on two people speaking simultaneously. All tasks place demands on the capacity of at least some of the body's sensory systems and, consequently, on the brain's ability to process sensory stimulation. The level and quality of a person's performance will be determined by the demands of a task if the demands of that task are within a person's capacity. For example, a person may have the capacity to perform two different tasks, such as eating cereal from a bowl with a spoon and eating a meal using a knife and fork. Although the person can do both tasks, he will eat his cereal with greater ease because it is a less demanding, easier, task. If the person reaches the maximum level of his capacity, then performance will be limited by his capacity, not by the task demands.

Capacity alters in relation to both the normal developmental processes and to pathology. In terms of normal development, infants learn to use spoons before they learn to use knives and forks. Although organically based capacities decrease with age, many everyday tasks are considered to make relatively few demands, and on these tasks it is expected that performance will not vary with age (Welford, 1993). However, some more complex tasks may demand more than the person's capacity allows, and then performance can be a function of age. The onset of any limitation depends on the nature of the task demands, the individual's capacity and the rate at which capacities decline; that is the greater the capacity and the slower the rate of decline, the later will performance begin to decrease as a function of age (Welford, 1993; Craik, 1977). Capacity can be reduced as the result of an injury or illness. For example, a person who has experienced a stroke and who has associated motor and sensory deficits and a resultant limited capacity in the motor and sensory systems may be unable to either eat using a spoon or a knife and fork. The difference in task demand is not the issue, in this example, because the problems in task performance are related to the person's reduced motor and sensory capacity.

Performance at all ages is affected by the task demand and the individual's capacity, experience and knowledge. In addition, factors related to volition and societal expectations will also

have an impact. Although all these factors (task demand, capacity, experience, knowledge, volition and societal expectations) are acknowledged as important, it can be very difficult to distinguish between them and to identify the point at which a change in performance is related to pathology. This is why normative data provided in standardised normative assessments (see Chapter 5) are useful when a therapist needs to conduct a discriminative assessment (see Chapter 3).

Hilko Culler (1993) cites the work of Chapparo (1979) describing how therapists, when undertaking initial assessments with people with neurological conditions, should select tasks with inverse cognitive and physical demands (that is a task with a high motor demand should have a low cognitive demand or vice versa) and explains how therapists should progress slowly to tasks with increasing levels of both motor and cognitive demands.

Some criterion-referenced assessments (see Chapter 5) take task demand into account and may present assessment items as a hierarchy from the simplest to the most complex task. For example, the Assessment of Motor Process Skills (AMPS; Fisher, 2003a) provides descriptions for a choice of instrumental activities of daily living (IADL) that have been calibrated through research to create a hierarchy from easiest to hardest task. Using hierarchies of task demand can save unnecessary testing time for both the therapist and client. For example, the Rivermead ADL Assessment (Whiting and Lincoln, 1980) is structured in terms of a hierarchy of items comprising increasingly demanding personal and household tasks. The therapist decides where on the hierarchy to begin testing, based on her hypothesis about which tasks the person may not be able to manage. If the person can perform the selected task, then the therapist ensures he can perform the three proceeding tasks and then progresses testing up the hierarchy until he fails to perform three consecutive tasks. Other assessments may be graded so that the person can be presented with progressively more demanding tasks as his ability increases, for example an assessment of meal preparation could be graded from using a pre-packaged cold meal to preparing a hot, three-course meal using raw ingredients (Hilko Culler, 1993).

THE IMPACT OF FAMILIARITY ON PERFORMANCE

Familiarity and practice influence performance. When a person practises a task over time, the demands of the task are learned and the person becomes more efficient in the use of his capabilities related to performing that task; the task becomes perceived as being easier. A good example is learning to drive a car. Two adults might have the same capacities, but the person who is familiar with driving a car will be better at driving than the person with no driving experience. Another example is that of cooking: 'it is less demanding for a person to cook a familiar recipe from memory than to follow a new recipe from a cookbook' (Hilko Culler, 1993, p. 218). Therefore, therapists need to be aware of how familiar or unfamiliar assessment tasks are to their clients. In addition, following a reduction in capacity, therapists can use practice and repetition to increase a person's task performance and use an ongoing reassessment of the task to monitor progress. When repeating an assessment in this way, the therapist must be able to differentiate between changes that result because the assessment is now familiar and changes that have resulted because of the person's capacity. Improvements in motor function are an example of this. Therefore, parallel forms of an assessment (see section on equivalent/parallel form reliability in Chapter 7, p. 199) might be used, where an unfamiliar task of the same demand and assessing the same capacity is given in place of the familiar assessment task.

THE INFLUENCE OF ENVIRONMENT ON PERFORMANCE

The environment in which an assessment is undertaken may also influence performance and can have an enabling or constraining effect on a person's function (Law *et al*., 1996). The term *environment* usually makes people think about the physical elements (including accessibility, architectural barriers and structural adaptations) of a person's setting. However, therapists need to

think about the environment in a broader context. The World Health Organization (WHO; 2002) states that 'disability and functioning are viewed as outcomes of interactions between health conditions (diseases, disorders and injuries) and contextual factors' (p. 10). Contextual factors include external environmental factors, which are defined as 'the physical, social and attitudinal environment in which people live and conduct their lives' (p. 10) and are subdivided into 'social attitudes, architectural characteristics, legal and social structures, as well as climate and terrain' (p. 10). The WHO definition of environment fits well with definitions from the therapy literature; for example, Cooper, Rigby and Letts (1995) state that environment is the 'physical, social, cultural, attitudinal, institutional, and organisational setting within which human function takes place' (p. 56) and several authors (for example Christiansen, 1991; Mosey, 1981) subdivide the environment into cultural, social and non-human/external/physical factors. The terms *external environment* and *non-human environment* have been used interchangeably in the therapy literature. Interacting with our environment facilitates the initial development, as well as maintenance of all, performance components (Mosey, 1981). Cultural and social factors need to be taken into account when selecting appropriate occupations for assessment and treatment. The non-human environment, in the form of setting and tools, needs to be carefully selected and structured during assessment in order to ensure meaning for the patient and fulfil the therapeutic purpose. An individual must interact with the non-human environment to engage in occupations. An activity (such as washing) occurs in a physical and social environment (washing may take place in a bathroom or by a river and the activity will be influenced by social and cultural norms). The performance of an activity may also involve the use of objects (washing may require the use of a washing bowl or basin, soap and towel). When a therapist uses the performance of ADLs as a method of assessment, she consciously structures an environment for this performance and selects specific tools for the client to interact with.

The Person-Environment-Occupation Model (Law *et al*., 1996) provides a useful theoretical framework for considering the impact of the environment during therapy assessment. A person, his environment and his occupation (including activities and tasks) interact continually across time and space. The greater the overlap, or fit, between the person, environment and occupation, the more optimal will be the person's function. An intervention that increases the enabling aspect of the environment for an individual and thereby creates a compatible person-environment-occupation fit will increase, or with a progressive condition perhaps maintain, function. Therapists are involved with assessing and where necessary adapting a person's environment or teaching the person compensatory techniques to help them to cope with the challenges placed by negotiating the environment with a particular impairment. For example, if a therapist modifies a kitchen to increase accessibility for a person in a wheelchair, then the fit between the person's capacity, the kitchen environment and the activities of meal preparation, washing up and laundry will improve, leading to increased independence.

Familiarity with an environment may influence assessment results; the impact of familiarity does not just apply to the activity or task to be assessed but also to the familiarity of the environment in which the assessment is to be undertaken. For example, 'a familiar environment (e.g. kitchen at home) is less demanding than a new environment (e.g. clinic kitchen)' (Hilko Culler, 1993, p. 219), and a therapist could expect a client to be more independent within his own kitchen than in unfamiliar therapy-department kitchen areas. Even if the familiarity of an environment does not affect the final outcome of an assessment, it may affect the speed at which the task is completed. It is quicker, as we know, to make a cup of tea in your own kitchen because you know where everything is kept. You will still be able to make a cup of tea in a friend's kitchen but probably it will take you more time because you will be searching in the unfamiliar environment for the items and ingredients you need. The home environment does not always facilitate function; for example, people may be able to move better on the hard, flat surface of a physiotherapy department or hospital ward than on the different surface textures (for example carpet, floorboards, rugs, lino, tiles) in their own homes.

The WHO (2002) recommends that 'to assess the full ability of the individual, one would need to have a "standardised environment" to neutralize the varying impact of different environments on the ability of the individual' (p. 11). The WHO suggests that there are a number of environments that can be used for this purpose, such as:

a. 'an actual environment commonly used for capacity assessment in test settings
b. an assumed environment thought to have a uniform impact
c. an environment with precisely defined parameters based on extensive scientific research' (p. 11).

Therapists are often involved in conducting assessments in people's own home and work environments, as they need to evaluate both environmental barriers and environmental supports to performance. Assessment at home is considered useful because people are more likely to behave and communicate in their normal way in familiar surroundings. The therapist can build a more accurate picture of the person's needs during a home assessment. A home assessment can also facilitate access to the views and the needs of any carer. The environment selected for assessment is especially important for people with certain conditions. For example, it is essential to assess the influence of context and environment on the function of a person with dementia (Tullis and Nicol, 1999).

Where safety is a concern, it is critical to assess the person in the environment where he will be functioning to examine the relationship between potential environmental hazards and the person's ability. Once potential hazards have been identified, changes to the

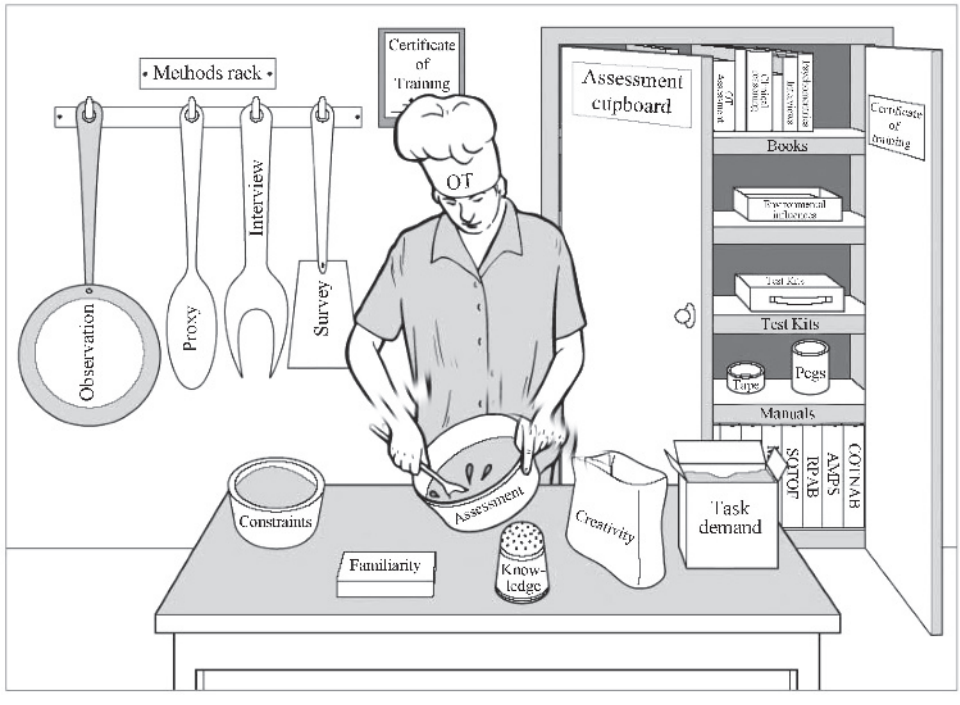


Figure 1.1 The therapist as a creative and expert chef. *Reprinted from Laver Fawcett AJ (2002) Assessment. In A Turner, M Foster and S Johnson (Eds) Occupational Therapy and Physical Dysfunction: Principles, Skills and Practice. London: Churchill Livingstone. Chapter 5, pp. 107–144. Copyright (2002), with permission from Elsevier.*

environment can be made to reduce the risks, for example a risk of falls. Some therapy assessments have been designed for use in the home environment. For example, the Safety Assessment of Function and the Environment for Rehabilitation (SAFER Tool; Letts *et al*., 1998) was developed to assess people's abilities to manage functional activities safely within their homes, and the Home Falls and Accidents Screening Tool (Home Fast; Mackenzie, Byles and Higginbotham, 2000) was developed to identify hazards associated with falls in the home.

THE CONSTRAINTS OF THE PRACTICE SETTING

The practice setting will influence the therapist's choice of assessment and may serve to enhance or constrain her assessment practice. For example, if a therapist moves to a service that encourages standardised assessment and has a range of published tests available, then her knowledge of different tests and skills in standardised assessment may increase. Conversely, a therapist may be experienced with a particular standardised test but find that it is not available in a new practice setting or that with the demand of her new caseload there is not enough time to administer the test in its entirety. It may not be possible in some settings to assess the client at several different times in varying test environments and cover all the areas of interest within the assessment. Therefore, the therapist needs to use her clinical judgement to select the most effective assessment strategy within the physical and political boundaries of the therapy environment. She may only be able to conduct a brief assessment and will need to make decisions about the person's overall ability and prognosis from limited data projections (see section on predictive validity in Chapter 6, pp. 178–80). This is where the quality of the therapist's clinical reasoning can be critical.

CONCLUSION

The therapist needs to be like an experienced chef (see Figure 1.1): not following rigidly a set recipe but combining knowledge of different techniques and knowing what ingredients and flavours can be combined in a creative way for each particular situation.

> Evidence based medicine is not 'cookbook' medicine. Because it requires a bottom up approach that integrates the best external evidence with individual clinical expertise and patients' choice, it cannot result in slavish, cookbook approaches to individual patient care. External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision. Similarly, any external guideline must be integrated with individual clinical expertise in deciding whether and how it matches the patient's clinical state, predicament, and preferences, and thus whether it should be applied. (Sackett *et al*., 1996, p. 71)

Therapists 'need to adopt outcome measures which will document the efficacy of their interventions, and guide clinical decisions and treatment planning. These measures need to be clinically appropriate, functionally relevant, valid, reliable and responsive to change. In addition, they need to be user friendly so as to minimise the burden to therapists and patients' (Wright, Cross and Lamb, 1998, p. 216). Not only should therapists critique and implement valid and reliable assessments in their practice, they should also be prepared to add to the growing body of research into therapy measures. This might be by collaborating with a test developer to add to data on inter-rater reliability or by contributing their views on studies of clinical utility and aspects of validity.

Richards (2002) challenges therapists to contribute to the national political agenda: 'it behoves . . . therapists to contribute expert assessments which stand up to scrutiny, form a sound

foundation for their intervention and link with valid outcome measures that clearly demonstrate the value of their contribution to efficient and effective service provision' (p. xviii).

We should not underestimate the responsibility we have to make sound judgements about our clients' abilities and dysfunction. The distance between theory and practice can sometimes feel like a wide chasm; we know that we should be using valid, reliable, standardised measures in our practice but the demands of the everyday practice settings in which therapists work (including limited time to review potential assessments and try them out and little money to purchase a new test even when there is strong evidence for its application) mean that sloppy – that is without a strong evidence or theoretical base – assessment processes are still occurring more often than we feel comfortable to admit. No matter how competent a therapist is at providing treatment, treatment will be useless if it is based on faulty evaluation and decision-making regarding the client's deficits and the resulting treatment plan. One of the best lessons I was taught as a basic grade occupational therapist was to take time out for continuing professional development (CPD). One time, I had agreed with my supervisor that I would allocate half a day that month to study the manual of a standardised test our department was considering using and would try out the test materials by role-playing the test administration with a colleague. Next supervision, I told her that I had booked my half-day CPD but had cancelled this time as I needed to do an urgent home visit assessment instead as the consultant was pushing to discharge a client. I was reprimanded, and she asked me to compare how many people had benefited from the home visit versus the number of potential people who would have benefited from a more accurate assessment. The next month, I did find time to review the test and found it to be relevant for our client group; within months all the therapists in the department were using this standardised assessment in their practice.

Therapists need to embrace evidence-based practice (EBP) as an opportunity rather than view it as a threat. It is about doing the very best we can for our clients. It also helps to further the development and standing of our professions, which will assist in ensuring ongoing and ideally increased funding for providing occupational therapy and physiotherapy to those people who would benefit from these services. Achieving EBP is a step-by-step process. This book aims to assist therapists to move towards a greater evidence base in their assessment and measurement practice. The first step is to raise a question or series of questions. Worksheets have been developed for each chapter to enable you to raise and answer questions related to different aspects of your assessment and measurement practice. Let us begin with a global question: 'How should I organise my assessment process in order to collect the right information, at the best time and in the most effective and efficient way to provide reliable, valid and responsive measurement in a manner that is acceptable to my clients?'

Once you have formulated a question as a focus for EBP, the second step is to search for evidence. Within the book, I have reviewed literature and research that will provide a sound knowledge base from which the student can start the journey of answering this question. As it is such a big question, it is helpful to break it down into a series of more specific questions. I have noted the main chapter or chapters that have been written to help you to answer each of these questions:

- *Who is the best source for this information?*
  - see Chapter 2
- *What is the best method for collecting this information?*
  - see Chapter 2
- *Why am I collecting assessment and measurement data?*
  - see Chapter 3
- *What level of measurement is required?*
  - see Chapter 4
- *How can I ensure my measurements are valid?*
  - see Chapter 6

- *How do I set about identifying appropriate standardised tests for my service?*
  - see Chapter 5 and Chapter 11
- *How do I evaluate whether my assessment process and the specific measures used are acceptable to my clients?*
  - see sections on face validity and clinical utility in Chapter 6 and the section on test critique in Chapter 11
- *How can I ensure my measurements are reliable?*
  - see Chapter 7 on reliability
- *How can I ensure my outcome measures are responsive to a clinically relevant degree of change?*
  - see Chapter 7 on reliability
- *How do I prepare for an efficient and effective test administration?*
  - see Chapter 8
- *How do I build rapport with my client?*
  - see Chapter 8
- *How do I ensure that my test administration remains standardised?*
  - see Chapter 8
- *How do I communicate the results of my assessment?*
  - see Chapter 8
- *What is the best way to collate and analyse the different types of data obtained through the assessment process to produce a coherent, meaningful picture of the person?*
  - see Chapter 9
- *How do I fit my assessment practice into the wider context of a multidisciplinary team and/or interagency approach?*
  - see Chapter 9
- *How do I combine the best available evidence, with my clinical experience and my knowledge of my client's preferences?*
  - see Chapter 10
- *How do I combine the best available evidence with my clinical experience and my knowledge of my client's preferences in order to implement the optimum assessment and measurement approach?*
  - see Chapter 11 and Chapter 12

I have included a number of worksheets in this book that can be used to focus your learning. If you are an undergraduate student, you might use the worksheets on clinical placement to explore the assessment processes being used by your supervisor and her colleagues. If you are a practising therapist, you could use the worksheet, alone or with colleagues, as a focus for your own CPD – remember to put a copy of any completed worksheet in your CPD portfolio as evidence of your work – or for your team's or department's service development activities.