

# CHAPTER 1 INTRODUCTION AND PROBLEM STATEMENT

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## 1.1 INTRODUCTION OF THE PROBLEM

Occupational therapists are facing many challenges when measuring outcomes after intervention. This chapter gives the reader an overview of the background and setting of the problem, and how this research has been planned to investigate the problem.

Occupational therapists in mental health care settings find it difficult to produce convincing evidence of their contribution to health care. What they do looks simple (Mattingly & Flemming 1994). Making cards with patients, facilitating groups, planning and preparing meals with patients, teaching stress management, playing volleyball etc. seem to be simple tasks or activities. What happens behind the scenes, such as applying theoretical frameworks and models to guide clinical reasoning and activity analysis, building the therapeutic relationship, and adapting activities and the environment before deciding on these "simple" activities, are not always evident to patients, care givers, multidisciplinary team members, management, or to employers.

Occupational therapists rely on theoretical frameworks to guide practice, and several theories and models are available (Law, Baum & Dunn 2001a). These theories and models provide assessment and intervention methods, techniques or principles, but should also assist in providing evidence of the service delivered. Consistent and routine measurement of outcomes of the service could provide the much needed evidence of the effect of the service (Baum & Christiansen 2005a; Bowman 2006; Lakeman 2004; Laver Fawcett 2007; Law, King & Russel 2001a; Unsworth 2000).

All measuring instruments, including outcome measures, should be supported by a theoretical framework or model of practice. When a specific theory is used in an outcome measure, it should support the clinician in the types of services that are delivered. For example if a clinician addresses balanced lifestyle and role performance in intervention, the guiding theory should include engagement and participation in occupation.

A theoretical framework that is often used by occupational therapists in South Africa, is Vona du Toit's Model of Creative Ability. This theory postulates that a person has varying levels of motivation

to engage in occupations or activities in everyday life. Motivation is a latent construct and cannot be observed as such but there is an action that represents the motivation. Du Toit (2004) described these actions that are observable in levels of motivation and action. The model organises a person's participation in daily life into consecutive levels of participation and in a developmental sequence. Each level has a description of the characteristics of that specific level in terms of ability to handle tools and materials, relating to people, handling situations, task concept, quality of task execution, supervision needed, norm awareness, anxiety control and exertion of effort. Du Toit (2004) believed that motivation governs action, and that by observing a person's engagement with tools, materials, people and situations, one could measure the amount of motivation. As a person progresses through the levels of motivation and action, the level of participation or functionality in that person increases. Clinicians have expressed the usefulness of the model in everyday practice because it guides them to facilitate engagement and participation in occupation (De Witt 2004; Du Toit 2004). The advantage of using a theory already applied in practice is that clinicians do not need retraining in their professional knowledge and skills as it is already embedded in their clinical reasoning.

## 1.2 BACKGROUND AND SETTING OF THE PROBLEM

Since Vona du Toit's Model of Creative Ability is widely used in South Africa and recently found its way to the United Kingdom and Japan, its applicability and validity has been questioned by different groups of people. Firstly, the South African occupational therapy community asked for evidence of this popular model to be used as an assessment and outcomes model (Casteleijn & De Vos 2007; Casteleijn & Smit 2002). It has also been questioned for its effect in intervention when compared to other models of treatment (Jansen & Casteleijn 2009). Secondly, groups of occupational therapists from abroad requested information regarding assessment procedures and available literature to apply this useful model in their settings. A serious lack of evidence currently exists and empirical investigation needs to be continued.

Occupational therapists currently have limited evidence of the therapeutic outcomes after patient rehabilitation. Some work has been done on outcomes for physical dysfunctions (Dittmar & Gresham 1997; Dobrzykowski 1998; Kilgore 1995) but hardly any on mental health outcomes in occupational therapy (James & Corr 2004; Unsworth 2000). There are numerous challenges for occupational therapists when coming up with evidence of the effect of their services and developing an outcome measure in a mental health care setting.

Firstly, the slow rate of change or improvement in patients' mental health problems, or no change during many months of rehabilitation, could easily be interpreted as delivering a poor service or that rehabilitation does not have an effect on the mental health of patients. This could be disheartening to clinicians, who might feel that measuring outcomes would be to no avail or might even show ineffectiveness. Scofield's (2006) opinion about measuring outcomes in mental health restated this challenge when she said that an effective outcome could be a sheer maintenance of skills or a slight improvement.

Secondly, occupational therapy, even after 90 years since its foundation, is not well known for its valuable contribution towards health care and specifically mental health care. Occupational therapists find it difficult to articulate their important contribution to consumers, employers and fellow professionals. The reasons for this vary. One of the reasons is that their role is not clearly defined. Contributions to improve health sometimes overlap with those of other professionals, especially when focusing on performance components or impairments. Occupational therapists often use different terminology to explain what they do. This is largely due to distinctive terminology used by the different training institutions as well as development in the profession where new terminology is introduced for better descriptions of the role of the occupational therapists in health care. Before occupational therapists decide on effective outcome measures, they have to agree on uniform terminology which should be well received and understood by consumers and fellow mental health care professionals.

Thirdly, the occupational therapy profession is prone to developing one measuring instrument after another without considering what instruments are currently available or what could be adapted successfully for a certain practice setting (Law & Baum 2001). These developments (and sometimes reinventions of the wheel) occupy their time and prevent progress in the process of investigating the soundness of the theoretical framework for the measuring instrument, examining its psychometric properties, as well as comprehensively marketing it for easy access to fellow rehabilitation professionals. In the end, the profession has an abundance of measuring tools for many different impairments, a few in occupational performance areas and some for the impact of the environment on the individual, but even fewer for measuring the outcomes of professional service delivery.

In the search for an outcome measure for mental health, no instrument could be found that measures therapeutic outcomes in occupational therapy services that are appropriate for the South African context. Factors to consider in the South African context are the type of settings where occupational therapists are practicing. The settings in government hospitals provide acute care (two to three weeks), subacute care (three weeks to three months), long-term care (more than three

months), forensic services and community services at Primary Health Care clinics. Private clinics usually provide acute care with a maximum stay of 21 days. There is a shortage of occupational therapists working in mental health care settings and consequently clinicians have high patient loads. The mental health care institutions offer care for all the diagnostic groups as described in the Diagnostic and Statistical Manual IV (Sadock & Sadock 2007). Clients are representative of all the cultural groups in South Africa mainly from black, white, coloured and Indian race groups. A brief overview of the cultural context and the people of South Africa is described below to give an indication of the complexities to consider when developing measurement tools suitable for the South African context.

The eleven official languages of South Africa are an indication of the rich ethnic and cultural diversity in this country. It is difficult to account for all the cultural values and traditions but one can expect a range from urbanised and Westernised cultures and traditional rural ethnicities. Different religious and cultural practices from all the race and language groups complicate service delivery. The effect of globalisation, as in the rest of the world is visible in South Africa. Immigration from neighbouring and other African countries to South Africa has resulted in the arrival of those looking for better work and living conditions. The country is further confronted with refugees from political unstable African countries. A Chinese South African community is present from earlier immigrants and recent economic negotiations between the South African and Chinese governments have led to a renewed influx of people. There is thus no single culture in South Africa and one should be aware of this cultural diversity when embarking on research with and for the population mix that is present in South Africa.

The types of assessments usually applied in mental health care settings in the Gauteng area of South Africa (the research setting) are interviews, observations, the use of activities and to a lesser extent, self-reporting questionnaires and standardised assessments. Clinicians use these assessments to determine the level of creative ability of a patient as this level directs them to a specific programme that is designed according to the principles of treatment for each level of creative ability. Treatment at each level is focused on participation in daily activities and coping with the demands of their environments. Clinicians take the cultural background and the environment of patients into account when conducting interviews and selecting activities for assessment and intervention.

A number of assessments, questionnaires and screening tools were found to be used in mental health care settings but none of these were aligned to the theoretical framework and the intervention used in the South African context. The MEDYN questionnaire for example covers three areas namely general/social behaviour, cognition and task behaviour (Odes, Noter, Nir, Marcus,

Shamir & Nir 2006). Although all these areas are appropriate for mental health care users, it is limited in terms of occupational performance areas like personal management, role performance and coping with the demands of the environment.

The Assessment of Motor and Process Skills (AMPS) was developed during the 1980's in response to the ever-increasing need for occupational therapy specific assessments and outcome measures (Chard 2000). Chard's (2000) investigation into the use of the AMPS in clinical practice revealed that it is able to measure change in clients' occupational performance in a range of clinical areas. Difficulties reported included the time it took to complete the AMPS and trouble getting started. A few clinicians reported that they were not able to apply the AMPS to their clinical area as their clients were not carrying out any of the daily living activities that are standardised in the AMPS. Hitch (2007) criticised the use of the AMPS for mental health care clients due to its reductionist nature and for only measuring a single component. There are a number of occupational therapists in South Africa who are trained in the use of the AMPS but it has not been used in mental health care settings in Gauteng. The reductionist nature of the AMPS is not suitable for this context as clinicians usually conduct comprehensive assessments of performance components (or client factors) as well as occupational performance areas. Typical performance components would be volition, self-esteem and cognition.

The Canadian Occupational Performance Measure (COPM) assesses self-perception of performance and satisfaction of daily occupations. It is a semi-structured interview and is used in agreement with the occupation-focused, client-centred Canadian Model of Occupational Performance. It covers the areas of self-care, productivity and leisure (including social participation). It has officially been translated into 24 languages and been used in 35 countries (McColl, Law, Baptiste, Pollock, Carswell & Polatajko 2005). Since it is a client-centered approach where the client will identify areas of concern, it is of vital importance that a thorough assessment of competency be done before using the COPM. This is a point of concern in using the COPM with clients suffering from psychiatric disorders as their level of competence and realistic decision-making could at some stages of the illness (e.g. psychotic episodes) impede on the applicability of the goals for treatment. Colquhoun, Letts, Law, MacDermid and Edwards (2010) reported on the feasibility of the COPM for routine use and found that clinicians appreciated the benefit in routine use of the COPM but not necessarily for sustained use due to time constraints. This measure could be appropriate for some of the patients in the South African context but many patients will not achieve the competence level on which they understand their psychosocial problems.

Perry, Morris, Unsworth, Duckett, Skeat, Dodd et al (2004) developed an outcome measure that focuses on multidisciplinary outcomes. The Australian Therapy Outcome Measure (AusTOMs) measures outcomes in speech pathology, physiotherapy and occupational therapy. The outcomes for occupational therapy consist of 12 domains, namely: 1) Learning and Applying Knowledge, 2) Self-care, 3) Functional Walking and Mobility, 4) Domestic Life: Inside House, 5) Upper limb use, 6) Domestic Life: Outside House, 7) Carrying out Daily Life Tasks and Routines, 8) Interpersonal Interactions and Relationships, 9) Transfers, 10) Work, Employment, and Education, 11) Using Transport, and 12) Community Life, Recreation, Leisure, and Play. If these outcome measures were to be used in mental health care settings, domains 3, 5, and 9 would be irrelevant. Occupational therapists in South African mental health care settings usually include certain performance components (or client factors) to explain the impact of the illness on the occupational performance areas and these performance components are not included in the AusTOMs. Typical performance components would be volition, self-esteem and cognition.

The Gauteng Occupational Therapy Outcomes-based Rehabilitation Work Group (2003) developed a functional assessment for mental health care users (the term for patients in South Africa's Mental Health Care Act of 2002), with the aim of measuring the effect of the occupational therapy service. This assessment, known as the Gauteng Psychiatric Functional Assessment, was distributed to all Gauteng Health occupational therapists in mental health care settings during 2003. The format of this "assessment" was similar to that of an outcome measure since its focus was to measure the effect of the occupational therapy service. The development of the assessment had not been documented and its psychometric properties were not investigated. Sadly, this tool was never implemented or used by occupational therapists. The reason for this could only be speculated as a lack of time and perhaps the need to produce evidence at the time.

The Model of Human Occupation Screening Tool (MOHOST) was originally designed for mental health settings (Kramer, Kielhofner, Lee, Ashpole, & Castle 2009). It is an occupation-focused assessment that determines the extent to which client factors and environmental factors (physical and social) facilitate or restrict an individual's participation in daily life (Kramer et al. 2009). It is used as an outcome measure and consists of six sections which are represented by 24 items. The six sections are motivation for occupation (or volition), pattern of occupation (or habituation), communication and interaction skills, process skills, motor skills, and the environment. A 4-point scale indicates whether the above mentioned items facilitate, allow, inhibit or restrict participation in occupation. The screening tool is based on the Model of Human Occupation. It seems that this tool is effective in the use of mental health settings as it is able to detect change (Kramer et al. 2009). It has its focus on occupation and is easy to administer. Not all occupational therapists in

South Africa are using the Model of Human Occupation and prefer Vona du Toit's Model of Creative Ability. Five of the eight training centres for occupational therapy in South Africa train students in the Model of Creative Ability and it shapes the students' clinical reasoning and management of their clients. Although the MOHOST might appeal to some South African clinicians, the researcher felt that Vona du Toit's Model of Creative Ability has to be investigated for application in routine outcome measurement.

In most settings occupational therapists are overloaded with large numbers of patients. Concerns were raised that measuring outcomes would be another task added to a full day's work. Literature also reported that the use of the AMPS and COPM in sustained outcome measurement was impeded by work overload and a lack of time for additional assessments (McColl et al. 2005; Colquhoun et al. 2010). A measure for outcomes must therefore be quick and easy to administer and replace at least some other cumbersome duties or simplify current duties e.g. writing reports for individual patients and giving feedback to the rest of the team in a written format.

In spite of all the challenges and constraints in mental health to develop an outcome measure, occupational therapy clinicians in Gauteng (South Africa) have expressed the need for a comprehensive and generic outcome measure for mental health care settings that supports the existing theoretical framework namely, the Model of Creative Ability. They require convincing evidence that confirm their unique role, as they believe that the occupational therapy service makes a major contribution to patients' successful return to home and/or work where they can competently fulfill their tasks and roles in the community.

### 1.3 QUANTIFYING MENTAL HEALTH OUTCOMES IN OCCUPATIONAL THERAPY

Recent debate around outcomes measurement has intensified. Historically, measurement of outcomes in the health care arena was not included in routine clinical practice. The demands for setting minimum standards of service and writing clinical guidelines for specific treatment regimes were on the rise during the late 1980's, while the systematic collection of data on patients' outcomes became the focus in the early 1990's, with the introduction of outcomes research and evidence-based practice (Cole, Finch, Gowland & Mayo 1996; Dittmar & Gresham 1997; Dobrzykowski 1998; Lyons, Howard, O'Mahoney & Lish 1997).



Although setting minimum standards of service, usually combined with quality assurance, is common practice in many countries, there was little evidence in South African literature for occupational therapy practices. One of the few examples is Foote, Lamont, Burger and Leishman's (2006) description of the quality assurance programme for Gauteng Health Hospitals that was introduced by the Standards Workgroup in the Province. This programme was based on the Donabedian model of health care. It would be important for future outcomes research studies to take into account any minimum standards of service as these could be seen as important forerunners to measuring outcomes.

Evidence-based practice rooted in medicine (Sackett & Rosenberg 1995) is often considered to be the panacea of clinical research, and is regarded as a best practice approach by many health care professionals. Debates about evidence-based practice, practice-based evidence, outcome measurement and delivering evidence of good care are now on the rise. For instance, Perry et al (2004) argued that routine measurements of patient outcomes for a range of health care domains are needed to adopt an evidence-based approach.

Joubert (2005) disputed the introduction of evidence-based practice in South African occupational therapy practices. Her arguments included the dilemma of accepting or soaking up Western-world knowledge and neglecting our own indigenous knowledge systems; the availability of human resources and accessibility of resources, as well as the shortage of credible research. Sudsawad (2005) added to this concern, arguing that clinicians are reluctant to utilise research findings because of its poor relevance to practice. Joubert (2005) further argued that evidence-based practice questions the integrity of the training of occupational therapists and their wealth of experience of tried-and-tested methods. She suggested alternative methods to evidence-based practice in order to ensure accountability and quality assurance of a complex service like occupational therapy. Her suggested methods take account of continuous assessment of patient response to treatment, reporting of successful interventions, collaborative work with clients and caregivers, and consultation with occupational therapists' wealth of experience.

On the other hand, Watson and Buchanan (2005) advocated that South African occupational therapists should take up the challenge to build their practices around sound scientific evidence. These authors suggested that whatever occupational therapists do must lead to substantiated outcomes; therefore evidence-based practice could be a way to substantiate these outcomes.

Whether occupational therapists choose to apply evidence-based practice, set minimum standards of practice, or make use of any alternative way to ensure accountability and quality assurance, the first action to take is to come up with evidence of outcomes. Sudsawad (2005, p. 354) stated that:



“measuring pre- and postintervention performances in natural environment during daily activities would conceivably be a convincing evidence of intervention effectiveness”. Bowman and Llewellyn (2002) also appealed to occupational therapists to embrace outcome research and demonstrate effectiveness of their service.

Ways in which individual practices decided on outcomes were not always evident in the literature. It appeared that some practitioners looked at the diagnostic groups of their clientele (Dobrzykowski 1998) while occupational therapy practitioners focused on their clients’ occupational priorities (James & Corr 2004; Kielhofner, Braveman, Finlayson, Paul-Ward, Goldbaum, & Goldstein 2004). Rogers and Holm (1994) mentioned that careful consideration should be given when selecting outcomes behaviour or domains that could be expected to change somewhat, or at least to stabilise, as a result of therapy.

Numerous authors strongly recommended the use of the World Health Organisation's International Classification of Function, Disability and Health (ICF) to classify the domains and items used in outcome measures (Üstün, Chatterji, Bickenbach, Kostanjsek, & Schneider 2003; Perenboom & Chorus 2003). Stamm, Cieza, Machold, Smolen, and Stucki (2006) as well as Perry et al (2004), stated that occupational therapists would find the ICF particularly useful as it includes activity participation and participation in social roles, which could be key indicators in measuring outcomes.

## 1.4 DEFINITION OF THE PROBLEM

Occupational therapists in mental health practices do not measure their outcomes systematically. They receive many qualitative and verbal statements from patients and families who are grateful for the service but this evidence only reassures the occupational therapists of the quality services they render. The problem is that there is no effective outcome measure for occupational therapists in mental health practices for the South African context that is aligned with their theoretical framework that could provide convincing evidence of the impact of occupational therapy services on mental health care users.

To develop an effective outcome measure, occupational therapists should determine acceptable domains that describe the impact of their services on the performance of the patients’ occupations. Concoran (2001) warned occupational therapists not to minimise outcomes to what *can* be measured, as opposed to what *should* be measured. Too often clinicians either narrowly focus on

domains like self-care, or broadly focus on qualitative domains like well-being which is difficult to measure.

## 1.5 PURPOSE OF THE STUDY

The purpose of this study was to develop a sound outcome measure for occupational therapists in mental health care settings that truly assessed the outcomes of their intervention programmes. These outcomes had to correlate with the needs of the consumers of the service.

An appropriate and plausible occupational therapy outcome measure ought to include domains like role balance, leisure performance, community integration, quality of life and performance of habits and routines (Foto 1996; Kielhofner & Forsyth 2002; Kramer et al. 2009; Law, Baum & Dunn 2001; Unsworth 2000). These domains would represent any occupational therapy service for mental health care users, but unfortunately these are broad qualitative domains with poor operational definitions. All of these domains needed to be operationalised before they could be measured.

The outcome measure also had to be valid, reliable and sensitive so as to detect change in activity participation after intervention. It was furthermore important that the outcome measure be grounded in an appropriate theoretical framework, namely the Model of Creative Ability as this is the framework used in most of the clinical settings in Gauteng.

## 1.6 RESEARCH AIMS AND OBJECTIVES

The question for this research was: What are the domains of an effective occupational therapy outcome measure and how should they be measured?

The aim of the first phase of the research was to identify the domains of the outcome measure. Domains in this study referred to the areas that would contribute to the overall construct of activity participation. To achieve this aim, the following objectives were set:

- Execution of a situational analysis at institution-based occupational therapy practices (acute, subacute and long-term care) to establish clinicians' views and perceptions of measuring outcomes and to select relevant domains for an outcome measure.

- Execution of interviews with mental health care users (clients of occupational therapy services) to determine their expectations of the service. From these expectations, outcomes would be inferred that could be measured and compared to the outcome domains selected by clinicians.

Once the domains of the outcome measure were identified (Phase 1), Phase 2 would commence with the intent of designing and developing an outcome measure. Several objectives were set:

- Operationalising the domains by identifying items that represented each domain.
- Designing a consistent measurement scale with descriptions of items for each level in the scale (levels in this case were the levels of creative ability).
- Designing an appropriate format and layout for the outcome measure.
- Composing a user manual for the outcome measure. (This manual would be used for the training of occupational therapists in the clinical field.)
- Training of clinicians in the use of the outcome measure.

The aim of Phase 3 was to subject the instrument to a trial. The following objectives were set:

- Identification of clinical utility problems, such as clarity of instructions, ease of use, time spend on assessment, adequate training to use the outcome measure and a user-friendly format.
- Investigation of the psychometric properties of the outcome measure:
  - Validity: content and construct.
  - Reliability: inter- and intrarater reliability as well as internal consistency.
  - Sensitivity to detect change.
  - Optimising the scale and items of the outcome measure.

## 1.7 RATIONALE FOR THE STUDY

Data generated from the utilisation of an outcome measure are necessary to benchmark outcomes and establish trends in occupational performance of mental health care users who receive

occupational therapy. This data are needed to assist occupational therapists to review their programmes and identify strong and weak aspects of client-therapist interactions.

As soon as benchmarks were to be established and trends described, the evidence could be used to influence policy at higher levels of management, for instance allocation of funding, availability of posts and improved standards of practice. The outcome measure could thus be used as a management tool as well.

The existence and utilisation of an outcome measure forms the basis of evidence-based practice. Occupational therapists who have access to a system that measures outcomes, could start to compare different intervention strategies and document the findings. When they have a system with which to determine service efficiency, they could start with efficacy studies where specific assessment and/or treatment techniques are compared.

The South African Government is constantly seeking better and more cost-effective ways to deal with health problems among the population. If the occupational therapists in mental health care settings could render a service that produced objective and systematic evidence of effective treatment programmes and show trends in the progress of clients' occupational performance, it would assist departments in motivating and validating occupational therapy programmes to government.

## 1.8 CONCLUDING REMARKS

The occupational therapy profession needs to develop. The best practices of today are the standard practice of tomorrow (Law & Baum 2001). Building on existing theoretical frameworks like the Model of Creative Ability would enhance understanding of the core of the profession (that is occupation) and will ensure growth in the mental health practices. The development of outcome measures could increase knowledge of occupation and activity participation as the core component and could build capacity among clinicians. This study will also enhance their understanding of measurements of occupational performance in mental health care users. The enhanced understanding will help to establish professional identity and in turn will draw attention to occupational therapists' unique contribution to the mental health care system.

The measurement of outcomes for occupational therapists in mental health care settings can no longer remain a voluntary option. It is the responsibility of the profession to ensure competent

clinical practice, and therefore its own survival. At present, occupational therapists in care settings in South Africa are not measuring their outcomes, yet they agree on the benefits and urgency of such a system. The development of an outcomes measuring system could therefore be beneficial, especially during these crucial times of cost-cutting which require professionals to render quality of care with minimum resources. This study aims to fill the outcome measurement gap by developing a system that is clinically tested and user-friendly.

# CHAPTER 2 OUTCOME MEASUREMENT IN HEALTH CARE

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## 2.1 INTRODUCTION

“For a profession to earn the respect of the people it serves, it must offer a service of demonstrable value” (Baum & Christiansen 2005a, p. 524). It is the responsibility of the profession to provide the evidence of the demonstrable value or quality of service that it delivers. Appropriate evidence is gathered by measuring the outcomes that a profession generates. The occupational therapy profession remains dedicated to improving health and well-being, which are the ultimate outcomes of the service delivered to all its clients. To achieve these ultimate outcomes, short term goals will be set which are also viewed as outcomes. Measurement of these ultimate and interim outcomes, at present, is not the routine task as is often suggested.

Chapter two presents the existing level of knowledge about outcomes in the health care discipline and specifically the outcomes issues in mental health care. An abundance of literature about the development of outcome measures was accessed and guided this research project. The theoretical frameworks of occupational therapy in mental health care need special emphasis to show how an outcome measure should be tailored for this type of setting.

This chapter starts out with issues and strategies in outcome measures in health care. It is followed by a discussion of basic elements and principles involved in developing an outcome measure. The intention is to eliminate the confusion between outcome measurement and assessment while the current status of outcomes measurement in occupational therapy is being described. Theoretical frameworks in occupational therapy, and how these should influence outcome measurement, conclude this literature review.

## 2.2 KEY ISSUES IN OUTCOME MEASUREMENT

Outcome measures in health care have become essential tools for managing services: they are an important prerequisite in well grounded clinical governance, the term used to describe the

processes and systems that govern service delivery and ensures quality of clinical care (Enerby, John & Petheram 2006; O'Connor & Paton 2008). Several authors described frameworks for clinical governance (Callaly & Arya 2005; Callaly, Arya & Minas 2005; Gask, Rogers, Campbell & Sheaff 2008; Laver Fawcett 2007; O'Connor & Paton 2008). Although clinical governance is still a point of contestation, it was not the focus of the current literature review. The researcher intended to discuss outcome measurement as one element of clinical governance.

Outcome measurement seeks to measure change as a result of intervention (De Clive-Lowe 1996; Laver Fawcett 2007). Laver Fawcett's definition of outcome measurement confirmed that it is a process that establishes the effects of an intervention: clinicians should use a specific outcome measure for this purpose (2007). Measurement of outcomes facilitate a number of management functions, for example, predicting recovery, calculating efficiency, effectiveness and efficacy of services, allocating resources, and determining critical pathways of professional conduct – to name a few (Ellenberg 1996; Hargreaves et al. 1998; Jette 1995; Laver Fawcett 2007; Pirkis, Burgess, Coombs, Clarke, Jones-Ellis & Dickson 2005).

Lakeman (2004) challenged the positive consequences of outcome measurement and argued that the "rhetoric talking-up the benefits of routine standardised outcome measurement largely remained speculative". Holloway (2002) revealed a similar reaction, with his criticism: "Promising much, delivering little". Huge gaps still exist between potential for quality improvement in health care and the reality of it, in spite of efforts to measure outcomes (Skinner & Turner-Stokes 2006; Walburg, Bevan, Wilderspin, & Lemmens 2006). Lakeman (2004) advocated that individualised outcomes be negotiated with the service user to accommodate his or her needs. Walburg et al. (2006) were also concerned that there was a general lack of responsiveness to users' needs.

Gilbody, House and Sheldon (2002a) discussed strengths and weaknesses of outcome research and discovered that many research projects on outcomes were driven by availability of data rather than "what is the problem and what is the outcome". If the problem is not clearly defined, confounding variables cannot be accounted for and improvement thus cannot be attributed to the treatment itself. The solution they offered for this problem was to measure outcomes in multiple relevant domains by means of standardised instruments appropriate for the clinical condition being treated. Brook, McGlynn and Shekelle (2000, pp. 282) suggested that governments shift resources from finding new information to measuring outcomes and quality of care; in other words, "using better what we know than by learning new things".

Herbert, Jamtvedt, Mead and Hagen (2005) agreed with Gilbody's caution about ignoring confounding variables in measuring the effect of intervention. Herbert et al. (2005) were concerned



that health care professionals might confuse measuring effects of intervention with evidence-based practice. They argued that measuring outcomes was not equal to measuring the effects of intervention and could therefore not be equivalent to evidence-based practice. They stated that "outcome measures measure outcomes". Selection of outcomes for measurement is influenced by many factors beyond intervention, such as the natural cause and prognosis of a condition, environmental factors, and individual characteristics (including the genetics) of a person. A good outcome therefore might have occurred even without intervention. Randomised trials are needed to control extraneous variables and justify the effectiveness of interventions (Herbert et al. 2005).

Concerns raised by Lakeman, Gilbody et al. and Herbert et al., as explained above, could be overcome by the excellent definition of an outcome measure suggested by Cole, Finch, Gowland and Mayo (1995). This definition includes significant issues in measuring outcomes. This definition reads: "An outcome measure is a tool to accurately measure a particular attribute of interest to the patient and the therapist and is expected to be influenced by intervention". The issues embedded in this definition are firstly, the measure must **accurately** assess the desired outcome, implying that it has been examined for validity and reliability for the specific population it is applied to. Secondly, the definition states that it measures a **particular attribute**, meaning that the measure does not claim to measure other attributes but rather a specific one and that the problem (in this case, the outcome) is clearly defined. Thirdly, it is measuring an attribute **of interest to the client and therapist**, ensuring that it covers the needs agreed upon by client and clinician. Finally, the attribute is expected to be **influenced** by intervention. Using the word 'influenced' implies that it is not claiming a cause-effect relationship, but is instead acknowledging effect and nothing more.

The key issues so far are thus concerned with accuracy of the outcome measures, whether it measures a particular attribute that is of interest to both the client and therapist, and that the outcome is due to the intervention.

Moore, Palmer, Patterson and Jeste (2007) made an important point in terms of what the intervention ought to effect. They stated that the effectiveness of mental health interventions have to be evaluated in terms of their effects on quality of life and functional independence and not in terms of relieving primary symptoms of the condition. Unfortunately there is no benchmark for functional independence for mental health care users. The authors suggested that it is important in mental health to use performance-based measures as opposed to subjective self-report measures (Moore et al. 2007). These authors' experience was that many users of mental health services lacked knowledge and objectivity in attempting to give a true reflection of their functional independence. Performance-based measures also pose a problem as these measures assess the

capacity of what a person can do under direct observation. Some mental health care users do not lack capacity but motivation to transfer the capacity into self-initiated functional performance (Lyons et al. 1997; Moore et al. 2007; Thornicroft & Tansella 1996; Valenstein, Mitchison & Ronis 2004).

## 2.3 STRATEGIES IN THE DEVELOPMENT OF OUTCOME MEASURES

Strategies in the development of outcome measures should not only address the above issues but should also attend to practical requirements of collecting information on outcomes. Walburg (2006) stated that when it comes to the measurement of clinical outcomes, it is important to decide *what* to measure, *how* to measure and *when* to measure. These practical issues in outcome measurement will now be discussed.

### 2.3.1 OUTCOME DOMAINS

Measuring outcomes is a complex task as it is difficult to define the effects of care (Enerby et al. 2006; Odes et al. 2006). Health care professionals acknowledged the difficulty to gauge effectiveness (Graham 1995; Skinner & Turner-Stokes 2006). When new outcome measures are developed, the complexity of measuring effects of care and effectiveness cannot be underestimated. The requirements of outcome measures and how to overcome the difficulties in the developmental stage are well described in the literature (Baum & Baptiste 2001; Concoran 2001; Dittmar & Gresham 1997; Dobrzykowski 1998; Foto 1996; Hargreaves et al. 1998; Kielhofner, Hammel, Finlayson, Helfrich & Taylor 2004b; Kilgore 1995; Rogers & Holm 1994) and will be presented in this section. This information could serve as a conceptual framework for the development of an outcome measure.

One of the first considerations in the development of an outcome measure should be what to measure (Walburg 2006). It is to be expected, as Dobrzykowski (1998) mentioned, that each professional practice ought to identify its own aspects or outcomes to be measured according to the service or programme it renders. Since the focus of outcome measures is to measure attributes that are expected to be influenced by intervention, it seems obvious that each practice setting (or similar practice settings) will have a tailor-made outcome measure.

Different terms used to describe the attributes or outcomes were found in the literature. These attributes were inconsistently named, e.g. items, domains, outcome domains, attributes, dimensions, key outcome measures, constructs, determinants, key indicators and functions (Hargreaves et al. 1998; Kilgore 1995; Law & Baum 2001; Unsworth 2000.) These terms were next explored to trace possible inconsistencies, or to determine if such inconsistencies were merely a matter of semantics.

Hargreaves et al. (1998) defined domains as the range of constructs being measured in an outcome tool, and gave examples like quality of life, health status and life satisfaction as possible domains. The Collins Dictionary defines a domain as a field or scope of knowledge or activities (Sinclair 2001). Laver Fawcett (2007) described a domain as a collection of issues that are related. She explained that in assessment, it was usually the set of functions or activities or behaviours from which test items are selected. Furr and Bacharach (2008) talked about “domain of items”, meaning that a domain was an overarching construct made up of several items.

The term attribute is often used and this could describe a characteristic like self-esteem, intellectual functioning, social ability, quality of life, reintegration into normal living and the like. Each of these attributes is difficult to observe, and need to be subdivided into observable behaviours, for example calculation in intellectual ability. Attributes viewed in this sense, are similar to the concept of domain and construct. The observable behaviours would then become key indicators and thus a specific unit of the domain.

An item is a specific unit among a list of items (Sinclair 2001). Laver Fawcett (2007) and De Clive-Lowe (1996) viewed an item as an individual response to or question about an assessment. Therefore an item is seldom an entity on its own; together with other items it forms a construct and is thus then part of a domain. Explained in this way, constructs and domains ought to be viewed as the same concept.

These terms could be explained at two levels. Domains, constructs and attributes represent the overall aspect to be measured and could be the first level, followed by items, key indicators, and determinants that all represent the sub-headings of a domain, construct or attribute, and could thus be the second level in a hierarchy.

Clarifying the levels of the terms becomes an academic exercise and might even be a semantic issue, but clarity is needed when terms like domains and items, dimensions and indicators are being used. All that is called for is clear definitions and consistent application of these terms.

Once terminology is spelt out, the different outcomes to be included in an outcome measure can be discussed. Several factors, like relevance to the overall purpose of treatment and representing the service, compatibility with needs of consumers, and what is possible and practical to measure, need to be considered. These factors were seldom evident in the literature when outcome measures were described but it was usually assumed that they had been addressed.

Graham (1995, p.199) suggested two questions that health care professionals should ask in attempting to identify the relevance of the outcomes they had measured. The first question was: “If we are successful in what we are doing, what change in patients can we expect to achieve and detect?” This question should guide the thinking of the health care professional toward specific outcomes that have been achieved in the past to predict outcomes in future. Since many variables come into play when patients are getting better, health care professionals should be confident about the focus of intervention programmes.

The second question was: “In what ways will they (the patient) be different, as compared to before?” The second question helps the health care provider to be confident about the amount of change that has occurred in patients.

There is an abundance of examples of outcomes included in outcome measurements and it is impossible to give a comprehensive account of all these outcomes. The table below is a brief summary of different domains used in rehabilitation services. These domains were found in literature from different health care professionals, for example medical practitioners, nursing staff, psychologists, physiotherapists and social workers. These domains were measured with instruments like self-report questionnaires, proxy questionnaires, direct observation and interviewing. The list does not include literature from the occupational therapy profession as this is presented in Table 2.2.

Table 2.1 is a summary of outcome domains found in rehabilitation services and is by no means exhaustive but gives an indication of the type of clinical outcomes selected to be measured.

Table 2.1 Summary of outcome domains in rehabilitation services.

Author	Reference	Domains	Year
Aaronson	Dobrzykowski (1998)	Physical functional status Disease and treatment related physical symptoms Psychological functioning Social functioning	1989
Lehman	Thornicroft & Tansella (1996)	Homelessness, Leisure activities Family contacts, Financial matters Involvement in crime	1982
Cella Tulsky	Cella (1990)	Physical conditions Functional ability or activity Family and emotional well-being Spiritual beliefs, Sexuality/intimacy Future orientation/hope Satisfaction with treatment Social functioning, Occupational functioning	1990
Liberman	Hargreaves et al. (1998)	Dysfunction Disability and Handicap	1988
Attkisson et al.	Hargreaves et al. (1998)	Clinical, Rehabilitative Humanitarian and Public safety	1992
Rosenblad & Attkisson	Hargreaves et al. (1998)	Clinical status Functional status Life satisfaction Safety and welfare	1993
Hargreaves	Hargreaves et al. (1998)	General health status Quality of life Specific symptoms and disorders Functioning Public safety and societal welfare	1998
Granger et al. (FIM)	Dittmar & Gresham (1997)	BADL Social cognition Functional communication	1986 & 1993
Dittmar & Gresham	Dittmar & Gresham (1997)	Family functioning Vocational/leisure functioning Community integration Quality of life	1997

Outcome domains specifically used in occupational therapy programmes for mental health care users did not differ from outcomes in general rehabilitation. Table 2.2 contains a summary of some of these outcomes. Although different terminology was used, the content was the same; in other words, occupational performance would encompass basic activities of daily living, occupational or vocational functioning, leisure and social functioning. It is impossible to list all occupational therapy

outcomes in mental health as the number of potential outcomes is large and focused on the type of interventions delivered.

Table 2.2 Outcome domains in occupational therapy programmes for mental health clients.

Author	Reference	Domains	Year
Law, Baum & Dunn	Law et al. (2001a)	Work performance, Leisure performance, Performance in basic activities of daily living (e.g. grooming, dressing, personal hygiene), Performance in instrumental activities of daily living (e.g. managing money, preparing meals, taking medication, doing laundry and housekeeping), Occupational role, Occupational balance.	± 1990 - 2001
Gauteng OT Outcomes-based Rehabilitation Work Group	Unpublished	Personal management, Interpersonal behaviour, Activity participation, Leisure.	2003
Karidi, Papa-konstantinou, Stefanis et al.	Karidi et al (2005)	Occupational abilities, Performance.	1980 – 2005
Foto	Foto (1996)	Disability, Quality of life.	1996
Law, Baptiste, Carswell, et al.	Law et al. (1998)	COPM According to the client's needs and priorities.	1998
Odes H, Noter E, Bar Nir M, Marcus D, Shamir Y, Nir N	Odes et al (2006)	MEDYN questionnaire General / social behaviour Task behavior and Cognition.	2006
Perry A, Morris M, Unsworth C, Duckett S, Skeat J, Dodd K, Taylor N, and Reilly K.	Perry et al. (2004)	AusToms-OT Learning and applying knowledge, Self-care, Functional walking and mobility, Domestic life: inside house, Upper limb use, Domestic life: outside house, Carrying out daily life tasks and routines, Interpersonal interactions and relationships, Transfers, Work, employment, and education, Using transport, Community life, recreation, leisure, and play.	2002
James and Corr	James & Corr (2004)	MOTOM Morriston OT Outcomes measure: Ability to carry out activities important to the individual patient, Change in occupational performance.	1994

Additional references for more outcome domains in occupational therapy included Fischer (2001), Karidi, Papakonstantinou, Stefanis, Zografou, Karamouzi and Skaltsi (2005), Kramer et al. (2009), Kielhofner, Braveman, Finlayson, Paul-Ward, Goldbaum and Goldstein (2004a), Kielhofner et al. (2004b), Law, et al (2001a) Law, Baptiste, Carswell, McColl, Polatajko and Pollock (1998), Lutchman, Thompson, Tait, Savage, Aitchison, Ruru et al. (2007), Moore et al. (2007), and Unsworth (2000).

The methods individual practices used to decide which outcome domains to include were not always evident in the literature. It seemed that some practitioners used diagnostic groups (Dobrzykowski 1998) while some occupational therapy practices focused on their clients' occupational performance priorities (James & Corr 2004; Kielhofner et al. 2004b; Kramer et al. 2009; Law et al. 1998; Lutchman et al. 2007). Whichever method is used, it is important to include outcomes that can be expected to change somewhat or at least stabilise as a result of therapy.

### 2.3.2 THE PRACTICE LOCATION IN THE CONTINUUM OF HEALTH CARE

The type of programmes or services offered at a practice location on a specific level of care i.e. acute, subacute, rehabilitation, homecare, outpatient care or long-term care influenced the classification of outcomes data (Dobrzykowski 1998; Jette & Haley 2005). Some practices will have different types of outcomes for different levels of care. Kilgore (1995) said that it was important for each practice to maintain its individuality but the ideal would be to assess the overall effect of the continuum of care. Therefore it is necessary to identify the discrete components and measure across different levels of care.

This seemed to contradict the issue of measuring a particular attribute as suggested by Lakeman (2004), Gilbody et al. (2002a), and Herbert et al.(2005), but Kilgore (1995) further suggested that specific goals had to accumulate into ultimate outcome goals, such as reduced disability and handicap, improved health, increased productivity and enhanced quality and quantity of life. These goals could be viewed as determinants that influence health and would differ in the practice location along the continuum or level of care.

A further challenge was mentioned by Kilgore (1995). Multiple therapeutic disciplines pursued goals like improved health and quality of life and any outcome measure of note ought to capture this information. This information usually disappears into a single patient record. The challenge was to retain the contribution of each discipline across the continuum of care in one outcome measure (Kilgore 1995).



### 2.3.3 THE MINIMUM DATA COLLECTION POINTS

When developing outcome measures, it is necessary to decide on the number of data collection points, that is when to establish base-line, as well as intermediate and final assessments with which to detect the change (or stabilisation) in the client.

Different collection points have been suggested in the literature. Dobrzykowski (1998) said that the minimum points to calculate the outcome are admission (or initiation of the rehabilitation programme) and discharge. Optional points could be added; for example, 90 days post-discharge. Unsworth (2000) indicated that a 3-point data collection would be ideal for occupational therapy outcomes. Gains that clients make from participating in occupational therapy programmes mostly are not realised until after discharge. Only when they have to face the demands of their occupational environment and perform their tasks and activities, did the effect of the occupational therapy programmes become evident. However, measuring outcomes after discharge might pose difficulties; for example, costly follow-ups, locating clients and other factors influencing transfer of therapy to real-life situations. These issues need to be considered when deciding on data collection points.

### 2.3.4 COLLECTION, ANALYSIS AND INTERPRETATION OF THE DATA

Data on outcomes could be captured in different ways. As technology develops, innovative methods are available such as keying in or touch screening data into software programmes that generate graphs and reports automatically. The ideal would be to link the outcomes software with existing databases of the institution in order to minimise duplications, such as capturing the demographic data of clients (Dobrzykowski 1998). Paper-based forms are widely used but this method is time consuming and limits possibilities of data analyses and optimal use of outcomes data.

Collection of data should be a routine task that is embedded in care plans (Greenhalgh & Meadows 1999; Skinner & Turner-Stokes 2006; Slade, McCrone, Kuipers, Leese, Cahill & Parabiaghi 2006; Till, Osoba, Pater & Young 1994) and has to be feasible so as to be included in busy clinical settings (Fossey & Harvey 2001; Jette & Haley 2005; Meehan, McCombes, Hatzipetrou & Catchpool 2006; Lakeman 2004). Currently there was little evidence in the literature that any of the health care professions dealing with mental health care users have succeeded in performing routine outcome

measurement (Greenhalg & Meadows 1999). Gilbody, House and Sheldon (2002b) and Slade et al. (2006) criticised psychiatrists for not routinely using standardised outcome measures, but Pirkis et al. (2005) declared that Australia had made impressive strides in the routine measurement of outcomes in mental health services. Skinner and Turner-Stokes (2006) conducted a survey in the UK which found that 86% of rehabilitation services that participated in the study had measured outcomes, while 12% admitted that they did not measure outcomes. Unsworth (2000) observed that occupational therapy literature which reported on outcome measurement is slowly rising, which in turn indicated that occupational therapists had not yet adopted routine outcome measurement.

Routine outcome measurement is a tool in managing quality of care (Lyons et al. 1997). New things about the service can be learnt (Macdonald 2002). These include whether there is a measurable change during contact with the service, how age groups and diagnoses respond to the care that patients received during interventions, and thereby comparing outcomes among groups and other services. This “tool” can only be effective if it is rooted in everyday care plans. Sudsawad (2005) stated that measuring pre- and post-intervention performances could be convincing evidence of intervention effectiveness. Brook et al. (2000) advocated that routine outcome measurement improved the understanding of everyday practice and what was already known.

When it comes to data analysis and interpretation of outcomes, experts in statistics need to be consulted. Statisticians promote the understanding and presentation of data and how to best make sense thereof. Data ought to uncover intriguing revelations about practice but the interpretation has to be done over a period of time to see if trends emerge (Winkel & Zhang 2007). Dobrzykowski (1998) suggested that programme changes not be implemented until at least one year after data collection.

Other variables such as morale of staff, fiscal constraints, different admission patterns, and different patient profiles could influence outcomes data and therefore, outcomes data need to be interpreted over a reasonable amount of time and with the necessary care.

### 2.3.5 TRAINING OF STAFF

It is essential that staff involved in capturing data for outcomes studies be thoroughly trained. Dobrzykowski (1998) emphasised that training does not end with operational training but takes account of getting the staff to understand the importance of the outcomes measurements and to be

committed to and instrumental in contributing to the successful execution of outcomes studies. All staff members involved have to be aware of the vision and benefits of gathering and managing data for outcomes studies.

Training of staff is further needed to establish reliability of the data that has been collected by staff members. It is seldom that only one person will collect data and therefore interrater reliability becomes important. Well trained staff should also provide consistent data that contribute to internal consistency of outcome measures (Enerby et al. 2006; Laver Fawcett 2007; Lyons et al 1997). Periodic retraining was recommended as it improved the success rate in outcomes studies, although it was costly (Dobrzykowski 1998).

The above comments highlighted important strategies for inclusion in outcome measure. However, these are practical issues and excluded any systematic approach to developing outcome measures. Several authors in occupational therapy described a number of processes that evolved into outcomes during the course of their investigations (Kielhofner et al. 2004; Rogers & Holm 1994; Unsworth 2000). These processes will be most helpful in the development of an outcome measure in occupational therapy.

## 2.4 THE OUTCOMES RESEARCH PROCESS

Kielhofner et al. (2004b) defined outcomes research as a dynamic system in which services are created and constantly improved through the accumulation of evidence about the process, as well as through the outcomes of the service. Their research identified four interrelated components in the outcomes research process in occupational therapy. These components are: 1) identifying client needs, 2) creating the best possible service to address the needs, 3) generating evidence about the impact of the service, and 4) accumulating and evaluating a body of evidence about a number of specific occupational therapy services.

Rogers and Holm (1994) described four essential components in developing an occupational therapy outcome; namely, 1) selecting an outcome behaviour that is reasonably expected to change due to therapy and select a sensitive measure to detect the change, 2) determining the time required before change would occur given the anticipated frequency and duration of therapy, 3) providing a detailed specification of the intervention to produce the outcome, and 4) identifying the specific

population at whom the intervention is aimed. These authors did not mention how the outcome behavior should be measured.

Unsworth (2000) mentioned three criteria for the selection of outcome measures which included elements of Kielhofner et al. (2004b) and Rogers and Holm's (1994) ideas. The three criteria are that the outcome measure: 1) is suitable for the client population and the setting (inpatient, outpatient, acute care, long term care etc.), 2) meets the needs of the therapist in terms of purpose of the tool, ease of administration, sensitivity to change in client's status and 3) is standardised.

Spreadbury (1998) added the importance of base-line assessment. A clinician should be clear about the client's base-line level when this person enters a programme. Assessment of the base-line functioning and subsequent assessments should be based on observable behaviour but should not ignore the subjective feelings of improvement.

Although the process in outcomes research guides the development of an outcome measure, steps in constructing measuring instruments further direct a systematic and empirically sound process.

Constructing measures was well described in the literature. Terminology usage varied from test development, to test construction, and to design of a measure. Table 2.3 compares three methods of test development from recent references. All three methods started with the purpose, or what should be measured, but ended up at different end points.

Creswell and Clark (2007) ended up by optimising scale length, Schultz and Whitney (2005) with determining the difficulty level of items, and Laver Fawcett (2007) at guidelines for test administration and how to interpret scoring. Guidelines for test administration become critical in outcome measurement as many clinicians from different settings might use the instrument and if the administration is not standardised, it will affect reliability of scores. One of the functions of outcome measurement is to benchmark against other settings but will be ineffective if measurements are unreliable.

These three methods are fairly recent sources of information and are valuable indicators and strategies to be applied in the development of outcome measures. Depending on the purpose of the outcome measure, these steps can be combined to assist a researcher in test development.

Table 2.3 A comparison of methods of test development.

Steps	Creswell & Clark (2007)	Shultz & Whitney (2005)	Laver Fawcett (2007)
<b>Step 1:</b>	Determine what is to be measured	Specify the type of measure: Maximal performance e.g. aptitude or achievement tests Typical performance e.g. personality or interest inventories	Identify the primary purpose for which test scores will be used
<b>Step 2:</b>	Final selection of domains/ generate item pool	Define the domain of the test: Context of the test Difference from related domains Dimensionality of the domain Amount of emphasis on each dimension	Identify behaviours that represent the construct or define the domain
<b>Step 3:</b>	Determine measurement format	Determine if open-ended responses or closed-ended responses item format will be used	Prepare a set of test specifications, outlining the amount of items that should focus on each type of behaviour
<b>Step 4:</b>	Scale development and validation Expert review	Determine item format (type of scaling)	Construct an initial pool of items
<b>Step 5:</b>	Include validation items Guidelines for use	Administration – individual or group testing	Review items and hold preliminary tryouts
<b>Step 6:</b>	Administer to sample	Determine appropriate test length	Field-test the items on a large sample
<b>Step 7:</b>	Evaluate reliability and validity	Determine difficulty levels of items	Determine statistical properties
<b>Step 8:</b>	Optimise scale length (and items)		Design and construct reliability and validity studies
<b>Step 9</b>			Develop guidelines for test administration, scoring and interpretation

## 2.5 OUTCOMES MEASUREMENT AND ASSESSMENT

As seen in this literature review, literature about outcome measures provided useful guidelines for the further development of outcome measures. However, a limited number of authors have expressed their views on outcomes measurement versus assessment practices. Is there a difference; is the one a precursor of the other, or do they go hand in hand? What about evaluation? These questions have not been answered clearly in the literature. Laver Fawcett (2007) attempted to

describe the difference between assessment, evaluation and outcomes measurement. These definitions were critically reviewed and compared with other definitions in the literature.

Jacobs and Jacobs (2004) defined an outcome measure as an instrument designed to gather information on the efficacy of service programmes; a means for determining whether goals or objectives have been met. Unsworth (2000) described it as an assessment or test measure that would demonstrate change in the client in one or more attributes. Observed changes are attributed to the therapeutic intervention. Laver Fawcett's (2007) definition included the word "process" in delineating outcome measurement. She viewed it as a process of establishing the effects of intervention and the outcome measure should have been administered at least twice to detect change over time. De Clive-Lowe (1996) posed a practical and simple question with which to explain outcome measurement: "Is there any change in this client as a result of this intervention?" Baum and Christiansen (2005a) described outcomes on a macro level by saying that they are the deliverables or benefits that a profession bring to society. Clinicians could set interim goals to deliver a broad outcome, like promoting health and well-being, and these interim goals are then also seen as outcomes.

Laver Fawcett (2007), as well as Creek and Bullock (2008), provided an explanation on the relationship between assessment, evaluation and outcomes measurement. These authors viewed assessment as a process that involves accurate and relevant data gathering methods where multiple types of data are collected. Evaluation is a judgement that is made and expressed in terms of amount or value. The outcome measurement should be at the heart of the assessment process as a robust standardised measure. Creek and Bullock (2008) further explained that assessment measures assets and deficits in an individual and is done at different stages of the occupational therapy process. A clinician would do an initial, ongoing and final assessment.

The inconsistent use of the terms assessment and evaluation is acknowledged. Some authors viewed assessment as the broad overall process and evaluation as the specific test with a narrow focus (Creek & Lougher 2008; Laver Fawcett 2007; Turner, Foster & Johnson 2004) while others saw evaluation as the overall, almost looking back at all the specific assessments to explain the problem/s (AOTA practice framework 2008; Blesedell Crepeau, Cohn & Boyt Schell 2008 ; Kielhofner 2002).

Distinct differences between an outcome measure and an assessment or specific test were identified. Perhaps the most important difference is that outcome measurements must provide evidence of change after intervention while assessments describe behaviour or function in detail. These differences are summarised below.

Table 2.4 Differences between outcome measures and assessments.

Outcome measure	Assessment or test
Aims to provide evidence of change in groups of clients after intervention.	Aims to describe an individual's capacity to perform in certain areas, establish base-line functioning of an individual to detect change after treatment, predict performance.
Uses routine measurement procedures to establish base-line functioning.	Use several standardised prescribed methods during assessment. Reason for referral and client's specific problem guides the selection of assessments.
Domains of the outcome measure should reflect the overall outcomes of the service delivery.	Domains reflect a specific construct that needs to be measured. This construct is determined by the individual need/problem.
Since the domains cover the entire service that is delivered the outcome measure is seldom one-dimensional.	Since the assessment usually covers one construct or domain it is usually one-dimensional.
At least two points of data collection are necessary.	If the aim is to describe or predict performance, a once-off data collection or assessment would suffice.
Uses data to describe trends in service delivery, indicate cost effectiveness and benchmark with similar services.	Uses data to describe a certain condition and enhance understanding of certain pathology in order to develop the best intervention for individuals.

It is important for occupational therapy clinicians to realise that an outcome measure could not be as detailed and focused as assessments. An outcome measure ought to be a quick, routine measure that covers all the goals or outcomes in the service or intervention programme. An outcome measure should therefore be suitable for the entire population of clients that receive the service while assessments may have their specific foci and purposes. All assessments would not necessarily be applied for all the clients. For instance, certain groups may need detailed cognitive assessments while other may need vocational readiness assessments.

There are also similarities between outcome measures and assessments. Some assessments may also be used to demonstrate change in patients. Standard procedures and guidelines for use need to be described and the administrator has to be well trained for both outcome measures and assessments. Psychometric properties for both have to be recognisable.



## 2.6 OUTCOME MEASUREMENT IN OCCUPATIONAL THERAPY

The above section contained key issues and strategies for outcome measures as described by different rehabilitation professionals and researchers. This section sets out the specific views and concerns of occupational therapists about outcome measurement.

Concoran (2001, pp. 57) pointed out that it is a formidable task to select acceptable parameters for clinical outcomes. She expressed concern that when occupational therapists selected domains to measure they either narrowly focused on self-care and mobility or focused broadly on qualitative parameters like well-being that are difficult to define and measure. She warned occupational therapists not to be tempted to minimise outcomes to what *could* be measured instead of what *should* be measured. This concern related to Gilbody et al.'s (2002a) argument that clinicians often used available data, which were easily gathered, but failed to address the problem at hand.

Broad and qualitative types of outcomes ought to be operationalised into measurable units (Concoran 2001; Law et al. 2001a; Unsworth 2000). Many of the occupational performance outcomes like role balance, community integration, leisure performance, quality of life and habits and routines have poor operational definitions. Because of poor definitions, few rating scales for these outcomes are available. The challenge for occupational therapists is to determine the specific aspects that are addressed in therapy, to operationalise those aspects and to assign them a rating scale.

Sealey-Lapes and Kotsch (in Laver Fawcett 2007, pp. 156) developed an information pack on outcome development for occupational therapists in the UK. They reminded fellow professionals that, although “home-grown” measures would reflect individual practice outcomes, designing of these measures is a very complex procedure that could take years of extensive research. It is not something to be taken up lightly. However, before clinicians decide to adopt an existing outcome measure, they should be convinced that their outcomes of intervention are similar to the existing or chosen outcome measure.

Law, King and Russel (2001b) asked for sophisticated measurement in occupational therapy and gave guidelines on how to start this journey. Firstly, they suggested viewing assessment as part of an overall measurement approach where the focus would be on the person, occupation and the environment. Secondly, the specific attributes to be measured have to be identified, starting with the problems in occupational performance; and also analysed, such as which bodily structures and functions (also called client factors or performance components) are affected that would influence

the execution of that person's tasks and activities. In addition to this, the environment where the person comes from will also be analysed for any barriers and facilitators to be considered in the intervention programme. Once the attributes have been decided upon, one then decided which would be the best outcome measure to use, considering factors such as ease of use, time to administer, psychometric properties and cost. Although the focus in occupational therapy measurement is on the person, occupation and the environment, it is assessment and intervention in the person's occupational performance that is the unique contribution of the occupational therapist (Kramer et al. 2009). Therefore any outcome measurement system has to address occupation as its primary focus. Occupational therapists use theoretical models to guide clinical practice. A sophisticated measurement process therefore requires that the theoretical models used have to be evident in the outcome measure (Law et al. 2001b).

Unsworth (2000) described a similar process of selecting outcome measures and also said that clinicians have to start with the decision of the attributes to be measured and whether these could be quantified. When to measure was the second important decision to make. Occupational therapists have to consider that many of the gains clients make from participating in occupational therapy programmes are not accomplished until the client is discharged and faced with reality. She also mentioned that any outcome measure ought to be suitable for the population of clients and the setting ought to meet the needs of the occupational therapist (purpose of the tool, quality of information gathered, time to administer and sensitivity to change) and ought to be standardised. Unsworth (2000) compiled a comprehensive list with suitable assessments for outcome measurement.

When measuring outcomes, occupational therapists need to identify the theoretical framework/s they use in assessment and treatment procedures (Law et al 2001). These theoretical frameworks are important indicators of the key outcome measures. For example, if the Model of Creative Ability (Du Toit 2004) is used, one of the key measures would be volition and action as expressed in activity participation. A theoretical framework like the Model of Creative Ability could further contribute to a sound outcome measurement system since this theory describes a person's activity participation and occupational performance in consecutive levels. Each level gives a detailed description of characteristics expected from a person on that level. The levels could be used as the consistent rating scale across the different domains and items of an outcome measure.

The focus on outcomes research has contributed to more refined measurement practices in occupational therapy. The Center for Outcomes Research and Education (CORE) in America, collaborating with occupational therapists from Canada and Sweden (Kielhofner et al 2004b), are

doing valuable work and continually inform the occupational therapy community of sound outcomes research methods. Their efforts were supported by recent studies on the impact of occupational therapy interventions on health outcomes (Chen, Heinemann, Bode, Granger & Mallison 2004; Finlayson 2004; Kielhofner et al 2004a; Nelson & Mathiowetz 2004; Taylor 2004; Taylor, Braveman & Hammel 2004). What was evident from all these studies was that sound outcome measures were used to assess change in clients. These studies (except for one on clients with dementia) were conducted on clients with physical problems and contributed to evidence-based practice in occupational therapy. If occupational therapists in mental health care settings in South Africa wish to engage in evidence-based practice they have to establish sound outcome measurement systems and come up with evidence like these studies on clients with physical problems.

A strong emphasis on the client-centred approach was noticeable throughout the literature when describing outcome measures (Law et al 1995; Law et al 2005; Moats 2007). The importance of a client-centred approach was emphasised not only in occupational therapy literature but also in rehabilitation in general as well as in the medical field (Asmundsdottir 2009; Baum & Christiansen 2005b; Dittmar & Gresham 1997; Hargreaves et al. 1998; Kielhofner et al. 2004b; Kilgore 1995; Spear 2003). It would appear to be critical that health care professionals involve clients in outcome measurement systems.

Certain constraints need to be considered when occupational therapists in mental health implement a client-centred approach. Although the client's input is seen as an important part of the therapeutic outcomes, a mentally ill patient is sometimes unable to contribute to goal setting and prioritising of his or her own needs due to debilitating symptoms of the disorder. In the psychotic phase, for instance, the patient is not in touch with reality and is therefore unable to set priorities for occupational performance outcomes. The manic patient will set inappropriate goals, the depressed patient struggles with feelings of hopelessness and anhedonia, which influence his or her drive to set priorities and identify needs. The chronic schizophrenia patient experiences a constant lack of motivation and his priorities, such as lying in the sun, might not be the priorities set by his family or therapist. A solution to this problem could be to consult the family members but they are sometimes the ones who "dropped" the unmanageable patient and might be less willing to get involved. Usually, the therapist ends up deciding on priorities and goal setting for the patient.

Establishing common scientific or outcome terminology among health care professionals when measuring outcomes could contribute to a better service to clients. It would facilitate communication and the transfer of information between professionals which could, in turn, enhance the understanding of each other's contribution towards clients' health status. Such a system exists

in the form of the International Classification of Functioning, Disability and Health (ICF). A classification such as the ICF has many advantages apart from uniform and consistent use of terminology. Arthanat, Nochajski and Stone (2004) discussed the potential applications of the ICF. Among others, it could serve as a research tool to measure outcomes, focusing on the overall quality of life. Unsworth (2000) shared this idea and also suggested that occupational therapists should consider using the ICIDH – 2 (the predecessor of the ICF model) to identify the focus for their outcomes research. Üstün et al. (2003) mentioned that the ICF provided an overarching structure for clinical practice and research to occupational therapists in particular.

Perenboom and Chorus (2003) explained that the ICF organised information in two parts: functioning and disability as the first part and contextual factors as the second part. These two parts are the primary concern of occupational therapists when addressing their clients' occupational performance issues. It would therefore make sense to consider using ICF terminology when deciding on domains for an outcome measure in occupational therapy.

In spite of many concerns around outcome measurement, there are positive developments in the occupational therapy profession that researchers should use in improving service delivery through outcome measurement. One of these positive developments is the solid theoretical base which, in some cases, is only just beginning to emerge (for example, Christian and Baum's Person-Environment-Occupation-Performance Model (PEOP) (Baum & Christiansen 2005b)) and in other cases, is re-established itself (e.g. Creative Participation Model of Vona du Toit (2004)). This solid theoretical base is justified in theoretical frameworks which will be discussed in the next section.

## 2.7 OCCUPATIONAL THERAPY MODELS

Theoretical frameworks are translated into practice models which assist occupational therapists towards an organised way of thinking and doing. For example, they can communicate their unique contribution to health and health care through models. Theory also helps to keep their knowledge base up to date and assist them in integrating new knowledge into practice, thus enhancing clinical skills and providing areas of excellence and expertise. As stated earlier, theoretical frameworks are important indicators of key outcome measures (Law & Baum 2001a).

Models conceptualise ideas and concepts which helps occupational therapists to operationalise concepts that need to be measured. Occupational therapy models could therefore provide valuable

inputs whenever researchers decide to develop outcome measures with which to enhance practice and provide evidence for the impact of their programmes.

Four models in occupational therapy will now briefly be discussed to stimulate scientific thinking on the development of outcome measures. These models were chosen for their unique focus on participation in occupation as well as tools that are available for measuring change in occupational performance and participation after intervention.

The Person-Environment-Occupation-Performance Model (PEOP) is a client-centred model that provides a framework for occupational therapists to improve the everyday performance of meaningful and necessary occupations of clients and their participation in the world they live in (Baum & Christiansen 2005b). Occupation, performance and participation reflect the complex interactions between persons and the environment in which they carry out the activities, tasks and roles that have meaning for them. To achieve a desired level of participation, a person requires the support of enablers and must overcome barriers that limit the execution of activities, tasks and roles that are important and meaningful to him or her. Both extrinsic and intrinsic factors impact on the occupational performance and participation of a person or groups of people and could either enhance or restrict their well-being and quality of life (see Figure 2.1).

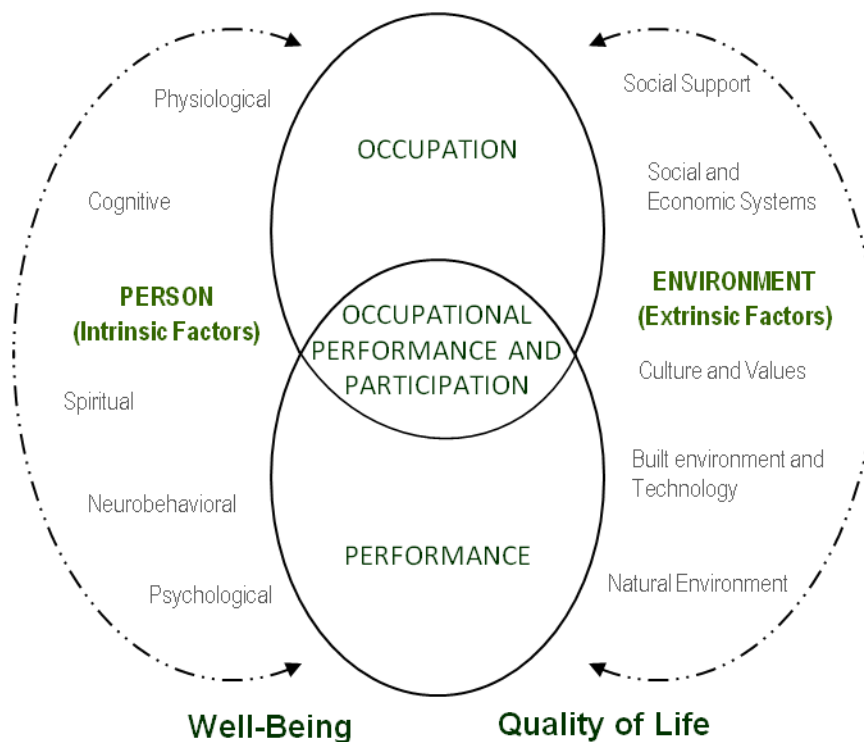


Figure 2.1 The Person-Environment-Occupation-Performance (PEOP) model.

During intervention the occupational therapist will select a broad range of purposeful client-centred strategies that engage the individual or the group in order to utilise resources that enable successful performance of their meaningful occupations (Baum & Christiansen 2005b).

The Canadian Model of Occupational Performance (CMOP) is another useful model that focuses on the client's needs with regard to occupational performance (Law et al. 1998). The CMOP explains the relationship between occupation, health and well-being. It emphasises the importance of the uniqueness of individuals and that clients are active participants in the interventions that occupational therapists provide. Humans are respected for their need to engage in meaningful occupation and the occupational therapist will provide the opportunities for engagement (Clark 2003).

The CMOP is one of a few models that explicitly mentions spirituality in the understanding of humans as occupational beings. The model postulates that spirituality afford a person to identify with the self and to explore the meaning that a person attributes to life. Occupational dysfunction happens when there is an imbalance between areas of occupation namely self-care, productivity and leisure. This imbalance is influenced by the environment (social, cultural or institutional) on the one hand but also performance components (physical, cognitive, affective) on the other hand. There is thus a constant dynamic interaction between the person, occupation and the environment (Clark 2003).

The COPM was developed as the assessment and evaluation tool to assist therapists who use the CMOP. Clients are asked in an interview to identify activities in the areas of self-care, productivity (work) and leisure that are difficult to perform and how important it is for them to perform those activities. The clients must then prioritise five of the stated problems and rate their performance and level of satisfaction in these problematic activities. The client rates the activity on a 10-point scale in terms of its importance for him or her, the quality of performance and the level of satisfaction attained. This information is then used for a collaborative goal-setting dialogue between the client and therapist. Bodiam (1999), Carpenter, Baker and Tyldesley (2001) and Cup, Scholte op Reimer, Thijssen and van Kuyk-Minis (2003) found the COPM to be an effective outcome measurement tool that was sensitive to change following upon rehabilitation.

The worth of the COPM lies in the focus on occupational performance and its client-centred approach. It reflects the values held by the profession and is an example of how occupational therapists can convey their unique contribution to health care.

Currently the COPM is used in a wide variety of settings, and its outcomes are well reported in the literature. It received some criticism from Hitch, Hevern, Cole and Ferry (2007), who described the rating scale as confusing and that a clinician would need abstract thinking in assessing a client.

Another well-known and well-published model used in outcomes measurement studies is the Model of Human Occupation (MOHO). This model has evolved to guide practice that focused on occupation (Kielhofner 2002). The model provides a broad framework to generate understanding of the client's occupational strengths and limitations and to implement an occupational therapy programme. The model describes the interaction of volition, habituation, performance capacity and the environment and how these always operate in concert to encourage a person to participate. Kielhofner (2002) argued that occupational adaptation could not be fully understood without considering these factors. More than 80 studies have been published and research is still ongoing, with a specific focus on studying the outcomes of MOHO-based occupational therapy. The MOHOST was originally developed for use in mental health settings and found to be valid and consistent as well as sensitive to detect change between admission and discharge (Kramer et al. 2009).

The three models briefly described above (the PEO, the COPM and the MOHO) have occupation and participation as their main focus. When the focus is on this key issue, diagnosis of the person becomes less important and therefore these three models are not restricted to use in a specific setting. They would be appropriate and useful in mental health care settings and give guidance for assessment and evaluation of occupational performance. The CMOP has an additional advantage in that it is client-centered and focuses on the client's satisfaction with his/her occupational performance. These three models unfortunately lack detailed intervention plans and although they guide direction for intervention, none of these models prescribe specific treatment principles. They also do not provide levels or "amounts of" occupational performance or participation in occupations. When outcome measures are designed for these models, the Lickert type of rating scale has to be used that is open for interpretation by the person who does the rating.

A model that describes activity participation in levels is Vona du Toit's Model of Creative Ability. When this model is applied in measurement of outcomes, these levels can be used as the rating scale. Unfortunately the model is not well researched but has the potential for further investigation as an outcome measure.

Vona du Toit's Model of Creative Ability (also called the Motivation and Action Theory) originated from the former Pretoria College of Occupational Therapy (currently the Occupational Therapy Department of the University of Pretoria) (Du Toit 2004). The main focus of this model, like the previous three models, is on participation in everyday activities (Van der Reyden 1989). A person's

participation in daily life is organised into a developmental sequence with consecutive levels. There are nine levels starting with Tone and ending with the Contribution stage. These levels describe the creative participation of any individual. However, it is the first five levels that are applicable to a hospitalised person. Table 2.5 is a description of the first five levels of creative ability.

Table 2.5 A description of the first five levels of creative ability.

	Level 1	Level 2	Level 3	Level 4	Level 5
	Tone	Self-differentiation	Self-presentation	Passive participation	Imitative participation
<b>Ability to handle tools and materials</b>	Not evident	Only simple everyday tools (e.g. spoon)	Basic tools for activity participation - poor handling	Appropriate, lack of skill	Good
<b>Relating to people</b>	No awareness	Fleeting awareness	Identification selection, makes contact, tries to communicate, superficial	Communicates	Communicates / interacts
<b>Handling of situations</b>	No awareness of different situations	No awareness or ability	Stereotypical handling, makes effort, but unsure or timid	Follower, variety of situations, participates in a passive way	Manages a variety of situations, appropriate behaviour
<b>Task concept</b>	No task concept, basic concepts	No task concept, basic and elementary concepts	Partial task concept, compound concepts	Total task concept, extended compound (abstract, elementary) concepts	Comprehensive task concept, integrated abstract concepts
<b>Quality of task execution</b>	None	None	Simple - familiar activities, poor quality product	Product fair quality (aware of expectations)	Product good quality (according to expectations)
<b>Supervision needed</b>	Total assistance and supervision (24 hour)	Physical assistance and constant supervision	Constant supervision needed for task completion	Regular supervision	Guidance, supervision, regular or new activities, occasional for known activities
<b>Norm awareness</b>	None noted	None noted	Starts to be aware of norms	Norm awareness (aware of expectations)	Norm compliance (do as expected, required standard)
<b>Anxiety control</b>	Limited responses	Limited, uncontrolled - basic emotions, comfort or discomfort shown	Varied, usually low self-esteem and anxiety, poor control	Varied + anxiety, poor control	Full range of emotions, mostly controlled, makes effort





<b>Exertion of effort</b>	None noted	Fleeting, minimal effort - not sustained	Effort inconsistent, not maintained, Low frustration tolerance	Varies	As expected / required, sustained
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Each level has a description of the characteristics of that specific level in terms of ability to handle tools and materials, relating to people, handling situations, task concept, quality of task execution, supervision needs, norm awareness, anxiety control and exertion of effort. Table 2.5 is only a brief description of the first five levels and not the complete descriptions of the levels. These descriptions only serve as cues for a clinician who is trained in this model. Subtle nuances exist and the experienced clinician observes the behaviours for each level and is able to detect these nuances.

As discussed earlier, each level could be used as the basis for a rating scale of the outcome measure, i.e. that all the domains identified for the outcome measure could be described according to the levels of creative participation. The level of creative ability is determined by observing a client in different situations while dealing with people, tools and materials, working either under supervision or independently, their awareness of social norms and norms for productive behavior, the amount of effort that is exerted and how the person is dealing with the negative effects of anxiety. It is impossible to observe all these behavior patterns in one assessment session and therefore the level will seldom be determined after one session. Van der Reyden (1989) suggested a minimum of three sessions or situations which permit observations about activity participation, before the level thereof is determined.

Du Toit further explained that actions and behaviours of a person typically moved through certain phases within each level. For instance, a person who has just progressed to a next level e.g. from self- presentation to passive participation would display dependence on the therapist to participate in activities or situations. This is the first phase and it is called the therapist-directed phase. The therapist facilitates participation by providing various types of support and structure. Once the person has mastered some skills, he/she becomes more independent and the therapist gradually withdraws support and structure. If the client continues to participate sufficiently with less support and structure it is an indication that he/she is now progressing to the next phase, called patient-directed phase. He/she is still on the level of passive participation but shows some progress. This independence and mastery help him/her to progress to the last phase which is the transitional phase. During this phase he/she starts to show characteristics of the next level, that of imitative participation. This progress is seen in actions and behaviours of the client and it is useful to measure small amounts of progress within a certain level. One of the problems in treating clients suffering from mental illnesses is that progress is slow and difficult to measure. These phases within each

level provide valuable indicators for small amounts of progress and could thus be successfully used in an outcome measure that will detect even small increments of change.

There are more advantages of this model with its developmental sequence. Each level focuses on what a person is able to do at that level. This information assists the therapist to determine which type of activities to present to the patient, what behaviour to expect and how to gradually increase the expectations for improved participation in daily activities. For each level there are treatment principles for the presentation and structuring of the activity, the requirements of the activity, the handling of the patient as well as grading principles to gradually guide the patient to the next level, should he/she show potential to move to the next level.

Although this theoretical framework has not been researched in great depth, it seems that it is widely used in mental health practices and its use and value could be re-established if used in an outcome measure to not only detect change in a client.

In the above paragraphs it was reasoned that theoretical frameworks in occupational therapy have to provide the solid theoretical base for outcome measures, but that the latter also needed to be complimented by sound measurement principles. Measurement principles must always guide the development of valid and reliable measuring instruments. The next chapter will present the latest issues in measurement.

## 2.8 CONCLUDING REMARKS

Unsworth (2000, p.147) stated that “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”. Limited evidence was found in the literature to show progress in outcome measures in occupational therapy in South Africa. However, valuable contributions in literature from abroad were discussed that described the existing level of knowledge and how these guided researchers to approach development of outcome measures in an informed way. The application of measurement principles in the development of outcome measures have to be integrated to ensure an effective product. Information on challenges in measuring attributes in humans and how the use of traditional and contemporary measurement principles contribute toward overcoming them, are presented in the next chapter.