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DEVELOPMENT OF AN OUTCOME MEASURE FOR OCCUPATIONAL THERAPISTS IN MENTAL HEALTH CARE SETTINGS

by

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DECLARATION

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SUMMARY

It is the responsibility of professions to provide evidence of the demonstrable value and quality of service delivery. Occupational therapists in mental health care settings find it difficult to produce convincing evidence of the demonstrable value and their contribution to health care. Currently no effective outcome measure for occupational therapists in mental health practices exists. The development of an outcomes measuring system is much needed in these crucial times of cost-cutting, rendering quality of care with the minimum resources and the quest for evidence of the effect of intervention.

The purpose of this study was to fill the outcome measurement gap by developing a system that is clinically tested and user-friendly for occupational therapists in mental health care settings. Such a system had to represent the outcomes in the occupational therapy programmes, meet the needs of the therapist in terms of purpose of the tool, be easily administered and be standardised. It was also important that the outcome measure was grounded in the theoretical framework that guides intervention programmes, namely Vona du Toit's Model of Creative Ability. This theoretical framework is widely used in South African mental health care settings and was found suitable to be transformed into a rating scale for the outcome measure.

A participatory approach combined with a mixed method exploratory design, specifically the instrument development model, was selected to guide the study. The development of the outcome measure happened in three phases. Domains for the outcome measure emerged after participation from occupational therapy clinicians and mental health care users in Phase 1. The operationalisation of the domains and the development of the rating scale happened during Phase 2. The third phase was the piloting of the outcome measure to identify issues to be optimised for the final implementation of the outcome measure.

Eight domains with 52 representative items emerged from Phase 1. The domains were Process skills, Communication and Interaction skills, Lifeskills, Role performance, Balanced lifestyle, Motivation, Self-esteem and Affect. Clinicians were satisfied that these domains represented the service that they deliver and compared well with the mental health care users' need for occupational therapy. The involvement of mental health care users in confirming relevant domains for the outcome measure ensured a client-centred approach in the research process.

The outcome measure, named as the Activity Participation Outcome Measure (APOM), has a unique feature of generating reports and spider graphs for every mental health care user. The APOM was

piloted in three mental health care settings. In spite of good intentions from clinicians to apply the measure, it was clear that measuring outcomes is neither a priority, nor a routine task in clinical settings.

The preliminary investigation into the psychometric properties yielded positive results. However, the sample sizes for the validity and reliability samples were not optimal and further data collection needs to continue for confirmation. It is recommended that investigations into the psychometric properties of the instrument continue to eventually market it as a valid and reliable outcome measure for occupational therapists in mental health care settings.

Key words:

Outcome measurement, Occupational Therapy Outcomes, Mental health care outcomes, Activity participation, Outcome measure, Creative Ability, Occupational performance outcomes.

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OPERATIONAL DEFINITIONS

Outcome measure: An instrument designed to gather information on the efficacy of service programmes; a means for determining if goals or objectives have been met (Jacobs & Jacobs 2004, p. 132). An assessment or test to measure one or several attributes that would demonstrate change in the client. The changes are attributed to the therapy intervention.

Effective outcome measure: This is a measure that has been investigated for its reliability and sensitivity to detect change that occurred after intervention. An effective measure is measuring what it is suppose to measure and is appropriate for the context in which it is used. In this thesis a sound outcome measure is used synonymously with and effective outcome measure.

Outcomes in occupational therapy: The functional consequences for the patient of the therapeutic actions implemented by an occupational therapist (Rogers & Holm 1994, p. 872). The roles and activities performed daily that give meaning and purpose to a person.

Domains: The range of constructs being measured in an outcome measure e.g. quality of life, health status, activity participation, functional status, life satisfaction (Hargreaves Hargreaves, Shumway, Hu & Cuffel 1998, p. 123). Domains will be used synonymously with constructs in this study.

Constructs: Something constructed by the mind, a theoretical entity, a working hypothesis or concept. Constructs will be used synonymously with domains in this study.

Items: A concept that represents a trait. The item is specific with sub headings to clarify what is included under that specific trait.

Occupation: “Occupation is everything we do in life, including actions, tasks, activities, thinking and being”. It is the interaction of the individual with their self-directed life activities (Law & Baum 2001, p. 6). Occupation as used by occupational therapists is thus different from the laymen's meaning e.g. the regular work or profession of a person or his/her job. Collins Concise Dictionary (Sinclair 2004, p. 1037) further defines occupation as "any activity on which time is spend by a person" and "the act of occupying or the state of being occupied". These definitions are compatible with occupational therapy's definitions.

Occupational performance: “The doing of occupation in order to satisfy life needs” (Law & Baum 2001, p. 6).

Function: Execution of tasks, activities and roles, sometimes used synonymously with occupational performance.

Mental health care users: This is the term in South Africa for patients or clients suffering from mental health disorders. The Mental Health Care Act of 2002 introduced this term to counteract the stigma of the term psychiatric patient.

Mental health: The definition of the World Health Organisation(2001) applies to this study: "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community".

LIST OF ABBREVIATIONS

ACIS	Assessment of Communication and Interaction Skills
AMPS	Assessment of Motor and Process Skills
APOM	Activity Participation Outcome Measure
AusTOMs	The Australian Therapy Outcome Measure
CMOP	Canadian Model of Occupational Performance
COPM	Canadian Occupational Performance Measure
ICF	International Classification of Function, Disability and Health
MOHOST	Model of Human Occupation Screening Tool

CHAPTER 1 INTRODUCTION AND PROBLEM STATEMENT

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 & Rosenburg 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

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)
Step 1:	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
Step 2:	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
Step 3:	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
Step 4:	Scale development and validation Expert review	Determine item format (type of scaling)	Construct an initial pool of items
Step 5:	Include validation items Guidelines for use	Administration – individual or group testing	Review items and hold preliminary tryouts
Step 6:	Administer to sample	Determine appropriate test length	Field-test the items on a large sample
Step 7:	Evaluate reliability and validity	Determine difficulty levels of items	Determine statistical properties
Step 8:	Optimise scale length (and items)		Design and construct reliability and validity studies
Step 9			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 (Asmunsdottir 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 of 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).

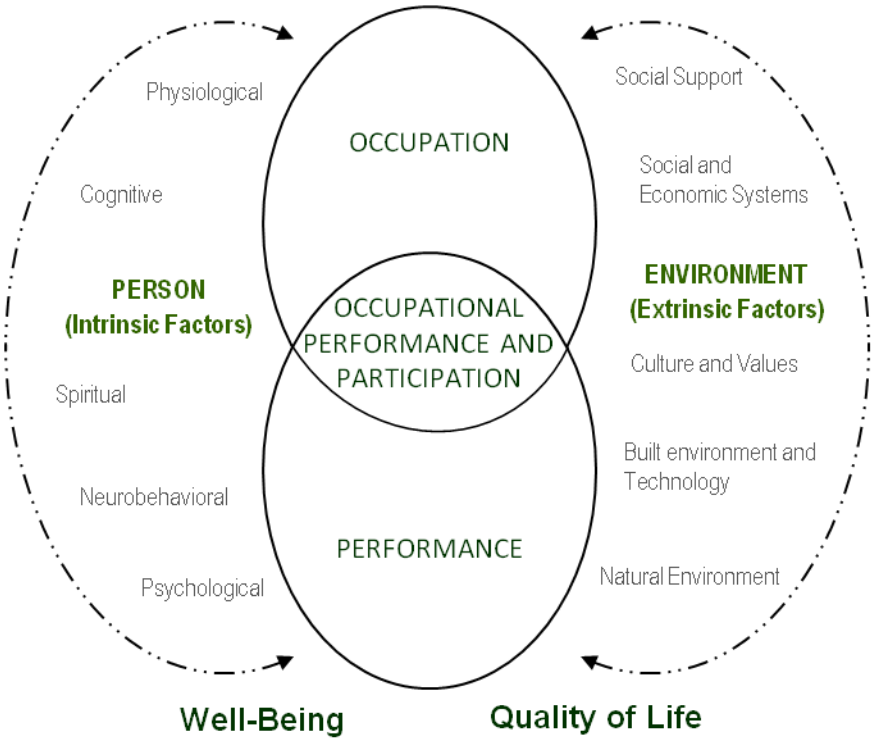

Figure 2.1 The Person-Environment-Occupation-Performance (PEOP) model.

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 occupation 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 influence 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 PEOP, 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**
Ability to handle tools and materials	Not evident	Only simple everyday tools (e.g. spoon)	Basic tools for activity participation - poor handling	Appropriate, lack of skill	Good
Relating to people	No awareness	Fleeting awareness	Identification selection, makes contact, tries to communicate, superficial	Communicates	Communicates / interacts
Handling of situations	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
Task concept	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
Quality of task execution	None	None	Simple - familiar activities, poor quality product	Product fair quality (aware of expectations)	Product good quality (according to expectations)
Supervision needed	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
Norm awareness	None noted	None noted	Starts to be aware of norms	Norm awareness (aware of expectations)	Norm compliance (do as expected, required standard)
Anxiety control	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

Exertion of effort	None noted	Fleeting, minimal effort - not sustained	Effort inconsistent, not maintained, Low frustration tolerance	Varies	As expected / required, sustained

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 measuress, 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 measuress 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.

CHAPTER 3 MEASUREMENT THEORY

3.1 INTRODUCTION

Osborne (2008, pp. ix) stated that "researchers are romantic fools, research is magical". This strong and antithetical comment cited above is an unusual, yet influential way to remind all researchers and the receivers of the findings of research not to merely believe in its magic or charm. Osborne (2008) wished to think about the researchers of the 21st century as "intrepid explorers and adventurers striving to explore phenomena, understand processes, and, most of all, go where no other human being has gone before". All researchers strive to create knowledge and understanding that will change the world. Does this striving for the almost impossible make romantic fools of researchers?

3.2 CHALLENGES IN MEASUREMENT OF HUMAN BEHAVIOUR

Researchers might be perceived by others to be, "romantic fools" if they do not judiciously apply rigorous and effective principles of research to get the most accurate picture of the real world. According to Osborne (2008), it becomes a moral imperative of all researchers to produce valid and reliable results to others. This is easier said than done as many challenges face researchers when they attempt to produce valid and reliable results in the measurement of human behaviour.

Common challenges and problems have been highlighted by several authors (Furr & Bacharach 2008; Laver Fawcett 2007; Wright & Linacre 1989). Firstly, all measurements are subjected to some degree of error and even more so in abstract, unobservable constructs in human behaviour such as self-esteem, motivation, cognitive skills and the like. These unobservable constructs are often referred to as latent traits.

A second problem is that most measures that claim to 'measure' these latent traits are only an observation of certain behaviours and not measurement per se. Wright and Linacre were concerned that many researchers were confused between observation and measurement (Wright & Linacre 1989). They explained that although observation is the first step to measure, as these observations

can be counted and even the severity or amount of the construct can be rated on an ordinal scale, the down side is that ordinal scale data does not present equal distances between ratings. For example, the distance from none to mild, or mild to moderate cannot be calculated and cannot be treated as mathematical numbers. These ratings (1 = none, 2 = mild, 3 = moderate) cannot be treated as composite scores where the rating for each item is added to the remaining items in order to get a total score. The Mini Mental State Examination is an example where this principle is violated. For example, a total score of 21 out of 30 indicates cognitive impairment (Tombaugh & McIntyre 1992). This is a composite score derived from nominal and ordinal ratings.

A third challenge is that psychological constructs or attributes do not operate in isolation and some constructs have strong relationships with others. For example, memory and attention are interdependent, while self-esteem and motivation influence each other (Laver Fawcett 2007). How would a researcher know that the specific attribute under investigation is accurately measured?

A fourth challenge is closely linked to the above mentioned problem, that of score sensitivity (Laver Fawcett 2007). Will the scoring accurately indicate meaningful amounts of this attribute? This is important in outcome measurement as the main focus is to measure change. If the outcome measure cannot detect small amounts of progress (or deterioration), it lacks sensitivity.

When people are being measured, the challenge of behavioural inconsistencies is a reality. People are sometimes consciously or unconsciously influenced by the test items or the person implementing the test. Participants could change behaviour to give the preferred response, also called demand characteristic, or could avoid giving a true answer (Furr & Bacharach 2008).

The final challenge is the many measures and tests available to measure aspects of human behaviour. Before these tests can be administered to a specific population and for a specific reason, the user of the test must have inspected the psychometric properties of the test (Furr & Bacharach 2008; Laver Fawcett 2007).

Measurement principles have developed over the years and many sophisticated techniques and measurement tools are available to address the above mentioned challenges. Some of these tools and techniques are presented in the next section.

3.3 TOOLS AND TECHNIQUES IN MEASUREMENT OF HUMAN BEHAVIOUR.

All measurements are subjected to some error (Embretson & Hershberger 1999; Osborne 2008; Wainer & Tissen 2001). The Classical Test Theory (CTT), also called true score theory, has been used widely to account for some measure of error. Observed scores can be segregated into true scores and error, mathematically expressed as X = T + E. Here, X = observed score, T = true score, E = error. The true score is the average score expected when an examinee would take the same test several times. The error score is the difference between a score for a particular test and the true score. True score theory has many techniques (split-half, test-retest, internal consistency, intra-test etc) and are usually applied to test the reliability of the test scores (Wainer & Tissen 2001).

Osborne (2008, pp. 51) described several shortcomings of true-score theory:

- Measures of persons and items are test- and sample-dependent. Tests with high complexity yield lower results and vice versa. If an above-average sample performs a test (or items on a test), the average score on the items will differ from a below-average sample. Thus person ability and item difficulty cannot be generalised to other samples.
- Complete responses are needed to do comparisons. If there is missing data, true-score theory could give unfair results. Cases with missing data are not included in the calculations.
- Interaction between person ability and item difficulty cannot be predicted with true score theory.
- Mathematical calculations and statistical analysis performed on ordinal scale data lead to invalid inferences and spurious interaction effects.
- Few techniques in true score theory exist that can detect abnormal or invalid response patterns (for example, malingering) and will therefore not detect invalid or irrelevant items in a measuring instrument.

New developments in measurement techniques are constantly evolving to address the shortcomings of true score theory, such as Item Response Theory (Furr & Bacharach 2008; Wainer & Tissen 2001). There is an abundance of literature that suggests that the techniques used in Item Response Theory

are superior to the information produced by true score theory (Furr & Bacharach 2008; Embretson 1999; Osborne 2008; Tesio 2003; Wainer & Tissen 2001; Wright & Linacre 1989).

Item Response Theory is based on the principle that a person's response to a particular test item is influenced by qualities of the person and qualities of the item. Both a person's responses to an item and the properties of this item determine the trait-level estimates. A person with high ability is expected to score high on the difficult items. This is presented in an item-characteristic curve that provides the precise value of these probabilities. If these probabilities do not occur, one could suspect abnormal or invalid response patterns and inconsistent behaviours. Rasch analysis is a popular measurement tool that is used for this purpose (Clark & Watson 1995; Furr & Bacharach 2008; Laver Fawcett 2007; Osborne 2008; Tennant & Conaghan 2007; Tesio 2003).

The item-characteristic curve in Rasch will detect change in a person, that is, as a person's ability improves, he ought to score better on difficult items that he was unable to obtain previously in a testing session. The item-characteristic curve thus detects differences between individuals at different trait levels (Furr & Bacharach 2008).

Rasch analysis generated several other useful techniques that could address other challenges in measurement of human behaviour. Since the use of ordinal scale is viewed as observation and not as measurement, the ideal would be to convert ordinal data into interval data. The Rasch analysis has this capability, providing the data fits the Rasch model. If the data is based on Guttman scaling, it will most probably fit the Rasch model (Laver Fawcett 2007; Tennant & Conaghan 2007).

Guttman scaling is used when descriptions or statements for an item are formulated to indicate the level of a client's ability on a continuum from easy to difficult. In a Guttman scale, once a respondent fits a specific description on the continuum, he should also fit all the weaker or less severe descriptions of the item. It is a deterministic scale and does not allow for odd behaviors that could probably occur (Laver Fawcett 2007; Tennant & Conaghan 2007). Therefore if the data is on a Guttman scale, the Rasch model converts the ordinal data into a linear measure or interval data.

When data is converted into interval data, the one-dimensionality of items can be determined. All items are placed on a continuum according to their difficulty level. From this analysis one could determine if the items coalesce to form a single dominant construct (Furr & Bacharach 2008; Laver Fawcett 2007; Tesio 2003; Wright & Linacre 1989). This function will address the challenge that attributes in humans do not operate in isolation and that items that are one-dimensional contribute to one attribute. It is important to note that other analysis such as factor analysis could also be performed to address this issue, but only if the construct or attribute under investigation is firmly

grounded in a theoretical framework. This method is able to detect the hidden or covert structure in a series of measurements that purport to measure a particular trait. This implies that a researcher who develops a measuring instrument will include all possible items that contribute to a specific attribute according to theoretical frameworks and clinical experience. Statistical analysis will indicate redundant items but it can never suggest missing items (Clark & Watson 1995).

3.4 PSYCHOMETRICS

All measures or tests need to be investigated for their psychometric properties, namely validity and reliability. This is an important aspect in measurement which needs to be addressed in development of outcome measures.

Furr and Bacharach (2008) defined psychometrics as the science of evaluating the attributes of psychological tests. They mention three important attributes of tests, namely the type of data (the scores), issues concerning the validity of data and the reliability of the data.

3.4.1 TYPE OF DATA

All data could be classified as either discrete or continuous data. Discrete data exists independently of each other, e.g. diagnoses, institution or type of programme. Continuous data forms a continuum, e.g. millimetres, age and temperature.

Data is also classified into scales of measurement, that is nominal data (assigning data to a specific category e.g. type of programme), ordinal data (assigning data in order of sequence), interval data (difference in standard units, also in rank order) and ratio data (similar to interval but originates at zero).

During the late 1980's Wright and Linacre (1989) were concerned that researchers could confuse observation with measurement and as a result, treat data improperly. Tesio (2003) also warned that measurement does not equal counting, but an abstract continuum on a continuous linear measure (e.g. a ruler). Quantitative observations are based on counting and these counts can be ordered in amounts of the underlying variable e.g. never, sometimes, always. This is a typical ordinal scale of measurement. The problem lies within the implied amounts as the distances between the scales are

not equal and the score is not a number in a mathematical sense. Nominal data (classifying variables into categories e.g. race, gender, age categories) are also observations and counts but not a number in a linear (interval) scale. Svensson (2001) explained these improper uses of ordinal data in more detail.

Wright & Linacre (1989) stated that measurements can only be true measurements if they are numbers with arithmetic properties (i.e. that can be added, subtracted, multiplied and divided). This is called interval or ratio scale of measurement. Svensson (2001) and Wright and Linacre (1989) labeled data on a nominal and ordinal scale as qualitative and data on interval and ratio scales as quantitative data.

To do valid statistical analysis of data from observed behaviours or latent traits, one must progress from counting observations to measurement. This progression is not new, and well known researchers like Thurstone and Thorndike invented techniques for this conversion in the 1920s. George Rasch developed even more sophisticated techniques in 1953 and these techniques are constantly refined in current research with ordinal scales of measurement (Osborne 2008).

It is not only the type of data that influences the choice of statistical analysis but also the types of validity and reliability that are being investigated.

3.4.2 VALIDITY

3.4.2.1 CONTEMPORARY VERSUS TRADITIONAL PERSPECTIVES OF VALIDITY

Validity raises questions such as: What does a test measure and does it measure what it is supposed to measure? Furr and Bacharach (2008) challenged this definition and argued that it oversimplifies the issue of validity. They proposed a more contemporary definition that reads: “the degree to which evidence and theory support the interpretation of test scores entailed by the proposed uses” (Furr & Bacharach 2008, pp. 168).

This definition implies that the test, or the set of items or the scores, are neither valid nor invalid. It is the interpretation of the scores that is valid or invalid. The next issue in this definition is that validity is related to the proposed uses of the scores and validity is only “valid” for that proposed use. It would be unjust to extend the use of a standardised test to measure associated or related constructs because a test’s validity is only valid for the intended purpose and intended population.

The third issue in this definition is that validity is a matter of degree and not an "all-or-nothing" issue. Furr and Bacharach (2008) further explained that there is no threshold for validity and therefore interpretation of scores should be expressed as strong or weak evidence for validity instead of simply valid or invalid. Clark and Watson (1995) shared this view by stating: "one does not validate a test, but only a principle for making inferences".

Furr and Bacharach (2008) made a distinction between the traditional three-faceted perspective (content, construct and criterion validity) described by Polgar and Thomas (2008) and the contemporary perspective on validity. According to Furr and Bacharach's (2008) contemporary perspective, construct validity becomes the focus point of psychometric investigation. This perspective makes sense, as one could argue that if there is no clear construct, there cannot be a meaningful measuring instrument. Construct validity therefore not only has to be the focus of a psychometric investigation but also needs to be the first property to be investigated. Figure 3.1 presents the types of information that can be used as scientific evidence to support the validity of test interpretations. Note that construct validity is at the centre while the five types of information on the outside represents a mix of reliability and validity aspects.

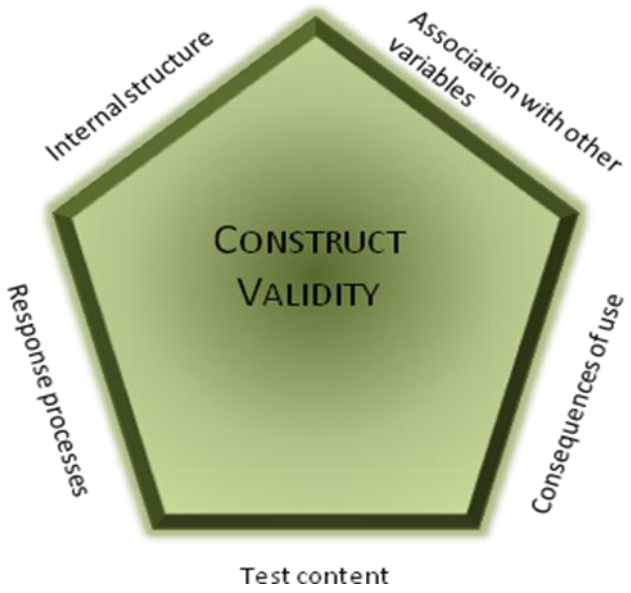

Figure 3.1 A contemporary perspective of types of information relevant to test validity. (Furr and Bacharach 2008, pp. 171)

Test content at the bottom of Figure 3.1 includes the aspect of content validity with specific reference to construct-irrelevant content and construct-underrepresentation. Face validity is also described as evidence of test content.

Response processes refer to the correct interpretation of instructions to use the test or, in case of self-report questionnaires, whether respondents gave true responses.

The internal structure of the test includes item correlation, how the structure matches the theoretical concept, if the items form clusters and whether dimensionality is single or multiple.

A structure is usually based on a theoretical concept or framework. When psychometric properties are being investigated, this theoretical concept must be included when the statistical analysis is interpreted. The crucial importance of the theoretical structure has been described as early as the 1950s by Cronbach and Meehl (1955). They described the nomological network of a construct and set out certain fundamental principles. One of these principles is that a construct occurs within a network of other constructs and the interrelationships should be presented in a nomological network. Some of these attributes in a construct needs to be observable but sometimes derivations could be made from remote observations. A nomological network visually represents the basic features of the concept, its observable manifestations and the interrelationships between them (Peterson & Zimmerman 2004).

When construct validity is being investigated the understanding of this network should be enhanced and thus the network could be expanded. New nomologicals emerge and enable the researcher to predict similar observations (Cronbach & Meehl 1955).

Although Furr and Bacharach (2008) did not refer to nomological networks, they do acknowledge the importance of the theoretical framework when interpreting findings from construct validity analyses. The internal structure of a test is dependent on a firm theoretical framework and associations with other variables should be clearly indicated.

Association with other variables can be investigated through convergent evidence. For example, the correlation with tests of related constructs can be investigated. This is similar to concurrent validity and discriminant evidence (non-correlation with unrelated constructs, also called divergent validity).

Consequences of use, also referred to as consequential validity (Lees-Haley in Furr & Bacharach 2008, p. 182) points to the fair (or unfair) and adverse effects of testing. Furr and Bacharach (2008) argued that if a test does not measure a construct equally well for the target population it is clearly an issue of validity. They gave the example of a test that predicts job performance where females score better than males; the researcher must have evidence that the test is measuring job

performance and that the items are not biased towards female characteristics or have an adverse effect on male subjects.

Face validity is sometimes considered as a weak type of validity. It is appropriate to use when many instruments for measuring a specific construct are available and one may choose from face validity which is the most appropriate (Brink, Van der Walt & Van Rensburg 2006).

Several authors classified criterion validity into concurrent and predictive validity (Laver Fawcett 2007; Payton 1994; Peat 2002; Seale & Barnard 1998). Concurrent validity is useful when two instruments measuring the same construct are available. It is administered to the same sample and the researcher could investigate a correlation between the two instruments.

Predictive validity is used to predict performance in future. A sample will be tested with a measure to establish how much of the criteria are met. Another assessment will be done at a later stage to measure the performance that was expected. If the measurement on the performance and the criteria correlate, the instrument has high predictive validity (Brink et al. 2006; Peat 2002; Seale & Barnard 1998). A typical example is intelligent tests. A subject must meet certain criteria for the different levels of intelligence. A certain level of performance (e.g. school performance) could be predicted using intelligence quotient.

3.4.2.2 ECOLOGICAL VALIDITY

One aspect of validity that Furr and Bacharach's (2008) contemporary perspective of test validity did not cover was that of ecological validity. Ecological validity has been discussed since the 1980's and refers to the relevance of tests' behaviour to the real world. In social sciences, ecology refers to the interrelationship between a person and his/her environment (Baker 1990). Brinberg and McGrath (1985, p. 138) defined ecological validity as the "extent to which a researcher can specify the scope and limits of a set of empirical findings with respect to the elements and relations selected from the substantive domain". Barrios (1988, p. 30) described ecological validity in terms of stability of obtained scores and states that a test will have high ecological validity if the same test has been administered in different settings and the scores show a high correlation. Polgar and Thomas (2008) discussed ecological validity as an aspect of external validity and refer to the difference in the situation in the test/intervention situation and real-life situations.

Tupper and Cicerone (1990) pointed out that internal and external factors influence everyday behaviour and performance in tasks. Therefore external and contextual factors need much more attention in test situations. Tupper and Cicerone (1990) defined ecological validity as the relationship between the results obtained in controlled experimental conditions and natural conditions, in other words, how the test performance corresponds to real-world performance. Sbordone and Long (1996) also pointed out that what a person is able to do in a simulated experimental environment is not necessarily what he/she can do in his/her natural environment.

All tests that relate to daily functioning or social aspects in a person's life should be ecologically sound. Ecological validity thus becomes a very important issue in occupational therapy since the profession's core business is about being able to perform the occupations that the environment demands of the individual; occupations that are both meaningful and provide satisfaction. Ecological validity has been taken seriously by neuropsychologists, but less so by occupational therapists. Numerous studies have been done in the field of activities of daily living and executive functioning by neuropsychologists. Van der Elst, Van Boxtel, Van Breukelen and Jolles (2008) found low to moderate correlations with three executive functioning tests, and argue that ecological validity in testing situations needs to be increased. Chaytor and Schmitter-Edgecombe (2003) highlighted the importance of adding test variables to simulate demands from the environment in order to enhance ecological validity. Their study demonstrated how the complex relationship between cognitive testing and real-world performance could be studied and better understood.

A study done on the cognitive skills of hospitalised patients with serious mental illness indicated that cognition in everyday tasks and common experiences implied ecologically sound results and that these types of testing should be relied on more often than traditional standardised cognitive testing (Heinrichs, Ammari, Miles & McDermid Vaz 2010; Thornton, Kristinsson, DeFreitas, & Loken Thornton 2010).

Studies done by occupational therapists to show ecological validity are scarce. The few studies that have been conducted showed good results. A study done by occupational therapists revealed high ecological validity in the Occupational Therapy Adult Perceptual Screening Test (Cooke, McKenna, Flemming & Darnell 2006).

Bottari, Dutil, Dassa, and Rainville (2006) emphasised the importance of context when assessing independence in everyday activities and urge occupational therapist to take context into consideration in standardised assessments.

An instrument to assess cognitive abilities and learning potential in children between 6 - 12 years was developed by Katz, Golstand, Bar-Ilan and Parush (2007) and showed good predictive validity. When an instrument has good predictive validity it could be an indication that it has assessed real-life variables (Chaytor & Schmitter-Edgecombe 2003; Moore et al 2007). This aspect of ecological validity has been referred to as veridicality by Franzen and Wilhelm (1996).

When developing instruments to measure outcomes, ecological validity has to be taken into consideration because the outcome of intervention in human behavior and social sciences is often only seen once the person has returned to his or her real-life situation. The implementation of ecological validity in the development of outcome measures has been reported in the literature. It is suggested that an outcome measure should reflect the satisfaction of the client with his or her real-life performance. This reflection could be done by the client or significant others that observe the performance in everyday life. While assessing performance, real-life situations should be simulated if assessment is impossible in the real-life situation (Franzen & Wilhelm 1996; Kielhofner 2006; Spooner & Pachana 2006).

Once instruments have been investigated for validity, reliability aspects should then be examined.

3.4.3 RELIABILITY

Reliability is the consistency with which a measuring instrument performs (Brink et al. 2006; Peat 2002; Payton 1994). Reliability is usually easier to establish than validity. However, if a measuring instrument is not valid there is little substance for investigating reliability. Although reliability is not a sufficient condition for validity (Leedy 1997), the one neither ensures nor precludes the other (Seale & Barnard 1998). Peat (2002) explained that poor repeatability (implying unreliability) cannot have good validity, but good repeatability does not guarantee good validity. However, validity will be higher if the instrument has good repeatability. Furr and Bacharach (2008, p.187) reiterated that: “Even though validity often requires reliability, the reverse is not true”.

Several reliability aspects can be investigated once validity has been established. These are stability, internal consistency, equivalence, intra- and interrater reliability.

Stability of an instrument refers to the extent to which the same results are obtained when the instrument is administered to the same sample twice. It is evaluated through the test-retest method for which a reliability coefficient will be calculated, statistically known as the correlation coefficient.

A coefficient above 0.7 is acceptable but coefficients of 0.85 and higher are preferable (Polgar & Thomas 2008).

Although stability is most appropriate for instruments that measure relatively enduring constructs such as personality and ability, there are instruments (specifically in outcomes measurement) that are developed to detect change in constructs such as motivation, self-esteem, participation and the like. Peat (2002:85) emphasised the importance of responsiveness of an instrument with outcomes measurement. Many instruments are inherently unresponsive to small changes in subjects. Peat suggested that in such cases the range of the scale needs to be extended by adding subcategories between main scores.

If therapists use their clinical reasoning and professional judgement about clients' progress or change, it should correlate with the correlation coefficient of the difference between the first and second assessment.

Laver Fawcett (2007, p. 202) refered to responsiveness as test sensitivity. She says that a sensitive test will minimise the chance of false negative results (when a person who has the deficit is not shown to have the deficit) and will be able to measure change due to intervention. The test must therefore target outcomes addressed in therapy. The test must be responsive to both the type and amount of change in function that is anticipated or desired as a result of intervention.

To calculate change, an effect size index is calculated. Effect size is a measure of the strength of the relationship between two variables and is ideal for outcome measurement; for example, the strength of the relationship between the base-line and final assessment. An effect size index of 0.2 or below is considered small, 0.5 is considered moderate and 0.8 or more a large effect size (Laver Fawcett 2007, p. 203).

An inconsistent classification of sensitivity and responsiveness was found in the literature. Laver Fawcett (2007) classifies test sensitivity as an aspect of reliability while Polgar and Thomas (2008) classified it as a validity issue. Clinically this should not have an influence on effectiveness of tests because the clinician should decide whether sensitivity is an issue. It should not really matter whether it is described as a reliability or validity aspect.

Internal consistency refers to whether persons in a trial respond consistently to the items in the test or measure. The Cronbach's alpha index is generally used to calculate the correlation coefficient for this consistency. A correlation of 0.7 and above indicates acceptable internal consistency while correlations above 0.9 could point to redundant items (Osborne 2008; Spiliotopoulou 2009).

Spiliotopoulou (2009) warned occupational therapists with regards to misconceptions about the use and interpretation of Cronbach's alpha. Sound interpretation of Cronbach's alpha will be enhanced if the researcher is cognisant of the following factors: the number of items in the test (large number of items could yield a high Cronbach's alpha), the width of the scale (wider scales could increase alpha), the nature of the data (nominal data is not suitable for Cronbach's alpha; rather use Kuder-Richardson), the sample size (small samples could yield large reliability coefficients), normal distribution and linearity (if not, Cronbach's alpha could underestimate the internal consistency of the test) (Spiliotopoulou 2009).

Equivalence is the term used when a test contains two similar sections or editions. A test user may then select one of the versions to administer. It is usually developed to counteract the threat of familiarity with a test. If a respondent scores the same on both editions of the test, equivalence is high (Furr & Bacharach 2008).

Interrater reliability refers to different observers or raters who use the same instrument to measure the same phenomena at the same time while intrarater reliability is a correlation between two or more ratings done by the same rater (Polgar & Thomas 2008).

Reliability thus deals with the property of reproducibility (Polgar & Thomas 2008). It is an important property in the measurement of outcomes since the minimum data collection points are at least two. This implies that the same measure will be applied at least twice on the same client and if the measure is not reliable, incorrect information will be used to make important decisions about the person's performance. Researchers and developers of outcome measures should thoroughly investigate the reliability aspects as discussed above.

Other concepts that may lead to confusion in research are internal and external validity. These two concepts warrant their own explanation as they may cause confusion in the realm of psychometric properties.

3.4.4 INTERNAL AND EXTERNAL VALIDITY

Internal and external validity are described in literature but should not be confused with the measurement properties of assessments or measuring instruments (Polgar & Thomas 2008). These two types of validity are not assessed when one investigates the reliability and validity of a specific measuring instrument. They are, however, applied in the interpretation of the results of the study.

In other words, psychometric properties will be included in research studies where instruments were developed and internal and external validity will be described in studies that investigate different variables (this includes almost all quantitative designs).

Internal validity is the freedom from bias in the interpretation of the results, that is, if the changes in the dependent variable may, with no doubt or bias, be attributed to the independent variable.

External validity refers to the extent to which the results may be generalised to the general population or subpopulations. When using mixed methodology a researcher could experience a problem in generalising the findings. During some phase of the research a researcher would have used qualitative methods to obtain data. Qualitative data does not lend itself to generalising and therefore external validity will be influenced. External validity is described as transferability in qualitative designs with qualitative data.

Polgar and Thomas (2008) classified external validity into population validity and ecological validity. Population validity refers to the generalisation of the results to the population from which the study sample was drawn. Population validity ensures that results are not generalised to populations with different characteristics to the study population. Ecological validity has been discussed earlier in this chapter and refers to the situation in which an investigation that has been carried out might not be accurately generalised to other situations.

Internal and external validity thus contribute to the validity of the findings and become important when the effect of service delivery is being investigated.

3.5 CONCLUDING REMARKS

This chapter discussed measurement principles and highlighted certain concerns with the measurement of human behaviour. Although some challenges exist, many tools and techniques are available to address the challenges. This information was helpful in the development of the outcome measure during Phase 2 of this study as well as with the interpretation of the data in Phase 3.

CHAPTER 4 RESEARCH METHODOLOGY

4.1 INTRODUCTION

The methodology comprised three phases. The aim for each phase was as follows:

Phase 1: Identifying the domains of the outcome measure

Phase 2: Designing and developing the outcome measure

Phase 3: Piloting the measure and examining selected psychometric properties.

The research approach and design for the entire study are set out in this chapter. The study objectives, participants who were involved in the study, data gathering methods and data analysis are described separately for each of the three phases. Chapter 4 concludes with a discussion of the ethical considerations of the study.

4.2 RESEARCH APPROACH FOR THE THREE PHASES

The researcher had several options with which to approach the challenge of developing an outcome measure. Use of a naturalistic approach as point of departure would delineate the context and meaning of the prospective measure in terms of professionals who intended to use it as well as potential clients who would be assessed by it. A participatory approach, in turn, would generate interpersonal responses from people participating in the real situation who, upon completion of the research, would continue to use the measure. A positivist approach, on the other hand, would provide the best external objective evidence of the measure's worth for the profession of occupational therapy and for clients. By settling for a pragmatic approach, a middle-of-the-road option, the researcher would create circumstance that would permit her to configure practical issues such as implementation, appropriateness and clinical utility during the conduct of the impending study (Babbie & Mouton 2001).

The researcher opted for a participatory approach to the study to address the research-practice gap (Taylor, Suarez-Balcazar, Forsyth & Kielhofner 2006). When researchers investigate problems in

clinical practice they have to be aware of the isolation that could be created between researchers and clinical practitioners. Researchers might not be aware of the important circumstances and constraints faced by clinicians. The development of an effective measure mandated scientific information from occupational therapists, based on their clinical experience, and from mental health care users about their personal experiences of occupational therapy services. Although the participatory approach is traditionally used in social science research with the intent to change social situations, it was often used to close the gap between research and practice. It was decided to apply this approach in a clinical setting where change in service delivery was clearly needed and where all the stakeholders had to become involved in order to maximise the chance of implementation in the clinical setting.

4.3 RESEARCH DESIGN FOR THE THREE PHASES

The researcher supplemented the participatory approach with a pragmatic approach that permitted her to merge the practical issues of an outcome measure (like clinical utility and psychometric properties) with the experiences of people from the research setting.

Whenever a compound approach, as was described above, is opted for, a mixed method design would yield the best strategic advantage: thorough investigation of each step or phase of the problem situation. A mixed method design is usually described as a diversified approach since it blends both qualitative and quantitative data. Creswell and Plano Clark (2007) suggested that where a researcher needed to explore a phenomenon and had not yet indentified appropriate variables, the application of an exploratory mixed method design could quickly point out relevant variables. The exploratory design, furthermore, specified the instrument development model for construction of measures or instruments such as an outcome measure. The research design for the entire study was thus a mixed method exploratory design that was aimed at instrument development.

Figure 4.1 presents the sequence of this research project according to the Instrument Development Model. Phase 1 constituted the qualitative steps of the research where the researcher relied on the participation of clinicians and mental health care users to achieve the research aims. Phase 2 entailed the development and designing of the outcome measure. This phase was a theoretical exercise where the researcher relied on previous research and literature reviews to generate item descriptions for the outcome measure. Phase 3 was the quantitative phase where the outcome measure was subjected to a trial and the psychometric properties were investigated.

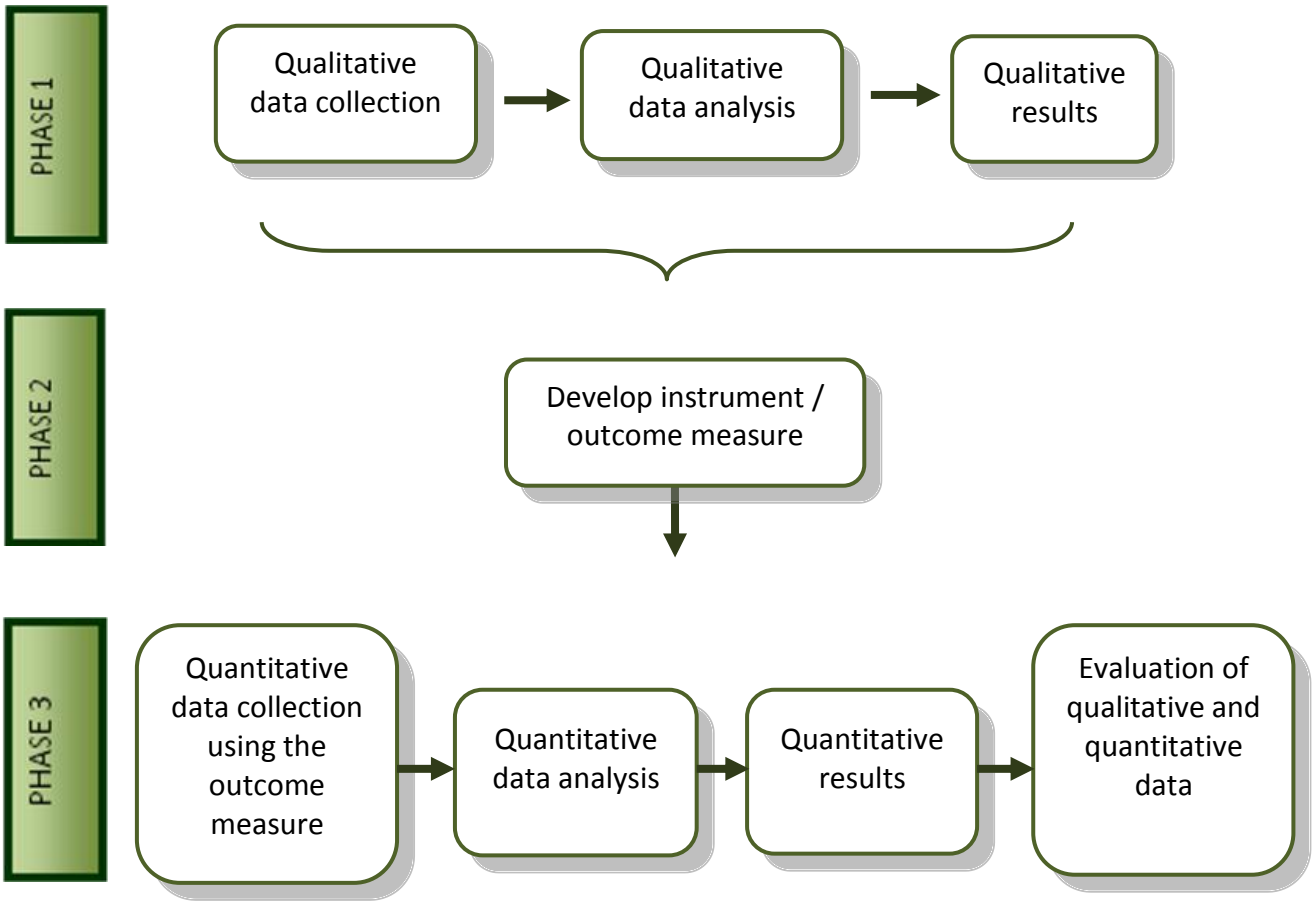

Figure 4.1 Mixed methods exploratory design: Instrument Development Model.

The Instrument Development Model guided the research through the three phases. Figure 4.2 gives an overview of the three phases of the research, methods used in the phases, the products that each phase yielded and the developmental stages in the instrument or outcome measure.

The methodology for each phase is next described in detail. Each section introduced the objectives of the particular phase, in an attempt to improve readability and understanding.

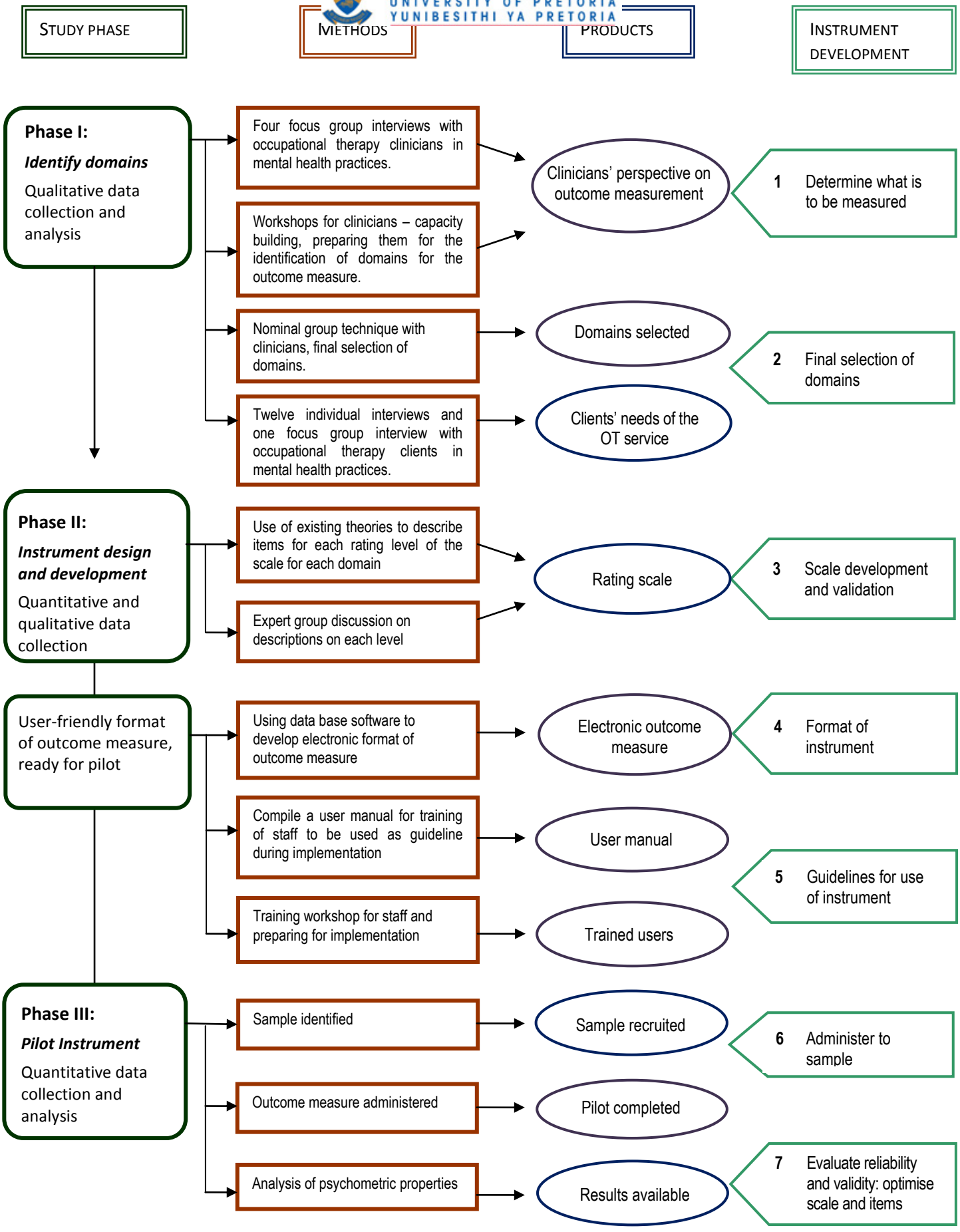

Figure 4.2 Phases, methods, products and instrument development steps of the study.

4.4 PHASE 1

4.4.1 AIMS AND OBJECTIVES FOR PHASE 1

The aim of the first phase of the research was to identify the domains of the outcome measure. Two objectives had to be met to achieve this aim: (i) establishing the views and perceptions of occupational therapy clinicians with regard to measuring of outcomes in order to identify relevant domains for an outcome measure; and (ii) evaluating mental health care service users' expectations about outcome domains selected by the clinicians.

4.4.2 PARTICIPANTS

4.4.2.1 RESEARCH POPULATION

The population to whom this study findings will apply are occupational therapists that deliver services to mental health care users in acute care, subacute care, long-term care and forensic services. These occupational therapists should use the Model of Creative Ability as their theoretical framework and be conversant and literate in English. The types of diagnoses of the mental health care users may include any of the disorders in the DSM IV. The severity of the illness may range from acutely psychotic or disorientated to stable and fully coherent. The age group of the mental health care users should be older than 15 years and could be from any cultural or socio-economic background.

4.4.2.2 OCCUPATIONAL THERAPY CLINICIANS

This phase of the study was initiated by selecting occupational therapy clinicians who were able to give rich and informative data on measuring outcomes. The clinical placement settings that were being used for student training at the University of Pretoria were judged as a fair representation of the scope of established occupational therapy mental health services. Occupational therapists from five mental health care settings in and around Pretoria were asked to participate. During personal discussions with the researcher, clinicians at these settings indicated that their departments would benefit from an outcome measure and that they were eager to participate in the study.

A situational analysis intended to assess the current state of knowledge and experience of the participating clinicians with regard to measurement of outcomes in occupational therapy mental

health practices, preceded determination of the domains. All participants came from mental health practices that delivered different services e.g. acute care (two to three weeks), subacute care (three weeks to three months), long-term care (more than three months), and forensic services. Qualified occupational therapists, each with unique personal experiences, coming from various training centres throughout South Africa, partook in this phase. Acknowledging the different backgrounds and service settings of the participants, it was imperative to go through a process where all could understand each other's views and perceptions of measuring outcomes.

Occupational therapy clinicians from the following settings were invited:

- Weskoppies Hospital (acute, subacute, forensic and long term care)
- 1 Military Hospital's psychiatric unit (acute and subacute care)
- Witbank Hospital's psychiatric unit (acute and subacute care)
- Denmar Psychiatric Clinic (acute and subacute care)
- Vista Psychiatric Clinic (acute and subacute care)

Clinicians, who had worked at least one year in a mental health setting, was eligible for inclusion. The research mandated a convenience sample since all participants that fitted the inclusion criterion above, were included. They had to respond to specific research question, namely what their views and perceptions about outcomes were and what outcomes they considered suitable for inclusion in an outcome measure. The researcher aimed to generate a wealth of detail from all the available participants from the above mentioned settings.

The researcher personally contacted every setting and invited clinicians who met the sampling criterion to attend the first focus group on a date negotiated between the clinicians and the researcher. Sixteen clinicians accepted the invitation. Two first-round focus groups were arranged to accommodate the number of participants.

4.4.2.3 MENTAL HEALTH CARE USERS

A purposive sample using the maximum variation sampling technique was applied to select mental health care users. The inclusion criteria stipulated a variation in age, gender, length of stay and attending different types of programmes at the occupational therapy department. These criteria implied that the mental health care users had to be familiar with occupational therapy and regularly attend the programme in order to give valuable information. They also had to be able to provide reality-based answers to questions put to them, thereby ensuring access to rich information. Mental

health care users who were interviewed individually were recruited from one institution. Clinicians at this institution provided the researcher with names of appropriate participants.

The individual interviews were followed up by two focus groups that verified the presence of data saturation. Mental health care users for the focus groups were selected from two other mental health care settings using the same inclusion criteria explained above. Clinicians from these settings identified and assigned suitable participants.

4.4.3 DATA GATHERING METHODS

4.4.3.1 FOCUS GROUP DISCUSSIONS

Focus groups are acknowledged means of eliciting information (De Vos, Strydom, Fouche & Delport 2005). The method originated in the early 1960's and have been extensively used by social scientists since the 1990's. Schurink and Poggenpoel (1998, p. 315) described it as a group of between eight to ten people purposively discussing a topic of concern or common interest. In practice it is conducted as an open but focused conversation, usually in a series to generate confirmatory data and ensure its saturation.

The advantages of focus groups are numerous. They are rapid and cost-effective means to gather data and useful when little is initially known about a specific situation or topic. The researcher directly interacts with participants and can thus probe for deeper meaning of specific views and perceptions. Participants are allowed to expand the responses of others in order to increase the generation of rich and comprehensive information about a topic.

The disadvantages of focus groups are that data-based findings cannot be generalised because the participants usually are part of a purposive sample or one of convenience and as a result are not necessarily representative of the population being studied. The qualitative and diverse nature of the data could also make it difficult to summarise.

A moderator facilitates the discussion of a topic or concern. The moderator does not participate in the discussion but encourages interaction between participants and allows the discussion to flow naturally. It is important to listen openly and intensely in order to keep the discussion within the boundaries of the topic without limiting response. The moderator, interacting with participants to

probe deeper meaning, has to remain non-authoritarian and non-judgmental throughout the focus group.

The moderator usually prepares an interview guide to subtly direct the discussion (refer to Appendix A for the interview guide for the focus groups). If the first question of the focus group is open, non-threatening and inviting, discussion should flow naturally.

Sixteen occupational therapy clinicians volunteered to participate in the intended study and they were divided into two groups of eight each. The groups were kept small in order to encourage participants to contribute maximally. Each focus group was planned to last two hours. It was important to pose the same opening question to both groups, and the interview guide was therefore essential for consistency.

The interview guide covered questions on the knowledge and attitude of clinicians about outcome measurement, existing measurement systems in use (including assessment methods and techniques), and various needs for an outcome measure. These questions were piloted with a colleague and the feedback was implemented. The original direct opening question was converted into an open statement with an invitational tone: “Let’s talk about outcome measurement”.

Data saturation occurred after each focus group participated in two rounds of discussion. Participants expressed a need for more information on available outcomes to assist them in identifying and selecting domains for an outcome measure during the second round focus group discussion. All the participants agreed to attend a workshop that addressed these needs. The researcher conducted the two workshops, as requested. Some participants found the dates inconvenient and the workshop, therefore, was repeated.

The content of the workshop covered the most recent trends in mental health practices, an update of philosophical, theoretical and practice frameworks as well as existing outcome measures. Towards the end of the workshop participants felt equipped to identify domains for an outcome measure. Step 1, 2 and 3 of the nominal group technique as described below formed part of the workshop.

4.4.3.2 NOMINAL GROUP TECHNIQUE

The nominal group technique (Lloyd-Jones, Fowell & Bligh 2002; Willcox & Zuber-Skerritt 2003) was utilised to determine the domains for the outcome measure. This technique starts off with a focal question using brainstorming. A public list of all responses that the participants had contributed is next compiled. The third step involves discussion and clarification of similarities, duplications or

unclear statements. During step four each participant prioritises and selects the top three statements from the public list. The final step is to rank the chosen statements in order of priority.

The focal question posed to the participants in this study was: "What are the domains that you wish to include in an outcome measure for your practice?"

Step 1 (10min)

Individual brainstorming in writing followed. Each participant received a small booklet with 20 pieces of paper (8cm x 8cm). They had to write each outcome on a separate piece of paper. The number of outcomes per participant was unlimited. (They could request more paper if necessary).

Step 2 (20 – 30 min)

A public list (on a flip chart) was compiled after a round-robin collection of ideas. Each participant received a turn to nominate one domain; if someone else had already mentioned it, the participant chose another one from her list. No criticism or judgement was allowed during this step.

Step 3 (30 – 45 min)

Hereafter discussion and clarification of public statements/domains started. Participants could ask questions about the domains. Duplicated domains were eliminated while others were renamed to enhance clarity of understanding. After the workshop, a final list of the domains was compiled and distributed to all participants via e-mail. The final list consisted of two columns: Column A contained a domain, e.g. process skill, and column B contained all the aspects for the domain, e.g. attention, pace, adaptation. (See Appendix B for the list that was distributed).

Step 4 (via e-mail)

Each participant was asked to select the three most important items/domains. Participants were asked to select from column A and then mark the aspects in column B which they viewed as relevant.

Each participant had to rank their three chosen domains (A = priority 1, B = priority 2 and C= priority 3).

Step 5 (ranking)

After receiving the selections of the participants, the domains were counted and weighted. Weighting of domains was done by assigning 3 to all As, 2 to all Bs and 1 to all Cs. The list was then reordered to reflect order of priority.

4.4.3.3 INDIVIDUAL INTERVIEWS AND FOCUS GROUPS WITH MENTAL HEALTH CARE USERS.

Interviews with mental health care users were conducted. An interview guide was prepared and used with volunteering clients. See Appendix C for this interview guide. The first interview with each client served as a trial interview. It was audiotaped to permit the researcher and a colleague to co-jointly review questions and answers obtained from the interview, at a later stage. Some questions were rephrased or eliminated after review. Twelve health care users were individually interviewed. The individual interviews continued until no new themes or categories emerged from the data. Two focus group interviews were held with nine mental health care users at a second and third institution, to confirm the data from the individual interviews and to check if new data emerged from participants. Three users who had participated came from one institution and six from another.

Domains were inferred from this information and were then compared with the clinicians' selection of domains.

4.4.4 ANALYSIS OF THE DATA

4.4.4.1 FOCUS GROUP INTERVIEWS WITH CLINICIANS

The content of the focus groups was transcribed verbatim, categories were identified and themes were created. Thematic content analysis (Green & Thorogood 2004) was used to categorise common themes. The key elements in each participant's versions were compared with those of all other participants and then classified into an existing category. A new category was created if the key element did not fit in an existing category.

4.4.4.2 NOMINAL GROUP TECHNIQUE

In Step 5 data generated by the Nominal Group Technique was analysed. The frequencies of responses were calculated where after and the weighting of each domain was determined.

4.4.4.3 INTERVIEWS WITH MENTAL HEALTH CARE USERS

The interviews with mental health care users were transcribed verbatim. Categories and themes that they came up with were compared with the domains that the clinicians had generated. The specific data set was examined to track additional or new categories or themes that might have emerged. The focus was on the content or range of the data and not on the frequency of responses: in other words, the number of times a theme or category was mentioned was not important.

4.4.5 TRUSTWORTHINESS OF DATA

Subjective meanings, experiences and perceptions from participants in this first phase of the research formed the starting point of the scientific inquiry. Subjective interpretation, however, could compromise data and make it unreliable and invalid, or in qualitative terms, data that is neither plausible nor trustworthy. Krefting (1991) suggested four strategies to establish trustworthiness in qualitative enquiries: credibility (internal validity in quantitative terms), transferability (external validity), dependability (reliability) and confirmability (objectivity). These strategies were applied during different stages of the research e.g. in the course of the research design, data collection and data interpretation. Application of the four strategies to ensure true reflection and presentation of the data that emerged from the first phase of the study is explained as follow.

4.4.5.1 CREDIBILITY

Identification of recurring patterns required spending adequate time with participants. The researcher had to submerse herself adequately in the research setting in her attempt to identify and verify response patterns that reflected the true circumstances and established confidence in the data. Krefting (1991) reminded researchers that the truth value is subject-oriented but, nevertheless, it is the researcher's responsibility to present the truth value as it is. The following methods were used to ascertain the presentation of the truth during the data collection.

Lincoln and Guba (1985) introduced the phrase "prolonged engagement". It refers to the researcher's need to ensure intimate familiarity with the research setting so as to permit the discovery of hidden facts (Anthony, Onwuegbuzie & Leech 2007a). It was often noted in qualitative

studies that as time went by, participants offered more sensitive information. In the current investigation the researcher engaged the research setting for an extensive period of two years since she first accessed it with the intention to study outcomes. She immersed herself in the research process by paying regular visits to settings, by having informal discussions with clinicians and students who did their training at the settings and often returned to supervise students in training. By the time the focus groups and interviews had started, the researcher valued and sometimes even identified with the comments from the clinicians and mental health care users.

Krefting (1991) cautioned researchers against the social desirable responses that participants often give, instead of relating their personal experience. This can also be countered by prolonged engagement in the setting. Questions sometimes had to be reframed to elicit the exact perceptions or experiences from participants.

The researcher's influence on the results of a qualitative inquiry must be acknowledged and explained. Reflexivity is an effective way of revealing the researcher's own background, perceptions and interests in the process. Even the relationship between the researcher and the participants needs to be explained. For this reason a vignette about the researcher has been included (see Appendix D).

As the researcher became more enmeshed in the research setting, she had to be careful not to lose the ability to interpret the findings and constantly had to separate her own ideas from those of participants. She did this by keeping a self-reflexive journal where she wrote up her perceptions and interpretations after each data gathering session.

Member checking prevents misinterpretation of the data (Anthony et al. 2007a). After completion of the focus groups, the researcher transcribed the data and partitioned it into themes and categories. The researcher presented the preliminary interpretations to the participants at the workshop to check if it represented their experiences and perceptions about outcomes. Participants used the opportunity to clear misunderstanding and verify some of the wording of certain themes and categories.

4.4.5.2 TRANSFERABILITY

Krefting (1991) mentioned that transferability might not necessarily be an issue depending on the purpose of the research and its situational uniqueness. If a case study, for example, had been investigated to understand the dynamics of that case but for no other purpose, transferability becomes irrelevant. In the current study, transferability was an issue since outcomes that were to

be measured in engaged mental health care settings preferably had to be appropriate for and relevant in other mental health care settings. Transferability was ensured through assembly of a representative sample of participants, and by drawing up a thorough profile of the participants (Anthony et al. 2007a; Anthony, Onwuegbuzie & Leech 2007b).

Participants were able to give information-rich data on what needed to be included in an outcome measure. Participants, after all, worked in mental health care settings and were experienced in whatever was at issue. As was said earlier, almost all mental health care settings, at the time of data collection, had already been invited to participate in the study.

The onus to provide an index of transferability did not rest on the researcher but it, nevertheless, was his or her responsibility to provide adequate information for outsiders to decide if findings of a study were transferable to their own situations (Lincoln & Guba 1985). By providing a comprehensive profile of the sample, namely the occupational therapy clinicians, the settings they represented as well as the mental health care users, external stakeholders could assess the transferability of the findings to their own situations.

4.4.5.3 DEPENDABILITY

Dependability refers to the consistency of the findings and repeatability of the study (Anthony et al. 2007a). The use of the code-recode procedure added to dependability of this study. During the analysis phase, the themes and categories were coded. The researcher went back to the analysis after a few weeks to see if she would still code the themes in the original categories. The participating clinicians were consulted again and some categories were recoded.

4.4.5.4 CONFIRMABILITY

Confirmability of a study indicates the degree of bias present in a study. Due to the nature of qualitative studies, the researcher has to be subjectively involved in the entire process, and is expected not to take an objective or neutral stance. Lincoln and Guba (1985) pointed out that neutrality in a qualitative study shifted from the researcher to the data set. Instead of the researcher being objective, the rigor lies in the data being neutral. The findings are solely those of the participants and any involvement of the researcher is clearly explained.

Triangulation was used in this study to support the confirmability or neutrality of data (Guba 1981). Obtaining data about what to include in the outcome measure from occupational therapy clinicians

as well as mental health care users enhanced the neutrality of the data. Informal discussions with experts during colloquial seminars and congresses were used to confirm some aspects of the data.

Reflexivity (Krefting 1991) was used to further support confirmability. The researcher kept a research journal in which she noted her personal experiences, perceptions and feelings after data gathering sessions. Neutral interpretation of the data was achieved by acknowledging subjective involvement and discussing this with research experts.

The matter of trustworthiness primarily related to the qualitative phase of the study. Since the study was a mixed method design, trustworthiness or internal and external validity of the other phases will be explained in following sections.

4.5 PHASE 2

4.5.1 AIMS AND OBJECTIVES FOR PHASE 2

Once the domains of the outcome measure were identified in Phase 1, Phase 2 commenced with the intent to design and develop the outcome measure.

The strategy for constructing and developing outcome measures was described in the literature review and applied in the prospective research. It is summarised in Figure 4.2, the last column labeled instrument development, commencing with *Determine what is to be measured* and ending with *Evaluate reliability and validity*. Each step in this instrument development strategy will now be described.

4.5.2 DEVELOPMENT OF THE OUTCOME MEASURE

4.5.2.1 DETERMINE WHAT IS TO BE MEASURED

As set out above, the first two objectives of Phase 1 of the study focused on what was to be measured. This was done in collaboration with occupational therapists and mental health users in

focus groups and with occupational therapy clinicians at workshop. Mental health care users were also individually interviewed. The final product of these data gathering sessions was a list of potential outcome domains.

4.5.2.2 FINAL SELECTION OF DOMAINS

The original list of possible outcome domains was overwhelming: it was impossible to construct an outcome measure with so many domains. The nominal group technique was used to guide the clinicians in prioritising the initial contributions.

4.5.2.3 SCALE DEVELOPMENT AND VALIDATION

Domain outputs derived from individual interviews and focus groups with mental health care users were compared with those chosen by the clinicians with the intention to confirm domains or items for the outcome measure.

The next step in the development of the outcome measure was to construct and validate a dedicated scale that measured each domain. The ultimate objective of scale development was to come up with a valid measure of a specific construct. Clark and Watson (1995) emphasized that it was essential to begin with a clear conceptualisation of the target construct. The initial content preferably had to be overinclusive, not limited to the needs of an institution, based on a particular individual's experience and ideas, or consisting of domains that are easy to measure. The entire range of outputs from the target population had to be represented in the domains. Overinclusion was necessary because techniques of data analysis could pinpoint weak or irrelevant items while they, simultaneously, were unable to detect items that should have been included.

One needed to take cognisance of the theoretical framework(s) of assessment and treatment procedures during outcome measurement (Law et al. 2001a). Theoretical frameworks are important indicators of key outcome measures. For example, if the framework was based on Vona du Toit's Model of Creative Ability (Du Toit 2004), volition and action as expressed in activity participation, would be two of the key measures. A theoretical framework, such as that of Creative Ability, could further contribute to a sound outcome measurement system since this model describes a person's activity participation and occupational performance in consecutive levels. Each level gives a detailed description of characteristics expected from a person at that level. These levels were used as the consistent rating scale across different domains and items for the outcome measure.

4.5.2.4 OPERATIONALISING THE DOMAINS

Each domain of an outcome measure was studied theoretically and operationalised by breaking it up into observable and measurable components. Items that represented the domain were phrased. This output made the domain observable and measurable. Each domain and its subset of items were meticulously delineated to permit domain differentiation and promote clarification of the meaning attributed to a specific outcome measure. Discussions in focus groups and theoretical definitions were used to identify domains and describe the items.

Many factors were considered in formulating item descriptors. Meticulous grammar, phrasing and semantics ensured precise formulation of a specific level of creative ability and representativeness of a particular item. The outcome measures were specifically developed for therapists who had knowledge and experience of the Model of Creative Ability, an issue that mandated item descriptors that were not cluttered by assumptions, constructs or principles of the theory. Item descriptors served as cues at a particular level and thus to be brief and to the point.

4.5.2.5 FORMAT OF INSTRUMENT

The instrument or measure was specifically developed for use by occupational therapy clinicians to measure outcomes of their intervention programmes. The format had to be commensurate with their level of knowledge and field of clinical practice. The format had to be user-friendly and explanatory, yet sufficiently practical for use with all types of clients in a mental health setting.

4.5.2.6 GUIDELINES FOR USE OF THE INSTRUMENT

A user manual was compiled that guided clinicians in the use of the outcome measure. The manual also had to facilitate the training of the clinicians. Its contents had to be comprehensive: the user manual had to illustrate the principles of outcome measurement, explain the difference between assessment and outcome measurement, detail procedures required for using the outcome measure, instruct users on how to determine a specific rating for a client, and define the various domains and items.

A four-hour training session was planned to explain the user manual. Adequate time for questioning and further explanation were allocated at the end of the training session. Clinicians were asked to use the outcome measure on five of their mental health care users.

4.6 PHASE 3

4.6.1 AIMS AND OBJECTIVES OF PHASE 3

Phase 3 required application of the instrument with the intention to identify clinical utility problems, investigate aspects of its validity and reliability, assess the sensitivity of the outcome measure to detect change and optimise the items where necessary.

4.6.2 ADMINISTER TO SAMPLE

Eleven participating clinicians were asked to recruit five mental health care users each and subject them to the outcome measure. The researcher was present whenever they assessed users so that she could respond to questions with regard to descriptions in the measure. The researcher also noted problems related to clinical utility, e.g. instructions for use, time required to complete the outcome measure and the effectiveness of the electronic format.

4.6.2.1 THE SAMPLES

Different samples and sample sizes were chosen for different types of validity and reliability estimation. Six occupational therapists were invited to judge content validity while the rest of the investigations were done on the performance of the mental health care users. The sample for intra- and interrater reliability was five clinicians from the setting who participated in the piloting of the outcome measure. Table 4.1 below indicates the sample size for each property that was investigated.

Table 4.1 Sample sizes for the validity and reliability investigations.

PSYCHOMETRIC PROPERTY	THE SAMPLE (UNIT OF ANALYSIS)	SAMPLE SIZE
Content validity	Occupational therapists acting as subject matter experts	6
Construct validity	Mental health care users' performance rating on the outcome measure	41
Interrater reliability	Mental health care users' performance rating on the outcome measure as rated by five clinicians	5 clinicians 1 mental health care user, 2 measurements
Internal consistency	Mental health care users' performance rating on the outcome measure	41
Sensitivity	Mental health care users' performance rating on base-line and final assessment	31

4.6.3 EVALUATING VALIDITY AND RELIABILITY: DATA COLLECTION PROCEDURE

4.6.3.1 CONTENT VALIDITY

Six experts on the subject matter of the Model of Creative Ability were asked to judge the relevance of each item and its descriptions in terms of overarching domains of the outcome measure. The experts had to assign a value of between 1 and 5 to each item to indicate their judgment of the relevance of the item to its domain. Each description was then judged for accuracy at the specific level of creative ability. The experts were asked to rewrite or add to descriptions where they did not agree.

Five of the experts had more than 30 years of experience and one had 10 years of experience in the Model of Creative Ability and also had been involved in the training of students.

4.6.3.2 CONSTRUCT VALIDITY

Clinicians attended two training sessions prior to the implementation of the outcome measure. They also received a training manual with relevant information for reference purposes during the data collection phase. The clinicians hereafter applied the outcome measure to collect data from the mental health care users. Base-line assessments were used to investigate construct validity.

4.6.3.3 INTRA- AND INTERRATER RELIABILITY

Data for interrater reliability was acquired from five clinicians who rated a single mental health care user that they knew well. A base-line measurement was collected, followed by second measurement five months later, with the same clinicians and health care user.

The same data set for the interrater reliability was used to calculate intrarater reliability.

4.6.3.4 INTERNAL CONSISTENCY

The data set used in the construct validity investigation was also used to investigate internal consistency.

4.6.3.5 SENSITIVITY

It was important to assess sensitivity to detect change in activity participation between the base-line and follow-up measurements. The effect size was calculated for 31 subjects who were rated by clinicians at two data collection points, namely the base-line and final assessment. The data set contained both a base-line and final score for each subject. This data set was similar to the construct validity data set, except that the data set for construct validity consisted only of the base-line assessment.

4.6.4 DATA ANALYSIS

The Table below sets out the statistical analysis performed for each property that was investigated.

Table 4.2 The statistical analysis per psychometric property.

PSYCHOMETRIC PROPERTY	THE SAMPLE (UNIT OF ANALYSIS)	ANALYSIS
Content validity	Occupational therapists acting as subject matter experts	Content validity index Qualitative amendments to the descriptors
Construct validity	Mental health care users' performance rating on the outcome measure	Principal Component Analysis
Intra- and Interrater reliability	Mental health care users' performance rating on the outcome measure as rated by five therapists	Correlation coefficients
Internal consistency	Mental health care users' performance rating on the outcome measure	Cronbach Alpha coefficient
Sensitivity	Mental health care users' performance rating on base-line and final assessment	Cohen's difference and t-test for paired observations

The contents of Tables 4.1 and 4.2 warrant explanation. The research design selected for this study was an exploratory mixed method design and required both qualitative and quantitative analysis. Combined (mixed) applications of the two opposing methods to data analysis in studies serve different scientific purposes. The different approaches to data analysis often might supplement one another, such as one generating research data that the second approach requires. In other applications the approaches perform a confirmatory function by using data generated by one approach to validate research data generated by an alternative approach. In a third research design simultaneous application of qualitative and quantitative approaches to data analysis initially might appear to clash and even result in radical differences of opinion among scientists. The latter assumptions hold for the current investigation (Giorgi 1985; Tabachnick & Fidell 1989).

An experienced quantitative researcher would hesitate to accept statistical calculation generated by an advanced multivariate statistical method (factor analysis mentioned in Table 4.2) on a limited sample (N = 41, as mentioned in Table 4.1). The quantitative examiner instantly will be conscious of the fact that the preconceived statistical criterion of having at "… least five cases for each observed variable" (Tabachnik & Fidell, 1989, p 603) has not been met. The qualitative researcher has a different opinion on this issue. Giorgi (1985, p 23), in explaining phenomenological thinking, set out

some of the principles on which quantitative and qualitative analysis differ, by saying that it: "is intrinsically difficult, since it goes against the natural tendency of consciousness to go toward things rather than its own processes ….". The quantitative researcher's natural tendency would be to become aware of the "thing" (statistical criterion) at the expense of the "noteworthy phenomenon" (the research data generated by the factor analysis) that is being investigated. In contrast, the qualitative researcher initially would consider the results of the factor analysis as a naïve data set that necessitates further reduction to convert it into meaningful data. Any qualitatively generated data set, in its initial format is embryonic. The embryo, through further data gathering that increases the sample size, will in due course evolve into a fully-fledged data set capable of yielding excellent research outcomes that can expand the discipline's body of scientific research knowledge (Giorgi 1985).

Presentation of factor analytic statistics based on a naïve data set, is solely intended to encourage the current researcher, other South African researchers and renowned scientists abroad, to accept the challenge of applying the innovative outcome measure in different contexts, with the intention to generate further data that, when pooled with the naïve data set, will convert the latter data set into mature research data. This "devious" approach has one other notable benefit. The qualitative analyst, as professional, will also develop and mature scientifically and better understand the psychosocial dynamics that underlie the outcome measure's factor analytic structure as it evolves from its embryonic structure into statistically structured scientific information of excellence.

4.6.5 OPTIMISE THE SCALE AND ITEMS OF THE OUTCOME MEASURE

Once the results of the psychometric investigation were available, the final step in the research process was activated. The researcher identified what changes were required to optimise the scale. A decision had to be made on possible removal of items or domains from the scale and adjustment of instructions in the training manual.

4.7 ETHICAL ISSUES CONSIDERED

Three fundamental ethical principles guided this research: respect for persons, beneficence and justice (Brink et al 2006).

Respect for persons was evident by respecting their right to self-determination, privacy, anonymity and confidentiality. Consent to become involved in the study was obtained from hospital management (Appendix E1), occupational therapy clinicians (Appendix E2) and mental health care users (Appendix E3). Potential participants were given the choice to participate or decline the request. The researcher undertook to manage data responsibly and ensure confidentiality and anonymity at all times.

Participants were protected against discomfort and harm by the researcher's adherence to the principle of beneficence. Although the nature of the study and type of data required did not expose participants to physical harm, caution was taken in the focus groups to ensure that questions asked and interviews did not cause emotional discomfort.

The principle of justice was exercised by acknowledging the participants' right to fair selection and treatment. All participants were selected for reasons directly related to the research and were not recruited and empirically manipulated because they could offer favourable information. Participants were treated fairly, no promises were made and their privacy was respected.

The Ethical Committee of the University of Pretoria and the Pretoria Academic Hospital gave ethical approval prior to the commencement of the study (Number: 118/2005, refer to Appendix E4). Additional ethical approval was obtained for the Human Research Ethics Committee of the University of the Witwatersrand (Number: M091025, refer to Appendix E5).

4.8 CONCLUDING REMARKS

A mixed method exploratory design, specifically the instrument development model, was chosen to guide this study. Development of the instrument progressed through three phases. Domains for the outcome measure emerged from Phase 1. The development of the outcome measure and descriptions for observable behaviours took place during Phase 2. Phase 3 subjected the instrument to a trial to investigate selected psychometric properties of validity and reliability. The identification

of issues to be optimised for the final implementation of the outcome measure was also addressed during Phase 3. Final routine implementation was not planned to be part of this study but would continue as a new study.

CHAPTER 5 RESULTS

5.1 INTRODUCTION

The previous chapter described the implementation of the research study in three phases. This chapter reports on the results and will be presented according to the same three phases. Phase 1 involved the focus groups with occupational therapy clinicians and mental health care users with the intent to determine domains for the outcome measure. The development of the outcome measure was part of phase 2. This phase covered operationalisation of the domains by identifying items that delimited them. A rating scale, based on the Model of Creative Ability, was then designed for each item. Phase 3 consisted of a pilot assessment of the outcome measure at three mental health care settings in Gauteng in order to investigate certain psychometric properties of the instrument.

5.2 PHASE 1: FOCUS GROUPS WITH OCCUPATIONAL THERAPY CLINICIANS AND MENTAL HEALTH CARE USERS

The aim of phase 1 was to draw on occupational therapy clinicians to identify domains for the outcome measure by means of focus groups and the nominal group technique. The domains identified by the clinicians were compared with the needs of the mental health care users. This comparison aimed to confirm that the domains indeed reflected the needs of the people who receive the occupational therapy service.

5.2.1 THE SAMPLE

5.2.1.1 OCCUPATIONAL THERAPY CLINICIANS

Occupational therapy clinicians in mental health care settings in Gauteng, specifically the Pretoria region, were invited to take part in Phase 1 of the study. At the time of the study four of the six

identified settings were able to send participants who were able to provide rich information during discussions on measuring outcomes. One hospital had only a newly appointed community service therapist that did not meet the participation criteria. The remaining hospital recently rotated staff, and as a consequence, the inexperienced clinician who moved to the psychiatric unit also did not meet the inclusion criteria. Table 5.1 presents selected biographical details of the clinicians who participated in two focus groups and one workshop.

Table 5.1 The occupational therapy clinicians sample.

Setting	No of therapists	Age range	Years of experience (range)
Weskoppies Hospital	11	22 – 40 yrs	1 – 18 yrs
1 Military Hospital's Psychiatric Unit	1	25 yrs	3 yrs
Denmar Psychiatric Clinic	2	26 – 30 yrs	6 – 10 yrs
Vista Psychiatric Clinic	2	33 – 42 yrs	11 – 20 yrs

5.2.2 ANALYSIS OF THE DATA FROM THE FOCUS GROUPS WITH CLINICIANS

Five themes emerged from the thematic content analysis of the qualitative data:

- understanding the concept of outcomes,
- outcome domains,
- barriers to measurement of outcomes,
- characteristics of an outcome measure, and
- benefits accrued by using an outcome measure.

Each theme was subdivided into clusters. A cluster is a collection of related concepts that converge in a theme. Each theme yielded several clusters that were coded to improve understanding of the the cluster. Codes were statements or phrases that the participants used during the focus groups.

Figure 5.1 presents a summary of themes in the dark green blocks, clusters in light green blocks and codes in the grey blocks.

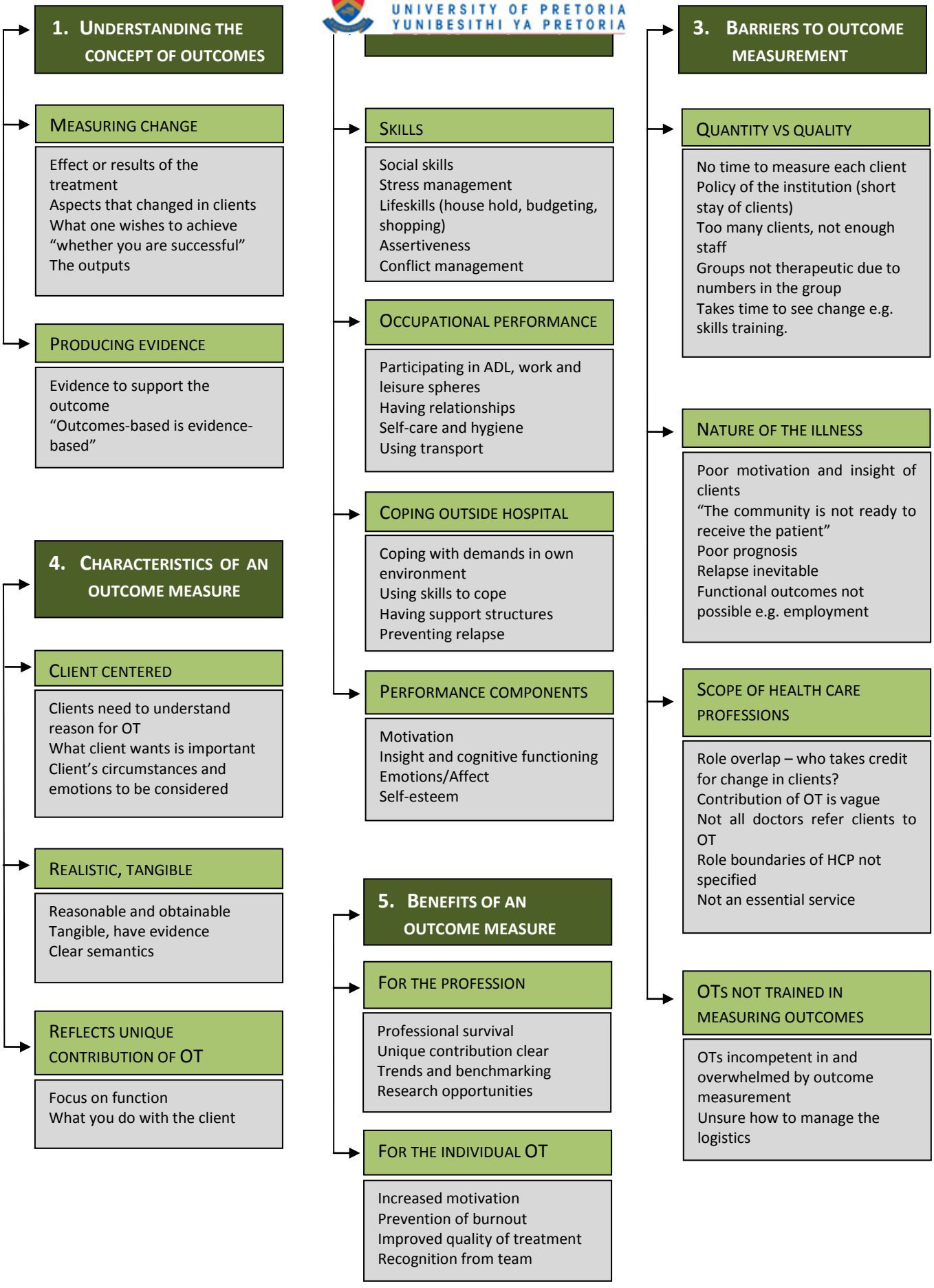

Figure 5.1 A summary of themes, clusters and codes.

5.2.2.1 THEME 1: UNDERSTANDING THE CONCEPT OF OUTCOMES

It was evident from the responses that clinicians had definite views and understanding of the concept of outcomes. Most of the clinicians understood outcomes as measures of the change that happened in their clients and whether they were successful with their treatment. "'n Mens moet kan sê wat het verander" ("One must be able to say what has changed"). One participant explained that "… outcomes is what you achieve, the functioning of the patients, the how is not so important, it is what you measure". Another response supported this understanding: "… outcomes are something that comes after the process e.g. baking a cake, the outcomes is the cake, the process is following the recipe".

One participant from another group was concerned about providing evidence. Her response was: "En ag ja, ons kan lang stories praat van hoe goed ons is en pasiënte wat terugvoer gee dat dit OT was wat hulle verbeter het, maar ons het niks op papier nie" ("And yes, we could tell long stories about how good we are and our patients giving feedback that it was OT that improved them, but we have nothing on paper").

5.2.2.2 THEME 2: OUTCOME DOMAINS

Clinicians discussed examples of outcomes, for example what they indeed would assess in an outcome measure. Their responses were clustered into skills, performance components, occupational performance, and coping outside the hospital context.

Skills showed up as the outcome that most participants would measure. Many different types of skills were mentioned e.g. assertiveness, social or interactional skills, stress management, and conflict management Lifeskills were mentioned several times and participants referred to aspect**s** such as using transport, being able to budget, running a household, taking care of children, and being able to identify and solve problems.

Work, leisure, social sphere, functioning in the home environment, self-care and taking medication were pointed out as important occupational performance areas. Work habits, social and personal presentation were also highlighted as essential components of going back to employment.

Performance components were viewed as important outcomes which had to be measured in psychiatric clients. "Depression, mood, self-esteem, motivation, anxiety, all these have an influence on the progress of the patient". The importance of insight into the psychiatric condition, concentration, memory, decision-making, social judgment and frustration tolerance were mentioned a few times.

Skills necessary to cope outside the hospital and the ability to "integrate into real-life" were singled out. Preventing relapses, "coping outside and stays there, not being readmitted" and "using the skills they have learnt in OT" were examples of important outcomes that ought to be measured.

5.2.2.3 THEME 3: BARRIERS TO MEASUREMENT OF OUTCOMES

The effect of the nature of the illness on overall functioning of a person dominated the discussion of barriers to effective measurement of outcomes. Participants explained that in many cases a psychiatric patient's progress was minimal due to debilitating symptoms such as lack of drive in schizophrenia and mood disorders. "Some will in any case relapse" was another response from a participant, implying that relapses interfered with progress in clients.

The staff-patient ratio was a concern. One participant felt that there was much more in a client that an occupational therapist could treat but there were not enough staff available at the different settings. *"Ons het nie die mannekrag nie en verwys maar dan na buite"* ("We don't have the manpower and then refer outside") and *"Ek het nie tyd om vir elke pasiënt iets op te skryf nie"* ("I don't have time to write up something for each patient"),*"Ek raak moedeloos oor die hoeveeheid pasiënte. Daar is omtrent 150 kroniese pasiënte en ek werk maar aan so 40 op die oomblik."* ("I get despondent about the number of patients. There are about 150 chronic patients and I am currently working on about 40.") *"Die frustrasie is omdat daar so baie pasiënte is, ons weet van holisme maar kom nie daarby uit nie."* ("The frustration is because there are so many patients, we know about holism but don't get to it".)

Role boundaries between different health care workers in a psychiatric team were another concern. *"Mens vra jouself baie keer af: Wat was my rol in hierdie pasiënt?"* ("One asks oneself many times: What was my role in this patient?"). Role boundaries between disciplines were not clearly delimited in hospitals. Nurses wanted to engage in ward activities and were indeed doing so. "They also do groups but they cannot do it as well as we do. We need to show that we are the experts. Nurses taking over because OTs do not give evidence of where we excel" "It is time to say what OT will do and what not."

Apart from role boundaries, role overlap was also discussed. One participant gave an example of how difficult it was to decide which professional was actually making the difference: "the guy is coming from pastoral counseling and that is why he is thinking differently and feeling better but you think he enjoyed the painting or the leatherwork. How do you prove that what he has done here (at OT), made the difference". "There are so many variables to consider, everyone (health care professionals) takes credit when patients improve, who helped the most?"

Responses indicated that the participants felt that their role as occupational therapists was not well known, doctors did not refer patients, the doctors' knowledge about other professions was vague and they had "no appreciation of each other's contribution". The following quote added to the problem: "We are not seen as an essential service and that brings many problems. To enhance quality of life is not essential".

5.2.2.4 THEME 4: CHARACTERISTICS OF OUTCOME MEASURES

According to the frequency of codes, participants' responses indicated a strong client-centred approach as characteristic of an outcome measure. They felt it was important for a client to understand the reason why he or she was referred for occupational therapy and that individual needs had to be incorporated into the treatment programme and ultimately be reflected in the outcomes that would be measured. One participant mentioned that the clinician sometimes did not assess the environment and circumstances of the patient and consequently selected outcomes that were not beneficial to the patient.

The codes "realistic", "sensible", and "tangible" were often mentioned by participants to describe additional characteristics of an outcome measure. The semantics of and how an outcome was formulated were also mentioned. One participant expressed concern that a poorly formulated outcome would cause confusion and become meaningless. Her comment was: *"… ons moet dit afbreek in kleiner spesifieke goed wat ons kan meet"* ("... we have to break it down into smaller specific things that we can measure").

A third characteristic, reflecting the unique contribution of OT emerged. Codes like *"Ons moet teruggaan na arbeidsterapie as professie, die teoretiese, wetenskaplike basis"* ("We have to go back to occupational therapy as a profession, the theoretical scientific basis") and "we must focus on function and skills, assertiveness, social skills, Lifeskills" and "we focus too much on components". This cluster correlated with theme 2: outcome domains.

5.2.2.5 THEME 5: BENEFITS OF MEASURING OUTCOMES

After all the relevant factors were discussed and shared, the participants were asked to talk about the benefits of an outcome measure. This question was only posed in the second round of focus groups although some benefits emerged spontaneously during the first round. The benefits were clustered into ones for the profession and others for the individual OT.

Benefits for the profession included statements like “It is essential if the profession is going to survive” and “it would make OT a more recognisable profession and the role that we play, the necessity”. In terms of improved treatment, a statement: “Effectiveness and productivity could be measured, we could then see where change is necessary” was made. There was also a comment that it provided opportunity for research. One participant pointed out that one could use it to predict future needs of clients and determine minimum and maximum requirements for successful treatment programmes.

Several participants mentioned increased motivation as a benefit for the individual OT. It would aid professional development and improve skills as confirmed in the following quote: “I will work more directed, will know the path of how to get there” and “it will decrease the risk of burnout”.

After the proceedings of the focus groups were analysed, clinicians participated in the nominal group technique were they were required to select domains from a list. This list was generated from the data of the focus groups and existing theoretical frameworks in occupational therapy literature (Appendix B). The results from the nominal group technique are presented below.

5.2.3 RESULTS OF THE NOMINAL GROUP TECHNIQUE

Seven participants responded promptly by e-mailing their selections from the list of domains to the researcher. One participant did not respond at all, despite several e-mail reminders and telephonic follow-up. Two participants were on maternity leave while another six participants had left their places of work by the time that participants were asked to make their selections.

Frequencies of the responses were counted and weightings calculated: these are reflected in Table 5.2.

Table 5.2 Frequencies of the domains and the respected total score in the Nominal Group Technique.

Domain	A 1st priority 3 points	B 2nd priority 2 points	C 3rd priority 1 point	Total
Communication and interaction skills	1	1	1	6
Process skills	1	2	1	8
Leisure	0	0	1	1
Motivation	2	0	1	7
Affect	0	1	0	2
Self-esteem	1	1	1	6
Balanced lifestyle	1	0	0	3
Role performance	0	0	1	1
Instrumental ADL	0	0	1	1
Cognition	1	0	0	3
Lifeskills	0	1	0	2
Social participation	0	1	0	2

The listed domains were ranked according to the total points received in Table 5.2.

Table 5.3 Domains ranked in order of priority.

Ranking	Total points scored	Domain
1	8	Process skills
2	7	Motivation
3	6	Communication and interaction skills
	6	Self-esteem
4	3	Balanced lifestyle
	3	Cognition
5	2	Affect
	2	Lifeskills
	2	Social participation
6	1	Leisure
	1	Role performance
	1	Instrumental ADL

It was interesting to see that although most clinicians felt strongly about lifeskills as an outcome in the focus groups, they did not designate it as a priority. Process skills, Motivation, Communication/Interaction skills and Self-esteem received the highest totals and were identified as priority outcomes. The remaining eight domains received a total of three or less.

The domains that scored three or less were grouped with domains reflecting universal characteristics e.g. Cognition was relocated to Process skills as these two domains had much in common, Social participation and Leisure were grouped with Balanced lifestyle, and Instrumental ADL was grouped with Lifeskills. Although Affect and Role performance also elicited scores lower than three, the two remained ungrouped as they did not fit into existing domains. It was felt that even though these two outcomes were lowly rated, they warranted inclusion as they were part of intervention programmes offered in occupational therapy.

The domains that were used to develop the outcome measure finally emerged in the following order, after prioritisation by the clinicians:

1. Process skills
2. Motivation
3. Communication / Interaction skills
4. Self-esteem
5. Balanced lifestyle
6. Affect
7. Lifeskills
8. Role performance

Once the domains for the outcome measure were identified, these were compared with the needs and expectations of the recipients of the service, namely the mental health care users.

5.2.4 RESULTS FROM INDIVIDUAL AND FOCUS GROUP INTERVIEWS WITH MENTAL HEALTH USERS/CLIENTS

5.2.4.1 THE SAMPLE

The table below describes the profile of the mental health care users who participated in the individual and group interviews. Their ages ranged from 22 to 58 years while their diagnoses included schizophrenia, mood disorders and post-traumatic-stress disorder.

A total of 15 mental health care users participated in individual interviews while eight were part of the focus group interviews. Two individual interviews were discarded. The clients proved unsuitable for participation because they did not understand the questions. They focused on their personal problems and constantly digressed from the lead-in question. They were considered as not information-rich informants.

Table 5.4 Profile of the mental health care users in the individual and groups interviews.

Setting	No of persons	Individual or group interview	Age range	Length of stay at time of interview	Primary diagnosis
Weskoppies Hospital	12	Individual	28 – 58 yrs	4 weeks – 12 yrs	Schizophrenia Mood disorders
Vista Psychiatric Clinic	4	1 Individual 3 group interview	25 – 52 yrs	2 – 3 weeks	Post-traumatic stress disorders Mood disorders
Denmar Psychiatric Clinic	5	Group interview	22 – 55 yrs	2 – 3 weeks	Post-traumatic stress disorders Mood disorders

5.2.4.2 CONSTANT COMPARISON OF RESPONSES OF MENTAL HEALTH CARE USERS

Responses from mental health care users on how they associated with a domain are next described.

- PROCESS SKILLS:

Some clients felt that participation in activities helped them to concentrate and compelled them to put effort into a task. Some reported that craft activities assisted them to rediscover their planning abilities. The majority of responses that matched Process skills emphasised the importance of

regaining concentration and memory so as to be able to complete a task or activity successfully for instance, by following a recipe.

- MOTIVATION:

Clients pointed out "being occupied" as an important concept. Statements like the following were expressed: "My personal opinion is that you can't stay around doing nothing the whole day you can't stagnate the whole day." The same person continued and said: "If you stagnate the whole day [then] you're getting older [and] you['re] getting up to mischief, you['re] getting bored. I think all patients come here to keep them occupied". Another mental health care user reported that: "We do things, it is something to do", and "I have learnt the value of your hands being kept busy".

One of the assumptions in the Model of Creative Ability is that successful engagement in one task spills over into another, and sometimes to an even more challenging task. One can therefore link the statement on the clients being occupied, to that of being motivated.

- COMMUNICATION / INTERACTION SKILLS:

Many positive effects of occupational therapy groups were mentioned. The mental health care users specifically mentioned social skills groups that showed them the value of interacting with others. One person said that "Social skills groups are good; they teach you about how to handle yourself in society." One individual mentioned the positive effect of the assertiveness group and that he was now more aware of the feelings of others, another pointed out that, "In the groups you hear about other people's stories and you realise you are not the only one with problems," while a third person stated the opposite and was not that positive about being involved in groups. She said that she did not come to hospital to hear about other people's sad stories.

- SELF-ESTEEM:

This domain matched well with the responses of the mental health care users. They reported that being involved in craft activities, cooking sessions, games or sport groups gave them a sense of self-worth. The process of creating a product which they could offer to significant others initiated a positive feeling about themselves and this renewed believe in themselves: "In groups you learn about yourself, you get to know yourself and in the end you feel good about yourself," one person said. And others said: "Other people give nice comments about your stuff", "the art classes, that was great, you feel good about yourself, you have done something", and "[they] make you feel worth something".

- BALANCED LIFESTYLE:

Mental health care users, who attended a maintenance intervention programme, reported that the occupational therapy programme helped them to live a balanced life inside the hospital. They had the opportunity to participate in games and sport groups, as well as craft activities, and worked in the protected workshops inside the hospital or did work in the laundry, the garden or at the administration block.

Mental health care users in the acute phase of treatment mastered new craft activities to do at home and permitted them to incorporate meaningful and enjoyable activities in their lifestyles. One client mentioned that time planning had helped her to realise that she had insufficient variety in her lifestyle.

Another client expressed the need to have occupational therapy during weekends as well because those were the times when she found it difficult to structure meaningful engagement in activities.

- AFFECT:

Many mental health care users realised the positive effect of craft activities on their emotions. “Being occupied in something enjoyable like making leather belts reduced my anxiety and fear. I could focus on something else”. “My hands are busy and my mind becomes clear”. “When you feel good about yourself, your mood also improves. You don’t feel so depressed anymore.” One mental health care user felt she did not benefit from a group focused on emotions. She reported that talking about depression and listening to other people’s problems made her feel more depressed.

- LIFESKILLS:

This domain was well supported by the responses of the mental health care users. “They helped me to cope with my problems better”, “I learnt how to make stuff, you know, I've learnt a lot from news groups about news I didn't know, you know, I learnt how to cook better you know”. One client suggested that more groups on the handling or raising children ought to be arranged.

Stress management and time planning were worthwhile for some. “We have learnt a lot of tips and skills here,” and, “I cannot solve my problem now, but I got guidelines to cope”.

- ROLE PERFORMANCE:

Mental health care users did not talk about role performance but nonetheless expressed some concern about facing reality. They felt safe inside the hospital or clinic given all the support they received from staff and fellow-clients who understood their problems. Once they were discharged, they had to use the skills acquired in the hospital. The reality that was waiting was actually the roles that they had to fulfill, whether it is a worker role, a mother role, running a household and the like. "The work only begins when you go out, you have to get a place to stay, a new job". One mental health care user who was readmitted said that he did not use the skills immediately but only at a later stage. He then realised how he had grown. Another mental health care user said the clinic is "an unnatural world and I do not feel prepared to go", "The discharge group helped me a lot".

There were overwhelming similarities between the domains and the expectations of the mental health care users. Only one disagreement was noticed; the response where a person felt that groups were not beneficial and it did not help to improve her mood.

A number of additional themes that did not fit any of the domains emerged from the interviews with the mental health care users. These are discussed below.

5.2.4.3 ADDITIONAL THEMES FORM THE INTERVIEWS WITH MENTAL HEALTH CARE USERS

- HEALING FACTORS

Mental health care users mentioned two aspects that helped them in the road to recovery. Firstly they reported the therapists' friendliness and caring attitude towards them, much more than other health care professionals in the team. One mental health care user said that "therapists treat you with dignity". However, responses from clinicians in the focus groups expressed concern over the fact that they did not have enough time to form good therapeutic relationships with mental health care users due to time constraints and patient overload.

Secondly, support from fellow-clients in the ward or in the occupational therapy groups were mentioned by the majority of mental health care users. Mental health care users said that it comforted them to share their problems with others and that this helped them feel that they were

not alone. Only one mental health care user experienced the opposite by mentioning that sharing experiences with other depressed patients made her feel more depressed (as mentioned earlier).

Although the healing factors theme emerged from the mental health care users' data set, no new domains were added or removed from the outcome measure. The theme of therapists being seen as caring was not addressed as such in the intervention programmes and was therefore not measured as an outcome. "Caring" is an essential characteristic of any health care worker and would therefore be part of the generic tools of practice, namely therapeutic relationship or use of self.

- OUTPATIENT PROGRAMMES

There was a suggestion from two mental health care users that discharged patients be permitted to participate as outpatients and to attend the craft sessions or other occupational therapy groups to assist them with "facing the reality outside". They felt that when they had to face a new or difficult challenge, it would help if they could attend one or two groups that dealt with this specific challenge.

This theme was not added to the domains as this is not a specific outcome of the occupational therapy programme and could happen in circumstances that fall outside the occupational therapy programme. In- or outpatient status was added to the minimal data set; in other words. a mental health care user could receive treatment as an inpatient or an outpatient and this was clearly noted.

The responses from the mental health care users confirmed that the domains selected by the clinicians were relevant for an outcome measure. With these findings, Phase 1 of the study was completed.

5.3 PHASE 2: DESIGN AND DEVELOPMENT OF THE OUTCOME MEASURE

Once the domains materialised from Phase 1, the outcome measure had to be developed. At this stage it was necessary to label the outcome measure. A collective construct that included all the eight domains was A*ctivity Participation*. The researcher felt that this was a descriptive term that depicted the core objective of occupational therapy, namely activity participation. The label was deemed appropriate as the Model of Creative Ability was central to the development of the outcome measure and also a key assumption thereof. Furthermore, the term activity participation is

familiar among multidisciplinary teams in mental health care settings. The final name of the outcome measure became the Activity Participation Outcome Measure. The acronym APOM was decided upon.

Scale development of the APOM was guided by the levels of creative ability and is described in the next section.

5.3.1 SCALE DEVELOPMENT

The first six levels of the Model of Creative Ability, namely tone, self-differentiation, self-presentation, passive participation, imitative participation and active participation were embedded in developing the rating scale (Du Toit 2004). Although Du Toit's Model of Creative Ability accommodated two higher levels, these were not accounted for in the current study. People functioning on such high levels of creative ability usually are not admitted to mental health care settings and generally do not show restricted activity participation that can be addressed in inpatient occupational therapy programmes.

Each level of creative ability was further divided into a therapist-directed phase, a patient-directed phase and the transitional phase as explained in the methodology section. Clinicians who are trained in the Model of Creative Ability know the indicators of these levels and phases. Those who are not trained in this model could undergo training to understand and master the levels and the phases.

Table 5.5 indicates the first six levels of creative ability as well as the phases within each level.

Table 5.5 The rating scale of the APOM.

Tone			Self-differentiation			Self-presentation		
Therapist-directed	Patient-directed	Transition	Therapist-directed	Patient-directed	Transition	Therapist-directed	Patient-directed	Transition
1	2	3	4	5	6	7	8	9

Passive Participation			Imitative Participation			Active Participation		
Therapist-directed	Patient-directed	Transition	Therapist-directed	Patient-directed	Transition	Therapist-directed	Patient-directed	Transition
10	11	12	13	14	15	16	17	18

Each domain was divided into distinct items. Items were scored by allocating a number between 1 and 18, 1 being the lowest possible and 18 the highest possible score. Each item required description in terms of the levels of creative ability.

5.3.2 OPERATIONALISATION OF THE DOMAINS

All domains selected by the clinicians were latent traits. Measurement of latent traits needs to be operationalised or deconstructed. Rossouw (2003) suggested that a good operational definition be formulated first. This definition had to reflect the essential characteristics or connotations of the trait. The eight domains of the APOM were defined and items that figured in the domain were selected. Item content also had to be observable during participation in everyday life. The researcher described each item according to the first six levels of the Model of Creative Ability.

5.3.2.1 ITEM DESCRIPTORS FOR PROCESS SKILLS

The term Process skills was developed and named by Fischer (2001) when she developed the AMPS during the 1980s. She described it as observable actions regulating one's performance over time, in selecting and using appropriate tools and materials during task performance and in adapting one's performance when problems are encountered. She distinguished between the Process skills energy, knowledge, temporal organisation, organising space and objects and adaptation.

Many concepts in Du Toit's (2004) Model of Creative Ability related well to some of the concepts in the Process skills, as described by Fischer (2001). Du Toit (2004) used terminology such as task concept to describe a person's performance of a task. This concept related closely to Fischer's temporal organisation, while Du Toit's description of concept formation and handling of tools and materials contained similar aspects to Fischer's description of knowledge. Making effort, as described by Du Toit (2004) linked with Fischer's energy while one of the aspects of the creation of a product (Du Toit 2004) linked with organising space and objects.

The definition for Process skills for the APOM was phrased as follow: the cognitive and executive functions that one uses to perform a task. This included the ability to plan a task, select and use tools and materials appropriately, pacing actions and adapting one's performance when problems

are encountered. Definitions extracted from the International Classification of Functioning and Health's mental functions were used in the eventual formulation of this definition (WHO 2001).

The above theoretical concepts were used to write the items for Process skills which are: Attention, Pace, Knowledge, Skills, Task concept, Organising space and objects and Adaptation. Refer to Appendix F1 for the complete description of each of the eight items for Process Skills.

5.3.2.2 ITEM DESCRIPTORS FOR MOTIVATION

Motivation was often described as the cornerstone of the occupational therapy process (Arnsten 1990; Doble 1988; Du Toit 2004; Kielhofner 2002; Reilly 1962; Smith 1974). Due of the importance of the concept of motivation, many definitions thereof were found in the literature of occupational therapy. Lou and Lane (2005, p. 275) defined motivation as a drive toward action. Coleman (in Du Toit 2004) described volition as an inner condition of the organism that initiated or directed its behaviour towards a goal. Jacobs and Jacobs Quick Reference Dictionary (2004) defined it as "individual drives toward the mastery of certain goals and skills; may be intrinsic or involve inducements and incentives".

The way in which people behave when they are actively engaged in their daily occupations and during their interaction with others and their environment, is the result of intrinsic motivation. Reilly (1962) described intrinsic motivation as a biologically inherent or innate urge to explore and master the environment through occupation. The human motive to fill one's life with occupation is central in the occupational therapy theories, especially in Kielhofner's (2002) theory of human occupation.

Reilly (1962, p. 78) put forward the hypothesis upon which occupational therapy was founded: "Man through the use of his hands as they are energised by mind and will, can influence the state of his own health". This hypothesis emphasised the importance of active participation. Reilly further stated that man has a vital need for occupation and the need to master his environment. One of the key concepts in the Model of Creative Ability is that of creative participation. It refers to the process of being actively involved in all activities concerned with everyday living (De Witt 2004). When a person is actively involved, he is motivated to engage in a subsequent, and often more challenging task, resulting in a perpetuation of active participation.

Du Toit (2004, p. 4) stated that: "man is only truly man if he fulfills the need to contribute to his world". A study by LaMore and Nelson (1993) suggested that choices and options in treatment activities are important to motivate a person's performance and commitment, as they induce a sense of self-efficacy, competence and being in control, and thus contributing to his world.

Humans project themselves into the future and decide how tomorrow will be lived (Arnsten 1990). A lack of options contributes to an external locus of control. Kielhofner (2002) supported this notion when he said that a sense of efficacy is the perception of control over one's own behavior. Doble (1988) said that humans possess the ability to actively choose the course of action they will take and thus assume some control over their desire to explore and master. Therapeutic contexts could facilitate choices by providing a number of opportunities in which to experience control. However, Doble (1988) accentuated that it is essential that the choices offered had to be structured to match the client's abilities and also be graded to challenge the person's skills.

Arnsten (1990) believed that a person can only be motivated when he experiences a sense of control and success. When a person believes in his skill, he is more likely to expect success. It is these feelings of competence that will motivate the person to engage in other activities (White 1971). However, engagement in activities does not always result in success and a person will develop beliefs about why he was successful or why his efforts failed. These beliefs referred to locus of control and this phenomenon influences the choice to engage or not to engage in certain activities.

The above discussions of motivation described the many constituents of motivation. For the purpose of the APOM, the definition of Motivation was formulated as: the desire to explore and master the environment through occupation or engagement in activity. It includes the basic drives and motives for action as well as the perception about the underlying main causes of events in one's life.

Five items constituted the domain of Motivation: Active involvement, Motives and drives, Shows interest, Goal-directed behaviour and Locus of control. Refer to Appendix F2 for the descriptions for the respective items associated with the different levels of creative ability.

5.3.2.3 ITEM DESCRIPTORS FOR COMMUNICATION AND INTERACTION SKILLS

The Communication/interaction skills item was selected from the Assessment of Communication and Interaction Skills (ACIS) (Forsyth, Lai & Kielhofner 1999). This instrument assesses three domains namely Physicality, Information exchange and Relations. These three domains were taken up as the items for the APOM. Forsyth et al (1999) described physicality in terms of physical contact with others, the posture a person assumes during communication, while using gestures and eye contact to communicate, maneuvering, and orienting one's body during communication with others and posturing that a person assumes during communication.

The Physicality domain of the ACIS was typified as Non-verbal communication in the APOM by means of four items; physical contact, eye contact, gestures and maneuvering the body. The

Information domain of the ACIS was interpreted as Verbal communication in the APOM through inclusion of four items; using speech, exchanging information, expressing desires and refusals and initiating interaction. The Relations domain of the ACIS was exemplified in the APOM by two items; awareness of others and conforming to social norms, and by establishing rapport in a relationship. Social contact and Relations with people, as described in the Model of Creative Ability, were used during the search for items that aptly described each of the levels of creative ability.

The Communication/Interaction skills domain of the APOM consisted of three main items namely Physicality or Non-verbal communication, Information exchange or Verbal communications and Relations. Physicality and Information exchange were represented by 4 items each. Relations were covered by 2 items. All in all, description was based on a total of 10 items.

The domain Communication/interaction skills in the APOM was defined as: Exchange of information using the physical body and spoken language to express intentions and needs in building and maintaining social relationships and interacting with others. Description of the 10 items representative of the levels of creative ability for the APOM are presented in Appendix F3.

5.3.2.4 ITEM DESCRIPTORS FOR SELF-ESTEEM

Esteem was defined as one having great respect or high regard for someone or something (Sinclair 2001). Self-esteem is therefore the regard that one has for oneself, or the worth that one ascribes to one self. A vital aspect of self-esteem is a sense of competence, since this which could determine one's expectations of success or failure (White 1971). When a person believes in his skill, he is more likely to expect success. The degree of commitment to a task could be an indicator of expectations of success or failure.

Rosenberg's (1965) Self-esteem scale is a well known scale that was developed in the early 1960's. The content of this scale, nonetheless, is still relevant today. The scale assesses how one feels about one's efforts, comparing one's own skills to those of others, attitude towards oneself and the qualities one believes he/she has. Some of these aspects were incorporated into the items measuring self-esteem.

Du Toit (2004) believed that commitment to a task or a situation revealed a belief in one's skill and therefore how one perceived feedback from others. Handling the negative effects of anxiety is linked to task commitment since an individual could be immobilised by anxiety, and as a result, show little commitment to begin or complete a task. Another assumption in the Model of Creative Ability (Du Toit 2004) was that maximum effort in task performance depends on previous experiences.

Positive experiences will motivate a person to engage in or commit to a task (and sometimes commit to an even more challenging task) again, whereas negative feelings, like anxiety, will lower a person's belief in himself and he will in all likelihood lack the courage to engage again.

Many scales measuring self-esteem are available while different authors express different opinions when they personally explain the most vital aspects of self-esteem. It was a challenge to restrict the items for self-esteem. The main criterion that served as a guideline was to determine which of these vital aspects of self-esteem are observable during activity participation in occupational therapy programmes. In the end six items were selected for this outcome measure: Commitment to task or situation, Using feedback, Attitude towards self, Awareness of qualities, Social presence and Self-worth.

The definition for self-esteem for the APOM was formulated as: the worth one ascribes to one self, the evaluation of one's virtues, the desire to feel accepted and expectations of success or failure.

Refer to Appendix F4 for the descriptors for each item according to the levels of creative ability.

5.3.2.5 ITEM DESCRIPTORS FOR BALANCED LIFESTYLE

Contributions by Christiansen, Baum, and Bass-Haugen (2005) as well as by Neistadt and Blesedell Crepeau (1998) were used to define and operationalise Balanced lifestyle. A balanced lifestyle is the result of occupations and activities that are meaningful and promote wellness in a person. Individuals prefer specific occupations above others, as a consequence of good mix and balance between physical, mental, social, spiritual and rest activities: in short, living a balanced lifestyle (Christiansen et al. 2005).

Use of time, habits and routines that address personal needs as well as the demands of the environment cannot be removed from balanced lifestyles. Poor time management often points to unbalanced lifestyles. A person's habits and routines fill up the time and are therefore included in the concept of balanced lifestyles. Habits are described as "automatic behavior that is integrated into more complex patterns that enable people to function on a day-to-day basis" (Neistadt & Blesedell Crepeau 1998, p. 869). Habits can either support or interfere with performance in areas of occupation. A person can thus have good habits or undesirable habits. Routines are the regular sequences that individuals apply to perform tasks, activities and practice occupations.

The definition for Balanced lifestyle in the APOM was phrased as: use of time, habits and routines that address personal needs and demands of environment, occupational preferences in balance

(good mix of occupations in all areas: physical, mental, social, spiritual, rest). It requires involvement in occupations that are meaningful and promote wellness.

Three items were described in the APOM for Balanced lifestyle: Time use and routines, Habits and Mix of occupations. These are presented in Appendix F5.

5.3.2.6 ITEM DESCRIPTORS FOR AFFECT

Emotion is a complex feeling with psychic, somatic and behavioural components, that is related to affect and mood (Sadock & Sadock 2007, p. 279). Petri and Govern (2004, p. 368) mentioned that emotion implies a change from one state to another, for example from happy to sad. The terms affect and mood further explain the dimensions of emotion.

Affect is defined as the observed expression of emotion by others, or what people are able to see from the outside (Sadock & Sadock 2007) or the way that a feeling is communicated through facial musculature changes (Petri & Govern 2004). The appropriateness of an emotion, how it is regulated and the range or repertoire of different emotions are aspects that one could observe in a person.

Du Toit (2004) described emotions in terms of different levels of creative ability. She believed that the lower the level of creative ability, the more basic the emotions would be. Du Toit never listed the emotions but pointed out that basic emotions were linked to levels of self-differentiation and self-presentation while more refined emotions were evident in passive participation and at higher levels.

Plutchik (2001) described a set of basic or innate emotions that a person would use for survival, similar to the fight or flight response. The eight basic emotions that he found were anticipation, joy, acceptance, fear, surprise, sadness, disgust and anger. He further described a blend of emotions that generated more complex emotions e.g. joy and acceptance would produce the emotion of love, fear whilst surprise turned into awe, anger and anticipation into aggressiveness. Refer to Figure 5.2. Plutchik's reference to basic emotions and blended emotions that were included in the explanation of the domain Affect, provided an informative overview of the repertoire of human expression of emotions (Plutchik 2001).

Figure 5.2 Plutchik's basic emotions (inside the circle) and blended emotions (outside the circle).

Mood, the other dimension of emotion, is a pervasive and sustained emotion that is experienced subjectively, reported by one person and observed by others. It is often seen as a lasting state of emotion and describe as temper. Typical descriptions of mood are positive, consistent, optimistic or happy.

The definition for Affect reads: the observed expression of emotion, or what one is able to see from the outside. The appropriateness of the emotion, how it is controlled and the range or repertoire of different emotions are aspects that one could observe in a person.

Affect was represented by three items: Repertoire of emotions, Control and Mood. Please refer to Appendix F6 for complete descriptors of the three items.

5.3.2.7 ITEM DESCRIPTORS FOR LIFESKILLS

Lifeskills is a term used by many professions. The WHO defined Lifeskills as "abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life" (WHO 2002, p. 3). Occupational therapists view Lifeskills as those that are necessary to survive the demands of everyday life (Creek & Lougher 2008). It is therefore sometimes referred to as survival skills. These skills might include managing money, organising and running a home, preparing meals, performing domestic skills, personal self-care, using transport,

caring for children/pets/parents, managing stress, communicating with others in a social context, and so on (Brokenshire 2001; Robertson, Connaughton & Nicol 1998).

The items that represented the domain of Lifeskills included Assertiveness, Stress and Conflict management, Domestic skills, Child care, Money and budgeting skills, Personal safety, Care of medication, Personal care, Hygiene, Grooming. Social skills were not included again as it was covered in the item Communication/Interaction skills, while Time management and planning leisure pursuits were included in the domain of Balanced lifestyle. These skills are not all inclusive and there are skills mentioned in life skill programmes not covered in this outcome measure e.g. friendships, nutrition, banking, recreation, coping with death, divorce and separation. The selection of skills included in this outcome measure was guided by the responses of the clinicians and mental health care users provided during the individual and group interviews.

The definition that was used for the APOM was: skills and competencies required by a person to manage independently in the community. It includes the abilities individuals acquire and develop in order to perform everyday tasks successfully.

The item descriptors for these Lifeskills can be seen in Appendix F7.

5.3.2.8 ITEM DESCRIPTORS FOR ROLE PERFORMANCE

Role performance can be described as the ability to effectively meet the demand of roles in which the client engages. Creek and Lougher (2008, p. 40) defined roles as “social constructs which carry behavioural expectations and which contribute to a person’s self image and sense of identity”. They are the sets of tasks that individuals perform in specific positions within a group. Roles are allocated by the society or culture of that person but each person will interpret his/her role in a unique way (Creek & Lougher 2008).

Christiansen et al (2005, p. 596) described roles within the context of human occupation: “A set of socially agreed upon expectations, functions or obligations that involve patterns, scripts, or codes of behaviour, routines, habits, and occupation that a person assumes and which become part of that person’s social identity”.

The definition formulated for the APOM was: the ability to meet the demands of roles in which the person engages. A set of socially agreed upon expectations, tasks or obligations that a person fulfills and which become part of that person’s social identity and participation in everyday life.

Three items were selected for the APOM: Awareness of roles, Role expectations, Role balance and Competency were included (see Appendix F8).

A total of 52 items were selected to represent eight domains in the outcome measure. Table 5.6 is an overview of each domain with its items.

Table 5.6 Domains and corresponding items.

Domain	Items	
Process skills	Attention, Pace, Knowledge (x2), Skills, Task concept, Organising space and objects, Adaptation	8 items
Motivation	Active involvement, Motives and drives, Shows interest, Goal-directed behaviour, Locus of control	5 items
Communication/interaction skills	Physicality: Physical contact, eye contact, gestures, use of body Information exchange: speech and articulation, expressing needs, conversation Relations: forming relationships and rapport	10 items
Self-esteem	Commitment to task or situation, Using feedback , Attitude towards self (x2) Social presence, Self-worth, Pursuing goals	7 items
Balanced lifestyle	Time use and routines , Undesirable and good habits, Mix of areas (physical, mental, social, spiritual, rest)	3 items
Affect	Repertoire of emotions, Control of emotions, and mood.	3 items
Lifeskills	Personal care, hygiene, grooming, Personal safety, care of medication, use of transport Domestic skills, child care, money and budgeting skills Assertiveness, stress and conflict management Pre-vocational and vocational skills, problem-solving	12 items
Role performance	Awareness of roles, role expectations and balance, Role competency	4 items

Certain items had to be described by subitems, for instance knowledge (under the domain of Process skills) and attitude towards self (Self-esteem).

5.3.2.9 A NOMOLOGIC NETWORK FOR ACTIVITY PARTICIPATION

The construct of Activity Participation was presented in a nomological network. Nomologic networks were first described by Cronbach and Meehl in 1955. They strongly recommended that a theoretical framework be constructed to explain the interrelationships between the constructs under investigation. Such a theoretical framework is crucial for the interpretation of construct validity analysis. At this stage of the study, the nomologic network is presented as a preliminary framework which is not yet based on empirical evidence. As soon as factor analysis or item response theory reveal the internal structure of this newly emerged construct of activity participation, the network would be revisited to decide if it is a true reflection of this construct.

The nomologic network of the eight domains that emerged from Phase 1 of the study is explained as follows. Activity participation is a core component in the scope of occupational therapy and is viewed as the overarching construct. Three subconstructs present this construct namely Client factors, Occupational performance skills and Well-being. The term Client factors is borrowed from the Occupational Therapy Practice Framework (2nd edition) compiled by the American Occupational Therapy Association (2008). Client factors in this framework refer to specific abilities, characteristics, or beliefs within a person and could affect performance in areas of occupation (AOTA 2008). Body functions and body structures as described in the ICF (WHO 2001) are also taken account of in Client factors. The CMOP describes clients factors as performance components which comes from the Uniform Terminology of the American Occupational Therapy Association (the precursor of the Occupational Therapy Practice Framework) while the PEOP model refers to intrinsic factors.

The three subconstructs presented in the nomologic network are often used in the clinical reasoning process of occupational therapy clinicians in a consequential manner. A clinician will commence with assessments to determine problems with client factors, these client factors usually affect the occupational performance of a client which in turn, will affect the well-being. This clinical reasoning is also postulated as the dynamic interaction between performance components, occupation and the environment in the CMOP. The PEOP model has a similar interaction between the various factors: 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. Therefore assessment and intervention in occupational therapy take cognisance of the client factors as a first line of therapy, followed by occupational performance skills to influence the well-being of a client.

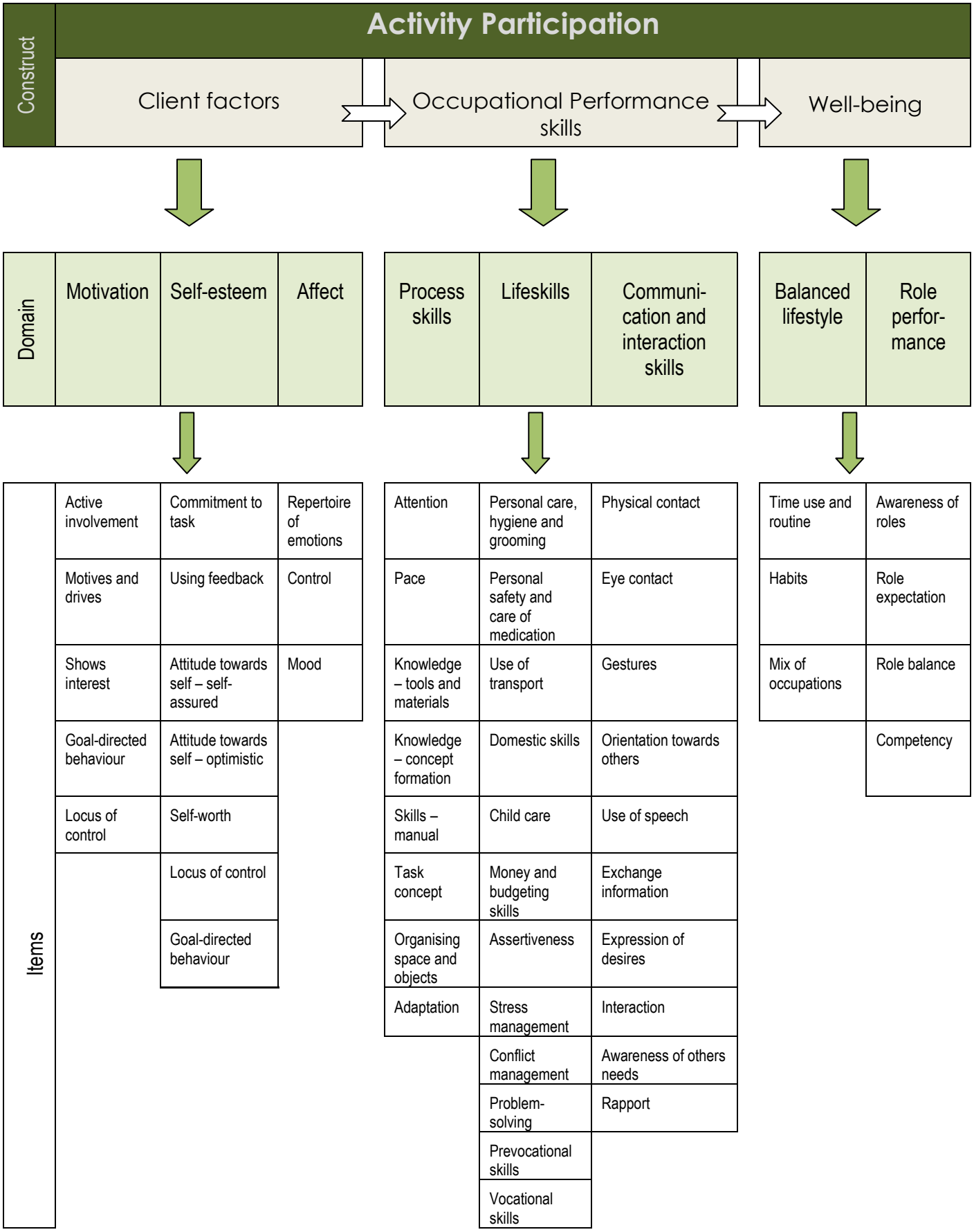

Figure 5.3 The nomologic network of activity participation.

An example to illustrate this clinical reasoning is presented. A client, who is finding it difficult to perform the prescribed duties at work, may experience problems with motivation and self-esteem. These problems will influence the vocational skills, stress management and conflict management, which will prevent a balanced lifestyle and the ability to perform the roles that is expected from that client.

The items under each domain in the APOM represented the observable behaviours that a clinician would assess or treat during the occupational therapy programme. These items can easily be expanded but for the scope and context of this study, these items emerged from Phase 2 of the study.

Figure 5.3 depicts the nomologic network that explains the interrelationships between the domains and items of the APOM.

5.3.3 THE FORMAT OF THE OUTCOME MEASURE

The format of the APOM was primarily constructed for electronic application but was available in hard-copy format as well. Use of the electronic format makes automatic data capturing possible. Item responses are in fact raw scores and these are automatically transferred to a data capturing sheet. When the hard-copy is used, raw scores have to be transferred manually onto the electronic datasheet.

In practice, a clinician would use the tables in Appendices F1 – F8 to select the description of a specific item that best portrayed the client. She could tick off more than one item (the rows of the table) but must carefully select one column as the columns indicate the “amount” or level of that item. If a clinician sometimes was unable to observe all the types of behaviours of a specific domain and it thus could happen that only some items of a domain would be scored.

The components of the APOM consist of a summary sheet, a data collection sheet, a base-line and final report and a spider graph compiled in Microsoft Excel 2003 or 2007. (Refer to CD file labeled Demonstration copy)

5.3.3.1 SUMMARY SHEET

Personal information (name, hospital number, age, gender), dates (admission to and discharge from the hospital, commencement and termination of the occupational therapy programme, and assessments), name of the occupational therapist, type of programme, being an in- or outpatient, number of sessions attended (group and individual sessions), the primary diagnosis, presence of personality traits/disorder (Axis II) and history of substance abuse were filled in onto the summary sheet. Raw scores for each domain for every assessment (base-line, 2nd, 3rd etc) automatically appeared on the summary sheet since scoring was linked to the data collection sheets.

The clinicians selected the above variables for inclusion as they were of the opinion that these were the most important factors impeding on the progress of a client. The summary sheet was actually the minimum data set since these variables become important when a clinician wishes to observe emerging trends. For instance, a clinician might have decided to analyse the progress of all mental health care users of a specific diagnosis, from a specific age range, with or without substance abuse and being an in-or outpatient. Progress patterns in terms of activity participation could be recalled since these progress patterns would be the emerging trends.

5.3.3.2 THE REPORT

A report for a specific client could be generated after a single assessment. The report would contain the selected item descriptors for that item. Provision was made for a base-line report as well as a final report. These reports could be used as the summary of the occupational therapy outcomes and could be filed for future references.

5.3.3.3 THE SPIDER GRAPH

Upon completion of two assessments, their respective outcomes could be compared by means of spider graphs and added to the report. These spider graphs have useful applications. A summary of the eight domains could be generated, or alternatively, each domain with its constituent items could be presented as separate graphs e.g. a graph for Process skills in terms of its eight items (Attention, Pace, Knowledge etc).

Figure 5.4 illustrates the eight domains in the format of a spider graph while figure 5.5 illustrates one domain with its items.

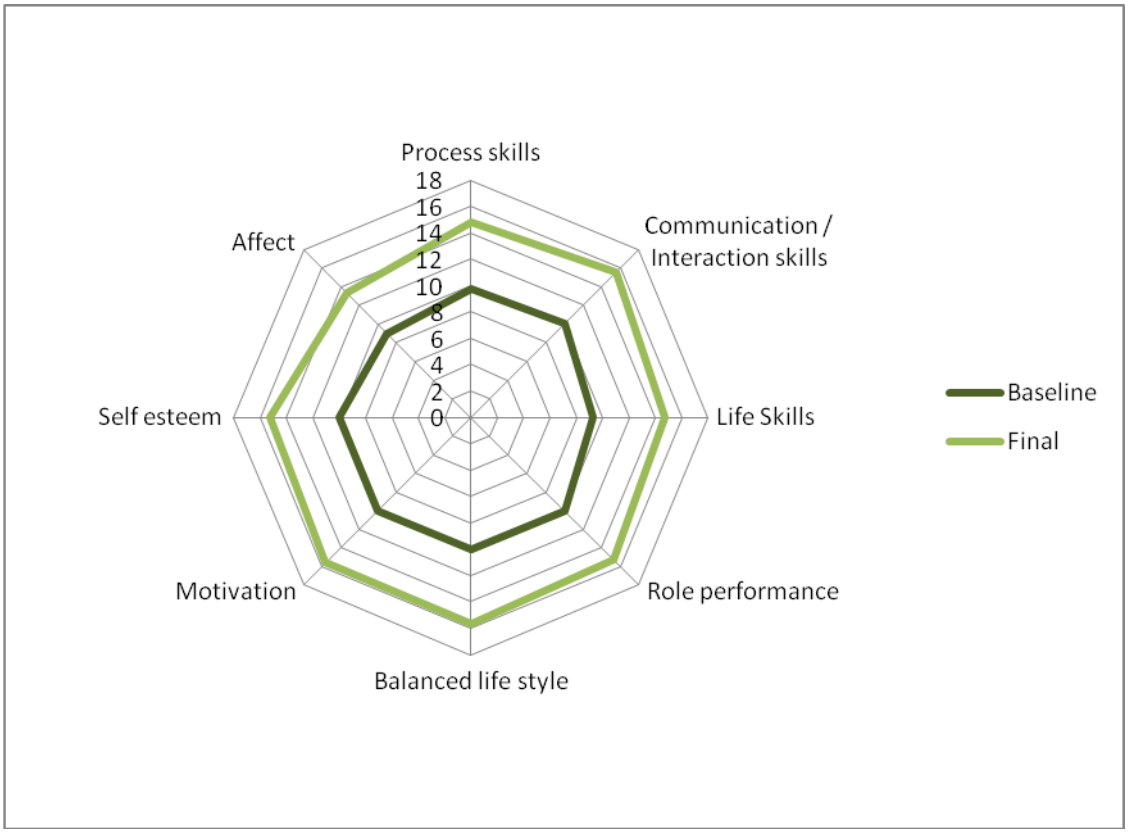

Figure 5.4 Example of the eight domains in the format of a spider graph

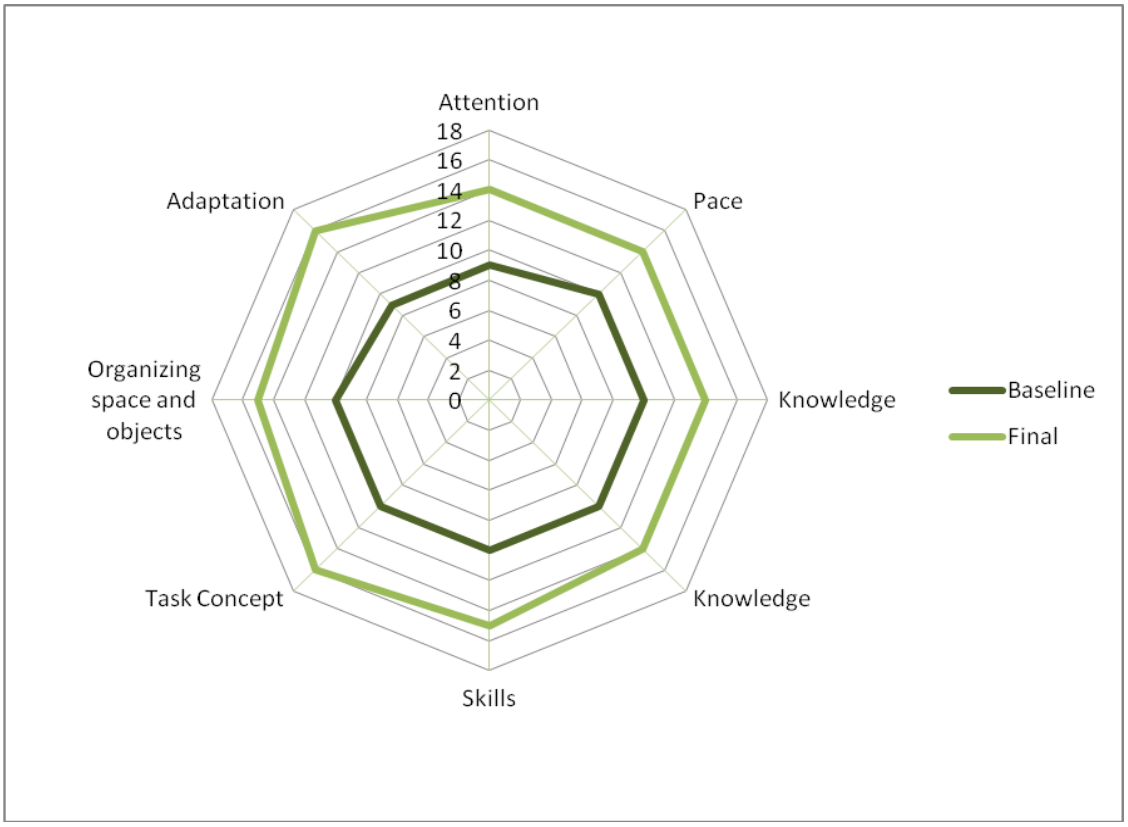

Figure 5.5 Example of one domain (Process skills) with its items

The spider graph is a visual presentation and often is an attention-grabbing way to present evidence of change in a patient. These graphs were useful in indicating areas of weaker improvement to a clinician and served as a mechanism which permitted effective redesign of intervention.

5.3.4 GUIDELINES FOR USE OF THE INSTRUMENT

A user manual was compiled and distributed among clinicians at one mental health care institution. These clinicians agreed to participate in the piloting of the outcome measure. The user manual introduced outcome measures to occupational therapy mental health care which was followed by a background of the origin and development of the APOM. (Refer to the CD file labeled User Manual APOM). Characteristics of typical outcome measures were explained and a comparison of outcome measures and assessment procedures in occupational therapy was presented. This comparison was included after comments of the focus groups indicated that clinicians were not sure of the difference between outcome measures and assessment procedures.

Definitions of the domains and their respective items in the outcome measure were presented followed by the rating scale itself. Scoring or rating was explained. A clinician selected the description that fitted her patient best and allocated a score between 1 and 18 for each item. The median was calculated for each domain by using the scores of all the items. If the electronic data-collection sheet was used, these medians were calculated by default. Medians, instead of means, were calculated as the scale of measurement was an ordinal scale.

The final section in the user manual explained the procedure for using the APOM. Usually, an initial interview would be conducted with a new mental health care user. The clinicians were provided with an interview guide containing useful questions. They were however not compelled to use this interview. If they were satisfied that their standard interview covered all the relevant questions they were encouraged to continue with their tried and trusted procedure. A mental health care user then received an intervention programme. The particular institution who participated in the pilot conducted four different intervention programmes: 1) maintenance group; 2) acute; 3) self presentation; 4) passive participation and transition groups. These intervention programmes consisted of group therapy, activities therapy, sport and games sessions and outings. Occupational therapy assistants usually presented the activities therapy, sport and games sessions and accompanied clients on outings while occupational therapists presented group therapy as well as activities therapy.

Clinicians often expose their clients to self-report questionnaires and inventories, like role checklists and time-use schedules. Data from these self-report sources provide valuable information that permits a clinician to complete the assessments of certain components such as Balanced lifestyle and Role performance. Clinicians were encouraged to continue using these assessments.

After the initial interview, a mental health care user had to be assessed in at least two futher sessions before a clinician could do the first or base-line assessment. This was necessary as the assessment is based on observing a clients' real performance or participation in activities, groups and situations in the hospital. A clinician also received feedback from other clinicians and assistants who had seen their clients. Personal observations and feedback from other staff members enabled the clinician to rate a client's participation comprehensively. In practice, it could happen that after some time a clinician did not have enough observations to rate a mental health care user on all eight domains or on all the items of one or more domains. Mental health care users sometimes, for various reasons, do not attend their occupational therapy programmes, thereby limiting opportunities for observation of performance. In such instances a clinician would then only rate those items on which she obtained adequate observations and feedback to rate the client.

The clinicians considered one week was as a realistic time period in which to obtain enough observations for the base-line assessment. The date for a follow-up assessment was determined by the type of programme that the mental health care users attended. For example, those on the maintenance programme would receive monthly assessments while those attending the acute programme would have had their second assessment two weeks after the base-line assessment. The final assessment needed to be completed before the mental health care user was discharged.

5.3.5 TRAINING OF THE CLINICIANS IN THE USE OF THE OUTCOME MEASURE

The user manual was introduced and reviewed at a training workshop. The event gave participating clinicians an opportunity to clarify uncertainties, report on omission of essential information or removal of irrelevant content from the manual. Eleven occupational therapists attended the workshop. Six of these clinicians participated in the initial phase where domains for the outcome measure were identified.

Each clinician was asked to administer the outcome measure to five mental health care users. After a period of three months, clinicians reported back that they were not confident in administering the outcome measure as they had reservations about descriptions of certain items.

A second training session was held where clinicians expressed their concerns and gave reasons for not completing their first attempt at applying the outcome measure. This session was structured as a focus group and attending clinicians gave permission for audiorecording of the session.

Problems that came up were a lack of support and encouragement from the researcher. At the time of the pilot of the APOM, clinicians were involved in a Gauteng Health Department project about ICF codes. Their experience from that project was that a staff member at the Occupational Therapy Department was driving the project and they felt compelled to complete the ICF codes on their patients. Since there was no one available to drive the outcome measure project, they forgot to complete the outcome measure. Other complaints were high patient loads and other administrative duties that limited clinicians' time to do additional work, such as completing the outcome measure.

The clinicians suggested that the researcher be present to clarify their uncertainties when they complete the outcome measure. Individual appointments were then arranged with the clinicians where the researcher applied the electronic version of the outcome measure while the clinicians used their hard copies to score their clients. The researcher captured clinicians' scores with the electronic version. This procedure worked out well as an immediate discussion followed in instances where the clinician had uncertainties or encountered differences. Only six of the eleven clinicians were able to make regular appointments as some were due for maternity leave while others withdrew from the research.

This method of data collection slowed down the assessment process and affected the sample size. Two other hospitals from the Gauteng Province (Chris Hani Baragwanath and Sterkfontein Hospitals) volunteered to participate. Ethical clearance was obtained from these two hospitals and data collection started hereafter. Refer to Appendix E5 for the additional Ethical Approval.

A training session was held at each of the two hospitals. The feedback from the first pilot group was used to adapt the training and further support was provided during a practical session where attending clinicians rated a client known to all of them. Discussions to clarify uncertainties followed and the researcher shared common problems encountered during the first pilot group. The clinicians at the volunteering hospitals were able to complete the outcome measure on their own.

After the training was completed, Phase 3 of the study commenced.

5.4 PHASE 3: PILOT THE OUTCOME MEASURE AND INVESTIGATE SELECTED PSYCHOMETRIC PROPERTIES.

5.4.1 PSYCHOMETRIC PROPERTIES

Phase 3 of the study included the piloting of the outcome measure while certain psychometric properties were investigated. Problems regarding clinical utility were also determined.

5.4.1.1 CONTENT VALIDITY

Six experts on the subject matter of the Model of Creative Ability and occupational therapy in mental health care contexts, scrutinised the relevance of the eight domains to the overall outcome of Activity participation. They had to judge how well each item fitted in with the domain to which it was assigned. Their ages ranged between 35 and 65 years.

Content validity indices were calculated. Lynn (1986) suggested that two indices of content validity be calculated. The first was an index for individual items in a measure, referred to as the Item-level Content Validity Index and the second version, an index for the overall measure, referred to as the Scale-level Content Validity Index. Polit and Beck (2006) agreed with Lynn (1986) that when six raters were being used, an Item-level Content Validity Index of 0.78 and higher was recommended while for a scale-level content validity index, 0.80 and higher was acceptable. Polit and Beck (2006) urged researchers to report both the Item-level and Scale-level Content Validity Indices for a complete presentation of content validity.

The rating scale that the six raters used, was an ordinal 5-point rating scale. Table 5.7 describes the rating scale.

The ordinal scale was dichotomised according to relevance and irrelevance, where ratings of 1 and 2 were computed as irrelevant and ratings of 3,4 and 5 as relevant.

Table 5.7 The rating scale for content validity.

Rating	Description	
1	The item fits the domain very poorly	Irrelevant
2	The item fits the domain poorly	
3	The item fits the domain moderately	Relevant
4	The item fits the domain well	
5	The item fits the domain very well	

The Item-level Content Validity Index was calculated by adding the number of raters that scored the item as relevant, divided by the total number of raters. Table 5.8 reports on the Item-Level Content Validity Index for each domain as well as the mean Item-Level Content Validity Index.

The Scale-level Content Validity Index could be calculated in two ways. The first was the average of the Scale-level Content Validity Index (S-CVI/Ave) which was the same as the mean Item-level Content Validity Index. A more stringent method was the Universal Agreement Scale-level Content Validity Index where only items with total agreement (those items that received a relevant rating by all the raters) were divided by the total number of items. The Scale-level Content Validity Index Universal Agreement (S-CVI/UA) and the S-CVI/Ave are reported in Table 5.8.

All the Item-level Indices for the domains were well above the recommended 0.78, with two domains receiving total agreement (Communication/Interactions skills and Role performance) while the weakest index was reported for Balanced lifestyle (0.83), but still in excess of the 0.78 cut off point.

The Scale-level Index of 0.93, when calculated with the average method, was well above the critical limit of 0.80, but when the Universal Agreement approach was used, the index equaled 0.61. It was not clear from the literature what the recommended S-CVI/UA Index ought to be as this method was rarely reported in studies of content validity (Polit & Beck 2006). An index of 0.61 in this study meant that 22 out of 36 items attained an Item-level Index of 1.00 while 14 items (39%) of the items had Item-level Indices of, respectively, 0.0 (0 out of six), 0.16 (1/ 6), 0.33 (2/6), 0.5 (3/6), 0.66 (4/6) or 0.83 (5/6). The raw data indicated that 15 items reached 0.83 and 1 item 0.66. In this study the Scale-level Content Validity Index was judged as satisfactory since no items were rejected.

Table 5.8 Content validity indices of eight experts' ratings on the relevance of the items of the APOM.

Domain	Item-level content validity index (I-CVI)	Scale-level content validity index – average method (S-CVI/Ave)	Scale-level content validity index – universal agreement method (S-CVI/UA)
Process Skills	0.95	0.93	0.61
Comm/Interact Skills	1.00		
Lifeskills	0.89		
Role Performance	1.00		
Balanced Lifestyle	0.83		
Motivation	0.87		
Self-esteem	0.97		
Affect	0.94		
Mean I-CVI	**0.93**		

In interpreting the content validity findings for clinical significance, it was clear that almost all the items were judged by the six experts as relevant for Activity participation. The only item that was scored below 0.78 was the item Motives and drives which fell under the domain of Motivation. The item-level index for Motives and drives was 0.66 and was the only item where two out of the six raters judged it as irrelevant. All the other items had an index of either 0.83 or 1.00.

Three of the experts were also asked to change the descriptions for each item if they were not satisfied with the precision of the description or if it did not fit the particular level of creative ability. One of the experts found all descriptions acceptable and did not suggest any changes. The remaining two experts suggested changes to improve clarity. Some of the suggestions were incorporated in the final version of the APOM that was piloted.

One expert suggested adding an item of Norm awareness. Norm awareness is an important concept in the Model of Creative Ability and refers to social norms, norms for the quality of an end product and norms for behaving in specific situations. It is one of those concepts that apply to all items. A therapist will evaluate all the behaviours and actions in terms of the awareness of norms and draw on it as guiding criteria for "leveling" a client. A therapist trained in the Model of Creative Ability

uses Norm awareness during the clinical reasoning process. It was decided not to include it as a specific item as it is a critical indicator relevant to all items.

It must be noted that the descriptions in the APOM did not attempt to cover all theoretical concepts but were typical summary descriptions of specific items for specific levels. Another important concept in the Model of Creative Ability is Task concept. It had to be used in the sense that the theory originally had explained it. Task concept has different steps or components which are common knowledge for a therapist trained in the theory. Therefore all the steps of Task concept were not included in the descriptions but were mentioned only in summary. It was suggested that all the steps be included but this made the descriptions cluttered.

Other minor suggestions were made, for instance, changing “not prepared to engage in a task” into “does not engage in task”.

The results of the content validity index calculations as well as the judgments of the individual item descriptors by subject matter experts supported good content validity of the APOM.

5.4.1.2 CONSTRUCT VALIDITY

In Section 4.6.4 of Chapter 4 the researcher reasoned in detail why the factor analytic statistics based on a naïve and inadequate data set would be reported in the results. The APOM was a novel construction. The development, piloting and application of the new measure generated statistical information about its psychometric properties that up to now did not exist. The statistical data, despite its naivety, does permit data interpretation but cannot provide any convincing evidence of what the instrument purports to measure. It will only contribute noteworthy research data when it progresses from an embryonic entity into convincing evidence about the factor structure of the APOM that will expand the existing body of scientific knowledge of the discipline occupational therapy.

A correlation matrix using the Pearson correlation coefficient was constructed for the eight domains of the APOM with the naïve data set of 41 subjects. The eight domains showed early but unconfirmed promise of fair to good correlations. The matrix of coefficients, at this stage, reflected neither convergent (commonality) nor divergent (independence) validity. The data set generated fair correlation between Process skills and Role performance (0.650), as well as between Balanced lifestyle (0.670) and Affect (0.641). Several domains correlated in excess of 0.70: the highest was Self-esteem’s correlation with Lifeskills (0.954) and Motivation (0.945) as well as Affect’s co-relation with Lifeskills (0.944). Table 5.9 presents the correlation matrix of the eight domains.

Table 5.9 Correlation matrix of the 8 domains of the APOM. (n= 41)

Factor / Domain	Process skills	Comm/ Inter skills	Life-skills	Role Perfor-mance	Balance	Motiva-tion	Self-esteem	Affect
Process skills								
Comm/Inter. skills	0.856	1						
Lifeskills	0.798	0.894	1					
Role performance	0.650	0.780	0.911	1				
Balanced lifestyle	0.670	0.744	0.801	0.807	1			
Motivation	0.748	0.826	0.799	0.813	0.861	1		
Self-esteem	0.708	0.781	0.954	0.806	0.831	0.945	1	
Affect	0.641	0.763	0.944	0.762	0.753	0.825	0.872	1

The researcher next initialised a factor analysis of the variates in the naïve APOM data set. This statistical analysis was the equivalent of an initial attempt at data reduction, an acknowledged step in qualitative data analysis (Giorgi 1985). The outcome of factor extractions from the initial data set is presented in Tables 5.10 and 5.11.

The computed Eigenvalues reflected the presence of common variance or specific variance among the items of the measuring instrument. Values exceeding 1 pointed to a high degree of commonality rather than unique variance among certain items. The extraction method was principal component analysis (Field 2005). The ideal sample size of 10 per factor (in this study 10 X 8), thus 80, for meaningful results was suggested. Provisional Eigen values were computed to explore early trends at this stage of the study. The total variance of the sample is presented in Table 5.10. Thirteen components were extracted, of which only five at this early stage, were scientifically meaningful. The Eigenvalue of 35.663 that explained 69.7% of the variance in the naïve data set was a preliminary but premature indication of one dominant common factor in the outcome measure.

Interpretation of initial extraction was difficult (Ho 2006: 205) and rotation of factors could give more meaningful result. Since the domains were highly correlated in the above matrix, the Oblimin rotation technique with Kaiser Normalisation was the preferred rotation option. It had to be reiterated that the rotation was done for exploration of the data and that it could be of value to present the pattern matrix that emerged.

Table 5.10 Total variance explained using Principal Component Analysis.

Component	*Initial Eigen values*		
	Total	% Variance	Cumulative %
1	35.563	69.731	
2	3.557	6.974	
3	2.126	4.169	
4	1.275	2.501	
5	1.177	2.308	
6	.912	1.789	87.472
7	.842	1.650	89.122
8	.647	1.268	90.390
9	.585	1.147	91.537
10	.531	1.042	92.579
11	.472	.925	93.504
12	.411	.807	94.310
13	.360	.706	95.016

Fifty-one items of the eight domains were used in the rotation. The APOM consisted of 52 items but the item "child care skills" (L5) was excluded from the factor analysis as it was only relevant for five of the 41 subjects. There were too many missing data and it was decided to exclude this item.

The 51 items of the eight domains were factor analysed and reduced to five factors. Due to the small sample size no significant conclusions were derived at. Table 5.11 reflects the five factors, items that figured in each factor, and their respective item loadings in each of the factors. Items with factor loadings ≥ 0.35 and -0.35 indicated stability and replicability of the item (Overall & Klett 1972). These items are indicated in bold italic.

Table 5.11 The Pattern Matrix illustrating the factor loadings of the 51 items. (n=41)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
P1 - Attention		***.930***	-.214	-.225	-.125
P2 – Pace		***.958***		-1.34	
P3 – Knowledge (tools & materials)		***.785***			-.104
P4 – Knowledge (concept formation)		***.852***		.130	
P5 – Skills	.137	***.809***		.101	
P6 – Task concept		***.844***	.226		
P7 – Organising space & objects		***.836***	.254		.138
P8 – Adaptation	.115	***.816***		.119	

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
C1 – Physical contact		***.646***		***.421***	-.127
C2 – Gases	.155	***.376***		***.557***	-.129
C3 – Gestures		***.535***		***.492***	-.103
C4 – Use of body		***.525***		***.465***	-.161
C5 – Use of speech	.282	***.662***	-.156	.128	
C6 – Exchange information	***.414***	.218	.107	***.366***	-.123
C7 – Express needs	-.119	.121	.118	***.391***	***-.653***
C8 – Initiate interaction	.342	.216		.287	-.324
C9 – Form relationships	***.401***			.183	***-.572***
C10 – Form rapport	***.473***				***-.546***
L1 – Personal care, hygiene, grooming		***.561***	.180	.257	-.170
L2 – Personal safety, care of medication	.166	***.413***	.349	.150	-.150
L3 – Use of transport	.308		***.447***	***.380***	
L4 – Domestic skills	***.316***	.265	***.377***		-.170
L6 – Money management and budgeting		.101	***.738***		-.211
L7 – Assertiveness		.313	***.413***		***-.375***
L8 – Stress management		.263	.321		***-.541***
L9 – Conflict management	.102		***.532***	.153	***-.425***
L10 – Problem-solving skills	-.131	.304	.336		***-.612***
L11 – Pre-vocational skills	.136	***.594***		.182	-.166
L12 – Vocational skills		***.672***			-.198
B1 – Time use and routines	***.426***	***.384***	.210	-.152	-.162
B2 – Habits	***.532***		***.535***		
B3 – Mix of occupations	***.559***		***.525***		
R1 – Awareness of roles	.212				***-.794***
R2 – Role expectations	.221			-.127	***-.800***
R3 – Role balance	.283				***-.649***
R4 – Competency	.286	.134		-.140	***-.621***
M1 – Active involvement	***.646***	***.352***			
M2 – Motives and drives	***.648***	.124	.151		-.170
M3 – Shows interest	***.840***		.108		
M4 – Goal-directed behaviour	***.410***	.318	.233		-.236
M5 – Locus of control	***.725***				-.176
S1 – Commitment to task	***.804***	.205		-.170	-.112
S2 – Using feedback	***.754***		.268		
S3 – Self-worth	***.867***				-.153
S4 – Attitude towards self (self-assured)	***.870***				
S5 – Attitude towards self (optimistic)	***.730***			-.166	-.238
S6 – Awareness of qualities	***.708***	.206	.117		
S7 – Social presence	***.796***	.158	.170		

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
A1 – Repertoire of emotions	***.787***	.101	-.115	.136	-.134
A2 – Control	***.937***		-.156	.234	
A3 – Mood	***.861***			.127	

P = Process Skills, C = Communication/Interaction skills, L = Lifeskills, R = Role performance, B = Balanced lifestyle, M = Motivation, S = Self-esteem, A = Affect

Factor 1 consisted of all the items under the domains of Motivation, Self-esteem and Affect. Theoretically these three domains are called client factors and clinically, it would make sense if those items clustered under one factor. One item from the domain Communication/Interaction skills and all three items from the domain Balanced lifestyle also assembled under Factor 1. All eight items of Process skills clustered under Factor 2 together with items from Lifeskills and Communication/Interaction skills. Factor 3 consisted of five Lifeskills items. Factor 4 only had two items from Communication/Interaction skills while Factor 5 contained all the Role performance items and the remaining items from Communication/Interaction skills and Lifeskills. Several items had double loadings (fell in two factors): all three items of Balanced lifestyle, four Lifeskills items and seven Communication/Interaction skills items. The item Information exchange under the Communication/Interaction domain (C8) highest loading was slightly less than .350; = 342. This item probably was unstable and unlikely to be replicated in any follow-up study. This was the only item with a loading less than .350 or -.350

The factor analysis was exploratory as the naïve data set did not meet the statistical requirement of a sample size of at least 10 subjects per domain. Although it was interesting to note how the items clustered into factors, no significant conclusions were made and meaningful repetition of the factor analysis is strongly recommended once the naïve data set was based on a sample in excess of 80 subjects, instead of the current 41 participants.

5.4.1.3 INTERRATER RELIABILITY

Five clinicians rated a mental health care user known to all of them, using the APOM. Two ratings were done by the same clinicians on the same mental health care user, five months apart. The average rating was calculated for the two ratings. The medians of each domain were calculated for each rater, where after the average of the median per domain was calculated. The Activity Participation of this mental health care user deteriorated slightly between the first and second rating, and as a result, all raters consistently judged the mental health care user lower.

Figure 5.4 shows the interrater reliability averages of the two data collection points.

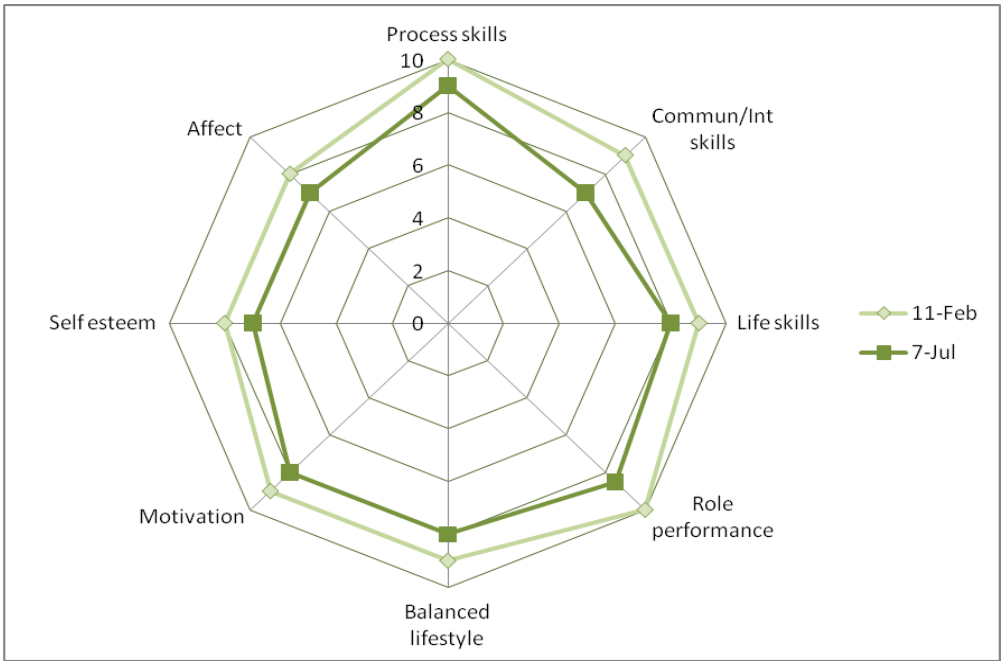

Figure 5.6 Interrater reliability averages of two data collection points

The interrater reliability of the five raters was judged by means of Kruskal-Wallis one-way analysis of variance tests. The raters assessed the eight individual domains as well as a combination thereof. The Kruskal-Wallis analysis involved the first and second ratings. The statistics of the analyses are presented in Table 5.12.

Table 5.12 Differences in scores between 5 raters according to the Kruskal Wallis Test Differences in scores between 5 raters according to the Kruskal Wallis.

Domain	Kruskal Wallis (H) for 1st Rating (Trial 1)	P value for 1st rating (Trial 1)	Kruskal Wallis (H) for 2nd rating (Trial 2)	P value for 2nd rating (Trial 2)
Process skills	15.6779	**0.0035**	17.9009	**0.0013**
Comm/Interact skills	12.6881	**0.0129**	15.9971	**0.0030**
Lifeskills	6.3668	0.1734	12.4825	**0.0141**
Role performance	6.3121	0.1770	10.3158	**0.0354**
Balanced lifestyle	8.8342	0.0654	9.2052	0.0562
Motivation	6.8390	0.1446	5.3547	0.2528
Self-esteem	13.6843	**0.0084**	2.9670	0.5634
Affect	1.5123	0.8245	7.4014	0.1161
All domains	0.7863	0.9403	0.8465	0.9321

The critical X^2 probability value for 4 degrees of freedom (k – 1) was 9.49 at the $\alpha = 0.05$ level. The Kruskall-Wallis test, being sensitive to differences in central tendency, statistically tests data sets for presence of significant differences. Where differences are insignificant, similarity in central tendency was present (Howell 2006). All significant differences in the data set are presented in bold in Table 5.12. In general, the presence of insignificant differences pointed to similarity in the judgments of the panel of raters (reliable or consistent interrating). In both trials 1 and 2, the statistical analysis pointed to difference of opinion among raters in judging the domains Process skills and Communication/Interaction skills. The statistical analysis showed that inconsistency in rating occurred more often in the judgment of trial 2 outcomes than outcomes of trial 1. The insignificant differences for the combined domains were noteworthy observations. Differences in judgment of individual domains apparently were balanced out and in the overall rating, hence the agreement between the raters.

5.4.1.4 INTRARATER RELIABILITY

Intrarater reliability was also assessed by comparing the raters' first and second scores. In this case, Spearman's correlation coefficients were calculated for each rater. One rater's first and second ratings were inconsistent ($r_s = 0.02$), two other raters were reasonably consistent in their respective individual ratings ($r_s = 0.66$ and 0.65) while two others demonstrated more than adequate intra-individual consistency in their judgments ($r_s = 0.70$ and 0.79). The rater with the incongruent ratings was a recently qualified clinician. All other raters had at least five years of experience in the field of mental health care.Table 5.13 illustrates the distribution of the APOM scores for the individual raters.

Table 5.13 Distribution of the APOM scores for the individual raters.

Domains	Rater 1		Rater 2		Rater 3		Rater 4		Rater 5	
	1st score	2nd score	1st score	2nd score	1st score	2nd score	1st score	2nd score	1st score	2nd score
Process skills	9	8	10	8	8	9	10	10	9	8
Comm/Interac	9	7	10	7	8	7	7	8	9	6
Lifeskills	10	8	9	7	9	9	7	8	9	8
Bal lifestyle	10	9	9	8	8	6	7	7	8	7
Role perform	10	10	11	7	11	9	9	7	10	8
Motivation	9	8	10	8	9	8	7	7	9	7
Self-esteem	8	7	10	7	6	6	6	7	8	6
Affect	10	9	8	7	8	6	7	8	9	7
	0.79		0.02		0.70		0.66		0.65	

5.4.1.5 INTERNAL CONSISTENCY

Cronbach's alpha indices were calculated for the eight domains. Cronbach's Alpha index tests how well an individual item in a scale correlates with the sum of the residual items. It measures consistency among individual items in a scale. Indices between 0.7 and 0.9 indicate good internal consistency of a scale.

Table 5.14 exhibits Cronbach's alpha indices for each of the domains. These alpha coefficients pointed to high internal consistency.

The alphas calculated for the APOM yielded good internal consistency for five items. Three items obtained a Cronbach's alpha higher than 0.9. Table 5.14 shows the Cronbach's alpha index for each domain.

Table 5.14 Cronbach's alpha index for each domain of the APOM.

DOMAIN	n	Cronbach's alpha
Process skills	40	0.786
Communication/Interaction skills	39	0.868
Lifeskills	31	0.998
Role performance	39	0.912
Balanced lifestyle	41	0.824
Motivation	41	0.879
Self-esteem	37	0.926
Affect	41	0.828

The Cronbach's alpha for Role performance and Self-esteem were slightly above 0.9 and could still be interpreted as acceptable items in terms of internal consistency. The alpha index of 0.998 for Lifeskills is however alarming as this high correlation with other items could suggest that other items are already measuring the same construct.

A small number of items per domain (three or less) could usually produce moderate to low alphas (Spiliotopoulou 2009). In this study two of the domains contained only three items; Balanced lifestyle and Affect, yet they did not yield low alphas. Internal consistency in measuring instruments can occur despite small sample sizes.

Small sample sizes could on the other hand provide large reliability coefficients and could be an explanation for the high Cronbach's alphas in this study. Lifeskills with its Cronbach's alpha coefficient of 0.998 is an example of this.

5.4.1.6 SENSITIVITY

Those outcome scores of mental health care users who were subjected to both a base-line and final assessment were statistically analysed to determine the instrument's sensitivity to detect changes that could be attributed to the intervention. A data set of 31 subjects was available. This data set was tested for normality and was found to be normally distributed. The t-test for paired observations was used. A paired observation was defined as the final score minus the base-line score. Because the measurements were paired, one would expect a high correlation between the two observations. Table 5.15 depicts the correlations between the base-line and final score. Highly significant correlations were confirmed for all eight domains with p values below 0.0001.

Table 5.15 Paired sample correlations between base-line and final score. (*** $p < 0.0001$)

	Paired observations	N	Correlation	Significance
Pair 1	Process_fin & Process_base	31	.786	.000***
Pair 2	Comm_fin & Comm_base	31	.809	.000***
Pair 3	Life_fin & Life_base	31	.851	.000***
Pair 4	Role_fin & Role_base	31	.852	.000***
Pair 5	Balance_fin & Balance_base	31	.784	.000***
Pair 6	Motivat_fin & Motivat_base	31	.797	.000***
Pair 7	Self_fin & Self_base	31	.840	.000***
Pair 8	Affect_fin & Affect_base	31	.869	.000***

The results of the t-test as presented in Table 5.16 indicated highly significant changes in all the domains with the highest t-value in Motivation (4.586) and the lowest in Communication/Interaction skills (2.927).

Table 5.16 The t-test results and effect size of 31 paired observations (final and base-line scores). (*** p < 0.0001; ** p < 0.001)

Domain	Mean difference	Standard deviation	Effect size	t-distribution	Level of significance
Process skills	1.126	1.436	0.783	4.363	.000***
Comm/Inter-action skills	.780	1.484	0.526	2.927	.006**
Lifeskills	.776	1.330	0.583	3.248	.003**
Role Performance	.944	1.491	0.632	3.523	.001**
Balanced Lifestyle	1.183	1.666	0.710	3.952	.000*
Motivation	1.252	1.520	0.823	4.586	.000*
Self-esteem	.983	1.587	0.620	3.450	.002*
Affect	1.086	1.417	0.767	4.268	.000*

A greater mean difference reflected more sensitivity to detect change after intervention. For the purposes of the current study, effect in a positive direction was viewed as positive and as supportive of detection of change. Detection of change supported the assumption that the outcome measure was sensitive in this regard.

The effect size was calculated using Cohen's difference where the mean difference was divided by the standard deviation. An effect size of 0.1 is interpreted as a small effect, 0.3 as a medium effect and 0.5 as a large effect. Estimating effect size was a statistical interpretation that required underpinning by clinical relevance. Table 5.16 illustrates the effect size for each domain of a sample of 31 subjects.

The final scores were consistently higher than the base-line scores (hence the positive mean differences) which reflected change in the desired direction. Motivation revealed the highest effect size (0.823), followed by Process skills (0.783), Affect (0.767) and Balanced lifestyle (0.710). The mean differences for all the domains were all highly statistically significant (p, 0.0001), indicating that the APOM was sensitive to detecting change.

Speculations why these domains revealed the best change could be that the intervention progammes were best tailored to improve these domains. However, interpretation of effect size of the APOM is premature at this early stage of the study. Effect size could be used to compare effect

sizes with similar services that also measure their outcomes with the APOM. Only when more sets of data become available, meaningful interpretations and comparisons will be possible. It is important to take cognisance of the sample size of each data set when comparisons are done since the standard deviation is influenced by the sample size. The smaller the sample size, the smaller the standard deviation, resulting in a smaller denominator when calculating effect size and thus inflating the effect size. It is advised to calculate effect size for sample sizes between 30 and 35 as this will give a reliable standard deviation.

5.4.2 CLINICAL UTILITY

While clinicians and the researcher rated mental health care users' activity participation by means of the APOM, the feasibility of the instrument was evaluated at the same time.

Clinicians understood the process of applying the APOM and did not experience noteworthy problems in completing the summary sheet containing demographic and medical information of the mental health care users. They found this information useful and necessary to record for each patient. The benefits of having this information in an electronic format were that they had their own database of patients and did not have to access the hospital's electronic management system which was not operating consistently and often unavailable for weeks. The drawbacks were that there computers were not reliable at all times and could also lose the valuable data. Therapists were advised to make regular backups to prevent losing data.

The rating scale with its 52 items was somewhat overwhelming for clinicians with little experience in the use of the Model of Creative Ability. It took them much longer to read through the descriptions than the experienced clinicians. It was also noted that experienced clinicians soon had an estimation of the patient's level of creative ability and will then focus on that specific level and the level below and above, but would not read all six levels of item descriptions. This initial estimation of a patient's level thus saved much time in reading and deciding which description fits their patient best.

There were items that clinicians were hesitant in rating a mental health care user on a specific level namely the Attitude toward self under the domain of Self-esteem and the first two items under information exchange of the Communication and Interaction skills domain. After discussing the performance of the patient with the researcher, they were able to make a firm decision. These discussions occurred with clinicians who were newly qualified. Some of the more experienced clinicians suggested changes in the descriptions of certain items. These changes were only made if

other clinicians agreed to the suggested change. Clinicians often commented on the accurate descriptions for many of the items, indicating that they were consistent with the observations in the clinical setting.

It took a newly qualified clinician approximately 45 minutes to complete all 52 items of the APOM while it took an experienced clinician 10 – 15 minutes to do so. Clinicians found the report that was automatically generated in Excell as helpful. Some reported that it was actually time-saving. The spider graph that was generated automatically was helpful, especially in team discussions about the progress of mental health care users.

Despite the obvious advantages of using the APOM, some clinicians still complained that they did not have time to complete the outcome measurements for their clients. These findings were similar to the findings of Colquhoun et al. (2010), Bowman (2006) and Chard (2000) that clinicians do not have time to complete outcome measures. Those clinicians who did find time to use the APOM routinely, continued to assess their patients after the data collection for this study ended. They found the visual illustration of the performance of the patients in the form of the spider graph extremely helpful in motivating for discharge or extended length of stay for their clients. These clinicians also reported that clients benefitted from the visual illustration and were often more motivated to attend occupational therapy.

5.5 CONCLUDING REMARKS

The results that were discussed in this chapter described the developmental process of the outcome measure, its eight domains and their constituent items. The rating scale, in practice known as the Activity Participation Outcome Measure, was based on the Model of Creative Ability. The new outcome measure was piloted in several mental health care settings. Assessment of the APOM's psychometric properties generally yielded positive results. Sample sizes for estimating the validity and reliability of aspects of the outcome measure, however, were not always optimal and require further data collection and analysis in search of supportive or even convincing evidence.

CHAPTER 6 DISCUSSION OF RESULTS

6.1 INTRODUCTION

The development of an outcome measure for occupational therapists in mental health care settings was long overdue. Measuring outcomes in mental health posed many challenges and these had to be dealt with while developing an outcome measure. The results of the three phases of the study revealed that most of the challenges were attended to while public release of a valid and reliable outcome measure constituted a valuable contribution to the discipline of occupational therapy.

In this chapter the results of the three phases are interpreted to indicate the actualisation of the aims and objectives of the study. The implications of the results are also discussed.

6.2 DISCUSSION OF RESULTS OF PHASE 1 OF THE STUDY

The aims of Phase 1 were to establish domains for an outcome measure that represented the service delivered by clinicians as well as the needs and expectations of the mental health care users with regard to rendering of occupational therapy service. It was important that the outcome measure was applicable to the South African context. It had to cover the type of domains that are typically addressed in interventions programmes delivered by occupational therapists in government as well as private psychiatric settings. The participation of and inputs by clinicians and mental health care users were essential for ensuring successful outcome of this study. Their participation is discussed below.

6.2.1 PARTICIPATION OF CLINICIANS TO ESTABLISH DOMAINS

Clinicians who participated in the focus groups were extremely positive and volunteered enormous amounts of information. During focus group discussions it became evident that clinicians did not have misconceptions or lack understanding of outcomes since all agreed that measurement of

change was the focus of any outcome measurement. A similar trend was reported by Bowman and Llewellyn (2002) who had conducted structured interviews with occupational therapists with regard to measuring outcomes. Their sample also showed agreement about outcomes and explained it as the tangible and measurable result of intervention.

Participating clinicians' solid understanding of outcomes laid the groundwork for further fruitful discussions about related themes e.g. characteristics of an outcome measure and what exactly to measure in mental health care users.

6.2.1.1 CHARACTERISTICS OF AN OUTCOME MEASURE

Viewed from the clinicians' perspective, the characteristics of an outcome measure were practical in nature but did not include any principles of measurement or psychometric properties like reliability or validity. They considered feasibility a priority as they wished to have an outcome measure that was realistic, tangible, and explained in clear semantics that reflected the unique contribution of occupational therapy. The feasibility of an outcome measure is as important as the mechanism's psychometric properties and must not be underestimated. Clinicians are the ones who will use the instrument and it, therefore, had to be user-friendly and relevant for their particular settings. Jette (1995) as well as Jette and Haley (2005) referred to the tension in functional outcome assessment between the need for a comprehensive and sensitive outcome instrument and clinicians' demand for a feasible instrument that can be used in busy clinical settings. Clinicians experienced increasing pressure to justify their services but would not be easily convinced to fill out lengthy outcome measures that took up valuable intervention time.

Client-centeredness was another characteristic that came up during focus groups involving clinicians. The clients' needs were important to clinicians as these assisted them in keeping services relevant. Their needs, at all times, reminded clinicians of the clients' circumstances and context. Currently, the client-centred approach is globally accepted as one of the core caring aspects of any occupational therapy service. Measurement in occupational therapy reflects the individual nature of people engaging in occupations. These measurements focus on a client's subjective experience of an occupation, on the one hand, but, on the other hand, on the observable qualities of occupational performance as seen through the eyes of the clinician. Client-centeredness is thus an important facet of occupational therapy and the researcher assumed that clinicians would include it in their discussions of outcome measurement.

Clinicians strongly felt that an appropriate outcome measure had to reflect the unique contributions of occupational therapy. They mentioned that domains had to focus on function and occupational performance of the client. Domains descriptions had to clarify consumers and practitioners of other health care professions' perceptions of the core business of occupational therapy. The domains that were eventually selected acknowledged the discipline's unique contribution.

During the focus groups and informal discussion, it became evident that clinicians had developed their own terminology to describe the unique contribution of occupational therapy in the health care team. Their terminology often was outdated and not in line with usages in the latest literature, for example the Occupational Therapy Practice Framework of the American Occupational Therapy Association (2008). This framework contains powerful terminology that explains the contribution of occupational therapy towards any condition or situation. When the researcher introduced clinicians to this terminology, they were remarkably receptive and agreed that it would be relevant for their practice settings. The clinicians in the end were satisfied with the inclusion of domains like Role performance and Balanced lifestyle in the APOM as they felt that these would assist them in their quest to make their unique contribution towards mental disorders public.

The lack of staying in touch with latest terminology could be a consequence of clinicians' attempts at coping with large numbers of patients and as a result, effectively reducing time allocated for professional development. It became obvious that an outcome measure had to be quick and easy to complete, without adding to already overloaded work expectations.

6.2.1.2 DOMAINS FOR AN OUTCOME MEASURE IN MENTAL HEALTH CARE SETTINGS

There was an excess of domains that could be included in an outcome measure but the process of incorporation had to be guided by the aims of intervention programmes and the needs of the people seeking the service in the South African context. The probability of finding a ready-made or appropriate outcome measure with domains that would represent the aims of a service as well as the clients' needs within a specific setting was limited.

The domains that emerged from Phase 1 of the study could be seen as generic domains for clients other than mental health care users. It is only physical components that were not appear. This finding could reveal what many educators in occupational therapy attempt to teach their students: occupational therapists do not have a narrow view of the type of diagnosis but rather focus on the impact of the signs and symptoms of an illness on the participation in everyday activities. It is the

infrastructure of health care that forces us to think in terms of a mental health care user or a patient with a neurological disease. The fact that a diagnosis is not important to occupational therapists are further supported by those clinicians who practice in settings outside the traditional hospital structure often have clients without a diagnosis as environmental factors also impact on participation in daily activities. If these domains of the APOM turn out to be generic for any occupational therapy population, the application and clinical utility of the APOM could have far reaching benefits for the entire profession. To claim validity and reliability of the APOM for generic populations, further studies need to be conducted by those clinicians in settings other than mental health.

Domains selected by clinicians for the Activity Participation Outcome Measure (APOM) in this study were compared with the domains or items of four other measures used by occupational therapists: the MEDYN Questionnaire, the AusTOMs, the MOHOST and the AMPS.

The MEDYN Questionnaire evaluates the change in functional ability in psychiatric inpatients that receive occupational therapy (Odes et al 2006). Domains in this questionnaire cover general/social behaviour, cognition and task behaviour. Three items of the domain general/social behaviour in the MEDYN were included in the APOM as Communication/interaction skills. The cognition domain of the MEDYN was fully covered by the Process and Lifeskills domains of the APOM. The task behavior domain of the MEDYN correlated well with the task concept item under the Process skills domain of the APOM. The APOM had a total of 52 items while the MEDYN contained 13 items and would thus require less time for administration.

Similarities were also found with the AusTOMs that measures impairment, activity limitation, participation restriction and well-being (Perry et al 2004). The AusTOMs was developed for use across a variety of health care disciplines, such as speech-, physio- and occupational therapists. In total, 12 items applied to occupational therapy, including three items aimed at physical dysfunctions. A therapist can select items that are relevant for his or her client and will not necessarily have to assess all the items. Several items of the AusTOMs corresponded with items of the APOM but were labeled differently. These items were learning and applying knowledge, self-care, carrying out daily tasks and routines, domestic life (inside house), interpersonal interactions and relationships, as well as work and using transport.

The AMPS is a widely used standardised assessment that is often used as an outcome measure by occupational therapists in mental health (Creek & Lougher 2008; Fisher 2001). This assessment consists of two domains namely Motor skills and Process skills. The domain of motor skills is not necessarily relevant for mental health care users while the Process skills are particularly appropriate.

Six of the items in the Process skills of the AMPS correlated with the items of the Process Skills in the APOM. These items are attention, pace, skills, knowledge, organisation of space and objects, as well as adaptation.

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. AMPS findings do not provide a complete picture of the client's performance problems. In this study, discussions in the focus groups of clinicians on what were to be measured in mental health care users, made it clear that problems related to activity participation in mental health are complex and comprehensive. The aggregate of domains that the clinicians eventually selected pointed to the complexity. Hitch (2007) reiterated this complexity when she explained that it is normal practice to assess many aspects in a mental health client, and that the AMPS did not cover these aspects comprehensively. The constructor of the APOM acknowledges the relevance of domains in the AMPS and therefore included it in her outcome measure but fully agrees with Hitch's view that it could not be applied as the only outcome measure in mental health care settings. The AMPS was not developed for specific settings but instead was intended for generic assessment (Fisher 2001). It is well known for its sound psychometric properties and much can be learned from the development and implementation of the AMPS (Hitch 2007). Although training is extremely expensive and access is limited, the AMPS remains a popular assessment in occupational therapy.

The MOHOST 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. The APOM's domains correlated well with the first four sections of the MOHOST.

In comparing the domains of the APOM with other outcome measures, it was clear that the APOM contained many more items. Items that were included in the APOM but were not part of previously mentioned outcome measures were: Role performance, Balanced lifestyle, Affect, Motivation and Self-esteem. These are aspects that are essential to address in an occupational therapy intervention programme with mental health care users in South African settings. Clinicians who use some of the other outcome measures that were mentioned would not cover the aforementioned five items since these aspects will not be measured and will thus make a comprehensive picture of the service that is delivered, impossible.

The APOM contains far more items than the outcome measures that were earlier mentioned and clinicians could reason that it is too cumbersome to complete a measure with 52 items. As mentioned previously, this is a concern but it must be reaffirmed that mental disorders are complex in nature and any reduction of items for the sake of gaining time, would jeopardise understanding and effective reporting of client recovery. Signs and symptoms of mental illness present differently in different persons and if an outcome measure has limited items, the complexity of the effect of the illness on activity participation could be viewed superficially.

Lakeman (2004) stated that routine outcome measurement ought to provide a lens through which one can witness a client's recovery from mental illness. He raised concern about the fact that current outcome measures are not capturing "the richness of people's recovery journeys" and that psychiatric symptoms alone are poor indicators of this journey to recovery. Hitch (2007) also expressed this concern when she criticised the use of an outcome measure like the AMPS with its reductionist approach that does not have the ability to capture the multiperspective approach used in mental health care settings. Lakeman (2004) suggested concepts such as coping, hope, connectedness, sense of self-efficacy, empowerment and self-esteem as indicators of recovery but acknowledged the fact that these types of concepts are difficult to quantify for the purposes of measuring outcomes. Domains that emerged in the APOM study deal with some of the concepts mentioned by Lakeman (2004) and, despite difficulties in quantification, they were operationalised into measurable units. Lifeskills, one of the domains in the APOM, focused on the important concept of coping. In order to cope, a mental health care user needs to apply skills such as personal management, domestic skills, budgeting, using transport, vocational skills and the like. These skills had been described at different levels of coping in the APOM. Self-esteem and sense of self-efficacy also had been incorporated in the APOM and were quantified successfully. Although these items would still not capture the recovery process in the way that Lakeman (2004) had suggested, they could provide some evidence of improved coping, self-efficacy and empowerment.

6.2.1.3 BARRIERS AND CHALLENGES TO EFFECTIVE OUTCOME MEASUREMENT

The focus groups, not surprisingly, acknowledged the nature of mental illnesses and the complexities that hinder the mental health care user as one of the barriers to measuring outcomes. Clinicians agreed that most of the problems in mental illnesses are latent in nature and difficult to observe. Poor motivation is a common problem among mental health care users and was mentioned as a

debilitating symptom that slows down recovery. It is difficult to observe motivation, but in the APOM this difficult construct had been operationalised into five observable items. By measuring motivation with the APOM, a clinician receives concrete evidence of how poor the motivation was at the beginning of the intervention and on whatever improvement or deterioration in this domain was observed during the course of the intervention programme.

The availability of a detailed breakdown of the problem can guide the clinician in designing a specific intervention plan for the client's problem. It could also be a case of the clinician might subjectively feel that motivation is the problem while the APOM results point to another domain as actual problem, for example, Lifeskills. Any attempt to deal with so many latent variables and explain the dynamic interaction between these variables becomes difficult and often entices clinicians to reason subjectively. The APOM would provide clarification and some supportive evidence on manifestation of these latent constructs.

If domains are routinely measured, latent trends in the nature of the activity participation might emerge and would thus permit clinicians to make informed decisions regarding their patients' progress and possible future interventions. The nature of the mental illness would thus be better understood and ought not to remain a barrier to measure outcomes.

Challenges mentioned by the clinicians were similar to findings of a study by Bowman (2006). This study explored the process and challenges to measure outcomes during occupational therapists' efforts at stroke rehabilitation. Bowman (2006) reported that participants in focus group discussions centered exclusively on challenges and barriers to measuring outcomes. These challenges and barriers were categorised into three themes: focusing on occupation, deconstructing occupation, and lacking knowledge, skills and assistance. Views similar to those that Bowman's had reported emerged in the APOM study, for example, occupational therapists wanted to include daily occupation in an outcome measure as this was their unique contribution towards rehabilitation, but short lengths-of-stay limit the possibility of focusing on occupation-based problems. Related views include the importance of measuring outcomes to promote professional credibility, difficulty in deconstructing (or, measuring the "units" of) a complex outcome like occupational performance, and lacking knowledge and skills to measure outcomes. Participants in the stroke rehabilitation study also mentioned the necessity of further training in outcome measurement, as the clinicians did in this study. Although Bowman's study focused on stroke rehabilitation, it was interesting to note that clinicians in mental health care had similar concerns about measuring outcomes (Bowman 2006).

A serious concern, raised by many clinicians during focus groups, was inadequate communication about the role of occupational therapists in a multidisciplinary team of professionals. The roles of the different health care workers were vaguely defined and, although there could be a subjective feeling that a patient has improved, it was not evident which health care worker contributed to improvement, or how this professional has achieved it. Domains included in the APOM represented a range of occupational performance concerns typically found in mental health care users, matters that are usually attended to in an occupational therapy intervention programme. The definitions and item descriptors for the domains clearly explained the occupational therapy perspective and indirectly communicated the role of the occupational therapist in mental health care settings. By using the domains of the APOM, which was based on the aims of the occupational therapy intervention programmes to measure the outcome in a client, the clinician would obtain substantive evidence on the contribution of occupational therapy toward the recovery of the client.

The clinician, however, would not have robust APOM-generated evidence in support of the 'claim' that the occupational therapy intervention has caused the improvement. Some domains, such as self-esteem, affect and motivation, are influenced by other professionals in the team, although in different ways that can have an effect on symptoms like depression, lack of drive, depleted energy and poor attention. Occupational therapy could thus not single-handedly lay claim to the evolved causal relationship between its intervention and the outcome. The measurement of outcomes is no substitute for convincing evidence gained from rigorous experiments, like randomised control trials. However, if measuring outcomes had been firmly established and a sensitive measure is available to measure change, randomised control trial may be the next step in producing evidence of effect of services. Routine outcome measurement in addition to randomised control trials is an interesting debate and is discussed in more depth at the end of this chapter.

6.2.2 PARTICIPATION OF MENTAL HEALTH CARE USERS

The participation of mental health care users to generate information that determined the domains for the outcome measure accentuated the value of a client-centred approach. Working in partnership with clients and respect for their needs ought to be embedded in occupational therapy interventions in order to improve their occupational performance. Law, Baum and Dunn (2005) as well as Law, Baptiste and Mills (1995) stated that measurement techniques have to include the

client's say in evaluating outcomes of their intervention. This aspect of client-centred practice was implemented in this study.

Another aspect of client-centred practice that was firmly integrated in this study was the notion that measurement had to focus on both subjective experience and observable qualities of occupational performance (Fossey & Harvey 2001; Krupa, Fossey, Anthony, Brown & Pitts 2009; Lakeman 2004; Law & Baum 2001). Clients' responses reflected their subjective experiences. They were granted an opportunity to express their need for and expectation of occupational therapy service. At the same time, domains selected by the clinicians were indicative of the observable qualities of occupational performance. Responses from mental health care users corresponded well with the domains that clinicians wish to see change in. This indicated that clinicians in the APOM study were in touch with their clients' needs.

Responses from the mental health care users in the APOM study compared well with a study done by Lim, Morris and Craik (2007). The three researchers gathered data by way of a self-report semi-structured questionnaire to examine acute mental health inpatients' perspectives on occupational therapy. Three-quarters of the patients reported the importance of occupational therapy's capability to provide them with daily structure, breaks with the ward environment, acquisition of new skills and creation of space for creative expression to improve confidence. Participants further reported the need to have occupational therapy available during both evenings and over weekends when lack of available therapeutic activity and boredom are common. This need was also expressed by the mental health care users in the APOM study. Findings in a study where patients had to identify therapeutic factors (Eklund 1997) too revealed that the attitude and behaviour of the occupational therapist contributed to the recovery process. The participants in Eklund's study also reported the value of being occupied and motivated through participation in activities, as well as being given the opportunity to be creative (Eklund 1997).

Much debate has taken place on whether clients with psychiatric diagnosis were able to give useful and rich information with regard to outcomes that ought to be measured. Irrespective of the debate, mental health care users were included in the APOM study since, according to the researcher's experience, they have valuable information to share and are "experts" in how the illness affects their activity participation. It was also clear from the findings of this study that they knew what they expected from the occupational therapy service. A study done by Eklund, Erlandsson and Person (2003) indicated that the occupational value of people with mental illness hardly differed from that of people without mental illness. These findings imply that mental health care users are able to

intelligently convey their needs and occupational values and must, therefore, be included in studies about their health and well-being.

The timing of gathered information from a mental health care user is crucial. There are stages in the course of mental illness where the person will be unable to provide comprehensive and sensible information e.g. during psychotic or severely depressed phases. Both psychotic phases and severe depression usually clear up after medication and once the appropriate treatment takes effect, the person's mental state stabilises and he or she is able to give useful information. Clients with limited cognitive abilities, e.g. mental retardation, are unlikely to give valuable information but in their case, their care givers or family members could act on their behalf.

In this study, two mental health care users had to withdraw because they were unable to give relevant information. Both users suffered from cognitive decline due to general medical conditions. The content of their thought processes were focused on their immediate problems and questions from the researcher elicited tangential thinking.

Lim et al (2007) reported that despite a commitment to client-centred practice, involving clients in their own intervention had made slow progress, especially among clients suffering from psychiatric conditions. This might be due to a narrow view that mental health care users might be unfit to make decisions on what they need or what will be beneficial to them. Goulet, Rousseau and Fortier (2007) reported that this approach was not interpreted as a priority by both service providers and clients in psychiatry. Little agreement between clients and service providers regarding intervention needs had been reported. Unfulfilled clients' needs included interpersonal relationships, independent lifeskills, productive activities and, coping with illness and health care (Goulet et al 2007). Greenhalgh and Meadows (1999), in a literature review of 13 studies, reported that there was little evidence that patient-based measures improved the management of patients or the patient outcomes.

Reluctance to use a client-centred approach, as reported in the literature, was not evident in the APOM study. During dedicated individual interviews and focus group, several mental health care users mentioned the caring attitude of occupational therapists. A study by Bambling and King (2001) found that up to 30% of the recovery of a mental health care user could be accounted for by the therapeutic relationship, due to the fact that the person felt he/she has been listened to, understood, respected and helped by the health care professional. Johansson and Eklund (2003) reported similar findings from a study that emphasised the importance and quality of therapeutic relationship with mental health care users. This seemed to be a noteworthy issue that has not been included in any outcome measure, in spite of studies that had been done on the importance of the relationship.

6.2.3 ACTUALISATION OF AIMS OF PHASE 1 OF THE STUDY

At the end of Phase 1, domains for the outcome measure were established for use by occupational therapy clinicians in South African mental health care settings. Clinicians were satisfied that the domains represented the service that they deliver to their clients. The needs and expectations of mental health care users with regard to occupational therapy service compared well with domains selected by the clinicians. The aims of Phase 1 were thus met.

6.3 DISCUSSION OF RESULTS OF PHASE 2 OF THE STUDY

The development and design of the outcome measure during Phase 2 in essence was a theoretical endeavour where the researcher made extensive use of both epistemology that underpinned the Model of Creative Ability and related literature. Codes derived from focus groups with clinicians and individual interviews with mental health care users were helpful in search of relevant descriptions for each level of all the items.

6.3.1 THE NEED FOR OBSERVABLE BEHAVIOURS AND ACTIONS

In order to measure all latent traits in the domains in the APOM, the items had to be described as observable actions during activity participation. Although a tedious task, it was not difficult to find observable actions for all items. The nature of human occupation, in essence, is about engagement in tasks that is observable in some way or other. Engagement in occupations is adequately covered in literature on occupational therapy, hence it was relatively easy to find descriptions for all the items. Literature on psychology was most helpful in the domains of self-esteem and affect.

Lifeskills was a common domain among many mental health care professionals, for instance nursing, occupational therapy, social work and psychology. It was necessary to select skills typically included in an occupational therapy programme. Construction of the Lifeskills domain required the largest number of items, pointing not only to its importance but also to variety that had to be accounted for. Lifeskills such as friendships, nutrition, banking, coping with death, divorce and separation,

were not covered in this outcome measure since it was felt that other professionals attended to these skills. Divorce and separation as well as dealing with financial issues were raised in focus group discussions with clinicians but were not selected during the nominal group technique. Mental health care users also did not mention these lifeskills as a need.

Balanced lifestyle (also called activities health) and Role performance domains are typical of and exclusive to occupational therapy's scope of practice. There is general agreement in literature on occupational therapy on what should be included under Balanced lifestyle and Role performance.

Quality of life is an important domain that often is included in rehabilitation outcome measures. During the focus groups, quality of life was considered an important outcome for occupational therapy but clinicians agreed that the concept was vague and difficult to measure. The domain Balanced lifestyle in the APOM, represented some aspects of quality of life. This domain focused on time-use, habits and a balance of occupations. When these behaviours and actions are balanced and healthy, the result is a feeling of well-being and experiencing of quality of life. Many quality of life and well-being scales are described in literature, usually from a client perspective, but were not rateable as observable actions like in the APOM. In the APOM Balanced lifestyle, together with Role performance, were designed to capture aspects of well-being and quality of life in mental health care users.

6.3.2 CREATIVE ABILITY AS THE RATING SCALE

The use of the Model of Creative Ability as grounding theory for the rating scale in this study turned out to be extremely successful. Several issues regarding outcome measurement that were raised by concerned authors could be addressed by using this model.

The first issue, raised by Lakeman (2004), was that concepts in the treatment of mental health do not lend themselves to quantification. This is true and although difficult to execute, it was achieved in this study. The theory underpinning the Model of Creative Ability assumes that observable actions in a person indicate the level or amount of activity participation at that stage. By performing several of these observations, one can infer a level. Each level has several criteria with which to assess expected behaviour at that particular level. Characteristic behaviours associated with the different items of each domain in the APOM were observed, described and tested during the study.

The Model of Creative Ability describes the levels of activity participation (Du Toit 2004). The criteria for behaviours expected at each level are advantageous in the development of an outcome measure. No other known theories or models described activity participation at different performance levels. A level indicates an 'amount' of performance and lends itself perfectly to a rating scale. Each level is further divided into phases namely therapist- or patient-directed or transitional. The phases were useful in tracing small amounts of progress that often are observable in mental health care users, as indicators of successful recovery. The rating scale is thus sensitive to small changes. Outcome measures are often criticised for their inability to detect small changes but this problem was overcome by employing the Model of Creative Ability in the rating scale.

Another advantage was that many occupational therapists currently working in the field of mental health care had been trained in the Model of Creative Ability and it was thus both easy and quick to apply the model in measuring outcomes in mental health care users. The disadvantage was that occupational therapists not trained in this Model first needed training before they could apply the rating scale to their clients. Some therapists were not interested in mastering a new model as they were satisfied with their current practice, while others were keen to learn a new practice in mental health care settings.

6.3.3 FORMAT OF THE INSTRUMENT, GUIDELINES FOR USE AND TRAINING OF CLINICIANS

The format of the outcome measure was influenced by discussions in the focus groups. High patient loads, unfamiliarity with measuring outcomes and routine applications of outcome measurement necessitated a quick and easy format. The electronic format was developed to address these and other concerns. This format had the added benefits of report generation, capturing of statistics and database building without any additional efforts from a clinician. One action could produce many outcomes e.g. while completing the outcome measure, a report and spider graph were generated in the background. Some of the occupational therapists participating in the research reported that they found the reports effective and time-saving while the spider graphs were useful in report back at multidisciplinary team discussions as well as discussion with their patients about aims of treatment and progress.

In spite of the positive feedback, only a few clinicians used the electronic format. Most preferred to use the hard-copy where they could decide on the description and tick it off on the document. This

might have been due to them not yet being familiar with the descriptions or that browsing through a hard-copy was easier than paging up and down on an electronic spread sheet.

It appeared as if the guidelines for use described in the manual were clear and comprehensive. No adjustments were made to the training manual.

Problems were encountered in the implementation of the outcome measure where clinicians felt unsure about the specific rating of a client. One-on-one discussions with some clinicians clarified uncertainties and fruitful discussions followed upon observations of what they experienced in their day-to-day interventions with the clients. This assisted the researcher to adjust the descriptions for certain items in order to enhance understanding and clarity.

Later training at two other hospitals included a hands-on rating of a client known to all clinicians. This proved to be a better way of training and reduced the uncertainty of some clinicians.

6.3.4 ACTUALISATION OF AIMS OF PHASE 2 OF THE STUDY

The outcome measure, in the format of a rating scale based on the Model of Creative Ability, was specifically developed for clinicians in mental health care settings. The domains were operationalised by including several appropriate items under each domain. All items were described in terms of levels of creative ability as observable actions in activity participation. A training manual was compiled and used in the training of clinicians. The training procedure needed refinement and a hands-on session was included during training. The aims for Phase 2 were thus met.

6.4 DISCUSSION OF RESULTS OF PHASE 3 OF THE STUDY

The aims of Phase 3 were to pilot the instrument with the intent to identify clinical utility problems, investigate the aspects of validity and reliability and optimise the outcome measure. Some of the clinical utility problems became noticeable during the training of the clinicians in Phase 2 and these had to be attended to before the pilot study could commence in Phase 3.

6.4.1 CONTENT VALIDITY

Items formulated according to the levels of activity participation in the APOM had to be validated by experts. Six experts agreed to participate. There was agreement on the domains and their items all yielded high validity indices. Only one item, Motives and drives, (part of the domain of Motivation) yielded a lower index than the recommended 0.66. Polit and Beck (2006) suggested that items with validity indices lower than 0.78 be removed from the measuring instrument, but cautioned that clinical relevance ought to be considered before deciding on item removal. In this regard, clinicians found the item Motives and drives clinically relevant and subsequently were not removed from the outcome measure. The principle component analysis in the construct validity investigation yielded a factor loading of 0.648 for this item, thus well above the cut-off value of 0.35. However, the sample size was not large enough to yield completely significant results and therefore the factor loading of Motives and drives was not taken into consideration in the decision to remove or retain the item.

Initially three experts were used in the content validity investigation but the small sample size skewed results. If one expert rated an item below the numeric value three, the agreement could turn out as low as 33%. It was decided to reduce the participation criteria for experts from 30 years of experience and having taught in the Model of Creative Ability, to 10 years of experience in the clinical field. Three additional experts agreed to rate items in terms of their relevance to the overall construct. The increased sample size yielded positive results with a higher overall agreement. Lynn (1986) proposed a minimum of three experts for content validity and mentioned that 10 were probably unnecessary. In this study three experts were not enough and although disagreement only occurred in a single instance (the domain Lifeskills), the chance factor was ever present. By increasing the number of experts to six the probability of chance agreement was reduced.

Polit and Beck (2006) urged researchers to report the results of both the average and ultimate agreement methods of calculating scale-level content validity indices. In this study the scale-level index average was 0.93 and that of the ultimate agreement 0.61. The reported ultimate agreement index could create the impression that agreement was average to poor but in actual fact only one item (Motives and drives) was scored as not relevant by only two out of six raters. Four raters agreed that it was relevant. The current researcher would suggest that the scale-level index be considered as mean for both the average and ultimate agreement methods. In this study the scale-level index would then be 0.77 [(0.93+0.61)/2] which better reflects the overall agreement on all the items.

Content validity is often referred to as a non-statistical type of validity as it relies on the professional judgment of experts and not so much on statistical analysis. Although the content validity index was calculated in this study, it basically is a descriptive analysis technique and thus is not as powerful as inferential statistics. The judgment of the experts was positive and they were satisfied that the items covered the domain of activity participation. No items were removed or added after this investigation.

6.4.2 CONSTRUCT VALIDITY

The results of the factor analysis that was performed to determine construct validity warranted caution as the sample size was only 41, while a more representative sample of 80 was preferred. It was interesting to note that the oblique rotation converged the 51 items into five factors, compared to the researcher's classification of the 51 items into eight domains (factors). The first factor extracted from the oblique rotation, included all items from three domains, namely Self-esteem, Motivation and Affect. Two items from the Communication/interaction skills domain as well as all three items from Balanced lifestyle also fitted in with Factor 1. Self-esteem, Motivation and Affect are considered by occupational therapists as client factors (sometimes referred to as performance components). The interaction between client factors, occupational performance and well-being had been explained in the Nomologic network (Figure 5.3). It was interesting to note that the factor loadings of the three client factors, from a statistical perspective, formed one factor.

Process skills with its eight items clustered in Factor 2. It would be worthwhile to see if all of the Process skills items would still form a single cluster as Factor 2 in a data set derived from a representative but larger sample. The exploratory results, to a very limited extent confirm the assumption that the items associated with Process skills are not only clinically relevant, but it might also be statistically significant in the long-term. The current high loadings of Process skills and Communication/Interaction undoubtedly would influence the factor structure of Factor 1 in a large datafile.

Lifeskills with its 11 items were scattered across three factors. The Lifeskills items cover a variety of skills that are diverse in nature. Personal care, Personal safety, Prevocational skills and Vocational skills formed part of Factor 2 while Use of transport, Domestic skills, Money and budgeting skills, Assertiveness skills and conflict management aggregated in Factor 3. Five of the six items in Factor 3 came from Lifeskills. Stress management and Problem solving skills fell in Factor 5. From a

theoretical perspective, skills like Assertiveness, Stress and Conflict management, and Problem solving would be a rational combination as these skills assist people to cope with demands of everyday life. However, the factor structure did not support this rational combination.

Discussion of the factor loadings was all explorative and speculative in nature because of the inadequate sample size. Once more data has been collected the principal component analysis with oblique rotation would be repeated in an attempt to extract a plausible factor structure. In the unlikely event of the second set of results being similar, there, nonetheless, is a possibility that the three latent client factors (Self-esteem, Motivation and Affect) could become part of a domain of psychosocial components. This will fit in with theoretical and practical frameworks where client factors are often assessed first in an attempt to explain the cause of problems encountered in the occupational performance areas.

Regardless of the preliminary results that indicate that all 51 items contributed to the overall construct of activity participation, there was still a concern that selected items for the APOM might have been over inclusive and would take too much time to measure. Clinicians complained about already overloaded patient-staff ratios, so that completion of lengthy outcome measures might not be feasible in the long-term. However, in considering the psychometric properties of an outcome measure, the items should fully represent the construct. Clark and Watson (1995) insisted that over-inclusion of items is necessary during the developmental stage of measuring instruments since metric analysis techniques can identify weak or duplicated items but can never detect items that should have been included.

6.4.3 INTER- AND INTRARATER RELIABILITY

Raters exhibited scoring variations in the domains of Process skills, Communication/Interaction skills, Lifeskills, Role performance and Self-esteem. These variations in rater scores might have arisen from the scoring of a client and his/her level of creative ability as these variations occurred throughout one level of creative ability. As such, this might have had implications for accurate scoring of mental health care users. Hypothetically, one clinician could have rated a user at the level of passive participation (level 7-9) while another rated this same person at the level of self-presentation (level 4–6) for a specific domain, with the user ended up in an inappropriate intervention programme, as a direct consequence. The raters, however, in general did not differ significantly in terms of overall rating (all eight domains combined). It seems as if the variations between the domains cancelled out

each other with the result that the final score for a specific mental health care user would converge on a single level of creative ability.

Another positive aspect that was found in the interrater reliability investigation was that all raters assessed the mental health care user on a lower level during a second rating 5 months later. This might indicate that the mental health care user had experienced a relapse in activity participation and that all raters noticed this. It might also mean that the raters were more experienced in the use of the scoring system after repeated exposure to the outcome measure, resulting in assessing the client at a more realistic level of activity participation. During a discussion about the functioning of the particular mental health care user, clinicians agreed that the person's activity participation seemed lower.

Intrarater reliability was confirmed in four of the five raters; two raters showed good correlations between the first and second ratings (0.70 and 0.79) with slightly less satisfactory correlations (0.65 and 0.66) for another two raters. One rater showed a poor correlation of 0.02. Among the clinicians, this rater was the least experienced when she began to participate in the study, perhaps pointing to a need for training in and assistance with rating mental health care users.

Problems in inter- and intrarater reliability has to be solved by training raters to improve their scoring of mental health care users. Any reasonable claim for the reliability of the APOM ought to be substantiated by consistent ratings by raters who are capable of rating mental health care users' performance accurately. Recommendations to address this issue are presented in the next chapter.

6.4.4 INTERNAL CONSISTENCY

The interpretation of Cronbach's alphas ought to be done with caution. Spiliotopoulou (2009) proposed the following criteria for interpretation of Cronbach's alpha values; number of items, width of the scale, nature of the data, sample size and distribution of the sample characteristics.

The alpha scores for all the domains in this study were all above 0.80, except for Process skills which was slightly lower at 0.786. According to Spiliotopoulou (2009), a large number of items would increase the value of alpha and thus the validity of the instrument. The number of items under each domain in the APOM varied, with Lifeskills containing the most items (11) and Balanced lifestyle and Affect only containing three items. All these domains had alpha indices that exceeded 0.80. At first

glance it seemed as if larger or smaller number of items in a domain was not responsible for the high alpha scores.

Another factor to consider in analysing high alpha scores was the width of variation of the scale. Wider scales could increase the value of alpha. The width of the scale in the APOM ranged from 1 to 18, which was a lengthy scale. Thus, the width of the APOM scale might have been the reason for the high alpha scores. Lifeskills had an extremely high coefficient of 0.998. Perhaps the length of the scale in combination with the large number of items in this domain could have resulted in this extreme score. A deduction one might arrived at is that this domain correlates extremely high with the other domains and thus might be considered redundant. Since the data set for internal consistency consisted of only 41 subjects, the better option would be to repeat the test for internal consistency on a representative sample.

The nature of the data is another factor to consider as nominal data are not suitable for Cronbach's alpha calculations. In this study the level of measurement was on an ordinal scale and Cronbach's alpha index was an appropriate choice of statistic. Small samples could yield large Cronbach's alpha coefficients. The sample size for the internal consistency was only 41 and this could be the reason for the high Cronbach's alpha values in this study. The presence of heterogeneity of variance in any measure of a population would also influence the size of reliability coefficients.

In the absence of a normal distribution and linearity of the scale, Cronbach's alpha scores might have underestimated the internal consistency of a test. Although the sample in the APOM study was small, a normal distribution was present and the APOM scale was a linear scale. Therefore this factor did not influence the interpretation of the Cronbach's alpha scores.

Taking into account all the concerns raised by Spiliotopoulou (2009), the results from the Cronbach's alpha calculations indicate good internal consistency for the APOM at this early stage.

6.4.5 SENSITIVITY

Effect size was calculated to determine whether the APOM was sensitive to detecting change. The sample of 31 had a normal distribution and it was possible to perform the t-test to determine significance of change. The results were highly significant from a statistical point of view, but had to be viewed from a clinically significant perspective as well.

Mental illnesses have different prognoses for different individuals and, although in many cases no change in the condition may occur, this could still be a positive outcome. For instance, a mental health care user suffering from schizophrenia might have reached the optimal level of functioning and the prevention of another relapse would then be seen as a positive outcome. In such instances no change would occur in the activity participation. If there is no decline, this will still be seen as a successful intervention. When viewing the results of some of the subjects in the sample of 31, their APOM scores remained unchanged in some domains but showed slight improvement in other items.

After calculating the effect size, it was satisfying to see that small changes were detected. It could have been ascribed to the relevance of the phases in the levels of creative ability, namely the therapist-directed phase, the patient-directed phase and the transitional phase. These phases allowed for the measurement of small amounts of progress which become very important to note in mental health clients. Although this unique contribution of the phases was envisaged by the researcher from the start, it was satisfying to see that it actually happened in the clinical setting.

It should also be noted that calculation of the effect size in this study has to be interpreted in terms of the search for indications of sensitivity and not to claim that the intervention caused the change. The sample was not randomised and independent variables like number of treatment sessions, type of intervention, case-mix group and the like were not controlled as this was not a randomised control trial. Once the outcome measure has shown that it is able to detect change, it could be used to measure the dependent variable and control the independent variables by randomisation into control and experimental groups. Larger effect sizes usually confirm the fact that rigorous methods were successfully applied in the set of statistical calculations from which the estimates of effect sizes were derived.

6.4.6 ACTUALISATION OF AIMS OF PHASE 3 OF THE STUDY

The APOM was piloted at three mental health care settings in Gauteng. One issue of concern was raised during a training session: uncertainty about scoring of clients on specific domains. The problem was attended to where after no further clinical utility problems were reported. Technically, the APOM was ready to be implemented in clinical settings.

Results from the psychometric investigation confirmed profession-based agreement on items that merited inclusion in the APOM and, beyond reasonable, were considered essential components of the construct activity participation. Analysis of the factor structure of the APOM should be repeated

with a larger sample. Assessments of inter- and intrarater reliability were not optimal, thus requiring further training of clinicians in accurate scoring. Internal consistency was good and supported the construct validity of the APOM. Significant statistical calculations based on difference scores that were derived from the base-line and final assessments, furthermore, confirmed the APOM's sensitivity to detect change,

6.5 CLINICAL REALITIES AND THE MEASUREMENT OF OUTCOMES

Lakeman (2004) insisted that routine outcome measurement, alongside randomised control trials, deserved more consideration in research. Evidence of the effectiveness of treatment was best achieved through randomised control trials, but their experimental nature was recently criticised. A further criticism was that replication of experiments was unrealistic in the clinical reality of everyday practice. Randomised control trials were also expensive since free treatment was often offered to subjects in the control and experimental groups. Lakeman (2004) called for more attention to routine outcome measurement, which can be done in clinical realities. Professionals in institutions or care settings that use the same outcome measurements can compile comprehensive databases for research purposes. Results from outcome measurements could become powerful mechanisms in improving service rendering but Gilbody et al (2002a) were sceptical about excessive claims on the benefits of routine outcome measurement.

Personally, the researcher is convinced of the benefits of routine outcome measurement, even though occupational therapy in mental health in South Africa faces several challenges in its attempts to implement routine outcome measurement. The researcher's current investigation and her experiences of previous research supported the assumption that occupational therapists are not ready to change their way of practice and are unlikely to accept a new approach that they probably would perceive as yet another workload burden that required filling in more forms. Occupational therapy clinicians have expressed the need for further training in outcome measurement but they, at the same time, face other expectations from their employers. Government hospitals, for example, have implemented the ICF as outcome measure. The ICF, unfortunately, is an inadequate outcome measure as this rating scale is insensitive to detecting small changes in the recovery process (Jette, Norweg & Haley 2008). Okochi, Utsunomiya and Takahashi (2005) found the ordinal scale's low test-retest reliability seriously influenced the detection of change over time. The qualifiers in the ICF are numerical codes that indicate the extent or magnitude of functioning, thus meeting the main

requirement of an ordinal scale. The qualifiers range from no impairment (= 1), mild impairment (=2), moderate impairment (=3), severe impairment (=4) to total impairment (=5). There are no criteria that guide assignment of ratings or on coping with two discriminating ratings, a practical issue that results in poor test-retest reliability. It would, indeed, be unfortunate if clinicians continued using such an unreliable measure to assess outcomes.

There is some indication of efforts to produce evidence of outcomes in private health care, but more likely in the case in physical settings and less likely in mental health care settings. It seems as if the need to produce evidence of outcomes is not a pressing issue in South Africa. Brook et al (2000) reported a related concern over a lack of policies in the USA on measuring quality of care. Hayward (2007) complained that systems and guidelines that are in place in Michigan, USA with the intent to guide quality improvement are inefficient and at times counterproductive in measuring clinical outcomes. The current need to produce evidence of outcomes in government settings is not forthcoming from the employer's side. The Policy on Quality of Health Care in South Africa was revised in April 2007 and identified the need for investigations that generated research evidence on the effectiveness of treatment (Department of Health 2007). This issue has not yet received attention.

Given the lack of support from government and without management systems in place, it would be difficult to convince occupational therapists to include routine outcome measurement in their daily practice. The APOM study has also not yet generated enough data to demonstrate the advantages of using the APOM as a routine outcome measure.

Comparison of the domains of the APOM with four other occupational therapy outcome measures (MEDYN, AusTOM, MOHOST and AMPS) affirmed the notion that occupational therapists included different combinations of outcomes in their service delivery. This inclination to fit selection of appropriate outcomes to the activity profile of a specific client strongly supported a client-centred approach, but circumvented the ideal of comprehensive outcome measurement. It was clear from the literature, despite appeals for comparing results and benchmarking services by way of uniform outcome measures generated from compatible data, that health care professionals proceeded to develop new outcome measures. The researcher that constructed the APOM acknowledged this trend but was unable to trace an outcome measure that represented the theoretical framework that is used in mental health care settings, nor the aims of intervention, and needs of the specific client population included in this study.

The literature further reiterated that when new outcome measures are developed, they ought to be comprehensive and sensitive to change, and must also be subjected to rigorous psychometric

evaluation. A balance must be maintained between sensitive outcome measures and the clinical utility or feasibility thereof. The researcher decided to include clinicians and mental health care users to enforce clinical utility. Phase 3 consisted of a preliminary investigation of and reporting on the psychometric properties and implications of the results for mental care uses and clinicians in health care settings.

To overcome the challenge of benchmarking, the researcher intends to distribute and market the APOM in all local health care settings and anticipates that many settings will at least consider this novel way of measuring outcomes.

The APOM has a unique feature that no other outcome measure currently has: generation of reports and spider graphs without any extra effort from the clinician's side. The intention of adding these benefits to the outcome measure was to reduce tedious administration tasks, improve the capacity to do routine outcome measurement, and to save precious time.

Meehan et al (2006) implemented an outcome measure for mental health care across disciplines in Queensland and found that implementing an outcome measure could take up to five years. Eight months after the commencement of measuring outcomes, Meehan's team was forced to gather information on the lack of progress in the project. Focus groups were done with the health care professionals that included nurses, psychiatrists and doctors, as well as allied health professionals. Some of the reactions from the staff in this study were similar to the findings of the focus groups in the APOM study. The time factor was raised. Clinicians complained about existing high patient loads. Acceptance of new methodology would imply adding of yet another task, such as being burdened by further measuring of outcomes. In Meehan's study the staff raised the fear of outcomes. They were concerned that measuring outcomes might not show progress and that such data would lead to reduction in funding or lead to interpretations that promote ineffective treatment (Meehan et al. 2006). Although the occupational therapy clinicians in the APOM study never raised concerns that funding cuts might follow upon poor outcomes, they raised a similar concern that it took time for a mental health care user to show recovery signs and that this lengthy process might be seen as poor treatment. If the APOM is used routinely, trends in average time required for recovery in different case-mixes will be revealed. This evidence can be beneficial in justifying rates of progress in specific intervention programmes.

Sudsawad (2005) used Roger's theory of Diffusion of Innovations to explain factors that influence the communication (diffusion) of new ideas (innovation). Some factors mentioned by Sudsawad (2005) could be the result of poor implementation of the APOM in the clinical setting. The first factor is relative advantage. This concept refers to the degree to which an innovation is perceived to be

better than the current way of practice. If clinicians are going to perceive the ICF as a better and easier way of measuring outcomes, they will not change their methods, or implement new ones.

The second factor is compatibility. If clinicians feel that the APOM is not compatible with their existing frame of reference, they will not change. The Model of Creative Ability was used as the frame of reference for the rating scale and fits the theoretical approach of these clinicians. There are a number of clinicians who indicated that they will use the APOM, but there are also clinicians who withdrew from the research because they prefer not to use the Model of Creative Ability. The researcher respected these preferences and will encourage the "Creative Ability group" to continue to use the APOM.

The third factor that influences the use of new ideas is their complexity. Use of the APOM is easy while training is also available. None of the participating clinicians complained about the level of difficulty of the use of the APOM and this was therefore not a reason for not implementing it.

The fourth factor that Sudsawad (2005) mentioned was whether the new idea is "triable" or executable. The APOM was in its pilot phase and clinicians were encouraged to experiment with the APOM and try it out. After a focus group discussion of the problems to try out the APOM, some issues were resolved and some clinicians then made use of the opportunity while others did not.

The last factor is visibility, which refers to the degree that the results of the innovation are visible to others. The results from the APOM are only partially observable at this stage. The report and spider graph that were generated reflected immediate results and these have been reported by clinicians as being very helpful in ward-round discussions with multidisciplinary team members. Long-term results will only be available when trends and benchmarks can be drawn from the data. These results could be valuable in convincing clinicians to start using the APOM. It is foreseen that the visibility of the APOM will be high as reports and spider graphs of each mental health care user will be made available to all team members.

In spite of the clinical realities that at the moment act as hindrance factors, the researcher has specific recommendations to overcome these and implement the APOM. These recommendations will be discussed in the next chapter.

6.6 CONCLUDING REMARKS

South African clinicians and expert occupational therapists who participated in Phases 1 and 3 of this study made groundbreaking contributions to this research project. Their contributions led to the construction and psychometric evaluation of a valuable outcome measurement that trendsetting occupational therapists can apply in clinical settings to generate vital information on the behaviour, expectations, problems, diagnosis, progression toward recovery, and even regression observable in mental health care users. The electronic version of the outcome measurement has the capacity to generate a professional report and scientific data on mental health care users as the assessment procedure progresses.

Construction of any measuring instrument seldom is a routine undertaking. A researcher who decides to do so faces four challenges: What needs to be done to construct it, determine its metric properties, implement it, and get fellow-professionals to accept it. The current researcher acknowledged the challenges and accordingly resolved to optimise the utility of the outcome measure by involving both mental health care users and experienced fellow-practitioners of occupational therapy to assist her in designing, constructing and validating the instrument. The first group of participants' contributions in establishing and verifying domains for the measure embedded the forthcoming instrument in a client-centred approach. The occupational therapists' praiseworthy contributions and constructive criticisms, in the near-future, would improve these professionals' occupational proficiency by way of access to an appropriate, advanced, practical effective, time-saving and user-friendly instrument with which to assess the degree of activity participation of mental health care users. Results generated by the outcome measures can be used to make important decisions about clients with regard to the type of intervention required, optimising of therapeutic treatment, their progress toward recovery, signs of digression, and readiness for discharge.

The outcome measure is a reality: it has been publically announced and launched, released and is ready for professional consumption. Practitioners of occupational therapy, in order to function optimally, use two criteria to judge the utility of an outcome measure: its ability to generate practical scientific information of excellence and embedding convincing research-based evidence of its psychometric properties. At present, existing research data on the psychometric properties of the APOM, is not yet convincing. This shortcoming, attributed to a unique and limited population in a

complex and demanding clinical setting, is acknowledged. The researcher's resolve is continued data collection to ensure that the APOM develops into a practical outcome measure that is reliable and valid.

CHAPTER 7 EVALUATION AND RECOMMENDATIONS

7.1 INTRODUCTION

The purpose of this research project was to develop a comprehensive outcome measure for occupational therapists in mental health settings. Many lessons were learnt after being involved in this project for five years. A critical evaluation of the study and recommendations for continuation of the research are presented. The effect of the completed research on occupational therapy practice in mental health is discussed. The final conclusion terminates the study.

7.2 EVALUATION OF THE METHODOLOGY

Application of mixed methodology, combined with participatory research, was the preferred method to address a real, practical problem in the clinical field. Taylor et al (2006) reported that participatory research is often used in occupational therapy to close the scientific gap between research theory and practice and to give clients co-ownership in identifying relevant aims and determining the content of occupational therapy services that they receive. The chosen design involved all stakeholders in the effort to enhance understanding of the problem. Application of the participatory design permitted the researcher to understand the problem from a clinician's point of view but also from the perspective of a mental health care user. The dual participation ensured the development of an outcome measure that is relevant for the clinical setting and addresses the needs of its consumers. A number of clinicians continued to use the APOM after the data collection for this study ended. This is an indication that they were committed to contribute towards the lack of evidence in occupational therapy and felt that they were making a difference in their clinical situations.

This information gathering approach required flexibility on the researcher's part. During the focus groups with clinicians (Phase 1), the need for more information with regard to the measurement of outcomes arose. The researcher had to be flexible and thus arranged workshops that addressed this need of the clinicians. Besides flexibility, the study required of the researcher to acknowledge the

capacity of the clinicians and mental health care users who best knew their situation. They, thus, were expected to dictate which domains to include or which services were needed.

If the participatory approach was not followed, the practical problems of poor implementation of the outcome measure would also not have been understood by the researcher. This approach has been used with success in other occupational therapy studies where it was also combined with other designs (Alant, Emmet & Samuels 2007; Graham 2007; Lorenzo 2008; Taylor et al. 2004).

Focus groups have been advocated as an appropriate method with which to explore the unknown early in the research process (De Vos et al. 2005; Krueger & Casey 2000). The use of focus groups was successful in this study and the information volunteered by the participants was extremely useful and relevant. The researcher received assistance from an experienced facilitator of focus groups and this increased the researcher's skill and confidence to conduct focus groups. Questions for the focus groups were auditioned with the experienced facilitator and this aided the researcher to modify them toward improved relevancy and validity.

Planning of focus groups for the research project was meticulous, which eliminated three common mistakes in applying focus groups as scientific intervention, as mentioned by Greenbaum (1998) namely methodological, procedural and analytical mistakes. Methodological mistakes were prevented in this research by choosing appropriate aims that the focus groups had to achieve, such as exploring the clinicians' perceptions of outcomes and the needs of mental health care users for occupational therapy services. Procedural mistakes were avoided by ensuring that appropriate questions were put and by prudent selection of key informants for participation in the focus groups. Analytical mistakes were minimised by resorting to member-checking with clinicians after the results of the focus groups were analysed.

The nominal group technique as quantitative tool was an effective way to facilitate the switch from qualitative to quantitative data analysis. It consolidated the data into specific workable domains for the outcome measure. It also allowed participants to select domains without being influenced by fellow-participants (Tague 2005). It was an easy-to-administer technique and the participants in this study effortlessly comprehended the process.

Creswell (2009) explained that the mixed exploratory design is often used to develop measuring instruments and this design provided the rigorous and systematic procedure for this specific research problem. It was a practical and clear design that guided the researcher throughout all of the phases of the research. The idea of explaining the phases, methods, the products and the steps

in one diagram (see Figure 4.2) clarified the entire research process and thus made it plain for outsiders to understand the research project.

7.3 REFLECTING ON THE STUDY

Many lessons have been learnt through and throughout this research. One of the lessons was that researchers are "romantic fools" but research is "magical" (Osborne 2008). Researchers, according to Osborne (2008), are "the intrepid explorers and adventurers and trail-blazers of the 21st century". The researcher of this study had strongly identified with this expression and could now sit back and reflect about the "magic" of research.

The study, in its initial phase, started off with an enthusiastic researcher and eager participants. Occupational therapy clinicians acknowledged the problem of lack of an outcome measurement and participated energetically in the focus groups. The problems areas were identified and agreed upon while domains were selected without being hindered by opposing views.

Phase 2 of the study was a complex stage as the researcher had to develop and design item descriptors for the domains. Information from both the focus groups and available literature was consulted in selecting the items for each domain. The phrasing of descriptors for the various levels of activity participation was exclusively based on limited material that Vona du Toit and her students had produced. The researcher relied on her own experience and understanding of the Model of Creative Ability as well as psychosocial constructs to design a draft version of items for all of the levels. This phase was an academic and theoretical exercise which at times became quite challenging; one can from time to time easily begin to doubt one's own competence. When the content validity supported the various descriptions of levels, it generated excitement and motivated the researcher to continue with the project.

The valuable input of the six expert occupational therapists who participated in the content validity was a positive initiation of Phase 3 of the study. In spite of this constructive start, Phase 3 was the most difficult stage to implement. Once the outcome measure had been developed, the researcher was more eager than the clinicians to implement it. Several unforeseen problems occurred: for example, a competing project was running concurrently, some clinicians changed their place of work, while others were not over keen to change their established way of practice which did not necessitate measuring of outcomes. Clinicians were not convinced that outcome measures were a

necessary task, even though some of them reacted enthusiastically about this possibility during the focus groups. At this stage the words of Osborne, "Researchers are romantic fools" (2008, p. ix), came to mind and coaxed the researcher to fully identify with this statement. This also led to the realisation that it was the prerogative of clinicians to decide where their passion and focus would lie. A few clinicians continued to participate passionately, while their personal involvement and outputs, as revealed by the data that they had generated, confirmed the magic of research. The Diffusion of Innovation Theory as discussed in the previous chapter helped the researcher to appreciate some of the problems encountered during the implementation phase.

Although data collection during Phase 3 was inadequate for the purposes of drawing significant conclusions about psychometric properties, both data collection and further adjustment of the APOM will continue as the researcher is convinced that the message about the importance of measuring outcomes has already reached some clinicians and is beginning to spread. Research results generated by a refined APOM will also prompt clinicians' decisions to accept and begin to practice outcome measurement.

Vona du Toit's Model of Creative Ability seemed to be an excellent theoretical framework of choice for this outcome measure. Presently, many occupational therapists in the field of mental health care are reliant upon the levels of creative ability in assessing mental health care users and the designing of intervention programmes. Several clinicians have an innate belief that this model is guiding them very well, in spite of a shortage of research evidence. This could be indicative of a tried and tested model that has relevance and meaning for clinicians who are not research-inclined. What research suggests might not always be well accepted by clinicians who deal with the challenges of everyday practice. Vona du Toit's Model of Creative Ability is embedded in the clinical reasoning of occupational therapy clinicians, despite the lack of supporting research for this model.

Researchers and clinicians should not reject clinical relevance and rigorous research methods, but ought to realise that they are interlinked by a common purpose. This common goal is to generate benefits for the client and improve service delivery. Research is a waste of time, money and energy if clients do not benefit significantly. The problems encountered in implementing the APOM have to be dealt with so that mental health care users can reap the benefits of this research project.

Lakeman (2004) stated that developing an outcome measure could take up to five years. Fischer developed the Assessment of Motor and Process Skills and it underwent several changes since its first publication in 1990. This is an indication that assessment instruments need refinement and continuous research to be relevant and feasible. The APOM took five years to develop and has not yet been fully implemented. The researcher, however, is committed to continue with follow-up

studies and refinement in her efforts to make the APOM a relevant and effective outcome measure for mental health settings. Several recommendations are suggested to continue with this valuable project.

7.4 RECOMMENDATIONS

The development of an outcome measure is not finalised after a single study and obviously several improvements are possible. The APOM is in an early stage of development and recommendations to optimise it as a relevant measure are presented here.

7.4.1 ECOLOGICAL VALIDITY

One aspect of validity that was not examined in the study was ecological validity. As mentioned in the literature study, ecological validity is important for outcome measurement in occupational therapy as the core focus of the profession is to enhance independence in occupational performance in real-life situations. This was an oversight during the planning of the study and should have been attended to. It will be addressed in future studies where clients' satisfaction with their performance in real-life will be investigated.

Questionnaires on client satisfaction among mental health care users were mentioned in the survey of literature, and can be combined with the Experience Sampling Method. This technique gathers data about a person's subjective experience of daily life in the setting that it occurs in real time (Fossey and Harvey 2001).

Other potential questionnaires that can be considered due to their relevance, are instruments such as the Satisfaction with Daily Occupations (Eklund & Gunnarsson 2007), Treatment Perception Questionnaire (Marsdon, Stewart, Gossop, Rolfe, Bachus, Griffiths et al. 2000), the Canadian Occupational Performance Measure (Law et al 1998), the Pre-discharge Assessment Tool (Rudman, Took, Eimantas, Hall & Maloney 1998), the Client Satisfaction Questionnaire (Mah, Tough, Fung, Douglas-England & Verhoef; 2006) and the Multnomah Community Ability Scale for consumers with severe mental illness (Dickerson, Origoni, Pater, Friedman & Kardonski, 2003).

Gavin and Turner (1997) said that it is important to involve clients when determining the dimensions in a client-satisfaction questionnaire. This will overcome the problem of clients not understanding aspects of a questionnaire or their feeling that they have to provide positive answers. The above mentioned questionnaires used to assess client satisfaction could be discussed with stable mental health care users to obtain their views on the relevance of the questions. Questionnaires with relevant questions could then be implemented to investigate the mental health care users' perceptions about the effect the occupational therapy service on his or her living environment.

7.4.2 ANALYSIS OF DATA

Data analysis to investigate the psychometric properties of the APOM was sufficient for piloting purposes but ought to be subjected to more rigorous analysis, such as Rasch analysis. More data need to be collected as the requirement for a Rasch analysis is at least 10 observations in each category (or level in the case of the APOM). The current study should thus encourage and prompt continued application until enough data have been collected for fully-fledged statistical analysis. The objectives of the Rasch analysis can be to detect ordered thresholds between scores, determine item difficulty and point out items that do not fit the construct or domain (Tesio 2003).

7.4.3 ITEM POOL

The current number of items in the APOM might be seen as excessive by clinicians at some mental health settings. The preliminary results indicated that all items probably contribute to one construct, opening up the possibility that domains and items become part of an item bank. An item pool is a collection of items that represent a range of performance areas at different levels of difficulty. Item pools have been implemented in clinical settings where clients have to be monitored across the full spectrum of care or during different stages, for example as both in- and outpatients (Calhoun, Haley, Riley, Vogel, McDonald & Mulcahey 2009; Revicki & Cella 1997; Rosa, Bjornera, Becker, Friesc & Warea 2008).

The recovery process of a mental health care user progresses in different stages: acute care, subacute, predischarge and outpatient stage. The severity of signs and symptoms changes during each of these stages. A patient, upon admittance during the acute stage, might suffer from a

psychosis that affects this person's activity performance differently as he or she progresses to the subacute stage. If there are enough items representing each stage of recovery while still measuring the overall construct of activity participation, a clinician might be able to select certain items from the APOM for a specific stage, thereby rendering it unnecessary to assess all 52 items. Revicki and Cella (1997) and others (Calhoun et al. 2009; Rosa et al. 2008) propagated the idea of minimising length of outcome measures while maximising sensitivity and precision in measurement. All items could serve as an item pool and this pool could be made available to occupational therapists who wish to select only appropriate items for their specific clients, thus addressing specific needs of individual clients. Selection of items could be negotiated between the clinician and the client, depending on the latter's stage of recovery. The item pool could even expand in future with the addition of new items and domains as the need arises.

Jette, Haley, Ni and Moed (2008) suggested that Adaptive Short Form instruments be developed, all with a common underlying metric. A comprehensive item pool should be available, thus permitting clinicians to select relevant items for a specific stage of recovery. Regarding the APOM, the rating scale is based on the levels of creative ability and thus has a constant underlying metric. If a mental health care user is in the acute phase, items like Motivation, Affect and Process skills might be considered more relevant than items such as Role performance and Balanced lifestyle. As the patient progresses, other items could be accessed and added. Optimisation of item selection would require subjecting all items to response analysis to ensure their validity for specific stage of recovery.

The possibility of developing an Adaptive Short Form and an item pool will be explored in future studies on the APOM.

7.4.4 CONTINUING PROFESSIONAL DEVELOPMENT IN OUTCOME MEASUREMENT

The current study determined that not all occupational therapy clinicians were convinced about the benefits of measuring outcomes and further awareness and training are required. The demand for evidence-based practices, however, is gaining ground and this development should be linked to the need to measure outcomes. Sudsawad (2005) accentuated measuring of pre- and postintervention performance in a natural environment during daily activities as prerequisite for providing convincing evidence of effective treatment. The APOM could become an essential measuring instrument in tracking progressive or digressive changes. Workshops to increase awareness of the importance of routine outcome measurement should take place in South Africa. Training should take place to equip

clinicians to engage successfully in outcome measurement. Once clinicians are comfortable with measuring outcomes, clinical trials can be started with control and experimental groups. In this way clinicians could contribute to the body of scientific evidence in mental health care settings and simultaneously, ensure their own continued professional development.

Currently there is no other outcome measure available for use in mental health care settings, implying implementation of the APOM in all South African settings. To achieve this, assistance from the National Department of Health should be requested. One of the aims of the Policy on Quality of Health Care in South Africa (Department of Health 2007) stated that effectiveness of services must be examined. If the researcher succeeds in negotiating a viable implementation plan with the Department of Health for assistance with the implementation of the APOM, clinicians will be empowered to purposively access the measuring of outcomes. If all mental health care settings in South Africa use the same outcome measure, many advantages, such as emerging trends and benchmarks will be established. Availability of such evidence could contribute tremendously to improvements in the professional standing of occupational therapy in a comprehensive health care team. Occupational therapists ought to become trendsetting professionals in developing, applying, evaluating and adapting measuring outcomes in mental health care settings.

7.4.5 CLIENT-CENTRED APPROACH

A client-centred approach is essential in occupational therapy. The client must actively participate in treatment and should have a say in expressing his/her need for intervention. Any discussion with the client or this person's family on the availability of and access to an item bank of suitable items that generate appropriate outcomes for diagnostic purposes or assessing specific stages of recovery, ought to stimulate active participation and at the same time enhance this person's therapeutic relationship with the occupational therapy clinician.

Lim et al. (2007) reported that although occupational therapists are committed to a client-centred approach, actual inclusion of clients in intervention planning has been slow. The APOM could serve as a negotiating tool during interrelationships with the client aimed at optimising the person's treatment. A spider graph is a visual representation that illustrates a client's areas of strength and weakness and could be used during discussions of this person's progress as well as with significant others involved with him or her. Goals for future intervention can then be planned with input from both the client and significant others.

Since the therapeutic relationship accounted for up to 30% of the recovery process (Bambling & King 2001) this matter should be incorporated in outcome measurement. Incorporation of the client-satisfaction questionnaires during intervention will contribute toward assessment of the therapeutic relationship, is suggested. Mental health care users should have an opportunity to rate the quality of the relationship, even if the rating is a subjective experience. These ratings could assist clinicians to effectively relate with their clients. Several appropriate questionnaires assessing satisfaction with service are available and could be investigated for their relevance to the mental health care setting in South Africa.

7.5 CONCLUDING THE RESEARCH

The researcher resolved to address professionals' reluctance to measure outcomes in mental health care settings in South Africa. This intention resulted in the development of an outcome measure for occupational therapists in mental health care settings, namely the Activity Participation Outcome Measure (APOM).

Phase 1 of the study involved occupational therapy clinicians and educators as well as mental health care users who determined the domains for the APOM. Phase 2 consisted of a theoretical exercise where the researcher operationalised domains that were identified during Phase 1. The pilot study in Phase 3 investigated the APOM's validity and reliability and revealed adequate content validity. The sample size was too small to obtain conclusive results during the factor analysis which was done to investigate construct validity. Although the domains and items of the outcome measure are appropriate for mental health care settings, inter- and intrarater reliability could be improved. Data collection will continue in order to yield a representative sample so as to enable more scrupulous psychometric and statistical analysis.

The journey of five years will not end here and the researcher looks forward to continuing with outcomes research and following up on the recommendations made in this study. The researcher believes that the APOM contributes meaningfully to the field of mental health care, and ultimately, could contribute to improving the health and well-being of mental health care users.

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GUIDE FOR QUESTIONS FOR THE FOCUS GROUPS WITH OCCUPATIONAL THERAPY CLINICIANS

Question	Cues/prompts
Let's talk about outcomes, what you know, your opinion, anything that comes to mind.	What do you understand, perceive or think of outcomes? Have you ever thought of outcomes? How would you explain to other team members what you are doing in OT? Do you get feedback from the team about the effectiveness of your service?
In your opinion, how important is this whole concept of outcomes?	Should the outcomes that you measure relate to the programme that you are offering?
Currently, how do you measure outcomes?	Do you measure the effect of your service? Do you get feedback from the patients about the service?
Which outcomes would you like to measure?	Let's talk about specific areas of outcomes. Can you give specific examples of outcomes?
When do we need to measure outcomes?	Could there be improvement early in the programme? If the effect of the OT programme can only be expected after discharge, when should we measure the outcome? How often should outcomes be measured?
Do you foresee any threats in measuring outcomes?	What if there is no change in the occupational performance of the patients? Do you experience problems with patient overload?
Do you foresee any benefits from measuring outcomes?	Benefits for you personally? Benefits to the profession? Benefits to the client? Benefits to the institution/hospital?
Last question: After all the discussions from the first and second focus groups, could you summarise your perception about outcomes?	What is your opinion about outcomes?

DOMAINS AND ITEMS LIST USED IN THE NOMINAL GROUP TECHNIQUE

Column A	Column B
Performance skills: Communication / Interaction skills	• Physicality: (Contacts, gazes, gestures, maneuvers, orients, postures) • Information exchange: (articulates, asserts, asks, engages, expresses, modulates, shares, speaks, sustains) • Relations: (collaborates, conforms, focuses, relates, respects)
IADL	• Care of others • Care of pets • Childrearing • Communication device use • Communication mobility • Financial management • Health management and maintenance • Home establishment and management • Meal preparation and cleanup • Safety procedures and emergency
Performance skills: Process skills	• Energy • Knowledge • Temporal organization • Organizing space and objects • Adaptation
Leisure	• Leisure exploration • Leisure participation
ADL	• Dressing • Eating • Functional mobility • Personal hygiene and grooming • Sexuality • Sleep/rest
Work	• Employment interests and pursuits • Employment seeking and acquisition • Job performance / work skills • Retirement preparation and adjustment
Motivation	

Column A	Column B
Affective	• Mood • Affect
Role competence	• Accepting different roles • Role performance
Social participation	• Community • Family • Peer / friend
Coping skills / lifeskills	
Goal setting	
Cognition	
Insight	• Problem spotting • Problem solving
Emotional maturity	• Taking responsibility • Insight
Self-esteem	
Identity	• Assets and limitations • Identifying own needs
Locus of control	
Education	
Balanced lifestyle	
Habits	• Useful habits • Impoverished habits • Dominating habits

INTERVIEW GUIDE FOR MENTAL HEALTH CARE USERS

(Afrikaans questions in italics)

Question	Cues/prompts
What does OT mean to you? *Wat beteken AT vir jou?*	What do you get from the programme? *Wat kry jy uit die program?* Which success do you feel you have achieved since attending OT? *Watter suksesse voel jy het jy behaal sedert jy AT bywoon?* What is the most important thing that OT did for you? *Wat is die belangrikste ding wat AT vir jou gedoen het?* Can you mention something in yourself that have improved since attending OT? *Kan jy iets noem wat in jouself al verbeter het vandat jy AT bywoon?*
Which things in the programme are most helpful in your opinion? *Watter dinge in die program is die meeste waardevol in jou opinie?*	What are there in the programme that the OTs must **not** take out? *Wat is daar in die program wat die ATe **nie** moet uithaal **nie**?* Which things works very well for the patients at OT? *Watter dinge by AT werk baie goed vir die pasiente?* Which groups or activities are the most popular or patients attend the most? *Watter groepe of aktiwiteite woon die pasiente die meeste of graagste by?*
Are there things in the OT prgramme that is unnecessary in your opinion? *Is daar iets in die AT program wat onnodig is in jou*	Is there something in the programme that is not working or wasting time? *Is daar iets wat nie werk in die program of wat jy dink tydmors is?*

Question	Cues/prompts
opinie?	Are there things that the patients never attend? *Is daar iets wat die pasiente omtrent nooit bywoon nie?*
Is there anything else that you would like to improve in your situation and with which the OTs can help you? *Is daar nog iets wat jy graag sou wou aan werk in jou situasie en waarmee die ATe jou kan help?*	What else do you want to achieve here at OT? *Wat wil jy nog bereik hier by AT?* Do you feel ready for discharge? *Voel jy jy is gereed vir ontslag?* When do you think you will be ready for discharge? *Wanneer dink jy sal jy gereed wees vir ontslag?*
Scenario question (within the patient's frame of reference) to see if patient will be able to apply what he has learnt: • What will you do if Social Services stop your disability grant? *Scenario vraag (binne ps se raamwerk) om te sien of ps wel kan toepas wat hy geleer het:* • *Wat sal jy doen as die Dept jou pensioen stop?*	Easier questions if the patient is unable to answer difficult questions: • What will you do if you have to stay alone for a week? • If ward is on fire? • *Makliker vrae as ps nie moeilike vraag kan beantwoord nie:* • *Wat sal jy doen as jy vir 'n week alleen moet bly?* • *As saal aan die brand slaan?*

VIGNETTE OF THE RESEARCHER

Daleen Casteleijn is an occupational therapist with 27 years of experience in occupational therapy. She has been a clinician for eight years in the fields of neurology, adult and child psychiatry and vocational rehabilitation working in several government hospitals in Gauteng. After eight years of clinical experience, she was appointed as a lecturer at an Occupational Therapy Department. She worked at this university for 18 years and then moved to another university where she was appointed as a senior lecturer at the Occupational Therapy Department.

By the time that this research project on the development of an outcome measure started, the researcher was acquainted with all the mental health care setting in the Pretoria area. This acquaintance happened through the many hours of student clinical supervision that she did in her capacity as a lecturer. She also presented numerous workshops to occupational therapists in clinical settings. All these contacts with the clinicians resulted in a good relationship with them.

At the time when the research idea emerged, the researcher had a strong conviction to investigate the lack of outcomes in occupational therapy in South Africa and particular in mental health settings. She was convinced that there had to be a practical way of measuring latent traits because if psychologists were able to decipher the measurement of an abstract concept like intelligence, occupational therapists definitely could measure occupational performance! It was with this conviction that the researcher entered the field of outcomes research.

During the research process the researcher often visited mental health care settings to collect data and thus created the opportunity to immerse in the clinical situation. She often spent tea and lunch times with clinicians at their workplace and listened to the practical problems, challenges and highlights that happened in day-to-day practice. Personal perspectives were often discussed and viewpoints were shared.

These contacts with clinicians in their workplace assisted the researcher and her understanding of the clinical situation and current challenges that they are facing. The advantage of being immersed in the situation is that clinicians did not give preferred responses during the focus group discussions as they knew that the researcher is aware of their practice setup.

The relationship between the researcher and the clinicians strengthened and could have influenced the researcher's interpretations of certain situations during the research. The interpretation of the results from the focus group discussion happened early in the research process and thus could not have been influenced that much by subjective feelings or incorrect interpretations by the researcher.

CONSENT FROM HOSPITAL MANAGEMENT

University of Pretoria

P O Box 667 PRETORIA 0001 Republic of South Africa

Tel (012) 329 7800 Fax (012) 329 7800

jcastel@postino.up.ac.za

Department of Occupational Therapy
School of Health Care Sciences
Faculty of Health Sciences

Date

Dear *CEO of hospital*

I am in the process of planning an outcomes research study and would like to include the staff of the occupational therapy department in the study. This letter briefly explains the purpose and process of the study. Your permission and signature as CEO of the hospital are kindly requested at the end of the letter. This letter will be forwarded to the Faculty of Health Sciences/Pretoria Academic Hospital Research Ethics Committee for ethical approval of the study.

The purpose of this study is to develop an outcome measurement system for occupational therapists in mental health settings. This system will help occupational therapists to determine mental health users' needs and to address their problems in an efficient and cost-effective way. This tool will help to identify problems in the occupational therapy programmes and indicate to therapists where improvements in the programme are necessary. This system will also be available in an electronic format, which could generate uniform reports with radar graphs. These reports could be filed in the mental health users' files and could be forwarded to Review Boards.

The study will commence after registration of the title at the University has been done. The planned commencement is January 2006 and will continue until November 2006.

Therapists will be asked to participate in at least three information-gathering groups to develop the outcome measurement system. No patients will be involved during this stage of the research. Once the content for the outcome measurement system is established I as the principal investigator will compile the system in a manual and an electronic version. Once the outcome measurement system is ready for use, therapists will be asked to attend the training session for the administering of the system. After the training therapists need to implement the system and administer it on their patients.

This is not the informed consent but permission that the OT department could be included in the study. Informed consent letters for the therapists as well as the patients will be introduced when the study commences.

If your institution requires any additional information re ethical issues please let me know. You are most welcome to contact me should you need further information.

Yours sincerely

Daleen Casteleijn

Signature of the CEO of the Hospital where the research will be conducted		
Signature	**Hospital**	**Date**
CEO _____	*Name of Hospital*	

INFORMED CONSENT

OCCUPATIONAL THERAPIST INFORMATION LEAFLET AND INFORMED CONSENT

INTRODUCTION

You are invited to volunteer for a research study. This information leaflet is to help you to decide if you would like participating. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the investigator. You should not agree to take part unless you are completely happy about all the procedures involved.

WHAT IS THE PURPOSE OF THIS RESEARCH?

The purpose of this study is to develop an outcome measure for occupational therapists in mental health settings. This measure will help occupational therapists to determine the change in mental health users' occupational performance problems after treatment. This tool will help to identify problems in the occupational therapy programme and indicate to therapists where improvements in the programme are necessary. The outcome measure will be available in electronic format which could generate uniform reports with radar graphs. These reports could be filed in the mental health users' files and could be forwarded to Review Boards.

WHAT IS THE DURATION OF THIS TRAIL?

The duration of the implementation of the outcome measure will be approximately 6 months.

HAVE THE RESEARCH RECEIVED ETHICAL APPROVAL?

This research project has been submitted to the Ethics Committee of the Pretoria Academic Hospital and the Faculty of Health Sciences, University of Pretoria for ethical approval. The study has been structured in accordance with the Declaration of Helsinki (last update: October 2000). Approval has been granted: nr 118/2005.

Another application for ethical approval has been submitted to the Ethics Committee of the Faculty of Health Sciences, University of the Witwatersrand.

EXPLANATION OF PROCEDURES TO BE FOLLOWED.

You will be asked to participate in the implementation of the outcome measure. This entails the following of normal occupational therapy procedures that is assessment and treatment. After you have assessed your patient, you will be asked to complete the outcome measure by selecting the most appropriate description that fits your patient's occupational performance. You will then commence with treatment and after two or three weeks, will complete the outcome measure again to determine if any change is evident.

Your final participation will be appreciated when we evaluate the value and applicability of the outcome measure.

RISK AND DISCOMFORT IN

No risks or discomforts are involved.

POSSIBLE BENEFITS OF THIS STUDY.

If therapists are able to measure outcomes, they will have evidence to show their contribution towards the rehabilitation of mental health users. This evidence will help to motivate for sufficient funding and better post structures. This could also assist them to take part in evidence-based practice where they could start comparing different treatment methods and the outcomes in their programmes.

I understand that participation is voluntary and I may at any time withdraw from this study.

If I have any questions concerning this study, I should contact: Mrs Daleen Casteleijn tel and fax: 011 643 5769 or cell: 082 561 2249.

CONSENT TO PARTICIPATE IN THIS STUDY.

I have read the above in a language that I understand before signing this consent form. I have been given opportunity to ask questions and am satisfied that they have been answered satisfactorily. I hereby volunteer to take part in this study.

I have received a signed copy of this informed consent agreement.

.....	.....	.....	.....
Patient / Guardian signature	Date	Person obtaining informed consent	Date

.....	.....
Witness	Date

INFORMED CONSENT

MENTAL HEALTH USER INFORMATION LEAFLET AND INFORMED CONSENT

INTRODUCTION

You are invited to volunteer for a research study. This information leaflet is to help you to decide if you would like to participate. Before you agree to take part in this study you should fully understand what is involved. If you have any questions, which are not fully explained in this leaflet, do not hesitate to ask the investigator. You should not agree to take part unless you are completely happy about all the procedures involved.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to develop a measurement tool to measure outcomes in mental health users like yourself. This tool will help occupational therapists to determine users' needs and to address their problems in an efficient and cost-effective way. This tool will help to identify problems in the occupational therapy programme and indicate to therapists where improvements in the programme are necessary.

WHAT IS THE DURATION OF THIS STUDY?

The duration of this study is approximately 1 year.

HAVE THE RESEARCH RECEIVED ETHICAL APPROVAL?

This research project will be submitted to the Ethics Committee of the Pretoria Academic Hospital and the Faculty of Health Sciences, University of Pretoria for ethical approval. The study has been structured in accordance with the Declaration of Helsinki (last update: October 2000).

EXPLANATION OF PROCEDURES TO BE FOLLOWED.

The investigator and the occupational therapists working at the mental health service provider (the hospital or the clinic) will develop the outcome measurement tool. As soon as it is ready to use, you will be assessed with this measurement tool during admission and again at discharge. Your occupational therapist might do a telephonic follow-up after a month of discharge to see how you are coping with your performance at home. You do not have to fill in any forms or questionnaires except for this consent form. You only need to follow the occupational therapy programme at the hospital or clinic.

RISK AND DISCOMFORT INVOLVED.

There are no risks or discomforts involved.

POSSIBLE BENEFITS OF TH

If therapists are able to measure outcomes, they will have evidence to show their contribution towards the rehabilitation of mental health users. This evidence will help them to motivate for sufficient funding and better post structures.

I understand that if I do not want to partake in this study, I will still receive standard treatment for my illness.

I may at any time withdraw from this study.

If I have any questions concerning this study, I should contact: Mrs Daleen Casteleijn tel and fax: (012) 329 7800 or cell: 082 561 2249.

CONFIDENTIALITY.

All records obtained whilst in this study will be regarded as confidential. Results will be published or presented in such a way that patients remain unidentifiable.

CONSENT TO PARTICIPATE IN THIS STUDY.

I have read or had read to me in a language that I understand the above information before signing this consent form. The content and meaning of this information have been explained to me. I have been given opportunity to ask questions and am satisfied that they have been answered satisfactorily. I understand that if I do not participate it will not alter my management in any way. I hereby volunteer to take part in this study.

I have received a signed copy of this informed consent agreement.

.....	.....	.....	.....
Patient / Guardian signature	Date	Person obtaining informed consent	Date

.....	.....
Witness	Date

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

FWA Nr. 0000 2567
IRB Nr. 0000 2235

University of Pretoria

Soutpansberg Road
MRC-Building
Room 2 - 19

Private Bag x 385
Pretoria
0001

Faculty of Health Sciences Research Ethics Committee
University of Pretoria
Date: 28/10/2005

Number	:	118/2005
Title	:	The Development And Empirical Investigation Of An Outcome Measure For Occupational Therapist In Mental Health Practices
Investigators	:	Daleen Casteleijn; Department Occupational Therapy; Pretoria Academic Hospital ; University of Pretoria; Pretoria
Sponsor	:	no
VAT No	:	no
Study Degree	:	**PHD in Occupational Therapy**

This Protocol and Informed Consent have been considered by the Faculty of Health Sciences Research Ethics Committee, University of Pretoria on 26/10/2005 and found to be acceptable.

Mr P Behari	B.Proc. KZN; LLM – Unisa; (Lay Member)
*Advocate AG Nienaber	(female)BA(Hons) (Wits); LLB; LLM (UP); Dipl.Datametrics (UNISA)
*Prof V.O.L. Karusseit	MBChB; MFGP (SA); M.Med (Chir); FCS (SA): Surgeon
Dr M E Kenoshi	MB,CHB; DTM & H (Wits); C.E.O. of the Pretoria Academic Hospital
Prof M Kruger	(female) MB.ChB.(Pret); Mmed.Paed.(Pret); PhDd. (Leuven)
Dr N K Likibi	MB.BCh.; Med.Adviser (Gauteng Dept.of Health)
*Dr F M Mulaudzi	(female) Department of Nursing,
*Mrs E.L. Nombe	(female) B.A. CUR Honours; MSC Nursing – UNISA (Lay Member)
*Snr Sr J. Phatoli	(female) BCur (Et.Al) Senior Nursing-Sister
*Dr L Schoeman	(female) Bpharm, BA Hons (Psy), PhD
Prof H.W. Pretorius	MBChB; M.Med (Psych) MD: Psychiatrist
*Prof J.R. Snyman	MBChB, M.Pharm.Med: MD: Pharmacologist
*Dr R Sommers	(female) MBChB; M.Med (Int); MPhar.Med;
Prof TJP Swart	BChD, MSc (Odont), MChD (Oral Path) Senior Specialist; Oral Pathology
*Prof C W van Staden	MBChB; Mmed (Psych); MD; FTCL; UPLM; Dept of Psychiatry

DR R SOMMERS; MBChB; M.Med (Int); MPhar.Med.
SECRETARIAT of the Faculty of Health Sciences Research Ethics Committee - University of Pretoria

* = Members attended the meeting on 26/10/2005.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Mrs JMF Casteleijn

CLEARANCE CERTIFICATE	**M091025**
PROJECT	An Outcomes Measure for Occupational Therapists in Mental Health Settings
INVESTIGATORS	Mrs JMF Casteleijn.
DEPARTMENT	Occupational Therapy Department
DATE CONSIDERED	2009/10/30
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 2009/12/01 **CHAIRPERSON** pp .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Prof MS Graham

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...

.....

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Process Skills

The cognitive and executive functions that one uses to perform a task. This includes the ability to plan a task, select and use tools and materials appropriately, to pace the actions and to adapt one's performance when problems are encountered.

The items for this domain are:

- **Attention:** ability to focus on the task, without distractions and the quality of the attention.

- **Pace:** rate of work and how accuracy is influenced by the rate of work.

- **Knowledge:**
  - Selects appropriate and necessary tools and materials for the task, knowledge about the task as well as the materials,
  - concept formation beginning with elementary, combined concepts, their functions and progressing to complex and abstract concepts

- **Skills:**
  - Uses tools and materials according to their intended purposes
  - Supports, stabilizes, and holds tools and materials in an appropriate manner that protects them from damage, falling, or dropping.

- **Task concept:** the different aspects of task concept
  - Understanding the activity as a whole
  - Identifying with the activity
  - Execution of the activity
  - Task completion
  - Task satisfaction
  - Evaluation of the end product

- **Organising space and objects:**
  - Logically positions or spatially arranges tools and materials in an orderly fashion within a workspace to facilitate ease of task performance.
  - Restores refers to putting away tools and materials in appropriate places, restores immediate workspace to original conditions (e.g., wiping surfaces clean), closes and seals containers and coverings when indicated, and twists or folds any plastic bags to seal.

- **Adaptation:** the ability to anticipate, correct for, and benefit by learning from the consequences of errors that arise in the course of task performance.

PROCESS SKILLS DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
Attention	Unaware of the task.	Fleeting attention to the task.	Focuses attention for short periods, easily distracted.	Focuses attention for duration of task performance but quality of attention sometimes poor, sometimes distracted.	Focuses attention for duration of task performance with good quality, not easily distracted.	Able to attend to task completely, quality of attention extremely good.
Pace	Not prepared to engage in a task.	No talk of pace or rate of work as actions are destructive or incidental.	Inconsistent pace or task execution, slow or poor rate and poor accuracy.	Pace starts to be consistent but still slow, accuracy sometimes poor.	Consistent pace, good rate of work according to the norm, good accuracy.	Consistent pace, good rate of work, sometimes exceeding the norm without risking accuracy.
Knowledge	No attempt to select appropriate tools and materials for the task.	No attempt to select appropriate tools and materials for the task.	Poor selection and impulsive use of appropriate tools and materials for the task.	Selects appropriate and necessary tools and materials for the task if task is familiar and structured.	Selects appropriate and necessary tools and materials for the task, even unfamiliar tasks.	Selects appropriate and necessary tools and materials for familiar and unfamiliar the tasks.
	No evidence of knowledge of materials or tasks. Concepts are disrupted.	Minimal knowledge of materials and tasks. Identifies elementary concepts e.g. body, colour and numbers. Knows functions and characteristics of elementary concepts.	Basic knowledge of intrinsic properties of materials. Identifies elementary and combined concepts.	More developed knowledge of materials and tasks Identifies combined concepts. Abstract concepts begin to emerge.	Sufficient knowledge of materials and tasks, knows where to find additional information if he does not know. Complex and abstract concepts are more extensive.	Good knowledge, will seek out interesting facts or more advanced information. Complex and abstract concepts are extended and well developed.
Skills	No handling of materials or tools.	Poor or inappropriate handling of material and tools. Poor maneuvering of objects held in the hand.	Appropriate handling but poor maneuvering of tools. Uses everyday tools and materials according to their intended purposes.	Skill of handling tools is improving, not yet according to the norm. Uses tools and materials according to their intended purposes.	Good skills and handling of tools, comply with the norm. Uses tools and materials according to their intended purposes.	Good skills and handling of tools, is able to learn new skills, tool handling is swiftly. Adapts tools or materials for better performance.

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Passive (10, 11, 12)	Passive (10, 11, 12)
Task Concept	No task concept.	No task concept but able to follow an instruction or command.	Beginning to understand the task and could identify with task. Will begin with a task but not able to plan logical order of the task independently. Task concept unconsolidated.	Needs assistance in beginning the task, deciding when to do next step and when task is complete. Better performance with familiar tasks - might be able to complete familiar tasks. Task concept almost consolidated, avoids evaluation of the task.	Able to begin, order steps logically, continue and complete steps without hesitation. Shows satisfaction and evaluate the task. Task concept is consistent and consolidated.	Shows initiative and originality in task execution, able to improve on performance due to critical evaluation of a task.
Organizing space and objects	No ability to organize space and objects for task performance.	Actions in task performance aimless, incidental and sometimes destructive, no ability to organize space and objects.	Willing to explore with materials and tools but no intention to organize the workspace. Area to be structured by therapist. No attempt to restore workspace.	Beginning to organize own work space and objects for familiar tasks, needs assistance with unfamiliar tasks. Will restore if asked to.	Able to organize space and objects, follows/imitates the procedure as set out by others. Restores workspace without reminding.	Able to organize space and objects in own original manner. Willing to assist others. Always restores workspace and remind others to do so.
Adaptation	No engagement in tasks and therefore unable to anticipate or correct for errors.	Engagement in tasks incidental or destructive and no ability to anticipate or correct for errors.	Engage in tasks to explore, needs prompting to anticipate or correct for errors but no learning from the consequences of errors.	Anticipated one or two apparent, simple errors and able to correct these errors. Beginning to learn from the consequences of errors.	Anticipated a number of apparent, complicated errors and some complex errors and are able to correct these errors. Learns from the consequences of errors.	Anticipate and correct for errors to ensure good quality end product. Learns from errors and will come up with original solutions.

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Motivation

The desire to explore and master the environment through occupation or engagement in activity. It includes the basic drives and motives for action as well as the perception about the underlying main causes of events in one's life.

The items are:

- **Active involvement:** the desire to engage in tasks or activities and demonstrating maximum effort and a sense of enjoyment and satisfaction

- **Motives and drives:** follows the hierarchical motives of Maslow from physiological, security, affiliation and love, self-worth to self actualisation motives.

- **Shows interest:** interest in familiar and unfamiliar activities, including the ability to sustain interest

- **Goal-directed behaviour:** planning of goals that fit the person's occupational profile, ability to adapt when problems arise, showing initiative in task performance, and achievement of goals. Includes the action towards the goal e.g. explorative, passive or experimental, imitative or with originality.

- **Locus of control:** the believe that one controls oneself and one's life and taking responsibility for own actions (internal locus of control) versus a believe that the environment, some higher power or other people control one's life.

MOTIVATION DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone 1 , 2, 3	Self differentiation 4, 5, 6	Self presentation 7, 8, 9,	Participation		
				Passive 10, 11, 12	Imitative 13, 14, 15	Active 16, 17, 18
Active involvement	Makes no effort to engage in activity.	Makes minimal effort, incidental response, shows enjoyment for brief moments.	Puts in effort, willing to try out and present self. Effort usually ends abruptly and before activity is completed.	Muster courage and able to maintain effort if no problems are encountered. Shows enjoyment during the task.	Sustains consistent effort for a task. Enjoyment motivates him to participate in more challenging tasks.	Sustains consistent effort and generates originality. Enjoyment leads to more creative participation in future situations.
Motives and drives	Basic drive to maintain the body in homeostasis, no signs of will to live, quality of life dependent on nursing care.	Willing to participate if basic drives needs are satisfied.	Egocentric motives, belonging and approval from selected persons drive the person to action.	Approval and belonging to a group drive the person to action.	Positive self-esteem drives the person to action	Striving for self actualization and values drive action.
Shows interest	Shows no need for stimulation or participation in activities.	Shows interest in activities that will satisfy basic and immediate needs.	Shows interest in stimulation and activities, interest not sustained.	Shows interest in variety of activities, sustains interest in preferred and known activities.	Able to show interest in preferred and non-preferred activities, willing to learn new skills.	Interested in preferred and non-preferred activities, execution with originality, adapts to make non-preferred activities more interesting.

Item	Tone 1 , 2, 3	Self differentiation 4, 5, 6	Self presentation 7, 8, 9,	Participation		
				Passive 10, 11, 12	Imitative 13, 14, 15	Active 16, 17, 18
Goal-directed behaviour	No signs of goal-directed behaviour.	No signs of goal-directed behaviour, participates in tasks with incidental action.	Beginning to work towards a goal with guidance from therapist, participates in task with explorative action.	Works towards a goal in well structured and well known tasks, action is passive and needs support and encouragement from therapist.	Able to plan goals for a task, imitate others and abide by rules and own structure.	Plans goals, adapt when problems arises, shows initiative in task performance.
Locus of control	External locus of control, dependent on total nursing care.	External locus of control, able to do self care but needs external rewards to participate in other tasks. Not able to see if activity was successful or not, incidental actions.	External locus of control, egocentric and participates for rewards. Needs to experience success to engage in activity again, impulsive actions.	External locus of control, waiting for therapist to structure environment, willing to participate in secure environment. Experience failure as traumatic, hesitant actions.	Internal locus of control emerging, set up a plan of action and beginning to take responsibility for own actions. Could handle negative effects of failure.	Internal locus of control, takes responsibility for own actions, changes behaviour or actions where necessary, failure is seen as a challenge to improve in future, believes he can influence outcomes of events.

APPENDIX F3

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Communication/Interaction Skills

Exchange of information using the physical body and spoken language to express intentions and needs in building and maintaining social relationships.

The items are:

- **Physicality:**

  Using the physical body when communicating. It includes making physical contact with others, using gazes and gestures and directing the body in relation to others.

- **Information exchange:**

  Refers to giving and receiving information. It includes the production of clear and understandable speech, the ability to express desires, refusals, and requests, engaging in interactions, sharing information and modulates volume and tone of speech.

- **Relations:**

  Maintaining appropriate relationships with others. It includes conforming to implicit and explicit social norms, attempting to establish a rapport with others and respecting other people's reactions and requests.

COMMUNICATION/INTERACTION SKILLS DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
Physicality - Non verbal communication	Aware that someone is there, makes no physical contact.	Avoids physical contact or makes inappropriate physical contact.	Makes physical contact, usually inappropriate and to see reaction of others.	Limited physical contact but appropriate.	Makes appropriate physical contact as other do (imitate correct behaviour).	Consistently makes appropriate physical contact.
	Stares into nowhere Might have fleeting eye contact.	Gazes and stares inappropriately, unable to use gaze to communicate.	Stares because of curiosity and seeking attention.	Beginning to use gazes correctly for communication.	Gazes appropriately for communication.	Use gazes consistently and appropriately in communication.
	No use of gestures.	Uses none or inappropriate gestures.	Uses gestures excessively or inappropriately.	Gestures becoming appropriate.	Gestures are appropriate. Orientates self correctly in relations to others.	Uses gestures consistently and appropriately.
	Sometimes aggressive behaviour but does not use body to communicate.	Poor ability to use body to communicate, sometimes aggressive behaviour.	Does not maneuver body correctly to suit the situation or in relation to others.	Orientates oneself physically in correct position in relation to others.	Maneuvers body correctly to suit the situation or in relation to others.	Uses body effectively in communication, not unsure to show actions and maneuvers body well to others in a group.
Information exchange	Limited to no use of speech to communicate.	Uses speech to communicate but usually incoherent and not able to modulate tone of voice or volume.	Articulates understandable speech but short phrases, not always clear. Inability to modulate speech and volume for the situation.	Beginning to articulates clear and understandable speech and modulates volume, but not consistent.	Consistently articulates clear and understandable speech and modulates volume.	Good articulation and modulates speech well.

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
	No exchange of information.	Exchanges limited information, only articulate own immediate needs.	Tries to communicate and exchange information but superficially and not always appropriate.	Exchanges information in "safe" and known situations, usually appropriate but limited.	Exchanges a variety of information.	Exchanges relevant and interesting information.
	Limited expression of desires, refusals seen in aggressive behaviour.	Needs to express desires and refusals immediately and inappropriately.	Expresses desires and refusals inappropriately, cannot select the right situation.	Unsure to express desires and refusals.	Still unsure to express desires and refusals but imitate others if necessary.	Expresses desires and refusals with confidence.
	Does not initiate interaction.	Does not imitate interaction or sustain a conversation unless to defend self.	Does not initiate interaction unless for egocentric reasons. Unable to sense when to terminate a conversation.	Initiates interaction and terminates a conversation correctly.	Engages in interaction according to social norms. Keeps up a conversation and expresses affect towards others.	Seeks out interaction with others, warm and open approach to others. Is able to focus on relevant aspects in conversations.
Relations	No awareness of others and no desire to form a relationship or adhere to social norms.	Fleeting awareness of others and no desire to form a relationship or adhere to social norms.	Awareness of basic social norms emerging but unable to conform to social norms, forms a relationship for egocentric reasons.	Aware of social norms and beginning to conform to explicit social norms. Dependent on others to initiate meaningful relationships.	Give and take emerges in relationships. Complies with social norms like others do.	Forms good relationships with others, seeks to give in relationships. Adapts own behaviour when situation changes.
	No interest to form rapport with others and unaware of others' needs and requests.	No interest to form rapport with others and unaware of others' needs and requests.	Beginning to show interest to form rapport with others. Does not respond to the needs of others (might be aware of needs).	Is unable to but wishes for rapport with others, inconsistent giving in a relationship.	Is able to establish rapport with others, respect others' reactions and requests.	Is able to establish rapport consistently, responds to needs of others with ease.

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Self-esteem

The worth that one ascribes to one self, the evaluation of one's virtues, the desire to feel accepted and expectations of success or failure.

The items are:

- **Commitment to task or situation:** showing confidence to carry out to a task
- **Using feedback:** the critical appraisal of negative and positive feedback to realize one's self-worth
- **Attitude towards self:** attitude that tends to be negative or positive, pessimistic or optimistic
- **Awareness of qualities:** takes pride in what one is able to do and what one is good at, ability to acknowledges the poor qualities without self pity
- **Social presence:** feeling socially at ease and having an equal place with others, showing signs of social poise and presence.
- **Self-worth:** feelings of being useful and have something to contribute, expectations to succeed and ability to handle failure

SELF-ESTEEM DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
Commitment to task or situation	Withdrawn, no awareness of situation or little reaction to a situation.	Reluctant to commit self to a task or situation.	Willingness to commit to some steps of a task and present self for a short period in a known situation.	Willingness to try out an entire task in a secure environment and known situation.	Confident to participate if norms are clear.	Assertive and confident in most situations.
Using feedback	Not aware of feedback.	Little reaction to feedback, sometimes gets aggressive towards feedback.	Unable to view feedback as means to improve self-esteem, reacts to concrete positive feedback.	Unable to handle the negative aspects of evaluation or feedback from others.	Able to handle negative aspects of feedback.	Expresses opinions, judge negative feedback correctly.
Self-worth	Unaware of self-worth.	Unaware of self-worth. OR Rejection sensitive and devalues self.	Sometimes unrealistic self-worth, not able to select appropriate criteria to judge self-worth against. Fragile self-esteem.	Self-handicapping behaviour sometimes evident, protect the self from failure and therefore no risk taking (anxiety for failure).	Anxiety for failure present when situations are risky.	Behaves and acts quickly and with confidence. Productive, get things done.
Attitude towards self	Withdrawn and secluded.	Unpredictable changes in attitude and behaviour. "I can't" attitude	Hesitant if therapist or support is absent or unavailable.	Hesitant in unfamiliar situations and withdraws when frustrated.	Generally self- assured in all situations.	Cheerful and happy. Sought out for advice and reassurance.
	No evidence of an attitude towards self.	Do not express an attitude towards self.	Feels cheated and victimized by life.	Doubt own adequacy, self-defeating. Subtly negativistic.	Beginning to be confident to stand up for self. Usually a positive attitude towards self.	Satisfied with self and no signs of self-concern.

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
Awareness of qualities	Not aware of any qualities or characteristics about self.	Do not express any qualities or characteristics about self. "The world does not see me"	Self-pitying, timid, could express concrete characteristics about self.	Self-conscious and sometimes self-depreciative, pre-occupied with incompetencies, unsure if conformed to norms.	Imitate successful persons, able to name good and bad qualities.	Able to acknowledge poor qualities, usually attempts to improve on it.
Social presence	Unaware of social contexts.	Unaware of social contexts.	Dependent from social acceptance and attention.	Passive in social situations, not confident to participate.	Not isolated from others, confident to be part of a group.	Socially at ease, social poise and presence.

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Balanced Lifestyle

Use of time, habits and routines that address personal needs and demands of environment, occupational preferences in balance (good mix of occupations in all areas: physical, mental, social, spiritual, rest). It includes occupations that are meaningful and promote wellness.

The items are:

- **Time use and routines:** the ability to allocate time proportionately to rest, work, leisure and personal management and follows a routine to achieve this.

  Routines are occupations that are performed in a certain sequence and take place at certain times of the day

- **Habits:** refer to behaviours that become habitual and automatic, usually occur in familiar environments and need minimum energy and thinking. Habits could become addictive and undesirable e.g. smoking, drinking.

- **Mix of occupations:** includes a variety of preferred and meaningful but also obligatory occupations that meet a person's physical, mental, social, spiritual, and sleeping (rest) needs.

BALANCED LIFESTYLE DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
Time use and routines	Person requires total care. Not aware of concept of balanced lifestyle or time use.	Not aware of concept of balanced lifestyle or time use. Person in institution that provides routines that structure time use automatically.	Unable to organize own time use, needs a structured pre-planned programme, gets upset if routine changes.	Aware of the importance of balance in tasks and to have a routines but unable to allocate time use independently.	Able to organize time use into a routine that will improve own lifestyle but finds it difficult to follow it consistently.	Organise own time use and follows it consistently, adapts time use when situation changes
Habits	Not aware of undesirable or good habits.	Inappropriate and destructive habits may be present e.g. begging, chain smoking, addiction to drugs, undesirable sexual activities. Not aware of good habits.	Inappropriate habits still present but beginning to be aware of negative effects of destructive habits. Useful habits emerging e.g. attending OT programme or protected workshop.	Habits not well established and easily disrupted by illness. Finds it difficult to replace undesirable habits with good habits but realizes the importance of it.	Aware of undesirable habits and able to change to good habits.	Avoids undesirable habits, assists others to change habits. Constantly striving for quality of life and will adapt habits to have a better lifestyle.
Mix of occupations	Total care, follows routine of institution. Not aware of meaning of being occupied.	Preference to do as little as possible, unhealthy mix of occupations. Not aware of meaning of being occupied.	Beginning to develop preferences e.g. which tasks to do in ward, at home or in OT department. Meaningful occupations are self-centred.	Aware of the value of variety and meaningful occupations but difficult to identify occupational preferences that provide meaning and satisfaction.	Has a set repertoire of preferred and meaningful occupations but no desire to explore more occupations.	Actively involved in a good repertoire of preferred occupations and often pursues new ones.

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Affect

The observed expression of emotion by others, what one is able to see from the outside. The appropriateness of the emotion, how it is controlled and the range or repertoire of different emotions are aspects that one could observe in a person.

The items are:

- **Repertoire of emotions:** the variety of emotions that a person experiences at different places, situations, occupations or interactions with people. Refer to Plutchik's emotions wheel.

- **Control:** the ability to be in command of one's emotions, that is long lasting mood as well as short lived emotions e.g. frustration. Includes the ability to express emotions in a socially appropriate way.

- **Mood:** enduring and sustained emotion that influences the person's perception of the world Mood is the subjective feeling of the individual and relatively longer lasting than emotions. Moods generally have either a positive or negative tendency or valence.

AFFECT DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
Repertoire of emotions	Blunted, flat affect. OR Emotional burn-out	Evidence of basic emotions e.g. satisfied or dissatisfied, enjoyment or anger, distress or apathy. Loss of joy.	Shows a greater variety of emotions e.g. fear, affection, envy but lacks appropriate level of intensity.	Anxious in unknown situations. Refined emotions like regret, pride, frustration, surprise.	Evidence of empathy, compassion and warmth. Anxious when creativity is required, needs an example to perform.	Whole spectrum of emotions e.g. compassion, tenderness, loyalty. Anxiety usually inspires achievement.
Control	No control over emotions, sometimes screaming.	Little control over emotions.	Easily triggered, sudden outburst of emotions like anger or laughter, lacks control.	Easily immobilized by anxiety, controls emotions in secure situations. Externalization of emotions becomes socially acceptable.	Able to control emotions, immobilized by anxiety in new situations without a model to imitate.	Able to control emotions and negative effects of anxiety and not easily immobilized.
Mood	Apathetic and lethargic.	Unpredictable moods.	Fluctuating moods.	Mood is stable in secure situations but tend to be pessimistic in unfamiliar situations.	Mood is consistent and tends to be optimistic.	Mood is consistent and optimistic.

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Lifeskills

Skills and competencies required by a person to manage independently in the community. It includes the abilities individuals acquire and develop to perform everyday tasks successfully.

The items are:

- Personal care, hygiene, grooming
- Personal safety, care of medication,
- Use of transport
- Domestic skills
- Child care,
- Money and budgeting skills
- Assertiveness skills
- Stress management
- Conflict management
- Problem solving skills: identifying the problems, considering options and alternatives and selecting the best option or solution.
- Pre-vocational skills: Personal and social presentation, work habits (following instructions, neatness and accuracy, recognising errors, planning etc)
- Vocational skills: skill and knowledge in a specific field, work speed, physical and psychological endurance

LIFESKILLS DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Passive participation (10, 11, 12)	Imitative participation (13, 14, 15)	Active participation (16, 17, 18)
Personal care, hygiene, grooming	Cared for by nursing staff or family.	Needs physical assistance and super-vision for bathing, toileting. Eating usually untidy and messy.	More refined skills e.g. grooming, dressing, hair care inappropriate and poor quality. Dental hygiene poor.	Self-care skills appropriate and with good quality, refined self care appropriate and good quality.	Is independent in all personal care skills and performs it with good quality.	Competently in all personal care skills, uses originality, acts as role model for others.
Personal safety, care of medication	No sense of personal safety, in total care and needs constant supervision and assistance.	Needs constant supervision for personal safety and medication.	Is aware of personal safety but needs occasional reminders and supervision, care of medication dependent on nursing staff or family.	Is able to maintain personal safety, takes responsibility for medication but inconsistent.	Is able to maintain personal safety, consistently takes responsibility for medication and own health.	Competent in personal safety, takes responsibility for safety of others. Responsible use of medication, consults when revision of medication is needed.
Use of transport	Transported by nursing staff or family if needed.	Dependent on others for transport.	Dependent on others for transport.	Is able to organize own transport, utilizes public transport or drive own vehicle.	Organizes own transport, whether public, self driving or lift club.	Organizes own transport and solve problems with transport in an original way.
Domestic skills	No skills evident.	Does not perform these skills, usually under constant supervision or care of others.	Performs aspects of domestic skills e.g. washing dishes, making tea. Quality still lacking.	Greater variety in domestic skills with improved quality but not consistently performing well in these skills.	Performs most domestic skills with sufficient quality and consistently (imitate another role models).	Has a wide repertoire of domestic skills and performs them well and with originality (acts as role model for others).

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Passive participation (10, 11, 12)	Imitative participation (13, 14, 15)	Active participation (16, 17, 18)
Child care skills	No skills evident.	Does not care for children, usually under constant supervision or care.	Is unaware of the different duties and responsibilities in child care skills.	Is aware of the obvious child care duties but not consistently performing well in these skills.	Fulfils child care duties and responsibilities consistently (imitate other role models).	Fulfils childcare duties and responsibilities with originality (acts as role model for others).
Money management and budgeting skills	No skills evident.	Does not handle money or do budgeting, usually under constant supervision or care.	Is unaware of value of goods or setting priorities for spending money.	Is aware of value of daily goods and needs but is not able to spend money consistently well.	Is aware of value of goods, has the ability to budget and spend accordingly in a consistent way (imitate other role models)	Is aware of value of goods, has the ability to budget and spend accordingly in an original way (acts as role model for others).
Assertiveness	No skills evident.	Is unaware of own or others' rights and feelings, acts with aggression or withdrawal.	Puts own rights first, is unaware of others' rights and feelings, acts with aggression or withdrawal.	Is aware of own and others' rights and feelings but responds passively, avoids conflict or immobilized by stress.	Responds appropriately to the rights and feelings of others but needs a role model to be assertive.	Responds appropriately to the rights and feelings of others. Sets the example for assertiveness.
Stress management	Is unaware of stress.	Is unaware of own stressors, acts with aggression or withdrawal.	Is aware of stressors but cannot identify own. Do not realise effect of stress on life. Is unaware of techniques for stress relieve.	Identifies own stressors with guidance, is aware of techniques for stress, uses techniques with guidance.	Identifies own stressors and manages stressors by following prescribed techniques and methods on own.	Creates own stress management programme with valuable techniques and methods. Sets the example for others.

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Passive participation (10, 11, 12)	Imitative participation (13, 14, 15)	Active participation (16, 17, 18)
Conflict management	Is unaware of conflict.	Handles conflict with aggression or withdrawal, often causes conflict without realising it.	Handles conflict with aggression or withdrawal, causes conflict repeatedly.	Avoids conflict and often immobilized by conflict. Is aware of techniques the handle conflict but only uses it with guidance.	Uses a few techniques for conflict handling independently.	Is able to choose a technique from a variety of techniques. Assists others in conflict management.
Problem solving skills	Is unaware of a problem.	Is not able to identify the problem.	Is able to identify simple problems, no skills to perform other steps of problem solving.	Is aware of the steps of problem solving, identifies simple problems but needs guidance for complex problems.	More complex problem solving skills emerges but follows methods that others would suggest.	Good problem solving skills, a repertoire of methods are being used and Is able to assist others in problem solving.
Pre-vocational skills	No skills present.	Begins to show some skills e.g. performing one or two routine tasks in the ward (making own bed), washing tea cups.	Begins to use pre-vocational skills but inappropriately and with poor quality.	Performs pre-vocational skills with some quality but inconsistently.	Performs pre-vocational skills according to the norm.	Performs pre-vocational skills with originality.
Vocational skills	No vocational skills.	No vocational skills.	Vocational skills emerging, may have splinter skills e.g. filing, typing.	Some vocational skills present but needs assistance to perform the skills.	Enough vocational skills to enter open labour market.	Variety of vocational skills, usually successful in a job.

THE DOMAINS AND ITEMS OF THE ACTIVITY PARTICIPATION OUTCOME MEASURE

Role Performance

The ability to meet the demands of roles in which the patient engages. A set of socially agreed upon expectations, tasks or obligations that a person fulfils and which become part of that person's social identity and participation in everyday life.

The items are:

- **Awareness of roles:**
  Aware that he/she has roles to fulfil in everyday life.

- **Role expectations:**
  Aware of the expectations, tasks and obligations for a specific role.

- **Role balance**
  Having a number of roles to fulfil at the same time.

- **Competency:**
  Ability to perform the expectations and tasks of all the roles.

ROLE PERFORMANCE DESCRIBED IN LEVELS OF PARTICIPATION

Item	Tone (1, 2, 3)	Self differentiation (4, 5, 6)	Self presentation (7, 8, 9)	Participation		
				Passive (10, 11, 12)	Imitative (13, 14, 15)	Active (16, 17, 18)
Awareness of roles	Is unaware of roles.	Is unaware of roles.	Is aware of role in institution, tries to comply but need supervision.	Is aware of roles in own situation and social standing if structure is secure and familiar.	Is aware of roles in own situation and social standing in stable and changing situations.	Completely aware of roles, assist others to be aware of their roles.
Role expectations	Is unaware of role expectations.	Needs reminding of minor tasks of a role.	Needs reminding of expectations and tasks of a role. Unrealistic expectations.	Is aware of simple expectations that are obvious for a role.	Knows expectations of a role and will refuse additional expectations.	Is aware of all expectations and finer nuances of a role.
Role balance	Is unaware of role balance.	Is unaware of role balance.	No evidence of role balance, performs some tasks of a role under supervision.	Is aware of role balance but needs guidance to perform tasks of different roles at the same time.	Is able to balance roles by following a role model and set routine.	Is able to balance roles and adapt routine as expectations increases.
Competency	Is unable to perform any roles.	Is able to perform one or two tasks of a role in the institution or ward under constant supervision.	Is able to perform minor tasks of a role in the institution or ward. Will execute certain tasks of the role to gain priviledges.	Perform some tasks of a role sufficiently.	Performs role as expected and according to the norm.	Competent in a variety of roles at the same time. Acts as a role model for others.