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ROUTINE MEASUREMENT OF OUTCOMES FOR MENTAL HEALTH CARE USERS ATTENDING OCCUPATIONAL THERAPY IN AN ACUTE MENTAL HEALTH CARE UNIT WITHIN A RURAL CONTEXT

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Dissertation submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree of Master of Science in Occupational Therapy

Johannesburg 2016

Declaration

I, Olindah Silaule declare that this dissertation is my own work. It is being submitted for the degree of Master of Science in Occupational Therapy in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

Signature: ……..

Date: 26 January 2017

Dedication

I dedicate this study to my siblings: Zandile and Tommy- Junior Thobela, Nhluvuko, Nhlayiso and Nhlakanipho Mkhonto, for them to be encouraged and grow to experience the transformational power of education.

Abstract

Introduction: The lack of accurate routinely collected data regarding mental health services is one of the several ongoing challenges facing healthcare services in South Africa. The increasing emphasis on routine outcome measurement within the field of mental health has urged occupational therapists to demonstrate the impact of their intervention on mental health care users. Therefore, the aim of this study was to implement routine outcomes measurement in the occupational therapy department in order to describe and document changes in activity participation in MHCUs at Tintswalo Hospital situated within a rural site of Mpumalanga province.

Methodology: Quantitative methods were employed in this study with a sample size of 64 MHCUs. One group pre/post- test design was used in order to collect data using an Activity Participation Outcome Measure (APOM).

Results: The key findings demonstrated that the majority of participants improved significantly across all of the APOM domains during hospitalisation. A decline in the APOM domains was noted in the follow-up stages yielding insignificant results as demonstrated by the value of the effect sizes.

Conclusion: Results of this study demonstrate the relevance of routinely measuring outcomes in mental health. The study generated evidence of change in activity participation during hospitalisation and follow-up and emphasised the need for future research in this regard.

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List of Abbreviations

ADL	Activities of Daily Living
AMPS	Assessment of Motor and Process Skills
APOM	Activity Participation Outcome Measure
AusTOMs	Australian Therapy Outcome Measure
BMD	Bipolar Mood Disorder
COPM	Canadian Occupational Performance Measure
ICF	International Classification of Functioning, Disability and Health
LOS	Length of Stay
MDT	Multi-disciplinary Team
MHCU	Mental Health Care User
MOHO	Model of Human Occupation
MOHOST	Model of Human Occupation Screening Tool
NHI	National Health Insurance
NHS	National Health System
UK	United Kingdom
SA	South Africa
ROM	Routine Outcome Measurement
USA	United States of America
VdTMoCA	Vona du Toit Model of Creative Ability

Nomenclature

Activity Participation: activity participation is described as involvement in a life situation, this process occurs when clients are actively involved in carrying out daily activities they find purposeful and meaningful (AOTA, 2014)

Client- centered approach: is described as “an approach to service which embraces a philosophy of respect for, and partnership with, people receiving services” (Law, Baptise & Mills, 1995, p 253). This means that respect for and partnership with clients should also be applied when conducting research about the (Casteleijn & Graham, 2012).

Effect Size: is a name given to a family of indices that measure the magnitude of a treatment effect (Becker, 2000).

Evidence-based Practice: Evidence-based practice is described as interventions for which there is scientific evidence consistently showing they offered improved client outcomes (Pirkis et al, 2005).

Outcome: is defined as “An agreed, clearly defined, expected or desired result of intervention” (Creek, 2003 p 50).

Outcome measure: An instrument used to measure and record change in a client, after their involvement in therapy (Unsworth et al., 2004).

Patterns of change: The difference in functioning as shown on the APOM using particular categories (Brooke, 2015)

Routine outcome measurement: The regular collection of data pertaining to the functional level and health of a client (Bilsker and Goldner, 2002).

Trends: Studies concerned with trends are a means of tracking change between data collection points (Kumar, 2011).

Chapter 1: Introduction

1.1. Background of the study

The core of occupational therapy's profession is based on the belief that humans are occupational beings and that occupation is central to human survival (Creek & Lougher, 2008). Human beings have a need to engage in occupations of their choice, in order to grow through what they do and experience independence, equality, participation, security, health and well-being (AOTA, 2008). This emphasises the importance of activity participation to human survival. "Activity participation is described as involvement in a life situation. This process occurs when clients are actively involved in carrying out daily activities they find purposeful and meaningful" (AOTA, 2014 p 629). Occupational therapy intervention therefore focuses on creating and facilitating opportunities to engage in occupations that lead to participation in desired and required life situations as demanded by the environment (AOTA, 2014).

To demonstrate the effectiveness of interventions they offer, occupational therapists are urged to incorporate routine outcome measurement (ROM) in to clinical practice (Casteleijn, 2014). ROM refers to regular measurements of clients' progress in clinical practice, aiming to evaluate and, if necessary, adapt treatment (Drake, Goldman, Leff, Lehman, Dixon, Mueser et al., 2001). ROM provides comprehensive information regarding the effectiveness of interventions provided, to act as feedback for improving clinical practice (Coombs, Willis & Deane, 2009).Therefore, ROM is relevant to meaningfully communicate patient progress, promote efficient treatment planning and demonstrating impact of services and efficiency (Duncan & Murray, 2012). The overall purpose of ROM is to provide information about the progress of individual service users' and to allow for broader service outcomes monitoring throughout the treatment process (Casteleijn & Graham, 2012). In this study ROM was used to communicate patients' progress through tracking change in activity participation of the MHCUs as they participated in the occupational therapy programme at Tintswalo Hospital.

Occupational therapists have an abundance of valuable clinical contributions, which they make regarding facilitating activity participation however; there is limited evidence to demonstrate change in clients' activity participation or functional ability in mental health settings (Casteleijn, 2013).Several challenges that hinders the incorporation of ROM in to daily clinical practice in mental health have been reported in literature. This includes the unavailability of context appropriate outcome measures, limited knowledge of which outcome measures to choose and the correct administration, as well as healthcare practitioners concerns about the time-consuming nature of outcome measures, lack of support and resources (Huijbregts, Myers, Kay, Gavin, 2002; Jette & Haley, 2005, Turner-Stokes & Turner-Stokes, 1997; Abrams, Davidson, Harrick, Harcourt, Zylinski, Clancy, 2006). In SA healthcare setting occupational therapists do not seem to have adopted ROM into daily practice (Casteleijn, 2013). The challenges associated with this are not different to those expressed in other countries. Casteleijn (2013), states that lack of incorporation of ROM in to clinical practice may be associated with lack of context appropriate outcome measures, limited knowledge and guidelines to develop the needed routine outcome measures, occupational therapists not familiar with how to implement developed routine outcome measures to daily clinical practice. Another reason is related to the fact that occupational therapists are under the impression that outcome measures and assessments are the same.

Lack of ROM makes it difficult for the occupational therapists to provide evidence for the effectiveness of the services they offer. The inability to provide evidence for services offered makes it hard for occupational therapists to articulate their unique contribution to consumers, employers and fellow professionals (Casteleijn, 2010). Due to this OTs are unable to motivate and validate occupational therapy programmes to government and this in turn may influence factors like funding for services and availability of posts (Casteleijn, 2010).

At Tintswalo Hospital there is no budget for occupational therapy services in mental health. This is brought about by the fact that there is limited understanding regarding the role of occupational therapy in mental health. This misconception is caused by the limited occupational therapy services in mental health in Mpumalanga province. Currently only two hospitals run occupational therapy programmes in mental health, as a result management is not familiar with what OT's do in mental health, hence

they struggle to understand the use of everyday activities to improve function. Another contributing factor is the lack of evidence to support effectiveness of services. These make it hard for occupational therapists to access budget for resources that can be used for activities like sewing, gardening and cooking. One of the challenges arising from this is the fact that the budget for this is centred in other cost centres like corporate services which includes laundry, kitchen and technical services as a result questions are often raised whenever occupational therapists motivate to access this budget. The occupational therapy programme is managed by two full- time occupational therapists while motivations have been written explaining the need for additional staff none of the efforts have been successful, this therefore emphasises the need to produce evidence for services.

Internationally there is increasing emphasis on ROM within the field of mental health (Duncan & Murray, 2012). In South Africa, there is emphasis on the agenda in mental health services research to shift focus as demonstrated in the National Mental Health Summit of April 2012 (Lund, Petersen, Kleintjes & Bhana, 2012). The majority of research conducted in SA during the last 12 years provides more information on burden of mental illness as well as status of mental health services in the country. To address the growing disease burden and to narrow the treatment gap within the mental health services, the need to develop evidence-based practice and feasible culturally appropriate mental health services within available resource constraints at district level became evident (Lund et al., 2012). Therefore, emphasis is placed on an urgent need to shift the agenda in mental health research with the main focus on intervention studies. The plan to implement universal health coverage in the form of the National Health Insurance (NHI) in SA further emphasises the need for the effectiveness of services to ensure good quality services and achieve positive health outcomes (SA Department of Health, 2015).

Allied health professionals, including occupational therapists are required, more than ever before, to demonstrate the impact of their intervention (Colquhoun, Letts, Law, Mac Dermid & Edwards, 2010).It is an ethical responsibility for each profession to produce evidence of effectiveness of services offered, thus making routine measurement of outcomes a critical component of evidence-based practice (Drake, Goldman, Leff, Lehman, Dixon, Mueser et al., 2001). Evidence-based practice is described as interventions for which there is scientific evidence consistently showing

that interventions offered improve client outcomes, therefore indicating relevance of ROM (Pirkis, Burgess, Coombs, Clarke, Jones- Ellis & Dickson, 2005).

Occupational therapists use purposeful and meaningful activities to assess and treat people with disorders, impairment and participation restrictions (Kohn, Hitch & Stagnitti, 2012). Occupational therapists, within acute settings, focus their treatment on activities of daily living and are required to provide evidence of accurate assessment and outcomes of interventions supported by clear and concise documentation (Welch & Forster, 2003). To date, occupational therapists have difficulty implementing routine outcome measures resulting in a lack of evidence to support their unique contribution to health systems (Casteleijn, 2012).

Outcome measures are often aligned with a specific theoretical framework or model (Casteleijn, 2014). For instance, clinicians who apply the Model of Human Occupation (MOHO) use the Model of Human Occupation Screening Tool (MOHOST) as an outcome measure. Clinicians who apply alternative models, for example the Vona du Toit Model of Creative Ability (VdTMoCA), use measures such as the Activity Participation Outcome Measure (APOM).

1.2. Statement of the problem

Trauer (2010) mentioned that ROM within mental health services has become a common practice internationally. In developed countries like the UK, USA, Australia and New Zealand there is increasing demand for healthcare professionals to produce evidence for the effectiveness of their services (Coombs, Stapley & Pirkis). Despite the rising demands for ROM to be incorporated in to clinical practice, SA still faces challenges in this regard. The lack of routinely collected data regarding mental health services has proven to be one of the several ongoing challenges facing mental health services in South Africa (Gray & Vawda, 2016). To date, occupational therapists in mental health care settings in SA find it difficult to produce convincing evidence of the demonstrable value and their unique contribution to health care system in the country (Casteleijn, 2010).This is brought about the fact that occupational therapists do not seem to have, as yet, adopted routine outcome measurement in daily practice(Casteleijn, 2013)

At Tintswalo Hospital, ROM is not incorporated into occupational therapy practice. As a result, outcomes of intervention are not measured or tracked, and little is known about the effect of the occupational therapy intervention on the mental healthcare users (MHCUs) admitted to the hospital. Their progress is not monitored and trends in their performance of daily activities and activity participation are not described. This makes the occupational therapy a less recognised member of the multidisciplinary team and its contribution towards the health of users is not being documented.

1.3. Research Question

What are the effects of the occupational therapy programme on the activity participation of the mental healthcare users admitted to the acute mental health unit within the rural context?

1.4. Purpose of the study

The purpose of this study was to generate evidence of change in activity participation of MHCUs participating in an occupational therapy programme in an acute setting within a rural context using a context-appropriate outcomes measure.

1.5. Research Aim

To describe and document changes in activity participation of MHCUs at Tintswalo Hospital through ROM.

1.6. Objectives

- To describe the level of activity participation of MHCUs at Tintswalo Hospital before and after occupational therapy intervention at 5 data collection points: Time 1 (admission), Time 2 (two to three weeks after admission), Time 3 (discharge), Time 4 (one month post discharge) and Time 5 (three months post discharge).
- To determine the change in activity participation after an average of three weeks in hospital participating in the occupational therapy programme at Tintswalo Hospital (between admission and discharge), and again after three months when users came for follow-up (change between discharge and final follow-up).

- To explore the relationship between independent variables namely age, gender, adherence to medication, participation in occupational therapy programme and the dependent variable, activity participation.

1.7. Justification for the study

There is a clear gap of ROM in occupational therapy services within the field of mental health. In South Africa, there is a shift within the health sector. This is brought about by the plan to implement the National Health Insurance and with this comes the emphasis of accountability by professions to deliver good quality services (Gray & Vawda, 2016). Outcomes measurement has a major role to play in improving quality and efficiency of services (Bausewein, Daveson, Benalia, Simon & Higginson, 2011).

This study enabled the researcher to gain insight into MHCUs expected outcomes within the rural hospital and gain more understanding of how measuring outcomes can contribute towards improving the quality of services delivered to MHCUs. The measurement of activity participation within this study enabled a better understanding of the factors that influence change in activity participation, which helped in facilitating the improvement of occupational therapy services offered within the acute setting in the rural context, and the need to incorporate outcomes measurement as a routine task within these acute settings in SA.

1.8. Research site

The study took place in the acute mental health unit of Tintswalo Hospital situated in Mpumalanga Province in the Bushbuckridge area. Tintswalo Hospital is a district hospital with bed capacity of 450 and caters for 16 community clinics. The hospital has the largest mental health unit in the province, with a 54-bed capacity. The bed allocation is 34 male beds, 10 female beds and eight beds for forensic MHCUs. This unit caters for a variety of patients, ranging from acute to chronic and forensic cases. Due to limited mental health services in the province, the unit caters for a large catchment area, expanded by the introduction of forensic services since 2014. The areas catered for include the entire Ehlanzeni district, with a population of 1688615 (Statistics SA, 2012), and some parts of two other districts - Gert Sibande and

Nkanghala districts. The average number of inpatients catered for per month is 45, with admissions amongst males higher than females.

The multi-disciplinary team includes a part-time psychiatrist and general practitioner who work three days per week. Nursing staff consists of a psychiatrically trained matron in charge of the unit, a professional nurse, a staff nurse and an auxiliary nurse per shift. The nursing staff works a seven-day shift every two weeks. A social worker is responsible for placement of MHCUs in a long-term care facility. There is one clinical psychologist and two occupational therapists facilitating the occupational therapy programme. Twice a week the psychiatrist, general practitioner, nursing staff and occupational therapy staff members conduct multidisciplinary ward rounds; this is where each case is discussed and referrals are made to other MDT members.

For occupational therapy services, a blanket referral is used where each patient admitted to the unit is required to attend occupational therapy, however at times referrals are made during the ward rounds. Due to an increase in number of patients the length of stay varies according to the availability of beds and severity of conditions, this may be between one to three weeks for acute patients, three to 12 months for long-term and forensic patients. Once discharged into the community MHCUs follow up at the hospital or nearby clinic depending on the area in which they reside.

1.9. Organisation of the chapters

Chapter 1: Introduction: This chapter described the background of the study. The statement of the problem as well as justification for the study were presented, which included the proposed research question, aim and objectives of the study. To give insight to the context where the study took place, a detailed description of the research site was also included.

Chapter 2: Literature review: This entails information on the literature reviewed related to this study and includes recent literature available on ROM within the South African context and abroad. The literature was expanded to look at ROM within the acute mental health setting, occupational therapy and also barriers and facilitators of implementing ROM.

Chapter 3: Methodology: this chapter includes research methodology and research design applied. The population and sampling methods, measurement tools, research procedures, as well as a detailed outline of the data analysis process, are presented. The chapter ends with ethical considerations.

Chapter 4: Research results: This chapter includes results of the research divided in to demographics; effect sizes in terms of the change in activity participation looking at baseline, intermediate, discharge and follow up assessments.

Chapter 5: Discussion and conclusion: this chapter contains discussions of the study as a well as recommendations, limitations and evaluation of the research.

Chapter 2: Literature review

2.1. Introduction

Literature regarding activity participation and factors influencing ROM is presented in this chapter. The literature was reviewed by searching different sites such as Ebsco Host, which includes CINAHL plus, PubMed and Google scholar. Although the search concentrated on ROM across all healthcare professions, the focus was on activity participation in the occupational therapy profession. Search phrases used included “Outcome measurement in mental health”, “ROM in occupational therapy”, “ROM in occupational therapy mental health”, “factors influencing ROM”, “ outcome measures used in occupational therapy”, “Outcome measurement in SA”, “follow up in mental health”, “mental health services in SA”, “barriers and benefits of ROM” “activity participation in occupational therapy mental health”

2.2. Activity participation in occupational therapy

The overall purpose in occupational therapy is to address activity participation. “Activity participation is described as involvement in a life situation. This process occurs when clients are actively involved in carrying out daily activities they find purposeful and meaningful” (AOTA, 2014 p 629). WHO (2001) in their description of the International Classification of Functioning, Disability and Health (ICF) describes activity and participation as two distinct constucts (Marcel & Dijkers, 2010). Activity is viewed as the doing of a task or a specific action while participation is the involvement in life situations (Marcel & Dijkers, 2010). These two concepts are a vital part of human development and lived experience. When an individual experiences problems in these two constucts, it is referred to as activity limitation and participation restriction (Marcel & Dijkers, 2010).

Law (2002), similar to the AOTA (2014) combined these two constructs and explained that through the process of activity participation individuals acquire skills and competencies, connect with others and communities, and find purpose and meaning in life. When disability arises in terms of mental illness there is decrease in activity participation this therefore results in few social relationships which results in poor health and well-being (Law, 2002).

Occupational therapists aim to enhance activity participation through facilitating engagement in activities of daily living. When measuring outcomes related to activity participation it is important to understand the factors that influence the clients' participation in activities and the outcome of therapy thereof. According to Law (2002), sociocultural and environmental and personal factors influence the participation in activities of daily living.

2.2.1. Sociocultural and environmental factors.

According to Wilcock (1998) sociocultural factors play an important role in determining the occupational behaviour. Customs and expectations from culture influence what people learn and do every day. The environment provides physical, social, cultural, psychosocial and spiritual demands and resources which individuals use in order to perform their occupations (Rebeiro, 1998). The social environment particularly social attitudes and availability of support are important in facilitating activity participation (Law, 2002).

2.2.2. Personal factors.

Humans attach meaning to occupations in which they engage in, as a result personal factors such as person's motivation, preference for participation, sense of control and competence can significantly affect choice and actual participation in activities (Law, 2002). These are important factors to take in to consideration when offering occupational therapy intervention as they help guide the activity selection process that facilitate activity participation in therapy. Through ROM the OT is able to track the client's level of function and this helps them to select activities that provide clear challenge and also provide an opportunity for action that matches the level of person's skills (Chugg & Craik, 2002).

2.2.3. Measuring activity participation in occupational therapy

There is currently no literature to indicate measurement of activity participation in mental health. Law (2002), states that measuring participation in occupations has several dimensions which is inclusive of person, environment and occupation, the measurement of activity participation therefore occurs at the transaction between these domains.

2.3. Routine outcome measurement

2.3.1 The need for outcome measurement

The demand for ensuring maximum quality of care, combined with the need for discreet use of resources has placed pressure on healthcare professionals to ensure their clinical practice is based on sound evidence (Bennett & Bennett, 2000). With this comes the responsibility for clinicians to produce outcomes for the interventions they offer**.** Outcome is defined as "An agreed, clearly defined, expected or desired result of intervention" (Creek, 2003 p 56).In order to determine outcomes, clinicians need to employ outcome measurement, which is the process used to measure change as a result of intervention (Casteleijn & Graham, 2012) in to practice. ROM refers to regular measurements of clients' progress in clinical practice, aiming to evaluate and, if necessary, adapt treatment (Drake et al., 2001).

ROM has been strongly emphasised within allied professionals for the last 20 years (Duncan & Murray, 2012). All healthcare professionals are expected to demonstrate the effectiveness of the services they offer (Casteleijn, 2014). It is in fact an ethical responsibility of each profession to provide evidence of noticeable value and quality of service delivery (Colquhoun et al., 2010). "For a profession to earn the respect of the people it serves, it must offer a service of demonstrable value" (Baum & Christiansen, 2005, p 524). The emphasis therefore is on the occupational therapy profession to employ ROM in their daily practice in order to demonstrate the value of their profession. In developed countries, such as the UK, Canada, USA, Australia and New Zealand, there is evidence of the benefits of incorporating ROM into practice however there is not much evidence in terms of implementation of ROM in developing countries.

ROM helps to guide clinical decision-making , engage consumers in treatment, foster a collaborative approach to care planning and goal setting, review consumers ' progress with treatment, inform questions about consumers ' eligibility for given programs, assist with discharge planning, improve the evidence base on which services are founded, and evaluate particular models of service delivery (Coombs, Stapley &Pirkis, 2011).

Mental health policies in Australia and New Zealand have emphasised the relevance of monitoring quality and effectiveness of services, which has led to implementation

of ROM within the mental health systems (Coombs, Stapley & Pirkis, 2011). Australia has the most coherently developed approach to treatment-level routine outcome assessment; a systematic review of outcomes was undertaken as part of the national mental health strategy (Slade, 2002). In the USA, driven by cost-containment, the emphasis on ongoing measurement of outcomes in routine mental health services has begun to emerge (Slade, 2002). In the UK, the payment by results system, brought by the implementation of the National Health System (NHS) has pushed healthcare professionals into producing evidence for the impact of interventions and without this, professions are vulnerable to closure (Duncan & Murray, 2012).

Unlike the UK, the South African health system, although it encourages the incorporation of evidence- based practice currently there is no push for health care professionals to produce evidence for their interventions. There is ongoing plan to implement universal health coverage system in the form of the NHI in SA which emphasises the need for the effectiveness of services to ensure good quality services and achieve positive health outcomes (SA Department of Health, 2015). Effectiveness is one of the principles of the NHI which refers to the extent to which an intervention results in expected outcomes in every day settings (SA Department of Health, 2015). The implementation of the NHI will therefore demand more accountability by professionals to not only deliver good quality services but also to produce evidence for the interventions they offer.

In South Africa, according to the National Mental Health Policy Framework and Strategic Plan 2013-2020, there is a lack of routinely collected data regarding mental health service provision; this affects the ability to determine the efficiency and effectiveness of interventions offered (SA Department of Health, 2012). Occupational therapists within the mental health systems, within the country, have not yet adopted ROM into their practice (Casteleijn, 2014). There is a need for healthcare professionals in SA to incorporate ROM into their daily practice in order to demonstrate the effectiveness of services.

2.2.2. Benefits of routine outcome measurement

Various benefits of incorporating ROM into clinical practice have been outlined throughout the reviewed literature. The routine measurement of outcomes has a

major role to play in improving the quality, efficiency and availability of care (Bausewein, Daveson, Benalia, Simon & Higginson, 2010). Being able to measure change brought by the intervention received in patients' health overtime and identifying the reason for change helps the service providers focus on acquiring knowledge and skills necessary to improve the quality of services (Bausewein et al., 2010).

While the overarching rationale for using outcome measures is associated with documenting changes brought about by intervention, it is also believed that outcome measures have an effect on aspects of client care, such as facilitating goal setting and increasing the focus of therapy on the client (Colquhoun et al., 2010). As identified by literature, one compelling reason to incorporate the use of outcome measures routinely is the possibility that it improves initial and ongoing intervention planning, resulting in improved clinical decision-making (Colquhoun et al., 2010).

ROM enables tracking of patients' progress, which can sometimes appear intangible, to be effectively communicated thus promoting efficient treatment planning (Duncan & Murray, 2012). There are certain mental health conditions that usually present with poor prognosis, one of which is schizophrenia, the progress of which made through intervention may be slow and sometimes even not noticeable. If outcome measurement is routinely part of the clinical experience, trends may become evident (Casteleijn & Graham, 2012). As a result, occupational therapists are able to identify those MHCUs who are not making progress thereby adapting the intervention accordingly, or evaluate the appropriateness of the outcomes set for the particular MHCUs. For example for some MHCUs, it means intervention focuses more on maintaining the current level of activity participation rather than trying to improve it.

Measuring outcomes is meant to improve quality of care. It should affect aspects of client care such as goal setting and the matching of therapy outcomes with the needs of the client (Drake et al., 2001). Records of patient outcomes indicate progress or change, even if these changes appear to be intangible. It enables effective communication to clients, their caregivers and other health practitioners, which in turn promotes accountability for services (Colquhoun et al., 2010). It is important to note that while it is useful to monitor progress through measurement of

outcomes, simply having knowledge of client progress is of no benefit unless the information is used to improve the quality of services (Drake et al., 2001). Within the SA context, where there is limited knowledge and understanding of the occupational therapy profession, the documentation of the effectiveness of treatment offered, particularly in mental health, can be used to motivate for budget allocation for services (Casteleijn, 2010).

In order for the service to be rated effective, it must be able to produce positive outcomes and be of benefit to the people receiving the intervention. Incorporation of outcome measurement therefore enables the evaluation of the quality of services the clients' receive. Quality in mental health is described as a measure of whether the services increase the likelihood of the desired mental health outcomes and consistency within the current evidence-based practice (Funk, Drew, Epping- Jordan, Flisher, Goldman & Levav, 2003). The term quality services in this context refer to quality services in general. The factor driving quality service still needs to be investigated and are different for different situations. Clinicians must take personal responsibility to ensure they collect information to help them evaluate their patients' progress and effectiveness of their practice (Duncan & Murray, 2012).

2.3. Factors influencing implementation of routine outcome measurement

In spite of all the advantages that ROM has in terms of clinical practice, there are challenges influencing the implementation into practice, for example, reluctance to implement routine outcomes in to clinical practice including occupational therapy. This is justified by little practical evidence supporting the use of ROM to improve care, clinical decision making or with outcomes (Colquhoun et al., 2010).

The lack of context appropriate outcome measures, particularly within the field of mental health, is a major problem particularly in the SA context (Casteleijn, 2010). This is associated fact that the OT 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). As a result the process of developing outcome measures is time consuming and at the end there is no investigation of the psychometric properties of the tools

developed as a result no information on reliability and validity of the outcome measure. The cultural diversity in SA makes the process of developing outcome measures complex and time consuming, as the cultural context of the country must be taken in to consideration.

Clinicians lack knowledge in terms of reliability and validity of outcome measures, which makes it difficult to implement routine measurement of outcomes (Colquhoun et al., 2010). In a resource-constrained area like SA, the cost of outcome measures access to appropriate technology and ability to use it is of concern (Casteleijn & Graham, 2012). This is further complicated by time constraints brought about by the increasing number of patients seen by practitioners. Although the SA policies emphasise the need to implement evidence-based strategies into practice, there are no expectations to produce evidence for practice particularly in government settings. The gap that exists in terms of implementing ROM was established in searching for literature to support this study. Throughout the reviewed literature, no similar studies were conducted to evaluate the use of ROM to determine activity participation of clients within a rural context, in SA or other countries. Within the study, various themes were identified with regard to factors influencing ROM in a rural context. These themes included type of setting or context, length of stay, family support and response to medication and finally, outcome measures. This was outlined by reviewing available literature and the information derived from the study's data collection.

2.3.1. Type of setting or context

The occupational therapy practice is governed by various models that guide the practice; one of the prominent models of practice is the Model of Human Occupation by Kielhofner. This model emphasises the importance of environmental context in an individual's activity participation. It explains that the environment can demand and offer opportunities for occupational performance (Forsyth & Kielhofner, 2006). Occupational engagement occurs in the environmental context (Wagenfeld & Atchison, 2014), which emphasises the important role the environment plays in structuring occupations or behaviours. According to Kielhofner (2008), the environment is made up the physical, social, cultural, economic and political aspects that impact on how occupations are motivated, organised and performed. It provides the opportunities and resources for engagement and urges certain behaviour or

presents constraints to engagement (Forsyth & Kielhofner, 2006). The Model of Human Occupation Screening Tool (MOHOST) has been designed to determine the extent to which client factors and environmental factors facilitate or restrict an individual's participation in daily life (Forsyth & Kielhofner, 2006).

A model often used in the South African context is the VdTMoCA (Casteleijn, 2014). Fundamental assumptions of the model are that a person has the need to create something of the self into the activities he/she engage in on a regular basis. The motivation to engage is observed in actions and these actions govern the motivation (Du Toit, 1991). The engagement is arranged in levels of motivation and action and the higher the motivation, the higher the action. The levels are called the levels of creative ability (Du Toit, 1991). Although this model does not explicitly mention the environment as an important context to consider, it is assumed that a person engaged in occupations within his/her cultural background, physical and social environment and encounters situations within known contexts as well as unknown contexts. Usually a higher level of action is seen in known context as occupational behaviour might be more habituated (De Witt, 2014). Characteristics of each level are culture free as the descriptions are generic for example the person is aware of the norms for the situation (Du Toit, 1991). The occupational therapist must then have knowledge of the cultural norms for the specific person to decide whether the person is aware of the norms.

When measuring outcomes, it is important to consider the environmental factors that affect the outcomes. The influence of a person's environment on their occupational performance needs to be measured in order to facilitate participation (Casteleijn & Graham, 2012). For example, if a person has to return to work after discharge, a higher level of competence in occupational performance areas are expected compared to a person who is discharged into the care of another person.

The type of setting where occupational therapists work is also viewed as one of the contextual factors that influence ROM (Casteleijn, 2010). The setting for mental health services in SA government practice includes acute setting where patients are admitted from 2 to 3 weeks, subacute setting (3 weeks to 3 months) and long- term facilities (from 6 months and longer). There is a shortage of occupational therapists working in mental healthcare settings and as a result, clinicians have high patient

loads (Casteleijn, 2010).This has a significant influence on ROM, as clinicians have little time to administer regular assessment to track change during and after intervention.

An acute setting is also characterised by high turnover of clients with early discharge brought about by the pressure on shortage of beds. Due to this, patients are discharged as soon as they begin to participate fully in therapeutic activities; as a result, there is limited time to evaluate the effectiveness of the services offered (Simpson, Bowers, Alexander, Ridley & Warren, 2005). Another study conducted on the role of occupational therapy in acute settings indicated that the speed of discharge tends to exclude the information that can be obtained through continuing assessments and made available by occupational therapists (Simpson et al., 2005). The challenges associated with type of setting thus influence the implementation of ROM by occupational therapists.

Another factor to consider when measuring outcomes is the influence of cultural context on ROM, as relevant for this study. Occupational therapists have long acknowledged that culture is an important aspect of occupation, and of perceptions of health, disability and illness (Bonder, Martin & Miracle, 2004). The founders of the profession emphasised that interventions in occupational therapy should be prescribed based on the individual's personal and cultural values (Bonder et al., 2004), which in turn accented the importance of cultural competence amongst healthcare professionals (Campinha-Bacote, 2002). The concept of culture and influence on occupational performance is important to explore within this study since it took place in a rural context. Literature describes cultural context as encompassing the norms, values and behaviours' related to the community or society in which the occupational participation occurs (Radomski, 2008). In order to provide services that are fitting and well utilised by rural people requires an understanding of the inherent belief systems and culture within these communities (Collins, Winefield, Ward & Turnbull, 2009).

People worldwide have beliefs and behaviours related to health and illness and this is influenced by perceptions, individual experiences and cultural context (Hyder & Morrow, 2006). A strong relationship exists between culture and mental illness within the SA context. Culture influences occupation as well as perceptions of health,

illness and disability, which in turn influences the health-seeking behaviours (Wegner & Rhoda, 2015). In South Africa, traditional beliefs and practices regarding illness are still predominant, with the choice of treatment often being traditional and spiritual healing (Vaughn, Jacquez & Baker, 2009). The perception in South Africa is that mental illness is caused by ancestral spirits and witchcraft, which affects the type of services being sought for help and in turn, the health outcomes (Musoke, Boynton & Butler & Musoke, 2014). Although no information could be obtained from literature, relating to link between health-seeking behaviour to ROM, the data collection process of this study identified patients whose families took longer to seek medical help, took longer to stabilise, thus affecting outcomes in therapy. Families often sought either traditional or spiritual help prior to coming to hospital.

2.3.2. Length of stay

Within the last two decades of the 20th Century, there has been a significant change in terms of length of stay, from months to days for psychiatric patient care (Glick, Sharfstein & Schwartz, 2011). The international trends have seen a policy shift from chronic psychiatric institutions and long hospital admissions towards acute, short hospital stays and community- based care to facilitate community integration of mental healthcare users (Behr, Christie, Soderlund & Lee, 2002). Length of stay has significant influence on the occupational therapy interventions in mental health and the outcomes thereof. In order to implement effective occupational therapy interventions, the length of stay of patients in hospital is important. Literature indicates the timing of gathering information from a patient diagnosed with mental disorder is crucial (Casteleijn & Graham, 2012), as there are stages in the course of mental illness when the person will be unable to provide comprehensive and reality-based information (Casteleijn & Graham, 2012). Information from the client and the clinicians' experience is important in enabling sound clinical decision-making (Behr et al., 2002).

Literature indicated that short lengths of stay in hospital are associated with poor outcomes and diminish opportunities for sustained recovery (Addisu et al. 2015). With this, the sole focus of psychiatric inpatient treatment has shifted to safety and crisis stabilisation (Glick et al., 2011). Short lengths of stay limit the possibility of focusing on occupation-based problems (Lloyd & Williams, 2010). The short stays in

hospital influence the occupational therapists ability to plan and implement effective interventions due to limited contact with the patients, this therefore limits the time for clinicians to adopt ROM into practice. The short hospitalisations are indicated to have severely influenced the interpersonal connectedness of staff, patients and families. In occupational therapy, there is great emphasis on collaboration between client and therapist to ensure the intervention is client-centred and beneficial (Casteleijn & Graham, 2012). Without interpersonal connectedness, the occupational therapist is not able take the clients' needs into consideration and this can influence the outcome of therapy.

2.3.3. Family support

There is limited literature that indicates the impact of family members on ROM of activity participation in occupational therapy. There is however, enough evidence indicating that the involvement of family in occupational therapy treatment planning is associated with good outcomes in facilitating activity participation of patients, particularly those with severe mental illness such as schizophrenia. The evidence from literature suggests that families play an important role in the recovery of people with mental illness and their involvement in interventions is associated with good health outcomes (Lehman, Lieberman, Dixon, McGlashan, Miller, Perkins et al., 2004), because family members know the individuals better than anyone. The new research strategies on outcomes measurement emphasises need to explore family involvement in determining the effectiveness of interventions in the mental health system (Ferris, 2008). All the above-mentioned factors emphasise the need for occupational therapists to collaborate with families, as these factors were identified as barriers to ROM.

There is growing need to encourage patients and their families to take an active role in planning, delivery and evaluation of services they receive to facilitate recovery (Ferris, 2008). In the occupational therapy profession, there is a strong emphasis on therapists to ensure the interventions they offer are client-centred; this approach encourages the involvement of clients and families in planning, delivering and evaluation of the services (Townsend & Polatajko, 2007). The implications for the incorporation of a client-centred approach into practice is that both the client and

family should be able to identify their specific occupational performance needs which need to be the centre of attention in occupational therapy practice (Casteleijn & Graham, 2012).

Routine measurement of outcomes should reflect the individual nature of people participating in activities, with focus on subjective experience of the client (Casteleijn & Graham, 2012). Outcomes measurement in this regard is aimed at evaluating occupational performance through observation of patient's activity participation in different contexts. When measuring outcomes, the first implication is that occupational performance needs are identified in collaboration with the client and family, with the focus on evaluating the level of activity participation influencing clients' occupational performance. The first step of facilitating recovery is for the occupational therapist to realise that the process is individualised, hence the clients should have a say in the intervention they receive, which facilitates autonomy and can be associated with good outcomes. Hence, it is essential that occupational therapists enable clients to have a say in evaluating the outcomes of their intervention (Casteleijn & Graham, 2012).

The client-centred approach is important in the occupational therapy process and should be incorporated continuously. When measuring outcomes, occupational therapists need to have a reliable account of the history of the patients' premorbid level of function to determine an effective course of treatment. This is only possible through collaboration between the therapist and the family (Rexe, McGibbon Lammi & von Zweck, 2012). When measuring outcomes in occupational therapy, measurements are done against the baseline level of the client and can only be done with collateral from family. Interviews of family members may be conducted routinely (Donnelly, Scott, McGilloway, O'Neill, Williams & Slade, 2011). Engagement of the family is therefore recommended to strengthen the therapeutic effort (Donnelly et al., 2011).

The ultimate purpose of outcomes measurement is to enable therapists to develop services that will facilitate clients' occupational performance so they are able to integrate successfully within their families. According to literature, family is important in assisting the patients' transition from pre to postadmission stages, thus

measurement of outcomes should involve education of families about the clients illness, recognition and treatment (Glick et al., 2011). The occupational therapy interventions should focus on exploring and addressing personal meaning of mental illness for family members, the extent of the family's involvement in the daily life of the mentally ill client, understanding of causation models and expected outcomes of the family for the patient (Ferris, 2008). Family is said to influence the patient's psychological adjustment to illness, management of illness, adoption of behaviours that influence recovery, functioning and adherence to medication.

Most mentally ill clients are unable to function independently without their family members due to the severity of their conditions e.g. Schizophrenia (Saunders, 2003). For such patients social support from families is important to enable day-to-day functioning (Saunders, 2003). According to literature, these patients frequently live at home with family rather than in hospitals, therefore implying that the measurement of outcomes is dependent on the active involvement of the family. The occupational therapist may need to develop strategies that will enable families to structure the clients' activity participation. One such strategy is the development of home programmes that will structure and facilitate activities in which the client can participate.

2.3.4. Medication

After being diagnosed with mental illness, people need assistance to rebuild their lives and ideally, the treatment should include medical, psychological and social components (Sanchez-Sweatman, 1997). Optimal drug therapy remains the cornerstone of the clinical management of psychotic disorders, although this is insufficient to lead to full recovery (Falloon, 2003). Medications are used to alleviate the symptoms thus providing an opportunity for beginning the recovery process (Andrews & Jenkins, 1999). There are different psychotropic medications used to treat mental disorders, with each being prescribed according to a diagnosis. Types of medication for treatment of schizophrenia can be divided in to two, namely typical (Haloperidol) and atypical antipsychotics such as Clozapine (Lee & Parks, 2006). The same treatment can be used to treat mood disorder such as bipolar and depression (Andrews & Jenkins, 1999).

Medication works differently for different people, some people are likely to get side effects from medications while others do not (National Institute of Mental Health, 2008). The aim of the health care professionals is to assist the patients in finding medication that is tolerable and has the least number of side effects, while reducing symptoms effectively (Sanchez-Sweatman, 1997). Patients receiving high doses of treatment experience extrapyramidal side effects without a significant improvement in clinical response (Kapur, Zipursky, Jones, Remington & Houle, 2000). It is important that healthcare professionals managing a patient, including occupational therapists, work together to observe any signs of side effects so the correct dose can be administered.

The concept for the influence of psychotropic medication on ROM does not seem to have been explored within the occupational therapy practice, yet the occupational therapy process enables therapists evaluate factors that facilitate and hinder activity participation (AOTA, 2014). Clinical reasoning in occupational therapy enables therapists to view the patient holistically and identify factors influencing participation (AOTA, 2014). Scientific reasoning is one aspect of clinical reasoning that is associated with the therapist understanding the client's diagnosis and the influence it has on activity participation (Boyt Schell, 2003). With this, occupational therapists are also required to explore and understand the influence medication has on the activity participation of the clients and the outcomes thereof.

When incorporating ROM into practice, it is important that occupational therapists are familiar with the medication clients are receiving and their associated side effects. This is important as side effects can cause significant impairment on the patients' function, thus influencing the outcomes of therapy (Andrews & Jenkins, 1999). One of the common antipsychotics used in the government setting in South Africa is Haloperidol. Studies have shown more extrapyramidal side effects with Haloperidol than with atypical antipsychotics such Clozapine (Kapur et.al, 2000); common side effects seen in patients can manifest physically or cognitively.

The side effects with physical manifestation can be observed through motor restlessness, localised or generalised tremors, muscle stiffness or rigidity and muscle jerking and includes eye rolling (Sanchez-Sweatman, 1997). Long- term use of typical antipsychotics, such as Haloperidol, can lead to a condition known as

tardive dyskinesia, which causes involuntary muscle movements usually around the mouth, neck and trunk (National Institute of Health, 2008). Side effects with cognitive manifestation can be seen through drowsiness or decreased alertness, impaired concentration and memory (Sanchez-Sweatman, 1997). Side effects can be reversed by administering anticholinergic drugs, also known as antiparkinsonian medication, but this can only happen if reported early.

Occupational therapists evaluate a client's performance by engaging them in a variety of activities and observations in different environmental contexts (Kielhofner, 2008). It is through observations of clients' activity participation that side effects can be identified. Since side effects have an impact on the clients' physical and cognitive function, they have a significant influence on occupational therapy outcomes. During ROM, it is necessary for occupational therapists to indicate the influence of side effects on the clients' performance.

Unless the unpleasant effects of medications are addressed, it becomes difficult for clients to engage in activities and show improvement, consequently, occupational therapists in mental health find it difficult to establish the effectiveness of their interventions. For example, a client with cognitive side effects, such as impaired alertness, finds it difficult to focus on tasks and may present with poor motivation to participate, for a client such as this therapy will not be effective unless the underlying cause is addressed.

Through routine measurement of outcomes, occupational therapists are able to establish trends so in the case where a patient is not improving in therapy, it can be determined if side effects are playing a role (Casteleijn & Graham, 2012). Through documentation of these findings, occupational therapists are able to not only provide effectiveness of their treatment but also monitor clients response to medications administered. Once this information is identified, occupational therapists are able to communicate with the doctor or psychiatrist in order to explore alternative medication and make changes accordingly.

2.3.5. Outcome measures

"Professional credibility requires the demonstration of efficient and effective interventions, the ability to determine a patient's status through standardised

assessment is essential for effective treatment planning and outcome measurement" (Baum & Christiansen, 2005:p524). Outcome measurement involves the use of measures to establish a patient's baseline health status and then evaluating changes overtime against that baseline; outcome measures help to record these changes therefore measuring the structure, process and output of care (Bausewein et.al, 2010).The use of routine outcome measures within mental health services has become common practice internationally (Shinkfield & Ogloff, 2015). As broad measures of clinical function and mental health status, such tools offer means of systematically identifying and monitoring the needs of patients while providing a common platform for the development of effective treatments (Shinkfield & Ogloff, 2015).

Although there are benefits documented about the incorporation of outcome measures into clinical practice, the reluctance of clinicians to use these measures can be justified (Colquhoun et.al, 2010). Clinicians perceive outcome measures to lack value and practicality for clinical practice and capacity to reflect the unique nature of disability (Colquhoun et.al, 2010).Therefore, in order for an outcome measure tool to measure change it has to be standardised, developed through research and tested for reliability and validity (Welch & Forster, 2003).

Clinicians lack knowledge in terms of reliability and validity of outcome measures, which makes it difficult to implement routine measurement of outcomes (Colquhoun et.al, 2010). Caution is advised when selecting outcome measures as some of them may be inappropriate for the setting or population, validity and reliability might not have been tested, or it could be time consuming, limiting the therapeutic time given to clients' (Drake et al., 2001). Outcome measures should fit seamlessly with the theoretical model that is followed to provide intervention (Law, Baum & Dunn, 2001).

Various outcome measures have been developed for use within the field of occupational therapy. One of the reasons affecting the incorporation of ROM in mental health services in the South African context is associated with lack of context appropriate outcome measures (Casteleijn, 2010). As a result, when employing routine measurement of outcomes into practice it is important, when selecting, to apply clinical reasoning (Maleka, 2010).

In order to select outcome measures appropriate for their context, it is important occupational therapists are familiar with the different outcome measures developed for use in occupational therapy practice. Some of these measures have been reported in literature and are briefly described below; they include the Canadian Occupational Performance Measure (COPM), Model of Human Occupation Screening Tool (MOHOST), Australian Therapy Outcome Measure (AusTOMs), Assessment of Motor and Process Skills (AMPS) and Activity Participation Outcome Measure (APOM).

The Canadian Occupational Performance Measure (COPM) is an outcome measure that was developed in the early 1980's by the Canadian Occupational Therapists task force in consultation with the Canadian Department of Health (Law et.al, 2001). This measure was developed from the Canadian Model of Occupational Performance and framework of client-centred practice (Nieuwenhuizen et. al, 2014). The COPM was developed for use as an outcome measure to assist both the client and the therapist to identify problems in three areas of occupational performance, namely self-care, productivity and leisure (Nieuwenhuizen et.al, 2014). This outcome measure is described as a client-centred measure designed to detect change in a person's occupational performance, over time, from the clients' point of view (Townsend, Stanton, Law, Polatajko, Baptiste, Thompson-Franson et. al, 1997).

This instrument can be administered by engaging the client in a semi-structured interview where they are required to identify occupational performance problems and their individual goals for treatment; the interview looks at the three areas self- care, productivity and leisure (Law & Baum, 2001). When administering this tool the client is required to identify and prioritise problems in the three areas and then rate performance and satisfaction in the three areas on the scale, with scores ranging between 1(lowest score) to 10(highest score), then identifying up to five of these problem areas for goal setting (Nieuwenhuizen et.al, 2014). In order to administer the instrument, the occupational therapists are required to attend training to ensure the tool is administered effectively (Nieuwenhuizen et.al, 2014).

The COPM has been largely researched for use in different fields of occupational therapy i.e. in physical and mental health care setting. Based on the literature, the research's findings of the tool emphasise the unique nature it has in terms of

facilitating client-centred practice (Law et.al, 2005). For this reason, the tool is associated with positive outcomes as it encourages strong collaboration between the client and therapist. According to recovery model, collaboration between therapist and the client is important to facilitate the process of recovery (Donnelly et.al, 2003). Since recovery is viewed as a personal responsibility, the COPM helps facilitate the clients' autonomy, which can be associated with good therapeutic outcomes (Donnelly et. al, 2003).

Like other outcome measures, there are challenges associated with incorporation of COPM into routine clinical practice. It has been identified as being time consuming. No outcome measure is without limitations, so even with its positive effects the COPM may not be appropriate for patients who are low functioning and are unable to understand their psychosocial problems. This instrument has also been criticised for not being culturally sensitive due to its nature of enabling too much autonomy (Kirsh & Cockburn, 2009).

The Model of Human Occupation Screening Tool (MOHOST) is an outcomes measure tool, developed by occupational therapy practitioners based on the need for concise, comprehensive, goal directed screening and outcomes measure (Kielhofner, Fan, Morley, Garnham, Heasman, Forsyth et al., 2010). This instrument was developed from the widely used conceptual model of practice, the Model of Human Occupation (Kielhofner, 2008). This tool was originally designed for use in mental health settings. The MOHOST is an assessment tool, which gives a broad overview of personal and environmental factors that influence the clients' occupational participation (Parkinson, Forsyth & Kielhofner, 2006). MOHOST provides a framework for gaining an understanding of the reasons affecting engagement in self-care, productivity and leisure, thus driving clinical reasoning (Kielhofner, 2008). The unique value of this instrument lies in its ability to take account of the impact that volition, habituation and environment have on the activity participation of the client (Kielhofner, 2008).

The instrument consists of 24 items, with four for each of the following Volition (or motivation for occupation), Habituation (or pattern of occupation), Communication and Interaction skills, Process skills, Motor skills and Environment (Kielhofner, 2008). Each item is rated on a four-point scale according to the following acronym, FAIR

(F= facilitates occupational participation, A= allows occupational participation, I= inhibits occupational participation and R= restricts occupational participation) (Kielhofner, 2008). Through routine administration of this tool, the occupational therapist is able to validate the knowledge they collect about a person over time, through continuous documentation of observations regarding their engagement in occupation in therapeutic environment (Kielhofner, 2008). This therefore implies the clients need to have a regular and sufficient opportunity to engage in meaningful occupations in therapeutic sessions for an occupational therapist to draw conclusions on the level of performance when scoring.

The challenges associated with administration of the MOHOST were determined in the studies that took place in the UK and USA; these challenges are not different from those of other outcome measures, most therapists complained about the time consuming nature of the tool (Kirsh & Cockburn, 2009). While the model of human occupation is well-known and incorporated into practice within the SA context, there is no information regarding the incorporation of the MOHOST into clinical practice within the SA context.

Another instrument based on MOHO as the conceptual base, is the Assessment of Motor and Process Skills (AMPS). AMPS is an outcomes measure, initially developed in the 1980's. This was in response to the increasing demand for occupational therapists to acquire profession specific assessments and outcomes measures (Fisher & Jones, 2009). AMPS is described as an innovative observational evaluation tool, used by occupational therapists, to evaluate the quality of a person's performance of activities of daily living within the natural and task-relevant environments (Fisher & Jones, 2009).

It was developed based on three concepts, firstly on the concept that occupational therapy is a client-centred profession, hence measurements of ADLs need to demonstrate unique nature of clients performance; secondly, the occupational therapy practice is occupation-based and occupation-focused therefore implying that measurement needs to focus on observations made during engagement in occupations; lastly the occupational therapy process is most effective when followed in an organised manner, i.e. from top to bottom manner, where clients problems are

established, goals are planned and finally treatment and evaluation take place (Fisher & Jones, 2009).

When evaluating a person using the AMPS, the occupational therapist needs to observe the person performing at least two relevant and chosen ADL tasks. “Scoring the AMPS is criterion-referenced, based on how much clumsiness or physical effort, time and space inefficiency, safety risk, and/or need for assistance the person demonstrated when performing ADL tasks” (Fisher & Jones, 2009). To determine the final score, the time between the two activities is recorded. The AMPS consists of 16 motor ADL items and 20 ADL process performance skills items, which the occupational therapist scores during administration. Occupational therapists are required to use a 4-point scale in order to score each ADL skill item (Fisher & Jones, 2009).

While components of the AMPS are made of beliefs and central tenants of the occupational therapy profession, literature indicates these components can be difficult to incorporate into occupational therapy practice. Amongst the challenges expressed with this tool, is the time consuming nature of the instrument and the troubles regarding starting to use it (Casteleijn, 2012). Some of the problems with this tool are that occupational therapists are unable to administer it, as clients are unable to perform any of the ADL’s as standardised on the AMPS. Just like AusTOMs, it is criticised for not including critical performance components for mental illness and the occupational performance areas are limited (Casteleijn, 2012).

The Australian Therapy Outcome Measure (AusTOMs) is an outcome measure developed by Australian therapists following the push to produce outcomes for intervention (Abu-Awad, Unsworth, Coulson & Sarigiannis, 2014). The AusTOMs was developed from the Therapy Outcome Measure used in the UK (Perry, Morris, Unsworth, Duckett, Skeat, Dodd et al., 2004). This outcomes measure was developed for use amongst a multidisciplinary team, which includes three allied professions, namely speech pathology, physiotherapy and occupational therapy (Perry et al., 2004). Literature indicates that although this outcome measure was developed in Australia it can be used internationally (Chen & Eng, 2015). AusTOMs, which is not context specific, enables the measurement of the difference in client profiles and patterns of services provision from different health settings (Perry et al.,

2004). Measurements in the AusTOMs include measurement of impairments, effects of therapy on activity limitations and the restrictions to social roles caused by disability (Perry et al., 2004).

For the purpose of this study, only the occupational therapy section of the outcomes measure was reviewed. The AusTOMs consist of 12 for occupational therapy scales, including Learning and applying knowledge; Functional walking and mobility; Upper limb use; Carrying out daily life tasks and routines; Transfers; Using transport; Self-care; Domestic life-home; Domestic life managing resources; Interpersonal interactions and relationships; Work, employment and education; Community life, recreation, leisure and play (Chen & Eng, 2015). Scoring of items on AusTOMs is based on the four domains of impairment: activity limitation, participation restriction and distress/wellbeing. Each of these four ratings, per scale, is scored from 0 (most severe) to 5 (least severe), and half points may be awarded creating an 11-point ordinal scale (Unsworth et al., 2004).

Perry et al. (2004) pointed out challenges that come with AusTOMs; the outcome measure is contextualised for allied professional in Australia, which excludes the use of the tool in other countries as factors may differ in different contexts. The instrument is also criticised for having limited critical performance components for mental illness and the occupational performance areas, which therefore eliminates the use in mental health (Casteleijn, 2012).

The Activity Participation Outcome Measure (APOM) is a measure developed and implemented for South African mental healthcare settings (Casteleijn, 2012). Its reliability and validity were established on South African populations (Casteleijn, 2012). Unlike other reviewed outcome measures, the responsiveness of the APOM also indicated it was suitable for use in South Africa. Another aspect that enhances its appropriateness is that the description of domains and items, as well as the rating scale, are aligned with the Vona du Toit Model of Creative Ability (VdTMoCA), a popular model used by many occupational therapists in South Africa (Casteleijn,2012).

Several theoretical assumptions underpin the model. Du Toit postulated two main components of the model namely motivation and action. Humans have motives and

goals that are driven by an inner force to answer to life's demands. This motivation is observable in participation in everyday life and du Toit called this the action component of the model. (Du toit 1980; van der reyden 1989). Motivation thus governs action and action is the manifestation of the motivation. The action leads to the production of a tangible (preparing a meal) or intangible (developing interpersonal relationships) end product. The quality of the end product depicts the level of motivation and action of a person. The engagement in tasks and activities enables a person to develop skills and behaviours necessary to cope with the demands of life. A person's ability to master skills and tasks of everyday life are influenced by a number of factors including cognitive ability, learned skills, life experiences as well as the availability of resources (de Witt 1997). The model thus takes into account the context of a person.

Du Toit never used the term occupational performance, probably because the use of this term became popular after her era but it could be viewed synonymously with activity participation in the VdTMoCA. Activity participation or occupational performance develops in an orderly fashion throughout life (de Witt 1997). This developmental nature of activity participation was translated into several levels of motivation and action by du Toit and her colleagues in the 1960s and 1970s. The table below presents the level of motivation with the corresponding action (observable behaviour for the motivation).

Table 2.1 Levels of motivation and action according to the Vona du Toit Model of Creative Ability

Motivation	Action
1. Tone	1. Purposeless, unplanned action
2. Self-differentiation	2. Incidentally constructive or unconstructive action
3. Self-presentation	3. Constructive, explorative action
4. Passive participation	4. Norm awareness, experimental action
5. Imitative participation	5. Norm compliant action
6. Active participation	6. Transcend norms, individualistic and inventive action
7. Competitive participation	7. Competitive centered action
8. Contribution	8. Situation centered action
9. Competitive contribution	9. Society centered action

The first five levels are mostly observed in persons with psychopathology, developmental or physical challenges. Persons with higher levels of motivation and action usually have the necessary skills and behaviour to overcome challenges of daily life. They have successful participation in all occupational performance areas and the higher the level, the more observable their influence on communities and societies are. Not all people will reach the higher levels of motivation and action (Casteleijn 2012).

Each level of motivation and action is further divided into three phases. The phases indicate that a person progresses gradually through a level. The first phase is the therapist-directed phase. This phase is observed when a person is showing the characteristics of a level with support from the therapist. It is usually when the person has just entered the level (for example when progressed from the self-presentation level of passive participation). The next phase is the patient-directed phase and this is when the person is in the middle of the level and needs less support or facilitation to participate. The final phase is the transitional phase and happens when the person is moving on towards the next level but not yet has all the characteristics of the that level. The phases within each level are ideal to see minor changes or progression in a person's activity participation. Casteleijn (2010) viewed this property of the levels of motivation and action as ideal for an outcome measure to track change. She consequently then develop the APOM as part of a PhD study.

The study was done in three phases; Phase 1 comprised the identification of items for the outcome measure, Phase 2 was the development of the format and descriptors for the items and Phase 3 consisted of the investigation into psychometric properties of the APOM. The APOM consist of 53 items which are organised in 8 domains. The names of the domains are Process skills, Communication and Interaction skills, Lifeskills, Role performance, balanced life style, Motivation, Self-esteem and Affect (Casteleijn 2010). Appendix A presents the domains with the items and their descriptors according to the first 6 levels of Creative Ability.

Phase 3 of the study revealed preliminary psychometric properties of the APOM. Content validity was established by a panel of six experts. They found the item

descriptors as appropriate for the levels of creative ability as well as relevant to the eight domains. A high scale-level content validity of 0.93 was reported. Construct validity was done on a small data set of 41 patients and an exploratory factor analysis showed that a five factor model could have explained the variance. The factor analysis results were deemed insufficient and another factor analysis was done some years later on a bigger sample of 376 patients. This factor analysis supported an eight factor model (Casteleijn & Hill 2016). Sensitivity of the APOM was demonstrated on a sample of 31 patients, showing that the APOM is able to pick up changes after intervention (Casteleijn 2010). Sensitivity was further confirmed in a study with a forensic population (n=62)(Brooke 2015) and a brain injury population (n=24) (Camp 2015).

Comparing the APOM to other outcome measures, it has the most items namely 53. This can be seen as too long as measuring change should be a quick and simple task to do on a regular basis. The APOM is based on a theoretical model that is not well published and difficult to learn through self-study. The APOM can thus only be administrated by occupational therapists trained in the VdTMoCA. The APOM also requires additional training and accreditation by means of a one-day training workshop. These workshops are only presented on demand and thus not easily accessible.

Terminology in the VdTMoCA has often been viewed as difficult to understand for example the names of the levels of motivation and action. The names only make sense for those trained in the model.

Notwithstanding some of the drawbacks of the APOM, it is a popular outcome measure that are used in many settings in South Africa as well as in the UK (Casteleijn 2012). Research to establish more psychometric properties like responsiveness and item functioning is continuing.

Four of the five outcome measures described above are linked to a specific theoretical model. Only the AMPS does not have a unique theoretical model, but the two main constructs of motor and process skills are well defined. The COPM, AMPS and APOM need specific training and certification, while MOHOST and AusTOMs

are self-explanatory. When additional training and certification are needed, it makes the outcome measure less accessible. All the outcome measures have been investigated for psychometric properties, but the APOM has not been as well reported as the others. This research will contribute to evidence of the use of the APOM in different settings in South Africa.

2.3.6. Out-patient follow-ups

Vogel and Paul (2000, p 62) describe follow-up as means ‘‘to strengthen the effect of some prior action by further action; serving to test or reinforce the effectiveness of previous action; or to maintain constant or intermittent contact with after diagnosis or therapy.’’ These authors also view follow-up as means to help lighten problems with activities of daily living (ADL) skills, adaptive equipment, adjustment to a new living situation, delivery of the discharge plan and factors contributing to re-admission in patients with physical limitations (Vogel & Paul, 2000). Rehabilitating clients to attain optimal functional performance within their natural environment is the main goal of each occupational therapist. Occupational therapists play a very important role in terms of helping clients transition from the hospital context to the home environment following discharge. For this reason, follow-up is seen as a critical final step to client care and this is valued by occupational therapists across different practices (Vogel & Paul, 2000).

There is limited evidence in literature that explores the issue of outpatients’ follow-up in occupational therapy practice. One non-occupational therapy study in the United States of America, highlighted several issues that could be transferred to occupational therapy in mental healthcare. El-Mallakh, James, Khan, Katz, McGovern, Nair et al., (2004) found that re-hospitalisation, or re-admissions to psychiatric hospitals, has a direct link to missing follow-up appointments. This group of researcher’s monitored adherence to follow-up appointments and in their sample of 81, 33% missed their first follow-up appointments. Patients with a substance-related syndrome were most likely to miss appointments. The study further revealed that 48% of patients without medical insurance did not comply with after-care appointments. Interestingly, homelessness, gender and involuntary hospitalisations were not associated with non-compliance to after care.

Vogel and Paul (2000) describe benefits associated with outpatient follow-up in ROM. These benefits include offering support to the client, checking on the appropriateness of discharge plans and receiving feedback on treatment efficacy, which was all indicative of a profession that values the client's independence and the quality and appropriateness of its treatment methods. In order to facilitate outpatient follow-up in occupational therapy, collaboration with family is required (Rexe et al., 2012). This is a benefit to occupational therapists as contact with family strengthens the support for the client to comply with home programmes and follow-up appointments.

Although there are benefits associated with outpatient follow-up in occupational therapy, there are challenges too. In this study, challenges in the field of mental health will be discussed as identified. Within the field of mental health in South Africa, there is emphasis on decentralising integrated primary healthcare services, which includes community-based care and primary health clinics (SA Department of Health, 2012). This therefore implies that once patients are stabilised in hospital they are discharged to the community and referred to clinics for further management (Lund et al., 2012). Although these strategies are focused on integrating patients into community services and alleviating burden for hospitals, this has had a significant influence on the follow-up of patients in occupational therapy. With these strategies, occupational therapists tend to lose contact with their clients as they are discharged directly to the clinics once stabilised. This is further complicated by the limit of community-based rehabilitation in mental health (Lund et al., 2012).

There is limited information regarding the incorporation of ROM into mental health practice in South Africa and because of this, occupational therapists have found it difficult to demonstrate the effects of intervention, which affects the value of the profession (Casteleijn, 2012). The lack of recognition of the value of occupational therapy in mental health by other professions and patients themselves may affect outpatient follow–up, as they are unable to see the value of coming back to see occupational therapists after discharge (Rebeiro & Polgar, 1999).

2.4. Conclusion

The literature reviewed indicates the importance of incorporating ROM into daily clinical practice. The relevance of ROM in occupational therapy, within the field of mental illness, was discussed alongside the factors that influence implementation into practice. Various outcome measures in the field of mental health and their appropriateness for the South African context were explored. There is limited information regarding the incorporation of ROM in occupational therapy mental health services within South Africa, to date no studies have been done to explore this in the rural context. This therefore emphasises the need for studies to demonstrate the effectiveness of occupational therapy services in rural areas where people have little knowledge about the profession and its value.

Chapter 3: Research Methodology

3.1. Introduction

The research methodology used in the study is described in this chapter. The discussion includes study design, sampling, measurement tool used to collect data and the process of data analysis used to address the research question. Below is the figure demonstrating the research question, aim and objectives of the study.

Table 3.1 Objectives of the study with corresponding unit of analysis

Objective	Unit of analysis
1. To describe the level of activity participation of MHCUs at Tintswalo Hospital before and after occupational therapy intervention	APOM scores of the MHCUs at 5 time points: • Admission • 2-3 weeks after admission • Discharge • 1 month post discharge • 3 months post discharge
2. To determine the change in activity participation	The difference in APOM scores between the time points
3. To explore the relationship between independent variables namely age, gender, adherence to medication, participation in occupational therapy programme and the dependent variable, activity participation.	Independent variables: • Age • Gender • Adherence to medication • Participation in OT Dependent variable: • APOM score

3.2. Research Design

This study is a descriptive, longitudinal research with quantitative, quasi-experimental features (De Vos, Strydom, Fouche & Delport, 2007). The study design included features of ROM as the data collection focused on one group, pre/post-test design (Tomlin & Borgetto, 2011). Descriptive research is described as a type of research that involves gathering of data that describes a set of events and then

organises, tabulates, depicts and describes data collection (Knupfer & McLellan, 1996). Longitudinal research refers to an investigation where participants' outcomes and possible treatments are collected at multiple follow-up times (De Vos et al., 2007). Longitudinal research design was used in order to investigate the effect of independent variables, such as age, on the dependent variables, such as activity participation, and the correlation between these variables

Quantitative research ascribes figures to a project and looks for a cause and effect relationship (Creswell, Klassen, Plano Clark & Clegg Smith, 2011). Within this study, the quantitative elements of the research were investigated through the measurement of the activity participation of the mental healthcare users using an Activity Participation Outcome Measure. Quasi-experimental design refers to a structured research that is experiment-like but does not involve its full characteristics, such as a control group and random assignments of subjects to treatment groups (Creswell et al., 2011). In a pre-test/post-test design, measurements of outcomes are taken both before and after intervention, which allows the measurements of actual changes for individual cases (Creswell et al., 2011). Measurements of the outcomes were taken before and after the occupational therapy intervention to validate the effect of the intervention on the participants' activity participation.

3.3. Population studied

This study involved the mental healthcare users admitted in the Tintswalo mental health unit. A selection criterion, elaborated on within the sampling of the study, was used to guide the selection of the participants for this study.

3.4. Sampling method

Non-probabilistic sampling was used for the purpose of this study. This type of sampling is described as a technique where samples are selected based on accessibility to the researcher and the relevance of specific population to be studied (Kumar, 2011).

A principle of ROM is to measure the total population. The sampling method in ROM is thus strictly speaking all-inclusive sampling. In this study, informed consent

influenced the sampling method and those who did not consent were not included. All-inclusive sampling could thus not be used.

For the inclusion criteria for this study, 64 mental healthcare users' admitted in the Tintswalo mental health unit were evaluated. Real-life information was gathered, no variables were manipulated and as a result, other criteria were adjusted based on the context. Due to the decrease in length of stay in the unit, as necessary for the context, research included patients who stayed for less than the three weeks that was initially indicated. With the appointment of the psychiatrist in the mental health unit, the data gathered was based on the specific diagnosis of the clients, which included Schizophrenia, Substance Use disorders and Mood disorders, as these are common at Tintswalo Hospital. Although these diagnoses are common no exclusions were made for clients presenting with other forms of diagnoses. Mental healthcare users excluded from this study were the forensic MHCUs.

3.5. Sample size calculation

In order to calculate the sample size, the Raosoft sample size calculator was used. The population for Tintswalo Hospital is on average 45 MHCUs per month. The margin of error is usually set at 5%, lower margin errors are usually set for larger groups (Raosoft, 2009). For this study, the margin of error was set at 5%. The confidence level was set at 95% and standard deviation and mean effect difference at three. A minimum sample of 16 was suggested to ensure true results that can be generalised to the population om MHCUs at Tintswalo Hospital.

In this study the sample size when implementing ROM also needed to be considered. As discussed above, ROM requires the total population of persons receiving the service. When the total population needs to be included, other factors come into play for example availability of staff to assess all MHCUs, method of assessment and whether the ROM is done as a research project. In the latter case, informed consent is needed which may influence the total population size. Since thee average of MHCUs at Tintwalo hospital was 45 per month, the sample size was estimated on 45.

I third factor had to be considered and that was the longiditudinal nature of ROM. In longitudinal studies, loss to follow-up is expected and a sample of 65 was aimed for.

The researcher's experience of the low number of patients who adhere to follow-up appointments at Tinswalo Hospital also influlenced the decision to aim for a much larger sample size than 45 patients.

In this study the decision for the sample size was thus made against the Raosoft sample size calculator to determine the ideal sample size for true results that can be generalised, requirements for ROM as well as the longiditunal nature of the study.

3.6. Measurement tool

For this study, the Activity Participation Outcome Measure (APOM) was used. This tool was selected for this study as it is context appropriate. It is the first tool developed for outcomes measurement in mental health setting within the SA context. The APOM is based on the VdTMoCA, which is the model of practice used to guide the occupational therapy programme in the mental health unit at Tintswalo Hospital. Of all the outcome measures available, the APOM was the most suitable for the setting. The VdTMoCA is not context specific model, this model consist of levels that are determined by an individual's level of motivation and action rather than the context they are in. This therefore makes APOM a suitable tool to use with mental health care users in any context including the SA rural population.

In order to administer the APOM the researcher attended a one-day training course in 2014. There are eight domains and 53 items to be scored in the APOM (See Appendix A). Each item is described in the levels of creative ability. A therapist will decide which description fits her patient the best and that will determine the level. Table 3.2 is an example of the descriptions, this example presents the item Pace.

Table 3.2 An example of the item *Pace* with its descriptors on the six levels of activity participation.

Level 1 – Tone	Level 2 – Self-differentiation	Level 3 – Self-presentation	Level 4 – Passive participation	Level 5 – Imitative participation	Level 6 – Active participation
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	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.

			poor.		

Once the level is determined, a clinical reasoning process follows where the therapist need to make a decision about the phase within the level, that is therapist-directed, patient-directed or transitional phase.

Table 3.3 illustrates the scale representing the scores used to capture the level as well as the phase of activity participation. Scores range from 1 to 18, 1 being the lowest activity participation and 18 the highest. Each score on the scale represents a specific level as well as the specific phase within the level for example the score of 1 to 3 represents the level of Tone while 1 represents the therapist-directed phase, 2 the patient-directed phase and 3 the transitional phase.

Table 3.3 The scale of the APOM

Level 1 – Tone			Level 2 - Self-differentiation			Level 3 - Self-presentation		
Therapist-directed	Patient-directed	Transitional	Therapist-directed	Patient-directed	Transitional	Therapist-directed	Patient-directed	Transitional
1	2	3	4	5	6	7	8	9
Level 4 - Passive participation			**Level 5 - Imitative participation**			**Level 6 - Active participation**		
Therapist-directed	Patient-directed	Transitional	Therapist-directed	Patient-directed	Transitional	Therapist-directed	Patient-directed	Transitional
10	11	12	13	14	15	16	17	18

The APOM allows for flexibility, meaning the therapist can select domains to measure based on the type of programmes they are facilitating. In this study, all eight domains were measured as they were all addressed in the occupational therapy programme. The APOM was used to capture five sets of data of the MHCUs gathered through intermittent assessments. Details of the assessment process are presented in the data collection process and will be outlined in the research procedure.

3.7. Data collection procedures and data quality control

3.7.1. Overview of data collection

The data collection process occurred over six (6) months, in the form of intermittent assessment of mental healthcare users and recording the findings on the APOM. Intervention followed through facilitating activity participation in the occupational therapy programme. The study was based on the real life situation at Tintswalo Hospital hence all the assessments were part of the everyday occupational therapy practice. Below is the process detailing how the process took place.

3.7.2. Assessment and intervention procedures

In order to carry out the assessment process the MHCUs were involved in the occupational therapy programme as per routine. Assessments were conducted by the researcher along with two other occupational therapists who worked in the mental health unit. Table 3.4 is the summary of activities used for the assessment of clients throughout the data collection. The researcher was the only person responsible for the scoring of the APOM items for the individual mental healthcare users. The two therapists then assessed and provided interventions as expected in the usual work. Following each intervention progress, forms were completed as expected in everyday occupational therapy practice. The researcher then had regular feedback sessions with the occupational therapists to communicate their observations of the activity participation of the MHCUs.

Feedback sessions transpired daily following a group session. For patients in the ward assessments took place in the group context and for outpatient follow-ups, assessments were done individually. In order to capture the data, two data capturing sheets were used, one each for the demographic data (see Appendix B) and the raw APOM scores, for each MHCU on all the evaluation points (pre, interim and post-test) (Appendix C). When capturing data on the hard copy, each client's file number was used as a research ID instead of the clients name to ensure confidentiality.

Table 3.4: Assessment methods used for data collection

Baseline assessment (Assessment 1)	Intermediate and discharge Assessment (Assessment 2 and 3)	Follow-up and Final Assessment (Assessment 4 and 5)
Interview(questioning), observations and collateral information		
Activities used		
Soccer Duster hockey Card making Insight games Board games (morabaraba, drought)	Gardening Baking Card making Insight games Puzzles Lego Home maintenance tasks (e.g. cleaning)	Key ring Envelope making Word search Maze Puzzles Beading (bracelets and necklaces) Home programmes (cleaning, cooking gardening,)

3.7.2.1 Initial assessment

The baseline or first assessment was performed within the first week of participation in the occupational therapy programme. The assessment of each participant was carried out by establishing the occupational profile of the MHCUs. The demographic information was collected during the multidisciplinary ward rounds where each MHCU's details are discussed. This was an ideal situation for the researcher and the other occupational therapists, as during the process the families were available to provide collateral information such as the medical history and expected tasks at home through which goals of therapy could be established. In case of participants

who had no family present during ward rounds, the hospital files were used to gather collateral information and details of the family.

Information gathered from the hospital files included the date of admission, file number, details of admissions and any previous history, as well as family relations. Once this information was gathered, the demographic sheet (Appendix B) was completed. This information was then used to establish the type of questions to be used during the interview process with the participants. For some of the participants in the study, the information in the file helped to clarify the reliability of information provided by them.

The baseline assessment entailed engaging the participants in four group sessions. The four sessions included participation in social skills, work, insight and recreational groups, which enabled the researcher to observe participants in different contexts, and establish a baseline level of activity participation. After observing the participants in groups, the occupational therapy progress form for each MHCU was completed by the researcher and two occupational therapists. Following this process, the researcher then compiled all the information observed in groups to score each participant's participation on the hard copy APOM score sheet (Appendix C). Once this was done, the researcher then captured the information from the demographic and APOM score sheets onto the electronic (Excel) version of the APOM to establish the baseline level of activity participation.

3.7.2.2 The intervention programme

Following the baseline assessment routine, occupational therapy intervention proceeded as usual. The occupational therapy programme (Appendix D) at Tintswalo aims to address factors influencing activity participation and specifically the domains of the APOM. Aims of treatment were prioritised based on where the MHCU will be discharged to and the support they have within their environment to function as independently as possible. Intervention is done in groups and is structured to cater for MHCUs at different levels of creative ability. The therapeutic groups include social/recreational, lifeskills, work, insight and exercise groups, with three projects running, namely gardening, tuck shop and car washing.

Intervention starts at low levels of creative ability, such as incidental level, with MHCUs seen in the active psychotic phase. MHCUs on low levels are engaged in

basic socials skills groups, i.e. recreational groups, exercise groups and basic gardening activities, such as watering and clearing weeds. These tasks allow for orientation to reality and exploration of skills. MHCUs at pre-discharge levels are involved in life skills and projects as mentioned above.

The programme runs daily during the week starting from Tuesday to Friday. Four hours per day are scheduled for occupational therapy intervention.

The occupational therapists at Tintswalo work collaboratively with other MDT members. The psychologists are responsible for facilitating substance abuse groups as part of improving insight of the patients, the social workers are responsible for resolving social conflicts between family and patients and nurses address the insight of the MHCUs daily through psychoeducation. This therefore indicates that other factors addressed in an occupational therapy programme are addressed by other members of the team. Therefore, the changes claimed are not solely accredited to OTs as other's input is acknowledged. Conversely, certain aspects that were measured, e.g. Role performance and Lifeskills, were only addressed by the OTs.

3.7.2.3 Interim assessment

In order to measure the participants' level of participation and track their progress, the following observations were made in the therapeutic groups: handling of tools, materials and situations, behaviour and interaction with others, amount of assistance needed and nature of engagement in all activities.

The interim assessment was carried out based on the length of stay of each participant; no set time was used in between the baseline and interim assessment. The re-evaluation of the activity participation varied for each participant, for some it was done after two weeks, while for others after three weeks. Those who stayed longer than three weeks were re-evaluated every three weeks. The researcher selected the interim assessment of these participants' that was the middle one between baseline and discharge. Data was captured first on the hard copy then on the electronic APOM to determine change in the activity participation.

3.7.2.4 Discharge assessment

Once participants were discharged from the hospital, the discharge assessment was done. For some, this assessment took place a few days after the interim assessment was done, while for others it occurred weeks after the interim assessment depending

on the length of stay in the hospital. This assessment was conducted to determine the level of change in activity participation from baseline, also areas in which participants still experienced dysfunction, in order to guide the family in structuring activities to facilitate activity participation in the home context. The level established during this phase marked as point of reference for the researcher to evaluate activity participation within the participant's home context. This was established when the participants came for their follow-ups.

3.7.2.5 Follow-up and Final assessment

One month after discharge, MHCUs were required to attend an outpatient clinic at the hospital before being discharged to a community clinic. This is the set time for follow-up for most mental healthcare users, however, this varied for each MHCU as some were scheduled to come after two weeks, while others after one-month post discharge. During the process of discharge, participants were given follow-up dates that corresponded to the doctor's appointment. Two follow-up sessions were scheduled for this study. In the first follow-up, participants were involved in a 45-minute individual session and collateral information was obtained from the family to complete the APOM. The level of activity participation established informed the researcher as to whether or not the participants were still on the same level as discharge, had improved or regressed.

Based on this, home programmes were developed for participants to address areas they were struggling with in terms of activity participation. The final assessment date was given to the participants corresponding to doctor's follow-up dates. The final assessment is the fifth assessment in the study. Following this the final APOM evaluation was done.

3.7.3 Data management

After loading the scores onto a hard copy, data was entered into the APOM Excel version. A report with a spider graph of the progress of the mental healthcare user was generated by the system. These reports were presented at ward rounds and multidisciplinary discussions (Appendix E). In order to organise all the information and keep track of the participants a combined demographic sheet was developed by the researcher to summarise the demographic information (Appendix F).

A tracking form was developed to keep track of all the outpatients coming for follow-ups (Appendix G). To assist in capturing information during the outpatient follow-ups, an assessment form was developed by the researcher (Appendix H). A minimum and maximum of three and five assessments, respectively, were captured per participant; this included the initial, intermediate, discharge, follow-up and final assessment. The first three assessments were done between admission and discharge in the hospital, the last two completed when participants came in as outpatients.

3.8. Control for Bias

In order to ensure the validity of the results, different types of biases needed to be addressed in this study. Selection bias may occur during the identification of the study population; in outcomes measurement studies this may occur when a researcher selects participants based on better prognosis or level of function to manipulate the results (Pannucci & Wilkins, 2010). Randomisation of clients may help to eliminate selection bias but this was not done in the study, as the population of 45 per month is too small. Instead, the researcher used the selection criteria, as outlined for the study, to select appropriate participants. Detection bias is defined as "systematic differences in outcomes assessment among groups being compared" (Viswanathan, Ansari, Berkman, Chang, Hartling, McPheeters et al., 2011, p6) and was avoided by ensuring that the scores were administered on separate hardcopy APOM for each participant. While scoring, the researcher had to make sure the previous score sheets were filed away, this way the researcher was blind and scoring was not influenced by previous scores.

3.9. Data analysis

Quantitative review of data calls for the condensation of results from several data sheets into a single data sheet. Statistical analyses will then be applied to this data. In this study, descriptive statistics were used for the description of demographic data. Pooled effect sizes, which a name is given to a family of indices that measure the magnitude of a treatment effect (Becker, 2000), were used to describe trends in changes in activity participation. Internal responsiveness of the study was

established through calculation of the effect size of the participants' activity participation.

There are various formulas used to measure the effect size (Becker, 2000). Cohen's *d* and Cohen's *r* effect size statistics were used to determine standardised differences between assessments in this study. Cohen's *d* was done by calculating the difference between the mean baseline scores and follow-up scores, which was then divided by the standard deviation of baseline scores (Husted, Cook, Farewell & Gladman, 2000). This formula was used to calculate the difference for each domain for five sets of collected data and included the difference between baseline and interim scores, interim and discharge scores, then discharge and follow-up scores, followed by follow-up and final assessment scores. In order to interpret the results using the Cohen's *d* the suggested d values were used as guidelines whereby value of 0.20 is considered small, 0.5 medium and 0.80 large effect sizes.

Cohen's *r* was determined from a table by converting the *d* value to a correlation (Fritz, Morris & Richler, 2012). When Cohen's d are converted to a correlation it is possible to compare different studies on an equal level. For Cohen's *r* the suggested values include 0.10 considered small, 0.24 medium and 0.37 large effect sizes

The paired t-test was used to determine the statistical significance of the calculated effect sizes, the significance level, also known as p-value, was set at the moderate level of 0.05 for this study. To determine correlations between dependent and independent variables, Spearman's Rank Order statistics were calculated. The significance of the correlations was determined by a p value of less than 0.05 while the strength of the correlations were interpreted as follow:

- 0 - 0.20 = negligible correlation
- 0.20 - 0.40 = low correlation
- 0.40 – 0.60 = moderate correlation
- 0.60 – 0.80 = high correlation
- 0.80 – 1.00 = very high correlation

3.10. Ethical considerations

In order to commence the data collection process for this study, ethical clearance was required and granted by the Human Ethics Research Committee (Ethical clearance number: M140977) at the University of the Witwatersrand (Appendix I) and by the Mpumalanga Provincial Ethical Committee. Furthermore, the hospital Chief Executive Officer (CEO) and the Allied Services Manager granted permission for this study (Appendix J).

The medical officer in the mental health unit was consulted to give an opinion on the capacity of the selected MHCUs to give consent to participate in the study. For those identified to be able to give consent met with the researcher and was invited to participate in the study. They were given an information sheet (Appendix K) which the researcher went through with them to ensure they understood and for them to clarify their understanding of expectations. Once they agreed to be part of the study the MHCUs were then requested to sign an informed consent (Appendix L). The MHCUs who did not agree to be part of the study were excluded but remained part of the occupational programme.

For the MHCUs that were identified to be functioning at low level to give consent family or care giver was requested to sign informed consent on behalf of the MHCU (Appendix L). In a case where the family was not available the medical officer was approached and requested to sign the informed consent form on behalf of the MHCU (Appendix L). Both the care giver and medical officer were given the same information sheet (Appendix K) first for them to read and clarify understanding of the study, after which they were given the informed consent to sign. The informed consent (Appendix L) was divided in to three sections where the participant, care giver and medical officer could sign. The participants were informed of their rights to withdraw from the study at any stage they wished to.

To maintain confidentiality coding of names of the MHCUs was done. The information was gathered and stored in a password protected computer used by the researcher only. The file with names and details of the participants was kept in a secure location by the researcher. The participants were informed about their right to access their results on request to the researcher.

In conclusion, this chapter covered the details at which the data collection process took place and set out to identify the process of data analysis, which will be discussed in detail in Chapter 4.

Chapter 4: Results

4.1. Introduction

This chapter presents the results of the analysis conducted on the quantitative data collected over a period of six months, with an overall number of 64 participants evaluated on the APOM. The results in this chapter are outlined per objective and this is inclusive of the demographic information presented through descriptive statistics. Effect sizes describe the average change across the domains between baseline, interim, discharge, follow up and final assessment and are presented in bar graphs. Correlations between independent variables and the dependent variable are presented in a table.

4.2. Demographics of the sample

The demographics for the MHCUs are presented in the table below, followed by the description of these factors.

Table 4.1: Demographic variables for MHCUs (n= 64)

Age in Years	Category	Male	%	Female	%

		(n=48)		(n=16)	
<20	1	2	3.13	1	1.56
20-29	2	27	42.19	7	10.94
30-39	3	12	18.75	5	7.81
40-49	4	6	9.38	2	3.13
50-59	5	1	1.56	1	1.56
Diagnoses					
Schizophrenia	1	19	29.69	4	6.25
Bipolar Mood Disorder	2	6	9.38	7	10.94
Substance Induced Psychosis	3	20	31.25	0	0
Other (epilepsy, acute psychosis)	4	3	4.69	5	7.81

Table 4.2: Additional independent variables of the sample (n= 64)

Variables	Category	Male (n=48)	%	Female (n=16)	%
Adherence to Medication					
Never	1	23	35.94	5	7.81
< 50% of time	2	19	26.69	5	7.81
>50% of time	3	5	7.81	6	9.38
All the time	4	1	1.56	0	0.00
Attendance to OT programme					
Never	1	0	0.00	0	0.00
< 50% of time	2	4	6.25	0	0.00
>50% of time	3	26	40.63	10	15.63
All the time	4	18	28.12	6	9.38
Level of education					
None	1	4	6.25	1	0.00
Grade 1-7	2	7	10.94	13	1.56
Grade 8-12	3	34	53.13	2	20.31
Tertiary level	4	3	4.69	3	3.13
Length of stay in weeks					
< 3 weeks	1	6	9.38	3	4.49
4-7 weeks	2	23	35.94	6	9.38

8-11 weeks	3	11	17.19	5	7.81
12-15 weeks	4	8	12.50	2	3.13

The data collection process took place as part of the usual routine at Tintswalo Hospital, the process continued until a sample of 64 participants was reached. The sample comprised 48 males, making 75% of the population studied and 16 females, making 25% of the population studied. It is evident from the information recorded in the table above that the number of male participants far exceeded that of females. This is reflective of the population at Tintswalo Hospital, where male admissions routinely exceed those of females. However, in this study no differences were noted in terms of changes in activity participation between these two groups.

Looking at the demographics in terms of the age groups of the participants, it is evident the majority were in the Category two age range, which is classified as the age group between 20 and 29 years; of these, 42.19% (27) were males and 10.94% (7) females. The second age band 30 to 39 made up 26.56 % of the sample, with 18.75% being males and 7.81% females. Participants in age band 40 to 49 age range made up 12.51%, with males being 9.38 and females 3.13 % of the sample. The two extremes were those below age 20 which made up 4.69% of the sample, and those between age bands 59 – 59 who made up 3.13% of the sample.

The demographic information in terms of diagnoses indicates that majority of the participants were those diagnosed with schizophrenia with an overall percentage of 35.94 %. Of this sample diagnosed with schizophrenia 29.69% were males and 6.25% were females. 31.25% of the sample was those diagnosed with substance induced psychosis which was only males. Those diagnosed with bipolar mood disorder made up an overall percentage of 20.32%, of which 9.38% were males and 10.94% were females. Those with other diagnoses including acute psychosis and epilepsy made up 12.5% of the sample of which males were 4.69% and females 7.81%.

The demographic data in terms of adherence to medication indicated a high rate of non-adherence amongst the MHCUs at Tintswalo. This information was established through collateral information from the family, and through review of previous medical history. Additional information was obtained as participants returned for

follow ups. Based on the data obtained males have a higher rate of non-adherence to medication than females. The data demonstrated 35.94% males and 7.81% females never adhered to medication. Limited adherence (< 50%) among males were 26.69% males and 7.81% for females. Those who were likely to adhere more than 50% of the time were 7.81% males and 9.38% females. Only one male participant adhered to medication all the time. An alarming total of 78,25% of non-adherence in category 1 (never) and category 2 (< 50%) was found in this study.

The attendance to OT programme, only the participants that were part of the OT programme were included in the sample, hence the number for those who never attended was 0% for both males and females. The overall attendance to OT programme was good, with majority of the participants attending more than 50% of the time during their admission, 40.63% of males and 15.63% females had good attendance. Those who attended all the time include 28.12% males and 9.38% females. Only 6.25% of males had poor attendance of less than 50%.

In terms of length of hospitalisation, the data collected indicated the majority of participants were hospitalised for four to seven weeks; of the sample hospitalised in this period, males were 35.94% and females 9.38%. From the sample size selected, nine participants were below three weeks of hospitalisation, of which two were below two weeks of hospitalisation. The participants with the longest length of stay were hospitalised for a period of 12 to 15 weeks; of this sample, males made up 12.50% and females 3.13%.

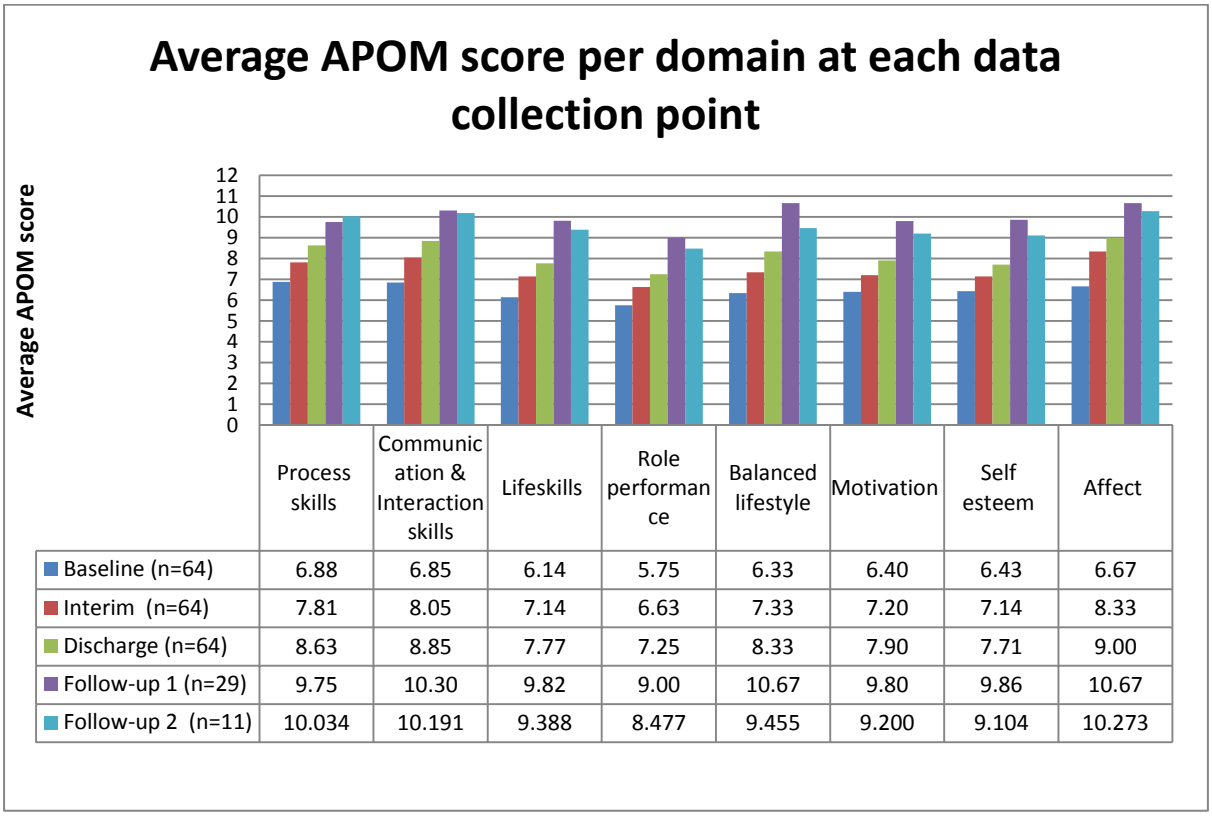
The Level of education of the participants indicated the majority were those with secondary level education, which includes grades eight to 12. As indicated in the table above, the percentage of males at this level of education was 53.13% and that of females 20.31%. The results indicate that 6.25% (4) of the male sample were illiterate. Of the sample of 64 MHCUs, 12.5% (8) had a primary school education, 73.44 % (47) had some form of secondary school education while 7.82% (5) had some tertiary education. This is reflective of the type of setting where this study took place.

4.3. Results per objective

4.3.1. Objective one

Objective one was to describe the level of activity participation of MHCUs before and after occupational therapy intervention. Descriptive analysis was done by calculating the mean APOM score of the total samples for each domain at baseline, interim, discharge, follow-up and final assessments.

Figure 4.1 indicates improvement in levels of creative ability in all domains, from baseline to discharge. It is important to note the sample size was the same for the hospitalisation period (baseline, interim and discharge), but loss to follow-up from discharge to the first follow-up was 54,68% (35) MHCUs. Loss to follow-up between the two follow-up points was 62% (18).



	Process skills	Communication & Interaction skills	Lifeskills	Role performance	Balanced lifestyle	Motivation	Self esteem	Affect
Baseline (n=64)	6.88	6.85	6.14	5.75	6.33	6.40	6.43	6.67
Interim (n=64)	7.81	8.05	7.14	6.63	7.33	7.20	7.14	8.33
Discharge (n=64)	8.63	8.85	7.77	7.25	8.33	7.90	7.71	9.00
Follow-up 1 (n=29)	9.75	10.30	9.82	9.00	10.67	9.80	9.86	10.67
Follow-up 2 (n=11)	10.034	10.191	9.388	8.477	9.455	9.200	9.104	10.273

Figure 4.1: Average APOM score per domain at each data collection point

The pattern of change indicated similarities in the improvement of level of creative ability across all domains. At baseline level, all domains had low APOM scores of between 5 and 6. According to the VdTMoCA, this represents the level of self-differentiation with incidental action. The maximum levels of creative ability at final assessment (follow-up) shows more variation than the baseline where Process skills,

Communication/Interaction skills, Balanced lifestyle and Affect domains were that of patient-directed phase of passive participation with experimental action. Lifeskills, Motivation and Self-esteem reached the therapist-directed phase of experimental level of creative ability. It is interesting to note, the Role performance domain was the lowest at baseline and although it improved, it remained the lowest at the final assessment.

Table 4.3 shows the change in APOM scores between the 5 assessments:

Time point A: Change between admission and second or interim assessment

Time point B: Change between interim and discharge assessment

Time point C: Change between discharge and first follow-up

Time point D: Change between first and second follow-up

It was also interesting to note the changes for the hospitalisation period (admission to discharge), admission to first follow-up (one month after discharge) as well as between admission and the second follow-up (three months after discharge). These are indicated as Time points E, F and G respectively in Table 4.3 below.

Table 4.3 Changes in APOM scores between the assessment points

	Time point A	Time point B	Time point C	Time point D	Time point E	Time point F	Time point G
Process skills	0,94	0,81	1,13	0,28	1,75	2,88	3,16
Communication & Interact skills	1,20	0,80	1,45	-0,11	2,00	3,45	3,34
Lifeskills	1,00	0,64	2,05	-0,43	1,64	3,68	3,25
Role performance	0,88	0,63	1,75	-0,52	1,50	3,25	2,73
Balanced lifestyle	1,00	1,00	2,33	-1,21	2,00	4,33	3,12
Motivation	0,80	0,70	1,90	-0,60	1,50	3,40	2,80
Self esteem	0,71	0,57	2,14	-0,75	1,29	3,43	2,68
Affect	1,67	0,67	1,67	-0,39	2,33	4,00	3,61

A steady improvement was seen between admission and discharge scores (column A to B), thus the hospitalisation phase. The first follow-up continued to show progress (column C) but only the Process skills domains showed improvement in the second and final assessment (column D). Column E showed that APOM scores increased between one and two point on the scale for the hospitalisation phase. It was good to note that the improvement was retained until the first follow-up (column F). The change between admission and the final follow-up assessment in Column G was lower than the first follow-up but the change was still positive. Interpretations of the results of the two follow-up assessments should be interpreted with caution as the sample size was much lower that the hospitalisation phase. However, according to the sample size calculator for power results, a minimum sample of 16 was required. The first follow-up had a sample of 29 but the final follow-up only had 11 participants.

4.3.2 Objective two

Objective two was to determine the change in activity participation after an average of three weeks in hospital of participating in the occupational therapy programme and again after three months when participants were coming for follow-up.

Effect sizes were calculated using Cohen's *d* and Cohen's *r*. Cohen's *r* was included to show the change as expressed in a correlation (0 to 1). Cohen's *r* has a maximum of 1 and a minimum of 0. This correlation coefficient is often more useful when the effect size of this sample needs to be compared to other samples. Cohen's *d* does not have a maximum of minimum value which makes comparison's difficult to interpret. Figure 4.2. below represents the results. The results demonstrate positive values indicating positive change across all domains from baseline to final assessment (follow-up 2). The results for the Cohen's *d* statistics indicate a value above 0.80, while that of Cohen's *r* statistics indicated a value above 0.5; both values are considered large (Fritz et al., 2012).

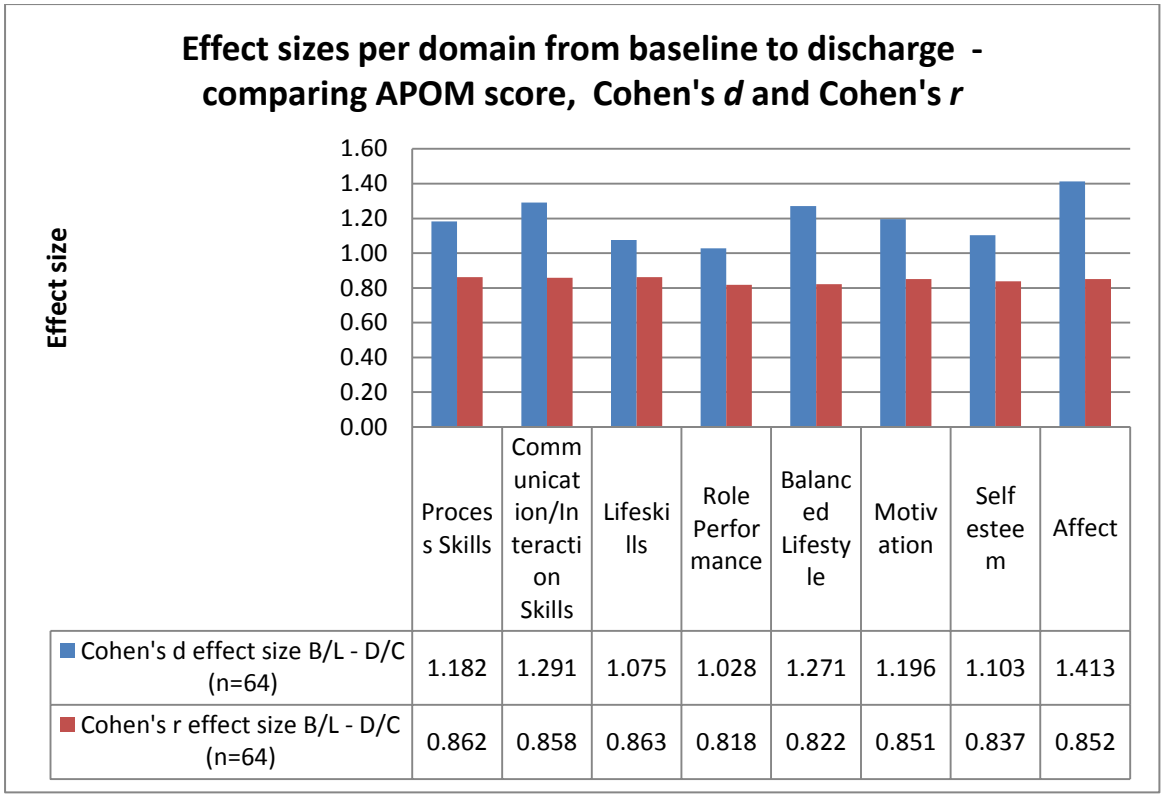


Figure 4.2: Cohen's *d* and Cohen's *r* effect sizes between baseline and discharge assessment periods.

The statistical significance, p-value is set at threshold 0.05. The results in Table 4.4 illustrated highly significant changes (p = 0.00) in activity participation from baseline to discharge, as revealed by Wilcoxon Matched Pairs Test.

Table 4.4: Statistical significance of changes during hospitalisation phase

Pair of Variables	Wilcoxon Matched Pairs Test (7 July 2016) Marked tests are significant at p <.05000 n=64	
	Z	p-value
Process Skills 1 & 3	6.894027	0.000000
Comm/Int 1 & 3	6.863219	0.000000
Lifeskills 1 & 3	6.900873	0.000000
Role performance 1 & 3	6.546155	0.000000
Balanced lifestyle1 & 3	6.573253	0.000000
Motivation 1 & 3	6.807752	0.000000
Self-esteem 1 & 3	6.699059	0.000000

Pair of Variables	Wilcoxon Matched Pairs Test (7 July 2016) Marked tests are significant at p <.05000 n=64	
	Z	p-value
Affect 1 & 3	6.758992	0.000000

The results for Cohen's *d* and Cohen's *r* statistics in Figure 4.3 demonstrated small to insignificant effect sizes for the discharge to follow-up 2 assessment intervals. The results for Cohen's *d* statistics showed small effect sizes in Process skills, Communication/Interaction skills, Lifeskills, Balanced lifestyle and Affect, with values between 0.20 and 0.47; no significant change occurred in Role performance, Motivation and Self- esteem. The Cohen's *r* statistics showed small effect sizes in Process skills, Communication/Interaction skills, Lifeskills, Role performance, Balanced lifestyle, Self- esteem and Affect, with values between 0.1 and 0.5, with no significant change in Motivation. These results demonstrated that no significant change in activity participation could be noted at this assessment stage.

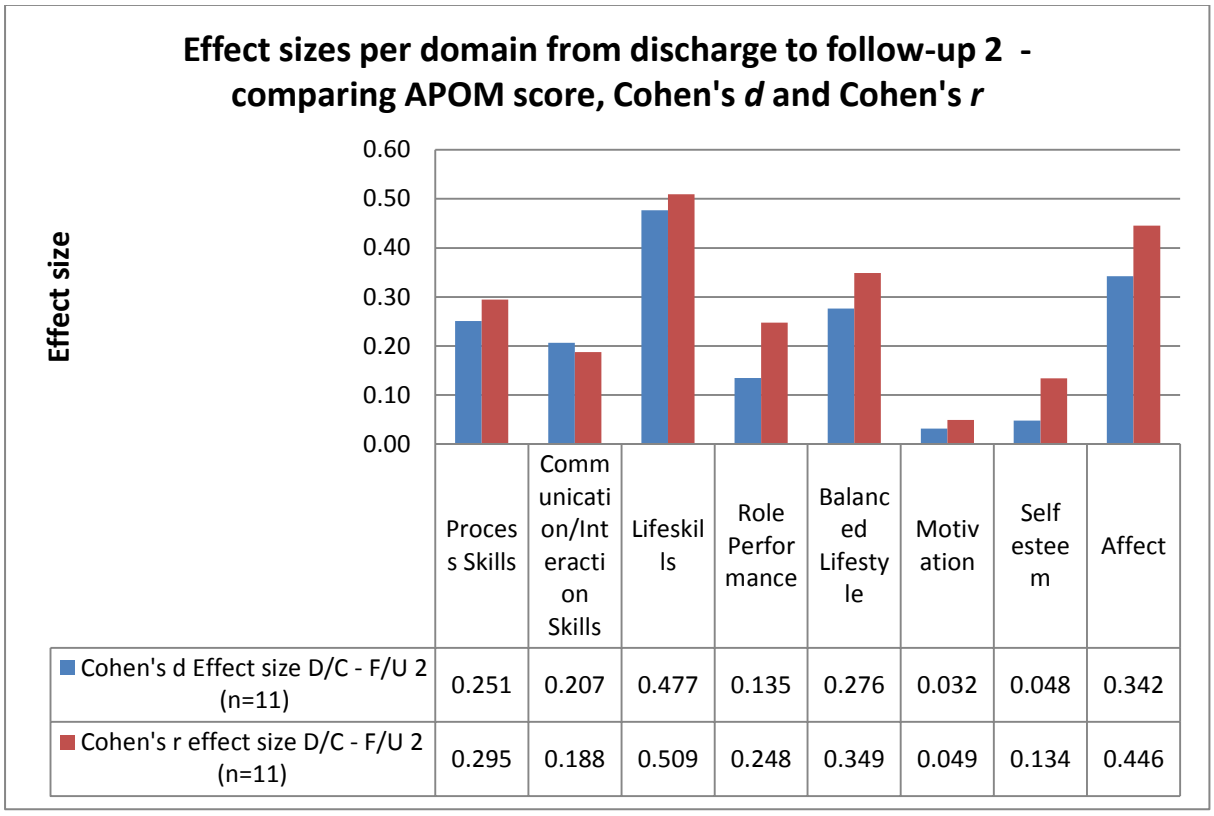


Figure 4.3: Cohen's *d* and Cohen's *r* effect sizes between discharge and follow-up 2 assessment periods.

Table 4.5 illustrates that the change in levels of creative ability from discharge to the final follow-up assessment was not statistically significant, as revealed by Wilcoxon Matched Pairs Test. All values in all domains are higher than p value 0.05.

Table 4.5: Statistical significance of changes for discharge to follow-up 2

Pair of Variables	Wilcoxon Matched Pairs Test (Copy of data for Statistica 7 July 2016) n= 11 Marked tests are significant at p <.05000	
	Z	p-value
Process Skills 3 & 5	0.978019	0.328066
Comm/Int 3 & 5	0.622376	0.533695
Lifeskills 3 & 5	1.689306	0.091162
Role performance 3 & 5	0.700140	0.483840
Balanced lifestyle 3 & 5	1.155841	0.247747
Motivation 3 & 5	0.152894	0.878482
Self-esteem 3 & 5	0.444554	0.656642
Affect 3 & Affect 5	1.260252	0.207579

4.3.3. Objective three

Objective three, was to explore the impact of independent variables such as age, gender, adherence to medication and participation in occupational therapy programme on the dependent variable, namely activity participation. The results in Table 4.5 indicated correlations between variables as identified by Spearman Rank Order Correlations. The correlations were done on the Cohen's *d* effect sizes from baseline to discharge, thus the hospitalisation period. The significance as well as the strengths of the correlations were analysed. Table 4.6 shows the significant correlations in red. Interpretations of the strength of the correlations were done according to the guidelines as set out in the methodology chapter 3.9.

Table 4.6: Correlations between the dependent variable (APOM domains) and independent variables (demographics) n=64

Variable	Spearman Rank Order Correlations (Copy of Correlations for Statistica) MD pairwise deleted Marked correlations are significant at p <.05000

	Age group	Gender	Diagnosis	LOE	LOS in days	Adhere meds	Attending OT
Process	-0.053	0.048	0.190	0.223	0.271	-0.066	0.162
Comm/Int skills	-0.057	0.101	0.140	0.266	0.268	0.023	0.201
Lifeskills	0.058	0.072	0.2180	0.276	0.249	-0.071	0.120
Role performance	0.021	0.157	0.168	0.212	0.219	-0.010	0.066
Balanced Lifestyle	-0.007	0.063	0.163	0.267	0.326	-0.088	0.090
Motivation	0.038	-0.039	0.197	0.198	0.248	-0.081	0.041
Self-esteem	0.077	0.089	0.249	0.295	0.177	0.055	0.048
Affect	-0.170	0.048	0.160	0.134	0.389	-0.033	0.255
APOM Average	-0.026	0.064	0.212	0.243	0.282	-0.037	0.153

First the correlations for APOM average were calculated, followed by calculations per domain. Correlations with p values above 0.05 were ignored (correlations in black) as these results could have happened by chance. The results for the APOM average demonstrated a weak correlation of 0.282 with length of stay. In the view of these results, it can be concluded that length of stay has a small effect on changes in activity participation overall and all other independent variables were insignificant. However, a few specific domains of the APOM revealed significant correlations with diagnosis, level of education and attending the Occupational Therapy programme but the strength of the correlations were all in the category of low correlations. The highest correlation was 0.326 between the domain of balanced life style and length of stay but the strength was still low.

4.4. Conclusion

The results in this chapter revealed that a high percentage of 78.25 did not adhere to medication before admission. The trends in recovery after implementation of ROM in the occupational therapy department at Tintswalo Hospital showed a steady increase. The only significant change in activity participation, as measured by the eight domains of the APOM, was the effect size between admission and discharge, thus the hospitalisation period. Progress was maintained until one month after discharge but a slight decline was measured after three months of discharge. The loss to follow-up should be taken into account when interpreting the retaining of progress. Many correlations between dependent and independent variables were

insignificant and those who were significant showed low strength in the correlations. Further discussion of these results will be done in the next chapter.

Chapter 5: Discussion

5.1 Introduction

The aim of this study was to implement ROM in the occupational therapy department in order to describe and document changes in activity participation in MHCUs at Tintswalo Hospital. This chapter presents a discussion of the results with specific reference made to the proposal of the study. This is inclusive of the three objectives the study was set out to investigate in order to establish the change in activity participation of the MHCUs following occupational therapy intervention. The outline of the discussion entails demographics of the sample, followed by discussion of the results as per objective, research limitations and recommendations for future research and finally, the conclusion of the study findings.

5.2. Demographics

The demographics of the study reflected that one third of the sample was females and two thirds males. The number of male participants were higher than females in all variables. This is related to the fact that in SA there is high rate of substance abuse which leads to increase in substance related disorders which are common amongst men of all ages below age of 65 years (Gray & Vawda, 2016). Substance use disorders constitute 5.8% of the mental illness diagnoses (SA Department of Health, 2012). In view of this study majority of the participants were males diagnosed with substance use disorders that made up 31.25% of the sample.

This data is reflective of the population at Tintswalo Hospital (mental health unit) and emphasises the need for Tintswalo Hospital to have a higher bed allocation for males rather than females, as elaborated in the description of the research setting. This may however vary across different acute settings. Based on this information, it is likely that the intervention will be male orientated, as literature encourages gender sensitive services tailored to meet the needs of specific population (WHO, 2001). The occupational therapy practice, being client-centred in nature (Duncan, 2006), should avoid gender-disparities. In this study, no differences were noted in terms of changes in activity participation between males and females.

The demographics in terms of age indicated most of the participants were within the 20 to 29 age group, followed by 30 to 39, then 40 to 49 age range. The two extremes were below 20 and the 50 to 59 age range. The fact that the majority of the participants were between 20 and 29 age groups raises a serious concern in terms of the occupational development amongst the population at Tintswalo. This stage of development is marked as entry point into worker roles with the requirement of forming and maintaining a productive and self-satisfying career (James, 2007). Like other demographics, it is important to ensure occupational therapy intervention is appropriate for the age group and address vocational or employment issues.

The results on length of stay in the hospital indicated the majority of participants were admitted for four to seven weeks, followed by eight to 11 weeks, then those who stayed 12 to 15 weeks in the hospital. At the extreme were those admitted for less than three weeks, with two participants in this range only admitted for a period just below two weeks. Other studies were conducted which yielded similar results in terms of the average length of stay. A study conducted on length of stay and related factors at a specialised hospital, The Tara H Moross Centre in Gauteng, revealed average length of stay of 49 days (seven weeks) and ranging between 29 and 78 days (Otieno, 2011). Another study conducted on analysis of ROM data in occupational therapy within two acute in-patient facilities in the UK yielded average length of stay of between 58.12 days (eight weeks) and 77.7 days (11 weeks)(Carter, 2013).

Although the mental health care unit at Tintswalo Hospital caters for a variety of MHCUs ranging from acute to long-term and forensic patients, there is a similarity in terms of the average length of stay with other settings. As noted in the results of this study, it can be concluded that length of stay has significant impact on activity participation and in order to yield positive outcomes, it is realistic that MHCUs be admitted for an average period of four to 11 weeks. Occupational therapy programmes should therefore be designed for delivery within this time-period. It also has implications for the time it takes for baseline and final assessments to track change during and after intervention. Although admission periods of four to 11 weeks give enough time to conduct ROM, other factors, such as number of MHCUs per staff and overall programme in the unit (e.g. how often MHCUs can attend the occupational therapy programme), need to be considered.

The demographics results indicated that 6.25% (4) of the male sample were illiterate. Of the sample of 64 MHCUs, 12.5% (8) had a primary school education, 73.44 % (47) had some form of secondary school education while 7.82% (5) had some tertiary education. The results are reflective of the population catered for at Tintswalo Hospital and the setting. Significant correlations have been found between the level of education and APOM domains, which includes Communication/Interaction skills, Lifeskills, Balanced Lifestyle and Self-esteem. This therefore emphasises the relevance of considering this factor when providing occupational therapy interventions to facilitate improvement in activity participation. Since occupational therapy makes use of activities such as crafts, games, cooking and baking, instructions are often given in written formats. This is but one of the considerations that should be carefully considered to accommodate the level of education.

5.3. Description of change in levels of activity participation

The results outlined in Fig.4.2 indicated this objective was achieved. The APOM mean scores indicated significant improvement across all domains from baseline to discharge. In contrast to this, the mean scores from discharge to final follow-up assessment demonstrated an insignificant change. The mean scores of the APOM is equivalent to the level of creative ability. The APOM mean scores ranged from patient-directed incidental (self-differentiation) level of creative ability at baseline (5.75) to transitional explorative (self- presentation) level of creative ability at discharge phase (9.00). The scores for Role performance were the lowest and for Affect, the highest. These are positive results and represent significant change during the hospitalisation phase.

The established incidental (self-differentiation) level of creative ability at baseline represents the level patients regress to during their acute stage of illness amongst the population at Tinstwalo. No literature could be obtained related to changes in activity participation of MHCUs in a rural acute mental health unit, however a similar study was conducted by Carter (2013) where change in activity participation was investigated in acute in-patient setting in the UK. The study indicated baseline APOM scores with overall level of explorative action (self- presentation). Similar findings were also established in a study conducted at Sterkfontein Hospital with a forensic population in SA, where APOM scores demonstrated overall level of

explorative (self-presentation) at baseline assessments. From these findings, it is evident the baseline APOM scores at Tintswalo are slightly lower than other settings.

According to De Witt (2014), incidental level of creative ability is characterised by disorganised thinking, language impairment, aggressive and bizarre or uncontrollable behaviour. The patients in this level are likely to be seen in chronic institutions where rehabilitation programmes are provided. Tintswalo Hospital, as an acute unit, varies from other settings, catering for a variety of patients of whom majority are chronic and often take longer to recover, therefore it is not surprising that this level was established at baseline. Due to slow progress in recovery in the hospital context, occupational therapists are required to offer interventions while patients still present with positive symptoms of psychosis.

Although the results form baseline to discharge indicates significant improvement by an average of two levels in creative ability, the discharge of patients at explorative level still raises concerns in terms of functional capacity amongst the population at Tintswalo Hospital. It is only once patients have reached experimental (passive participation) level of creative ability that the skills for independent living can be achieved (De Witt, 2014). This indicates that even with effective occupational programmes facilitated in the hospital, it is unlikely patients will be able to integrate successfully following discharge.

5.3.1. APOM mean scores from baseline to discharge assessments

A statistically significant difference was noted in the mean scores across domains from baseline to discharge assessments. The mean scores for Process skills, Communication/Interaction skills, Balance lifestyle and Motivation from baseline to discharge assessments indicated improvement from transitional incidental level to patient-directed explorative level of creative ability (two points on the APOM scale). Lifeskills and Self-esteem domains indicated slight improvement from transitional incidental to therapist-directed phase of explorative creative ability level (two points on the APOM scale). At extremes were the mean scores for Role performance and Affect domains. Role performance showed slight improvement with the means scores showing slight improvement from patient-directed incidental level to therapist-directed phase of explorative level (one point on the APOM scale). Affect showed the

highest mean scores, with improvement evident from transitional incidental level to transitional explorative level of creative ability (three points on the APOM scale).

Sundsteigen, Eklund & Dahlin-Ivanoff (2009) stated that engagement of patients in occupational therapy groups is relevant in assisting them to make occupational changes. The benefits noted by clients includes acceptance by others, successful interactions, use of creativity and emergence of hope, which are all important components of recovery. The occupational therapy programme at Tintswalo Hospital facilitates acceptance by others through engaging clients in groups that facilitate social participation. This includes sports, work and insight groups within these groups clients are given an opportunity to express their views, give an input in terms of how a particular activity needs to be done. For example clients in the sports group are given an opportunity to each demonstrate an exercise of their choice that they want the others to follow, they are given an opportunity to be a team leader where they need to coach the team and decide on name of the team while working together with others. All these factors facilitate a sense of belonging through interaction with others and acceptance by others all of which are important in facilitating the recovery process amongst the clients at Tintswalo Hospital.

It can therefore be proposed that this phenomenon was observed in this study based on the significant changes noted in the domains. Engagement of patients in activities of daily living is associated with improvement in Process skills (Graff, Vernooij-Dassen, Thijssen, Dekker, Hoefnagels & Rikkert, 2006). Social skills training amongst patients with severe mental illness is associated with positive occupational therapy outcomes if combined with Lifeskills training (Arbesman & Logsdon, 2011). As social participation is considered problematic in mental health setting, therefore the groups at Tintswalo are structured to allow for the practice of social skill irrespective of the theme (OTASA, 2006). Improvement noted in Communication/Interaction skills in this study is attributable to the element that social skills are inherent within all group interventions in the field of occupational therapy.

Kielhofner (2008) emphasised the importance of emotions in the facilitation of activity participation and indicated people are more likely to engage in activities they find enjoyable, which in turn results in motivation to participate. This is also a fundamental principle in the VdTMoCA, where du Toit stated that exertion of

maximum effort in one activity generates motivation to engage in activities again, and often more challenging activities (Du Toit, 1991). In the view of these results, APOM scores for Affect in this study demonstrated highest mean scores. Brooke (2015) stated that high scores in Affect can be associated with few items to score in this domain which includes repertoire of emotions, control of emotions and mood. This in turn might indicate that the scores are somewhat inflated. Further research into the Affect domain is thus warranted.

5.3.2. APOM Mean scores from discharge to follow-up 2.

The results from discharge to follow-up 2 indicated a variety in APOM mean scores, with all domains showing improvement from discharge to follow-up 1 and slight deterioration noted in follow-up 2. From discharge to follow-up 1 the results for Process skills, Communication/Interaction skills, Balanced lifestyle and Affect demonstrates improvement to the overall creative ability level of therapist-directed experimental (passive participation). As explained earlier, this is the ideal level to start facilitating community integration. Role performance, Motivation and Self-esteem showed improvement to transitional explorative (self-presentation) level of creative ability. Lifeskills showed the highest improvement with overall level reaching patient-directed experimental level of creative ability. The improvement in this domain is positive, as Lifeskills are one of the important domains that can assist with community integration.

All domains except Process skills showed deterioration in the APOM scores between follow-up 1 and follow-up 2. Slight deterioration in the APOM scores was evident in the results for Communication/Interaction skills, Motivation, Lifeskills and Self-esteem. Deterioration was noted in Role performance with levels dropping to patient-directed explorative, followed by Balanced lifestyle with levels dropping to transitional explorative level of creative ability. Poor Role Performance and Balanced Lifestyle are indicators for poor well-being (Casteleijn, 2010) and this could prevent successful community integration if MHCUs are not able to fulfil their roles in the family and if they go back to previous unhealthy living styles.

No literature could be obtained in terms deterioration in activity participation or APOM scores following discharge from the hospital. However, in this study deterioration was noted and the following reasons were identified: by the time they

came back for a follow up other participants had relapsed due to poor compliance to medication caused by lack of supervision, while others continued to use substances while taking medication. This is caused by the fact that other MHCUs were discharged before insight could develop. For most of the participants there was no structure provided to engage in activities in their home environment as family members did not believe that the MHCUs would be able to carry out the duties allocated. Attempts were made to provide the structure for activity participation in the home environment however monitoring of the programme by family was poor as other programmes were not monitored.

The sample size for the final follow-up assessment was extremely small and it might be more beneficial to look at individual changes rather than group means. During the data collection process, it was established that four of the 11 participants had relapsed resulting in negative change across all domains. Factors that contributed to the regression of these participants were related to non-adherence to medication amongst three of the four participants, while one lacked family support to structure activity participation. Although no significant correlations could be identified between adherence to medication and APOM domains, it is important to note this factor; as established in the demographics, 43.75% of the population studied were non-compliant to their treatment. From these results, it was also established that one participant showed highly significant improvement across all domains, which could be attributable to the amount of family support this participant received following discharge and adherence to medication. As described in the literature review, family support plays an important role in the recovery of MCHUs and the findings identified in this study support this phenomenon. It can therefore be emphasised that collaboration needs to exist between the family and occupational therapist to ensure successful integration into community.

From baseline to follow-up 1, trends indicated improvement in activity participation. Based on the results, an assumption can be made regarding the importance of occupational therapy in maintaining or improving level of function through follow-up. This emphasises the need for community-based rehabilitation programmes in mental health as identified by the National Mental Health Policy Framework and Strategic Plan 2013-2020 (SA Department of Health 2012). In this framework, the concept of community care is based on emphasis of the incorporation of psychosocial

community-based rehabilitation. One of the objectives is district mental health services and Primary Health Care Re-engineering, which the key activity is to look at the incorporating of psychological services at community health centres. There is no plan to incorporate occupational therapists at this level based on this framework, which raises concern as they play an important role in facilitating community-based rehabilitation programmes responsible for community integration of MHCUs, as supported by the results in this study.

The data collection process was not without challenges. The assessment intervals from discharge to second follow-up indicated a loss of participants. The number of participants from discharge to follow- up 1 indicated a loss of 35 MHCUs (55%), leaving 29 participants at this stage. A further decrease in sample size occurred between follow-up 1 and 2, where an additional 18 MHCUs (62%) were lost, leaving a sample size of 11 participants. Various factors were associated with challenges experienced in follow-up in this study. Loss of participants in the follow-up stages is common in routine outcome measure studies. A study conducted on psychosocial rehabilitation with schizophrenia patients indicates loss of participants due to migration to another location due to family situation, limited insight and support from the family (Valentia, Rascon, Juarez, Escamilla, Saracco & Liberman, 2010). Pillay (2016) conducted a similar study of ROM using the APOM at Tara H Morros Centre with a group of adolescents. The researcher also found a large loss of participants in the follow-up period, having only seven participants after six weeks from discharge. Reasons for poor follow-up were similar to the reasons discussed below.

The reasons for loss of participants during the follow-up phase include the discharge of patients in the absence of the occupational therapists; therefore no follow-up dates could be issued, while others were unable to keep follow-up appointments issued. Some participants were lost due to referral to local clinics following discharge. Migration to other places caused by family situations meant some participants had to relocate so they could have family to supervise treatment, others came to Bushbuckridge for work purposes or visits and once discharged, had to return home. Migration of people in South Africa is common and a factor that should be accounted for when MHCUs are discharged from hospitals. Healthcare systems should track MHCUs and ensure they know where to follow-up when discharged.

5.4. Recovery patterns in activity participation

Results of the effect sizes indicated positive change across all domains during hospitalisation. Effect sizes demonstrated improvement with large values on both Cohen's d and Cohen's r statistics and showed clinical significance of the study. These study results correlate with findings in the study by Caddy, Crawford and Page (2012), where participation in creative activity groups yielded strong effect sizes from admission to discharge. This significant difference could also point to the effective programmes offered to MHCUs whilst hospitalised. The engagement of clients within client-centred therapeutic groups is associated with positive outcomes (Sundsteigen et al., 2009).

The effect sizes for discharge to final follow-up 2 shows small to insignificant changes on both the Cohen's d and Cohen's r statistics. The results for Cohen's d statistics show small effect sizes in Process skills, Communication/Interaction skills, and Lifeskills, Balanced lifestyle and Affect, with values between 0.20 and 0.47, but show no significance in Role performance, Motivation and Self-esteem. The Cohen's r statistics show effect sizes with values between 0.1 and 0.50 in all domains except for Motivation, which yielded insignificant change. Significance of results is dependent on the extent of the observed change, which is dependent on sample size. The effect sizes in this study demonstrate that no significant change in activity participation could be noted at this assessment stage. The reason for this is the decrease in sample size, as noted in the follow-up stage.

The results between objective 1 and 2 showed correlations in the findings noted during hospitalisation period and from discharge to final follow-up 2. The findings during hospitalisation indicate significant improvement in the effect sizes and pattern of change, both results yielded positive outcomes. The results from discharge to final follow-up 2 also show correlation, as both results yielded slight to insignificant change in activity participation as evident in the values of APOM scores and effect sizes. From these results, it is evident the decline started after first follow-up. This therefore provides evidence that while occupational therapy services succeed during hospitalisation, the changes made during this period were sustained after one month but not after three months. No occupational therapy services were delivered to the discharged participants. As the majority of the patients are discharged once they reach the explorative level of creative ability, this influences integration into the

community. This thus emphasises the unique contribution of OT in helping patients reach their maximal functional level and facilitating community integration. As mentioned earlier, the need for community mental health services delivered by occupational therapists and as indicated in the National Mental Health Policy Framework and Strategic Plan 2013-2020 (SA Department of Health 2012) is becoming essential.

5.5. Correlations between dependent and independent variables

There were insignificant results in the correlation studies between age, gender, adherence to medication and APOM domains. This differs from findings of the study conducted by Carter (2013), where a strong and positive correlation was identified between APOM scores with age and gender from baseline to final assessment. Other studies support the findings of this study, as noted in the study conducted in the Pacific in 2010, which investigated the effectiveness of occupational engagement as an intervention for patients with schizophrenia. The findings indicated no statistical significant correlations between gender, type of schizophrenia, age of first admission or age group and occupational engagement (Guerrero, 2010); the results also show slight significance between self-esteem and diagnosis. These findings are relevant as literature indicates strong relationship between Self-esteem and Diagnosis of mental illness. Low self-esteem is common in most psychiatric conditions, such as major depressive disorders, eating disorders, anxiety disorders and substance related disorders (Silverstone & Salsali, 2003). In occupational therapy, self-esteem is thought to influence the level of activity participation. When people lose ability to perform occupations that are relevant to them, it decreases perceptions about themselves as being capable, which results in decreased self-worth (Reynolds, 2003).

The correlation significance is noted between Communication/Interaction skills, Lifeskills, Balanced lifestyle, Self-esteem domains and Level of education. There is a strong correlation between education and health outcomes. Education helps promote and sustain healthy lifestyles and positive choices, supporting and nurturing human development, human relationships and personal, family and community well-being (Feinstein, Sabates, Anderson, Sorhaindo & Hammond, 2006). Level of education is an important factor that determines how activity participation is structured and

facilitated in occupational therapy, to attain and sustain positive outcomes in therapy domains, as indicated in this study.

Length of stay also showed significant correlation with Process skills, Communication/Interaction skills, Lifeskills, Balanced lifestyle, Motivation and Affect. Glick et al. (2011) indicated that longer hospital stay is associated with positive health outcomes, as it provides an opportunity for addressing larger goals of recovery, which involves social-interpersonal, residential, occupational, vocational, and spiritual contexts of patients' lives. This study could not establish a strong link between hospitalization and better activity participation. The study by Brooke (2015) showed that forensic MHCUs who are institutionalised, deteriorate in activity participation. There is therefore a critical point in the period of hospitalisation where MHCUs might become dependent on the care in the institution which will have a negative effect on community integration. From the current study at Tintswalo, the researcher would like to suggest that 11 weeks should be the maximum period of stay to prevent institutionalisation.

The correlation significance is also noted between attendances of occupational therapy programmes and Affect. There is link between occupational performance and the affective symptoms brought about by affective disorders seen in occupational therapy (Daremo, Kjellberg and Haglund, 2015). It is important to note that affective symptoms seen in mental disorders such as depression, bipolar mood disorder and anxiety disorders influences occupational performance through impact on other domains, such as Self- esteem and Motivation, which influences the level of activity participation. Kielhofner (2008) describes that participation in client-centered occupational therapy intervention is associated with increased interest in activity participation which in turn results in positive feelings and emotion. The link between Affect and Participation in occupational therapy programmes is further emphasised by the fact that people choose to engage in an occupation that he/she finds satisfying and enjoyable.

The overall results in this study showed positive change, as demonstrated by the values of effect sizes, therefore indicating clinical relevant changes in health of the MHCUs (Husted et al., 2000). The results thus indicate the internal responsiveness of the APOM for the population of Tintswalo Hospital. The routine measurement of

outcomes at Tintswalo yielded results that can be used both to maintain and improve services offered within occupational therapy. As established in the literature review, the ability to routinely measure change brought by the intervention received in patients' health overtime and identifying the reason for change helps the service providers focus on learning and improving the quality of services (Bausewein et al., 2010).

Based on the results, Role performance domain noted from hospitalisation to follow-up showed low improvement. The performance of roles as expected requires a sense of personal responsibility which should be facilitated more during the hospitalisation period. This can be done through structuring activities in the ward, where personal responsibilities can be allocated to MHCUs in relation to tasks in the ward. In the discharge phase, collaboration between the family and the occupational therapists needs to be strengthened and individualised home programmes may be provided to help clients transition to community and have awareness of the expected roles within their home environment. Often families refrain from allocating roles and responsibilities to MHCUs due to their perceived incompetence, however using the VdTMoCA, therapists can provide individual client-centred guidelines to the family.

5.6. Limitations of the study

Limitations noted in this study are first related to methodology. As an experimental research, this study only consisted of one-group from the same hospital with no randomisation of the sampling which limits the generalisability of the results. The correlations identified the relationship between the dependent and independent variables, but there was no description of the causal effect of the variables on each other. The significant decrease in the sample size noted in especially the second follow-up assessments of this study narrowed the results; therefore no conclusion could be drawn at this stage. During the follow-up stage participants did not keep appointments, therefore the researcher assessed participants by either pulling them out of doctor's queues or if they came for disability grant assessments, therefore treatments offered were not planned for individual participants.

5.7. Recommendations

It is clear from the demographics of this study that schizophrenia and substance use disorders dominated the population. Although no causal effects of these variables could be identified on the activity participation, it can be recommended that future studies examine the effect of these two variables amongst the population around Tintswalo Hospital.

The majority of the age group covered in this study included young adults between the age of 20 and 29 and although no correlations could be identified with activity participation, it may be useful to investigate the occupational implications of this variable on the population. Decreased adherence to medication is another factor that was identified as an area of concern amongst this population and it is recommended that future studies investigate factors that contribute to this and the occupational implications, particularly amongst the population studied.

While correlations of the study looked at relationships between the variables, it is important that future studies describe the effect of these variables on occupational functioning of the MHCUs. It is clear from this study that outpatient follow-ups are a challenge in occupational therapy within the field of mental health. Although no conclusions could be drawn on the results due to small sample size, trends were noted. The preliminary trends indicated that lack of follow-up may be associated with decrease in function, therefore it is important to investigate this further as this information can be used to clarify the importance of occupational therapy in acute settings as well as in community integration of MHCUs within the SA context.

5.8. Evaluation of the study

The data collection process was a lengthy process. Firstly gaining consent for participation was a challenge. Some of the MHCUs became suspicious of the intensions of the study and as a result, if discharge was not granted they associated this with the study indicating they were kept in hospital only for the purpose of the study. This resulted in reduced or withdrawal from participation in the occupational therapy programme. Consent for participants with active psychosis was gained from doctor and explanation of the study was done during participation within the occupational therapy programme once insight was gained.

Secondly, the increase in number of admissions into the mental health unit resulted in more variety, which in turn influenced the occupational therapy programme as it had to be adjusted continuously to cope with the increasing demands brought about by this factor. The increase in number of admissions placed a lot of strain on the occupational therapists in terms of constant adjustment of the programme and the administrative demands that came with it.

The data collection process took place as a part of the routine in the occupational therapy services offered at Tintswalo Hospital. This came as an advantage for the researcher, therefore the results are a presentation of the realistic situation with all the confounding factors mentioned above. Two occupational therapists who were also responsible for facilitating the programme in the unit contributed greatly in this study in terms of assisting with the data collection process.

Although not an objective of the study, facilitators and barriers of ROM at Tintswalo Hospital were identified in this study. The scoring of the APOM was done by the researcher as the two occupational therapists are not trained in its administration. The researcher developed forms which assisted in capturing assessment information during the follow-up stage of the study. The two occupational therapists assisted enormously in terms of performing these assessments which helped the researcher to complete the scoring on the APOM.

The high turnover of clients placed a lot of strain on the researcher as an average of three score sheets had to be done for each participant during hospitalisation and an additional two scoring sheets had to be administered during the follow-up assessment stages. The use of Excel version APOM meant that scoring had to be administered on the hardcopy first, followed by capturing data on the electronic version and this process was time- consuming. Although the use of APOM in this study yielded positive outcomes, the time-consuming nature may impact adoption of ROM into clinical practice at Tintswalo Hospital.

Even with the challenges experienced with ROM in this study, positive factors were identified. Firstly the effectiveness of the occupational therapy programme during the hospitalisation phase was established. Areas needing improvement in the programme were identified, which included facilitation of activity participation to improve role performance amongst the population at Tintswalo. This study enabled

identification of variables influencing activity participation in the population at Tintswalo Hospital. The results noted in the follow-up stages can be used to emphasise the factors' influence on activity participation within the home environment, which in turn may be associated with challenges experienced with community integration of MHCUs. The overall findings therefore support the need for implementation of ROM into acute mental health settings in spite of the context.

5.9. Conclusion

The overall aim of this research was to implement ROM in the occupational therapy department in order to describe and document changes in activity participation in MHCUs at Tintswalo Hospital. The purpose was to generate evidence of change in activity participation of MHCUs participating in an occupational therapy programme, in an acute setting within a rural context, using the context-appropriate outcomes measure APOM. The overall outcomes of this study demonstrated positive results. Significant results were noted in terms of the activity participation of the MHCUs during hospitalisation period. The study yielded insignificant results in the follow-up stages of research. The results of this study are reflective of the situation of at Tintswalo Hospital as MHCUs are likely to receive occupational therapy services during hospitalisation, as there is no occupational therapy programmes offered in the community. These results therefore emphasise the need for occupational therapy programmes within the community.

The results noted in the follow-up stage provided an opportunity for exploration of ways in which these services can be facilitated for continued activity participation within the environmental contexts of the MHCUs. One way in which this could be implemented is through development of home programmes in collaboration with the family which will help structure the activities for MHCUs in their home environment.

In addition to the results, the responsiveness of the APOM in an acute setting within a rural context was established and although not part of the objective of the study, this was a very important factor to note. It can therefore be assumed that APOM is suitable for use in this setting.

In conclusion, the lack of ROM in acute mental health settings within the rural context is evident, particularly within occupational therapy. This study therefore

demonstrated evidence of the relevance of measuring outcomes in this context and encouraging future research in this regard.

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APPENDIX A

APOM DOMAINS, ITEMS AND ITEM DESCRIPTORS

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.
Tools and materials	No evidence of knowledge of materials, tools or tasks.	Little evidence of knowledge of tools and materials with no attempt to select appropriate tools and materials for the task.	Basic knowledge of intrinsic properties of materials with poor selection and impulsive use of tools and materials for the task.	Appropriate knowledge of familiar materials and tasks. Selects appropriate and necessary tools and materials for the task if task is familiar and structured.	Sufficient knowledge of materials and tasks, knows where to find additional information if he does not know. Selects appropriate and necessary tools and materials for the task, even unfamiliar tasks.	Good knowledge, seeks out interesting facts or more advanced information. Selects appropriate and necessary tools and materials for familiar and unfamiliar the tasks.
Concept formation	Concepts are disrupted.	Identifies elementary concepts e.g. body, colour and numbers. Knows functions and characteristics of elementary concepts.	Identifies elementary and combined concepts and knows functions of objects.	Identifies combined concepts with ease. Abstract concepts are emerging.	Complex and abstract concepts are consolidated.	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 tools and materials according to their intended purposes.	Skill starting to improve and handling of tools is improving but yet not 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.
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.

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)	Physical contact	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, imitate correct behaviour.	Consistently makes appropriate physical contact.
	Eye 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.	Use gazes appropriately for communication.	Use gazes consistently and appropriately in communication.
	Gestures	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.
	Using body	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 (verbal)	Use of speech	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.
	Exchanging information	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.
	Expressing needs	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.

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)
	Initiating interaction	Does not initiate interaction.	Does not initiate 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	Awareness of social norms	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.
	Establishing rapport	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.	No 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.

LIFESKILLS 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)
Personal care, hygiene,	Cared for by nursing staff or family.	Physical assistance and super-vision for bathing, toileting. Eating usually untidy and messy.	Shows interest in refined skills e.g. grooming, dressing, hair care but inappropriate with poor quality. Dental hygiene poor.	Self-care skills appropriate and with good quality, refined self care appropriate and good quality.	Independent and good quality in personal care skills.	Competent in all personal care skills, uses originality.
Personal safety	No sense of personal safety, in total care and needs constant supervision and assistance.	Needs constant supervision for personal safety.	Aware of personal safety but needs occasional reminders and supervision, dependent on others.	Is able to maintain personal safety but inconsistent.	Consistently maintains and takes responsibility for personal safety.	Competent in personal safety, takes responsibility for safety of others.
Care of medication	No sense of need for medication, in total care.	No awareness of need for medication, under constant supervision.	Aware of need for medication but needs occasional reminders. Dependent on other for medication.	Understands the need for medication. Able to take responsibility for medication most of the time.	Independent in care of medication.	Responsible and consistent use of medication, consults timeously when revision of medication is needed.
Use of transport	Transported by nursing staff or family when needed.	Dependent on others for transport.	Depending on others for transport and able to request assistance in transportation for own needs.	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.
Domesti c skills	No skills evident.	Does not perform domestic 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 other role models.	Has a wide repertoire of domestic skills and performs them well and with originality, acts as role model for others.
Child care skills	No skills evident	Does not care for children, under constant supervision or care of others.	Is mostly 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 and acts as role model for others.

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)
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 and acts as role model for others.
Assertive-ness	No skills evident.	Is unaware of own or others' rights and feelings, acts with inappropriate response e.g. either aggression or withdrawal.	Puts own rights first, is unaware of others' rights and feelings, acts with inappropriate response e.g. either 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. Does 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.
Conflict management	Is unaware of conflict.	Handles conflict with aggression or withdrawal, often causes conflict without realising it.	Inadequate management of conflict situation, reacts inappropriately e.g. with either 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. Is aware of the norms but not consistently complying. Needs re-assurance from others to perform consistently.	Performs consistently in pre-vocational skills and according to the norm.	Performs pre-vocational skills with originality.

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)
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.	Sufficient vocational skills to enter open labour market.	Variety of vocational skills, usually successful in a job.

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)
Awarenes s of roles	Not aware of roles.	Not aware of roles.	Aware of role in institution, tries to comply but need supervision.	Aware of roles in own situation and social standing.	Aware of roles in own situation and social standing.	Completely aware of roles, assist others to be aware of their roles.
Role expectations	Is unaware of role expectations.	Is aware of basic expectations but needs reminding of the expectations.	Needs reminding of expectations and tasks of a role. Has unrealistic expectations of roles.	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	Unable to perform any roles.	Able to perform one or two tasks of a role in the institution or ward under constant supervision.	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 to others.

BALANCED LIFE STYLE 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 life style or time use.	Not aware of concept of balanced life style 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 life style 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 life style.
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 usually self-centred.	Aware of the value of variety and meaningful occupations but finds it 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.

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.
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.

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
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.

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.	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.
Self-assurance	Withdrawn and secluded.	Unpredictable changes in attitude and behaviour.	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.
Satisfaction with self	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.	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.

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.	Evidence of basic emotions e.g. satisfied or dissatisfied, enjoyment or anger, distress or apathy.	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.	Easily triggered, sudden outburst of emotions like anger or laughter, lacks control.	Limited control over emotions.	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.

APPENDIX B

Demographic data

Research ID	

Diagnosis	Axis I	
	Axis II	
	Axis III	
	Axis IV	
	Axis V	

Gender	Male	Female

Age group	<20yr	20-29	30-39	40-49	50-59	60-69	>70

Adherence to medication	Never	< 50% of the time	>50% of the time	All the time

OT programme attendance	Never	< 50% of the time	>50% of the time	All the time

Total APOM score	Baseline	Intermediate 1	Intermediate 2	Intermediate 3	Discharge	Follow-up

APPENDIX C

APOM Score sheet

Patient research ID:_____

Baseline Intermediate 1 Intermediate 2 Intermediate 3 Discharge Follow-up

Process skills	
Attention	
Pace	
Knowledge – of tools and materials	
Knowledge – concept formation	
Skills to use tools and materials	
Task Concept	
Organizing space and objects	
Adaptation	
Communication / Interaction skills	
Physicality – physical contact	
Physicality – Gazes	
Physicality – Gestures	
Physicality – Use of body	
Information exchange – Use of speech	
Information exchange – Content of conversation	
Information exchange – Expression of needs	
Information exchange – Initiate interaction	
Relations – Social norms	
Relations – Rapport	

Lifeskills	
Personal care, hygiene, grooming	
Personal safety	
Care of medication	
Use of transport	
Domestic skills	
Child care skills	
Money management, budgeting skills	
Assertiveness	
Stress management	
Conflict management	
Problem solving skills	
Pre-vocational skills	
Vocational skills	
Role performance	
Awareness of roles	
Role expectations	
Role balance	
Competency	

Balanced life style	
Time use and routines	
Habits	
Mix of occupations	
Motivation	
Active involvement	
Motives and drives	
Shows interest	
Goal directed behaviour	
Locus of control	
Self-esteem	
Commitment to task /situation	
Using feedback	
Self-worth	
Attitude towards self – self-assurance	
Attitude towards self – satisfaction with self	
Awareness of qualities	
Social presence	
Affect	
Repertoire of emotions	
Control	
Mood	

APPENDIX D

OCCUPATIONAL THERAPY PROGRAMME: TINTSWALO HOSPITAL

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
08:00 – 09:00	**08:00 – 08:30**	**08:00 – 09:00**	**08:00 – 08:30**	**08:00 – 08:30**
Rehab Meeting	Admin	Psychiatry Meeting	OT staff Meeting (rehab)	Rixile Health Education
09:00 – 09:30	**09:00- 13:00**	**09:00 – 10:00**	**09:00 – 10:00**	**09:00 – 10:00**
OT staff meeting (rehab)	Ward Rounds	Supervision meeting	Screening and green files	Admin
10:00 – 13:00				
Ward Rounds		**11:00 – 12:00**	**11:00 – 12:00**	**10:30 – 12:00**
		Self - care	**Insight group**	**Survival skills**
L	**U**	**N**	**C**	**H**
14:00 – 15:00	**14:00 – 16:00**	**14:00 – 15:00**	**14:00 – 16:00**	**14:00 – 15:15**
Screening and green files	Active Recreation group.	Activity group/ Stimulation group: Level 1 patients.	Activity Group: Level 2 patients.	Social Skills(unstructured)
				15:30 – 16:00
				Exercise group: Physiotherapy and OT staff.
15:15 – 16:00		**15:15 – 16:00**		
Admin		Admin		

* Outpatient treatment: Review – Wednesday Morning

: Day patient treatment – Thursdays and Fridays (10:00 – 15:00)

APPENDIX E

APOM
Activity Participation Outcome Measure

Occupational Therapy Report

Organisation Name:	Demo Organisation	**Date of Assessment:**	2014/08/31
Patient Name:	DMT	**Date of Admission:**	2014/06/01
Patient Age:	44	**Level of Creative Ability:**	Passive Participation
Patient Gender:	Male		

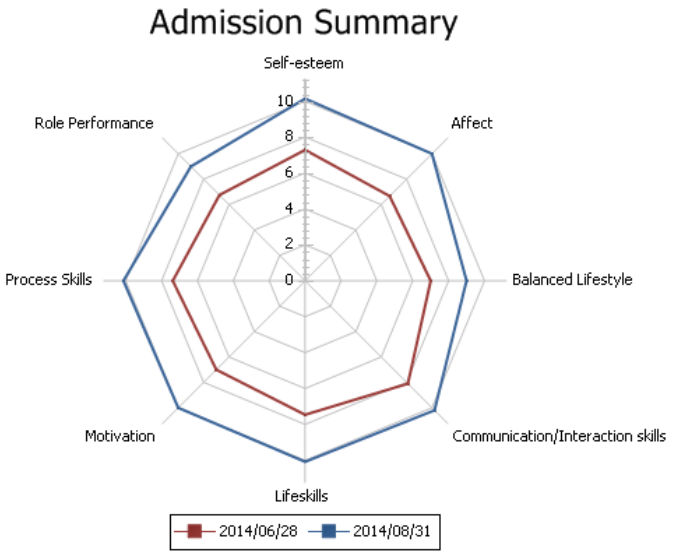
Assessment Detail

Process Skills

Adaptation	Engage in tasks to explore, needs prompting to anticipate or correct for errors but no learning from the consequences of errors.
Attention	Focuses attention for duration of task performance but quality of attention sometimes poor, sometimes distracted.
Concept Formation	Identifies combined concepts with ease. Abstract concepts are emerging.
Organizing Space and Objects	Beginning to organize own work space and objects for familiar tasks, needs assistance with unfamiliar tasks. Will restore if asked to.
Pace	Inconsistent pace or task execution, slow or poor rate and poor accuracy.
Skills	Skill starting to improve and handling of tools is improving but yet not according to the norm. Uses tools and materials according to their intended purposes.
Task Concept	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
Tools and Materials	Basic knowledge of intrinsic properties of materials with poor selection and impulsive use of tools and materials for the task.

Communication/Interaction skills

Awareness of social norms	Awareness of basic social norms emerging but unable to conform to social norms, forms a relationship for egocentric reasons.
Establishing rapport	No interest to form rapport with others. Does not respond to the needs of others (might be aware of needs).
Exchanging information	Tries to communicate and exchange information but superficially and not always appropriate.
Expressing needs	Expresses desires and refusals inappropriately, cannot select the right situation.
Eye contact	Beginning to use gazes correctly for communication.
Initiating interaction and conversation	Does not initiate interaction unless for egocentric reasons.
Physical Contact	Limited physical contact but appropriate.
Using body to communicate	Orientates oneself physically in correct position in relation to others.



SUMMARY SHEET FOR DEMOGRAPHIC INFORMATION

APPENDIX F

Name and Surname	Age	Address in detail	Contact Number	Diagnosis	Patient ID	Level of Education	DOA	DOD

Name and Surname	Initial Assessment	Intermediate Assessment	Final Assessment

RESEARCH DATA COLLECTION: FOLLOW UP DOCUMENT

	Date:	Date:	Date:
	Activities:	Activities:	Activities:
	Date:	Date:	Date:
	Activities:	Activities:	Activities:

APPENDIX H

ASSESSMENT DATA DURING FOLLOW-UP VISIT

Name of patient	
Details of care giver	
Date of follow up	
Care givers report(behaviour, interactions, duties, compliance with medication, structure required)	
Daily routine	
General observations(affect, appearance, response)	
Activity used for Re- Ax	
Observations	
General comments(OT)	
Plan	

APPENDIX I

Human Research Ethics Committee (Medical)

Research Office Secretariat: Senate House Room SH 10005, 10th floor, Tel +27 (0)11-717-1252
Medical School Secretariat: Phillip Tobias Building, 2nd Floor, Tel +27 (0)11-717-2700
Private Bag 3, Wits 2050, www.wits.ac.za

23 October 2014

Chief Executive Officer
Tintswalo Hospital
Acornhoek
Mpumalanga

Dear Sir/Madam

SUBJECT: **CONFIRMATION OF STUDY APPROVAL**
Protocol Ref no: M140977
Protocol Title: Routine Measurement of Outcomes for Mental Health Care users attending Occupational Therapy in an Acute Mental Health Care Unit within a Rural Context
Principal Investigator: Ms Olindah Silaule
Department: Occupational Therapy

This letter serves to confirm that the Human Research Ethics Committee (Medical) has approved the above mentioned study. In order for a clearance certificate to be issued, the researcher is required to submit written approval to conduct the study in your hospital.

Yours faithfully,

Ms Zanele Ndlovu
Administrative Officer
Human Research Ethics Committee (Medical)

UNIVERSITY OF THE WITWATERSRAND
OFFICE OF THE DEPUTY VICE CHANCELLOR RESEARCH
23 OCT 2014
RESEARCH OFFICE
JOH

APPENDIX J

APPENDIX J

MPUMALANGA PROVINCIAL GOVERNMENT

Building No.3
No. 7 Government Boulevard
Riverside Park Extension 2
Nelspruit
1200
Republic of South Africa

Private Bag X 11285
Nelspruit, 1200
Tel: 013 766 3429
int: +27 13 766 3429
Fax: 013 766 3458
int: +27 13 766 3458

Department of Health

Litiko Letemphilo | Umnyango WezaMaphilo | Departement van Gesondheid

Enquiries: Themba Mulungo (013) 766 3511

12 November 2014

Ms. Olindah Silaule
P.O Box 1061
Thulamahashe
1365

Dear Ms. Olindah Silaule

APPLICATION FOR RESEARCH & ETHICS APPROVAL: ROUTINE MEASUREMENT OF OUTCOMES FOR MENTAL HEALTH CARE USERS ATTENDING OCCUPATIONAL THERAPY IN AN ACUTE MENTAL HEALTH UNIT WITHIN A RURAL CONTEXT

The Provincial Research and Ethics Committee has approved your research proposal in the latest format that you sent.

Kindly ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

Kind regards

Machaba

MR. MOLEFE MACHABA
RESEARCH AND EPIDEMIOLOGY

12/11/2014

DATE

APPENDIX K

Information sheet – MHCUs and Medical Doctor

ROUTINE MEASUREMENT OF OUTCOMES FOR MENTAL HEALTH CARE USERS ATTENDING OCCUPATIONAL THERAPY IN AN ACUTE MENTAL HEALTH CARE UNIT WITHIN A RURAL CONTEXT.

Good Day,

I am Olindah Silaule, currently a postgraduate student at the University of the Witwatersrand planning to conduct a study on the measurement of outcomes in mental health care users attending occupational therapy in an acute mental health care unit within a rural context.

Purpose of the study

As there is currently limited research on the effect of occupational therapy on mental health care users' activity participation and their ability to cope with everyday demands after discharge from a mental health care unit in rural areas, this study is being done to get a better understanding of the effect. It is hoped-for that the results will assist occupational therapy programs to be more evidence based and specific for patients suffering from a mental illness and living in rural areas in South Africa.

I am inviting you to take part in this study.

What is expected from the participants in this study?

I am requesting that you take part in the occupational therapy programme at Tintswalo Hospital. The programme consists of an interview where I will ask some personal and medical information and then I will ask you to complete a few craft activities such as making a paper box, beading a bracelet, or painting. The activity will be something that you have done before as well as an activity that might be new to you. This will take about 45 minutes to complete. Your performance (while you are doing the activities) will be watched by me and the occupational therapy technician. You will get a score for your participation on a measure called the Activity Participation Outcome Measure. This assessment will help us to give you specific occupational therapy activities and groups that will help you to deal with your problems. You will then continue with treatment by me and the occupational therapy technician. After the treatment or every 3 weeks, we will repeat the assessment to see if your

performance is changing after treatment. The scores of your assessment will be entered into a computer programme and later used to calculate your change from beginning to end of treatment. Once you are being discharge from the hospital, you will receive a date for follow-up at your nearest clinic or at Tintswalo Hospital (whichever is closer to your home). If you are going to follow-up at Tintswalo Hospital, I will see you again at the follow-up appointment where I will do another assessment to see how you have been coping at home or at work (should you be employed).

There are no known risks in the study and your participation in this study is voluntary and you may refuse to participate or withdraw at any time without any consequence.

All information obtained during the course of the study, will be kept strictly confidential by using a code instead of your name so that you cannot be identified. All research data will be stored in a locked place and the computer based information will be password protected. Only me and my supervisor will see the information. Results of the study will be available on request.

If you have any queries, more information may be obtained from Olindah Silaule at telephone number (013) 795 8706. If you have any questions please feel free to contact me or my supervisor at 078 203 5213 or 011 717 3701. Should there be any ethical queries about the research you are welcome to contact the Human Research Ethics Committee (HREC) Chairman Prof P Cleaton-Jones at +2711 7171234 or anisa.keshav@wits.ac.za for reporting of complaints or problems.

If you are willing to take part in the research please sign the form attached. If you are an involuntary or assisted patient your doctor will also be asked to give permission for you the take part in the study.

Thank you

Olindah Silaule
Occupational Therapist, Tintswalo Hospital

APPENDIX L

Informed Consent form – MHCUs and Medical doctor

I agree to participate in the study: Routine measurement of outcomes for mental health care users attending occupational therapy in an acute mental health care unit within a rural context as outlined in the information sheet:

Participant:

Name: _____

Signature: _____

Date: _____

Medical doctor:

Name: _____

Signature: _____

Date: _____