

**The effect of an occupational therapy mental health day
treatment centre on the use of in-patient services in the Western
Cape, South Africa.**

by Riekie Engelbrecht



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Occupational Therapy at the Stellenbosch University

Supervisor: Nicola Plastow

Co-supervisor: Ulla Botha

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Declaration

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own original work, that I am the authorship owner thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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Abstract

Background: The high number of mental health care users requiring care, the quick turnover in psychiatric hospitals and the scarcity of community-based mental health services are some of the factors that have led to a dramatic increase in the number of high frequency users of in-patient psychiatric services. In an attempt to address these issues, an occupational therapy-led day treatment centre was established at Stikland Hospital in the Western Cape province of South Africa. The aim of this study was to determine whether attendance at an occupational therapy-led community day treatment centre for mental health care users affects the use of in-patient services in the Western Cape Province of South Africa.

Methods: A pre-test/post-test quasi-experimental study design was used to determine the benefits of the occupational therapy-led day treatment centre. Total population sampling was used. Forty four mental health care users participated in the study. The number of admissions and number of days spent in hospital before and after occupational therapy intervention were compared using statistical analysis.

Results: The analysis showed a significant difference in the number of admissions ($p = .00$) and the number of days spent in hospital ($p = .00$) before and after the occupational therapy intervention. There was a decrease in the number of admissions of 62.3% after intervention. Twenty-five participants (56.8%) had fewer admissions after intervention than before. Total days spent in hospital for the group showed a decrease of 74.6% after intervention. Days spent in hospital became shorter by up to 7 months after occupational therapy intervention. This indicated a medium effect size ($r = .436$) for number of admissions and a large effect size ($r = .504$) for number of days spent in hospital after intervention. The frequency of attending the day treatment centre had no influence on number of admissions ($p = .410$) or on the number of days spent in hospital ($p = .579$) after intervention.

Conclusion: The findings suggest that an occupational therapy-led day treatment centre is effective in reducing the use of in-patient services within the Western Cape, South Africa. In addition providing a range of opportunities for meaningful participation may be more important than the intensity of treatment when promoting recovery.

Opsomming

Agtergrond: Die groot hoeveelheid persone wat psigiatriese sorg benodig, die vinnige omset in psigiatriese hospitale asook die tekort aan gemeenskaps psigiatriese dienste is van die faktore wat lei tot 'n toename in persone wat gereelde heropname benodig. As moontlike oplossing vir die probleem is 'n dagbehandelingsentrum geopen by Stikland Hospitaal in die Wes-Kaap provinsie van Suid Afrika. Die doel van die studie was om vas te stel of 'n dagbehandelingsentrum, onder leiding van 'n arbeidsterapeut, effektief is in die Wes-Kaap provinsie van Suid Afrika vir persone met psigiatriese siektes.

Metode: 'n Voortoets-natoets kwasi-eksperimentele studie metode is gebruik om die voordele van 'n arbeidsterapie gedrewe dagbehandelingsentrum te bepaal. Totale bevolking steekproef is gebruik. Vier en veertig persone met 'n psigiatriese diagnose het deelgeneem aan die studie. Die hoeveelheid opnames asook hoeveelheid dae spandeer in die hospitaal voor en na die arbeidsterapie intervensie is vergelyk.

Resultate: Resultate het getoon dat daar 'n beduidende verskil was tussen die hoeveelheid opnames ($p = .00$) en die hoeveelheid dae in die hospitaal ($p = .00$) voor en na arbeidsterapie intervensie. Die groep se hoeveelheid opnames het met 62.3% gedaal na intervensie. Vyf en twintig deelnemers (56.8%) het minder opnames gehad na intervensie as voor intervensie. Data toon 'n medium effekgrootte ($r = .436$). Die totale dae in die hospitaal vir die groep het met 74.6% afgeneem na intervensie. Dae spandeer in die hospitaal het met tot 7maande verkort na arbeidsterapie intervensie. Dit toon 'n groot effekgrootte ($r = .504$). Die frekwensie van bywoning het geen invloed getoon op die hoeveelheid opnames ($p = .410$) of hoeveelheid dae in die hospitaal ($p = .579$) nie.

Gevolgtrekking: Die studie het gevind dat, in die Wes-Kaap, 'n arbeidsterapie gedrewe dagbehandelingsentrum 'n effektiewe en uitvoerbare opsie is om die druk op binne-pasiënt dienste te verlig. Die studie het verder getoon dat betekenisvolle deelname aan aktiwiteite moontlik belangriker is vir herstel na 'n psigiatriese siekte as intensiteit van behandeling.

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Glossary of terms

Use of in-patient services: The number of admission to and days spent in a psychiatric hospital.

High frequency users: Mental health care users who are frequently admitted to hospital and make frequent use of the mental health care system as an in-patient.

Early discharge policies: Also referred to as crisis discharge policies or premature discharge policies. This policy entails discharging mental health care users who are not yet fully stabilised in order to make beds available to users who are more acutely ill.

Revolving door phenomenon: A pattern of rapid and repeated admission shortly after discharge.

Therapeutic interventions: Refers to any type of therapy focused on rehabilitation and improved well-being, these exclude drug therapies.

Day treatment centres: Facilities that render day treatment interventions on an out-patient basis to mental health care users.

Specialised Ambulatory Treatment Services Centre: A day treatment centre situated on the grounds of Stikland Psychiatric Hospital in Western Cape province of South Africa.

Occupational therapy intervention: Refers to the time period attending the SATS Centre while receiving a variety of occupational therapy input.

Occupation-as-means: Using occupation as basis of treatment to reach recovery goals.

List of abbreviations

HFU: High frequency users

SATS Centre: Specialised Ambulatory Treatment Services Centre

USA: United States of America

PSR: Psychosocial rehabilitation

Chapter 1 Introduction

1.1 Background and problem statement

The continued pressure on in-patient psychiatric hospitals is a global problem and has widespread repercussions on both in and out-patient services.^{1,2} One of the inevitable consequences of this sustained pressure is the implementation of an early discharge policy. This controversial policy has a demoralizing effect on staff and families, and has been linked to increased readmission rates.^{2,3} Mental health care users are most often not stabilised adequately before early discharge and they are unable to complete their occupational therapy treatment as in-patients. Therefore, mental health care users are rarely able to achieve an adequate level of independence to maintain themselves in their home environments. When this combines with other factors that are well known to influence risk of readmission, a pattern of rapid and repeated admissions shortly after discharge develops. This pattern is referred to as the revolving door phenomenon.^{4,5} The situation is further exacerbated by a paucity of appropriate community resources to provide treatment and support for mental health care users in their home environments after discharge.⁶

The revolving door phenomenon also affects mental health care in South Africa.⁴ In an attempt to address this issue, the establishment of an occupational therapy-led day treatment centre was proposed at Stikland Hospital. Stikland Hospital is a state psychiatric hospital situated in the Western Cape province of South Africa. Day treatment units are community based centres with programmes which incorporate the principles of psychosocial rehabilitation. These types of units are one of the many strategies used to alleviate the continued bed pressure on in-patient units, by attempting to bridge the gap between in and out-patient care.⁷

The day treatment centre at Stikland Hospital is run primarily by occupational therapy staff. Attendance is voluntary and mental health care users can attend the programme for as long as they feel necessary. A variety of groups like cognitive stimulation, art and craft, psycho-education, life skills and drumming are run 3 to 4 days per week. The premise of the centre at Stikland Hospital was that it would draw on available resources and strive to offer

psychosocial interventions to improve social interaction and empower mental health care users to successfully re-integrate into society.

Studies conducted to assess the effectiveness of day treatment centres report an improvement in clinical and functional outcomes when attending a day treatment centre.⁸⁻¹² Previously only three studies conducted respectively in the United States of America,⁸ Japan,⁹ and Turkey¹⁰ reported on the influence of day treatment centre on bed pressure by considering the decline in number of admissions and number of days spent in hospital. Literature on day treatment centres is limited and cannot be generalised to the broader mental health care population due to small sample sizes and lack of randomisation of participants.¹³ Furthermore the majority of studies were conducted in first world countries where communities and health care systems are different from those in the developing world. A unique feature of the Stikland day treatment centre, in comparison to those described in existing literature, is that it is staffed primarily by occupational therapy personnel.

1.2 The purpose of the study

The purpose of this study was to determine the effect of an occupational therapy-led day treatment centre for mental health care users in South Africa. The centre was based on the notion that it may be effective in bridging the gap between in- an out-patient care, and reduce bed pressure. To our knowledge, this study is the first in South Africa to describe the process of establishing such an occupational therapy-led day treatment centre for mental health care users, and to compare the outcomes with those reported in first world countries. Only the study conducted in the United States of America (USA) by Husted et al.⁸ reported on the specific amount of decline in number of admission and days spent in hospital. This study will be one of the few studies internationally to quantify the specific changes in admission rates and days spent in hospital for both the group and individual participants.

1.3 The research aim, question and objectives

1.3.1 Aim

The aim of the study is to determine whether an occupational therapy-led community day treatment centre for mental health care users influences the use of in-patient services in the Western Cape, South Africa.

1.3.2 Research question

The research question guiding this study was:

What is the effect of attendance at an occupational therapy-led community day treatment centre on the number of admissions and number of days spent as in-patient for adult mental health care users in Cape Town?

1.3.3 The objectives of the study

The following five objectives were set out to guide the researcher in achieving the aim.

- To determine the client factors that affect the number of admissions over the 24-month period prior to attending the occupational therapy-led day treatment centre
- To determine whether there is a difference in the number of admissions over the 24-month period before and after attending the occupational therapy-led day treatment centre
- To determine whether there is a difference in the number of days spent in hospital over the 24-month period before and after attending the occupational therapy-led day treatment centre
- To determine whether there is any difference in the number of admissions over a 24-month period based on the frequency of attendance at the occupational therapy-led day treatment centre

- To determine whether the frequency of attendance at the occupational therapy-led day treatment centre has an effect on the number of days spent in hospital over a 24-month period

1.4 Implication of results

The findings of this study will inform the continued service provision at the day treatment centre at Stikland Hospital. The study will also contribute to the evidence supporting occupational therapy treatment for people with mental health problems. Furthermore, this study can potentially influence the education of occupational therapy students, policies and further research. All findings will be communicated to relevant role players within the Associated Psychiatric Hospital structures as well as the Department of Health and will be presented at an academic forum or published in a peer-reviewed journal.

1.5 Null hypothesis

The overall null hypothesis is that an occupational therapy-led day treatment centre for mental health care users has no effect on the use of psychiatric in-patient services in the Western Cape, South Africa. This includes that attendance to the occupational therapy-led day treatment centre has no effect on the number of admission and number of days spent in hospital. In addition that client factors do not influence number of admissions and that the frequency of attendance also has no effect on the use of in-patient services.

1.6 Delineation of the study

The study was conducted over a period of four years as part of the requirements for completion of the Masters Degree of Occupational Therapy (Psychiatry) at the University of Stellenbosch. Data collection was done at the Specialized Ambulatory Treatment Service Centre at Stikland Psychiatric Hospital where the researcher is currently employed. Pre-existing data over a four year period from 2009 to 2012 was used.

1.7 Chapter overview

In the following chapter the researcher will review the literature related to the factors influencing readmissions, community based strategies used to reduce readmissions, day treatment centres and the role of the occupational therapist in mental health care. The chapter will conclude with a review of the literature concerning mental health care in the Western Cape province of South Africa. Chapter 3 presents the methodology used for this study. The results of the study are presented in Chapter 4. Chapter 5 presents a discussion of these results. The study is concluded in Chapter 6 where the implications of the study for occupational therapy as profession, policy development, education and further research are discussed.

Chapter 2 Literature Review

2.1 Introduction

Deinstitutionalization has become a global trend in psychiatric care which started in the 1950s. This has led to the closing and downsizing of many long-term psychiatric units across the world.¹⁴ The reduction in the number of beds available for in-patient care, amongst other factors, contributed to an increased pressure on in-patients beds.² This resulted in a global problem that has widespread repercussions on both in- and out-patient services.¹ The process of deinstitutionalisation is also evident within the South African mental health care context. The Mental Health Care Act (2002) signalled a shift from in-patient to community-based care, and emphasises the maintenance of basic human rights. Nevertheless, Janse van Rensburg highlights the need for adequate resources in order for a policy of deinstitutionalisation to be implemented.¹⁵

Although the intention of a deinstitutionalisation policy is to benefit mental health care users, the outcomes are not always positive. The constant bed pressure does not allow for mental health care users to spend the necessary time to clinically stabilise to the optimal level and benefit from in-patient programmes. Durbin et al.³ reported that early readmissions were more likely for mental health care users discharged prematurely. Mental health care users who were not clinically stable and still showed active symptoms and unstable behaviour before discharge were more likely to return to hospital, even within 30 days after discharge.³ This pattern of rapid and repeated admission shortly after discharge is referred to as the revolving door phenomenon. Mental health care users are referred to as high frequency users (HFUs) because they are frequently admitted to hospital and make frequent use of the mental health care system as an in-patient.^{4,5}

2.2 Understanding factors that influence readmission of mental health care users

The constant readmission of HFUs is explained by a number of factors. During a quantitative study conducted in Australia, 50 mental health care users were monitored over a three-year

period to identify the 15 factors that most frequently contributed to hospital readmission. These were categorized into four main categories, including physical and psychiatric illness, harming of others and self, substance abuse, and social factors. Social factors were found to be the greatest contributors to the high percentage of readmissions.¹⁶ A qualitative study focussed on factors influencing readmission was conducted in Germany. The study was from the perspective of mental health care users categorized as HFUs who were admitted to hospital three or more times during a 30 month period. Twenty mental health care users with schizophrenia were interviewed and divided into two groups based on where they stayed. The mental health care users that stayed in sheltered accommodation identified medical problems and social exclusion as the main factors influencing their high number of admissions. The mental health care users staying in private residences similarly identified symptoms of the illness, substance abuse and social problems as the main factors influencing admissions.¹⁷

Mental health care users with poor support networks and challenging social environments are less likely to remain well.¹⁸⁻²⁰ It is evident in the reviewed literature that there is a strong correlation between social indicators of deprivation and psychiatric admission rates.^{5,21,22} A study conducted in the Netherlands suggested that people with poor perceived support utilize mental health care services up to two to three times more than those with good social support. Furthermore, mental health care users that are living alone use mental health care services 30% to 80% more than mental health care users staying with family or friends.^{23,24} A study conducted in Ireland, Finland, Norway Spain and the UK contradicted the findings of the previous studies. The study reported that the lack of social support was associated with less rather than more service use for mental health care users with depressive or adjustment disorder. This was explained by the lack of motivation and drive that is generally associated with depression. It was argued that mental health care users with depression who have good social support engage with services due to motivation received from family and friends. Mental health care users who are socially isolated often lack the motivation to attend appointments resulting in poor engagement with services and higher risk of readmission.²⁴ This shows that irrespective of whether a lack of social support increases or decreases use of services, poor support networks mean mental health care users remain stable for shorter periods of time.

Another factor influencing regular readmissions is co-morbid depressed mood and poor treatment adherence due to lack of insight and unwanted side effects of medication.²⁵ Mental

health care users often experience loss of self-esteem and their ability to tend to their own daily needs can be affected.²⁶ This is of concern as most daily activities are triggered by a basic, immediate life need.²⁷ Without external motivation, many mental health care users will spend their days in bed, smoking or watching television, with skills and confidence levels deteriorating even further.^{26,28} Low motivation can impact their diet and ability to maintain their general health. Consequently, nearly 85% of mental health care users also have co-morbid health problems.²⁹

In addition to struggling with a daily routine, mental health care users also often experience functional impairments such as having poor coping skills and may find it difficult to manage conflict situations.³⁰ This is often due to lower cognitive levels associated with mental illness.²⁸ Mental illness is also associated with impairments in executive functions, such as conceptual reasoning, planning and strategic thinking.³¹ This can influence mental health care users budgeting, adaptability and problem solving skills, often causing severe stress for the individual. A study comparing the problem solving skills of mental health care users with people without psychiatric diagnosis, reported that mental health care users solved fewer problems. When mental health care users did solve problems, they did so far less efficiently than their healthy counterparts and their performance was less consistent and tended to deteriorate when the problem became more complex.³¹ It has also been reported that mental health care users with multiple functional impairments are likely to utilize primary mental health care services three to seven times more than mental health care users who do not have functional impairments.²³

Recent trends in mental health care have shown that mental health care users who need extra support and are referred to treatment programmes are becoming younger. These are often mental health care users who are admitted as involuntary patients under the Mental Health Care Act (2002),³² and may even be less motivated to engage with services.³³ This reluctance to engage with services has resulted in the emergence of compulsory out-patient treatment programmes. These programmes usually target middle-aged adults with a diagnosis of schizophrenia, who lack insight, are isolated and at risk of non-compliance, self-neglect and regular readmissions. Although there is no evidence that these programmes are effective, they show the need for identifying possible HFUs and the importance of putting support structures in place to prevent regular readmissions of these mental health care users.⁶

It is evident from the above that factors that lead to readmission also limit quality of life. It is important to acknowledge these factors as well as the functional impairments of mental health care users in order to find innovative ways to address these challenges.

2.3 Community-based strategies to reduce readmissions

One of the inevitable consequences of the sustained pressure on in-patient units and the emergence of a population of HFUs has been the implementation of various interventions and strategies aimed at alleviating pressure on in-patient services. Three of the most common strategies documented in literature are assertive community interventions, continuity of care interventions, and crisis care interventions. Assertive community interventions use a team-based approach where frequent and comprehensive support is given, often in the form of home visits.³⁴ Continuity of care interventions centre around the same clinician being responsible for a mental health care user's care across in- and out-patient settings.³⁵ Crisis care interventions aim to provide support during a crisis period, either at the mental health care user's home or on community level.³⁶ All three types of intervention have been shown to reduce the number of admissions and are reported by both mental health care users and their families to be a more satisfactory form of care than standard care. Assertive community interventions and continuity of care interventions reduce length of stay as in-patient.^{34,35} Assertive community interventions have shown improved engagement of services, while studies report a faster and more effective transition between services for continuity of care interventions. Crisis care interventions have also been linked to an improved mental state after three months when compared to standard care.³⁴⁻³⁷

Rehabilitation is an integral part of a comprehensive mental health care service package.³⁸ Although assertive community interventions, continuity of care interventions and crisis care interventions alleviate the pressure on in-patient units, the main focus of these strategies is not rehabilitation but medication compliance and management of symptoms of the illness. In a study conducted in ten European countries, service users, caregivers, mental health professionals and advocates were asked to identify components of care that they considered to be important for recovery, as well as to rank these aspects according to importance. The study found that the most important component for recovery is therapeutic intervention.³⁹ The literature provides ample evidence that therapeutic interventions should be part of the comprehensive care given to mental health care users.^{38,40,41}

Psychosocial rehabilitation (PSR) is an approach to community-orientated therapeutic interventions that can address the revolving door phenomenon.⁴² This approach is informed by 15 literature-based principles as set out by Cnaan⁴², that are considered most important by mental health care users and their caregivers (Table 2.1). The core philosophy of PSR is that every individual has an underutilized human capacity that should, by equipping the individual with skills, improve their general wellbeing.⁴³ Therapy should rather focus on the current situation and the mental health care user's strengths, than on the pathology of the illness and past problems. The principles also highlight that therapy should take place in an intimate environment and emphasise the importance of community involvement, vocational rehabilitation, patient rights and client-centred treatment as part of the rehabilitation process.⁴⁴ Over the last few years, PSR has gradually evolved into a practice modality to assist people with mental illnesses and these principles still form the basis of current treatment interventions.⁴⁵

Table 2.1 The 15 key principles of Psychosocial Rehabilitation

-
1. All people have an under-utilized human capacity that should be developed.
 2. All people can be equipped with skills (social, vocational, educational, interpersonal and others).
 3. People have the right and responsibility for self-determination.
 4. Services should be provided in as normalized an environment as possible.
 5. Assessment of needs and care should be differential (i.e., based on the unique needs, abilities, deficiencies, and environment of each mental health care user).
 6. Maximum commitment is required from staff members.
 7. Care is provided in an intimate environment without professional authoritative shields and barriers.
 8. Early intervention is preferable.
 9. Environmental agencies and forces are recruited to assist in the provision of service.
 10. Attempts are made to modify the environment in terms of attitudes, rights, services, and behaviour (social change).
 11. All mental health care users are welcome for as long as they want to be served (with the exception of specific short-term, high-demand programs).
 12. Work and vocational rehabilitation are central to the rehabilitation process.
 13. There is an emphasis on a social rather than a medical model of care.
 14. Emphasis is on the mental health care user's strengths rather than on pathologies.
 15. Emphasis is on the here and now rather than on problems from the past.
-

Psychosocial interventions may contribute a great deal to the improvement in the overall functioning of mental health care users.³³ It is argued that the stimulation provided in PSR

interventions produces neurocognitive changes that enhance the relationship between treatment intensity and functional improvement.⁴⁶ For mental health care users, something as ordinary as engaging in social interaction has been shown to enhance well-being, create the experience of meaning, and to prevent deterioration of mental health.⁴⁷ Social interaction is therefore an important component of PSR programmes. Although one cannot force a family to show support to a mental health care user, one can create a system within which mental health care users can receive support from their peers.⁵ Peer support consequently plays a valuable role in PSR programmes and mental health care users often react more positively to input from other mental health care users as opposed to input given by staff.⁴⁸

Attending PSR programmes can benefit both mental health care users and health care services as a whole. During a study conducted in the USA to measure the effect of PSR programmes on hospitalization rates, it was found that PSR programme attendance lowers admission rates as well as the amount of days spent in hospital as an in-patient. The clinical and psychosocial functioning of 41 mental health care users diagnosed with schizophrenia or schizoaffective disorder were measured at baseline and then at 6 and 12 months follow-up. Mental health care users that attended therapy more frequently and had better continuity in care had a reduced length of stay and improved psychosocial functioning at both 6 and 12 months. The study concluded that up to 28% of the changes in clinical and psychosocial outcomes, especially related to social, work and independent living, after 12 months of receiving PSR intervention was explained by the frequency and continuity of care.⁴⁹

One therapeutic intervention used to alleviate continued bed pressure that is based on the principles of psychosocial rehabilitation, is the day treatment unit. Day treatment units are community-based treatment centres where mental health care users can make use of a variety of therapeutic input as out-patients. These centres aim to fill the gap between in- an out-patient care by creating structure to the mental health care user's day, and improving attendees' social interaction. This decreases social exclusion, and stimulates and empowers mental health care users to improve their level of re-integration into society.⁷ Although there is strong evidence for assertive community, continuity of care and crisis care interventions, there are limited studies with sufficient evidence published about day treatment centres.⁵⁰

2.4 Community day treatment centres

Many countries have established out-patient treatment units in an attempt to address the consequences of continuous bed pressure and to bridge the gap between in- and out-patient services. Day programmes originally started out by giving similar services as in-patient units, such as supportive group therapy, social services, medication management and community meetings. These programmes have evolved into programmes providing more specific goal setting for community engagement, functional assessments, skills development, vocational rehabilitation and family psycho-education.⁵¹ These treatment units are referred to in literature as day care, day treatment units, day hospitals, day centres or rehabilitative care facilities. All of these units render different psychosocial rehabilitation-based interventions on an out-patient basis to mental health care users.

Data on day treatment centres is limited. In a 2001 Cochrane review, three alternative treatment interventions to standard out-patient treatment were reviewed, one of them being day treatment care. The review reported that no evidence was found that day treatment care was better or worse than standard out-patient care on any social or clinical outcome measures. There was data that suggested day treatment centres are more expensive than out-patient treatment, but it was inconclusive.⁵² In another Cochrane review published in 2007 Catty et al.¹³ reported that no randomised control trials for non-medical day treatment centres were found. The review further states that research for non-randomised studies gave conflicting evidence regarding the role of day treatment centres in mental health as well as the clinical and functional outcomes of attending these centres.¹³ Due to the limited systematic reviews or randomised controlled trials on day treatment care, it is useful to highlight findings from individual studies.

Literature was searched for quantitative studies reporting on the effectiveness of attending a day treatment centre rather than qualitative studies reporting on the experiences of attendees. However, some qualitative studies as well as descriptive studies that were found to be relevant to this research project were also reviewed. The researcher was specifically interested in the similarities or differences between day treatment centres in different countries, the types of treatment interventions, staffing, outcomes of attendees and challenges of these day treatment centres.

In Japan, day treatment centres focus on recreational activities, social skills training and occupational engagement.⁹ The treatment team consists of nurses, occupational therapists, social workers, clinical psychologists and doctors. A quantitative study conducted at Okumura Hospital compared the number of admissions of mental health care users attending the day treatments centre to non-attendees. Mental health care users attended the day treatment centre on average 2.3 days per week and an average of 14 mental health care users attended the centre per day. Attendance at the centre were found to be effective in reducing readmission rates if mental health care users were attending the unit continuously for four months or more with at least one visit per week. The findings suggest that attending a community day treatment centre may prevent readmissions of out-patients with schizophrenia in rural Japan. The authors also compared the days spent in hospital before and after attending the day treatment centre. Data showed that hospitalisation periods became shorter by up to three months. Data were however not statistically significant ($p = .49$) as there was only data available for four of the mental health care users. A weakness of the study was that the conclusions regarding the effectiveness of attending a day treatment centre was based on a small sample size of only nineteen mental health care users.⁹

In Turkey, day treatment centres were not accessible to those who stayed outside the community where the service was offered. Therefore a day treatment centre was started on the grounds of the Bakirkoy Research Hospital for Psychiatry and Neurology to ensure equal access for mental health care users from different communities.¹⁰ The specific treatment programme focused on vocational rehabilitation, psycho education, life skills training and social integration. The centre also rendered a support service to relatives. The multi-disciplinary team consisted of a psychiatrist, two psychologists, four psychiatric nurses, a social worker and four occupational therapists. No clinical or functional outcomes are reported for attendees of the day treatment centre at Bakirkoy Hospital. However, in the same article a study conducted at a community treatment centre in Istanbul reported improved clinical outcomes for attendees. The treatment programme entailed psycho-education, skills training, support groups, computer lessons, art and craft, folk dance groups and social outings to enhance shared experiences between attendees. Attendees also have an annual march against stigmatisation. The study reported reduction in hospitalisation and better adherence to medication was found in mental health care users attending the out-patient community treatment centre.¹⁰ No specific data were documented regarding the sample size or the clinical effectiveness of attending the centre.

A study conducted in Minnesota, USA showed evidence for the effectiveness of day treatment for mental health care users and relapse prevention.⁸ This was a combined study between two day treatment centres in rural Minnesota. The treatment programme at the centres was run by a multi-disciplinary team with a psychologist playing a leading role. There is no specific mention of occupational therapy input, although the topics covered at the centres are occupation specific. Attendance was voluntary and treatment focused on skills training, self-care, medication management, work readiness, advanced social skills, stress management, budgeting and decision-making. The aim of the centre was to develop skills for independent living. Treatment was given three days per week for three, one-hour sessions per day. The majority of mental health care users at the day treatment centre were female and had a diagnosis of schizophrenia.

Mental health care users that participated in the study conducted in Minnesota, USA were divided into two groups. Mental health care users who completed the day treatment programme (n = 27) and mental health care users who dropped out of the programme against the recommendation of staff (n = 13). The group who completed the day treatment programme had a readmission rate of 5.3%, with a total number of days spent in hospital of 67 days and for each individual, an average of 2.48 days. The group who did not complete their day treatment had a readmission rate of 46.4%, with a total of 1008 days spent in hospital as a group and an average of 74 day spent in hospital for each individual. This study showed clear evidence that attendance of a day treatment centre is effective in reducing the number of admissions and number of days spent in hospital ($p < 0.0005$) for mental health care users.⁸

In Sweden there is a distinction between meeting-place-oriented and work-oriented day centres. Meeting place orientated day centres are informal centres that focus on social interaction. Work orientated day centres focus on vocational activities and skills training. Data could be found indicating that psycho-education and craft activities are part of the general treatment programme in Sweden, but further information regarding the specific interventions, staffing, and attendance rates are limited.⁵³ No quantitative studies assessing the effectiveness of Swedish day centres could be found but two particular qualitative studies are of interest. The first investigated attendees' motivation and motives for participation in day treatment centres as well as their satisfaction with rehabilitation. Evidence suggests that women have stronger motivation to attend day treatment centres. The strongest motives for attending the day treatment centre were getting structure to the

day and for socialisation.¹² In the second study, attendees and non-attendees of a day treatment centre were examined regarding social interaction. The attendees engaged in more social interaction but did not experience better quality or closeness in their relationships than non-attendees. During this study it was found that social support was mainly provided by informal caregivers such as family members.¹¹

In a descriptive article about mental health care in Germany it was stated that Germany also distinguishes between two types of out-patient day treatment facilities, namely day care facilities and rehabilitative care facilities.⁵⁴ Day care facilities mainly focus on day-to-day leisure time activities. Some day care facilities are open for mental health care users with a variety of treatment needs who drop-in at their own convenience, while other day care facilities are more structured and attendance is mandatory. In 2000, there were 536 day care facilities that had a structured, 5-day a week programme with mandatory attendance. An additional 1013 day care facilities had a drop-in programme. Day care facilities vary in structural characteristics that depend on regional conditions and funding arrangements. Most do not have psychiatric or psychotherapeutic personnel on staff. Rehabilitative care facilities on the other hand provide a wide variety of interventions that include occupational therapy input, vocational training, sheltered employment, educational services and support for on-the-job-training to help mental health care users reintegrate back into the community. At these rehabilitative care facilities attendance is mandatory. The article does not report on the effectiveness of day care or rehabilitative care facilities.⁵⁴

In a study reporting on the overall running of 289 day treatment centres in Italy,⁵⁵ it was stated that the majority of staff employed at these day treatment centres are nurses. In 77% of these cases, the centre was managed by a medical doctor and in 21% of the cases, by a psychologist. The study distinguished between therapeutic interventions and rehabilitative activities. The predominant therapeutic intervention presented at these centres was psychotherapy, with occupational therapy only presented at 2.9% of the centres. The predominant rehabilitative activities were crafts, activities of daily living like preparing meals, and physical activities like outdoor sports. The majority of mental health care users spent 2-5 hours per week on therapeutic intervention and 6-10 hours per week on rehabilitative activities. Although most of the centres reported that their main focus was social rehabilitation, only 40% of them had a social skills development programme. A third of the centres introduced mental health care users to vocational rehabilitation skills in preparation for sheltered employment programmes.

The Italian study further reported that the majority of attendees at day treatment centres were male (61%) and had a diagnosis of schizophrenic disorders (60%). About 30% of the attendees had been attending the day treatment centre for less than a year, with the majority of the users (38.7%) attending for more than three years. The turnover of these centres was low, with mental health care users being in day treatment care for extended periods of time. The study did not report on any functional or clinical outcomes. However, when staff were asked to give their opinions regarding the outcomes of attending a day treatment centre, the majority reported a decrease in number of admissions, followed by an easing of the burden on families and a broadening of social networks.⁵⁵

The USA had the same problem as Turkey concerning day treatment centres not being accessible to all mental health care users in the surrounding area.⁵⁶ The strategy followed to overcome this problem in one area was to start a treatment mall on the hospital grounds. A treatment mall is the physical space where the psychosocial rehabilitation interventions occur. The Dorothea Dix treatment mall in South Carolina has 36 classrooms, a cafeteria, a recreational area, a library, a boutique where mental health care users spend virtual money, a medical suite, a greenhouse, a vocational evaluation centre, a steakhouse where mental health care users work and enclosed courtyards that are used for outdoor activities. Mental health care users are transported daily from different communities and group homes to attend the treatment mall. Because the treatment mall is on the hospital grounds, mental health care users can easily walk to doctors' appointments or to collect medication. Classes are 45 minutes each and a maximum of four classes per day is advised. Classes are taught by the multi-disciplinary team and educators from a nearby college teach adult basic education, human resources development and computer skills. Other topics covered by the staff are health and wellness, medication education, symptom management, emotion regulation, stress management, budgeting, cooking, horticulture, music, art and spirituality. No clinical or functional outcomes are reported.⁵⁶

Dual diagnosis treatment is an intervention that is more commonly incorporated in community day treatment centres due to mental health care users' need for this type of intervention. Countries have individualised the nature of these interventions according to the particular service needs faced in each setting. In Australia, dual diagnosis interventions are part of the comprehensive PSR programmes open to all mental health care users at community centres.⁵⁷ In contrast with Australia, drug dependence services in Italy are run separately from mental health care. Mental health care users with dual diagnoses are

managed in specialized drug dependence units due to the high association with violent behaviour that may be disruptive to mainstream mental health care users.⁵⁵

Examining the literature, there is evidence that attendance at day treatment centres can be beneficial for mental health care users.⁸⁻¹² Only three studies reported on the effectiveness of day treatment centres by measuring admission rates and days in hospital. The Japanese⁹ and Turkish¹⁰ studies reported a decrease in number of admissions, where the study conducted in Minnesota, USA reported a decrease in both number of admissions and number of days spent in hospital.⁸ Neither the Japanese nor the Turkish study reported the statistical significance of their positive findings. The USA study only reported the statistical significance for number of days spent in hospital and not for the decline in number of admissions.⁸ Two of the listed studies stated that reduction in number of admissions as well as number of days spent in hospital are associated with regular attendance.^{8,9} Nevertheless, these studies are all either descriptive studies or report on a small sample size that cannot be generalised to the broader mental health care population. This correlates with the findings of the Cochrane Review that suggested that more in-depth studies should be conducted to evaluate the effect of day treatment care.¹³

Although all studies reported following a PSR programme, the centres focused on different aspects of PSR, to the extent that Sweden and Germany distinguish between different day treatment services.^{53,54} The Dorothea Dix centre was the only day treatment centre that reported providing transport for mental health care users.⁵⁶ The Turkish day centre was the only centre that reported incorporating mental health care users in activities to educate the community on mental health and decrease stigmatisation.¹⁰ This emphasises the differences in services according to the country in which the centres are based, mental health care user and service needs, culture, legislation, resources and staffing. In Turkey and the USA difficulty with managing a centre was reported as shortages of staff and funding.^{8,10} In Italy the most problematic aspects of managing day treatment centres were identified as funding, prolonged care and difficulty in discharging mental health care users, and insufficient systems for reporting the outcome of treatment given.⁵⁵ A shared similarity is that all centres reported on are run and managed by a multi-disciplinary team. Occupational therapists are only mentioned by name in four of these studies^{9,10,54,55} as part of the comprehensive team rendering a service within the centre. However, there is no mention of the role or specific duties that the occupational therapists perform in the day-to-day running of these day treatment centres.

2.5 The role of occupational therapy in community day treatment centres

Over the last few decades, the notion that mental health care users can recover became a reality and treatment programmes promoting meaningful life became part of comprehensive mental health care services.⁴² This opened the door for occupational therapists to have an active role in mental health care services on both an in- and out-patient level of care. It is evident from the studies conducted in Japan,⁹ Germany,⁵⁴ Turkey,¹⁰ and Italy⁵⁵ that were discussed above, that in some cases occupational therapists do form part of multi-disciplinary teams and have an important role to play in community day treatment centres. There is however a paucity of literature regarding the effectiveness of occupational therapy in community mental health and even more so with regard to occupational therapy in day treatment centres.

Occupational therapy in mental health is focused on improving a mental health care user's functioning by using activities as therapeutic tools to develop the necessary skills for the mental health care user to improve their quality of life and re-integrate into their community.³³ Occupational therapists are trained to have a holistic approach to rehabilitation and to consider the relationship between person, environment and occupation.⁵⁸ The term 'occupation' does not necessarily refer to work, but the things people do every day. These include leisure, socialisation, self-care or community living.⁵⁹ Occupational therapists use their training and knowledge to match occupations with different levels of demand to each individual's occupational needs.⁶⁰ For a therapist to facilitate development of skills and re-integration into the community, there should be an understanding of the integrated balance between the mental health care user's community and home environment, personality, occupations and a firm knowledge of the particular illness or disability. The aim of the occupational therapist is to assist the mental health care user in maximising their occupational performance within their unique social and cultural environment.⁶¹

Mental health care users who attend community day treatment centres often have limited opportunities to engage in occupation, which can have an influence on their identity and self-worth. These are two aspects that are exacerbated by mental illness.⁵⁹ It has been argued that occupational engagement is essential to health and quality of life.⁶² A qualitative study, conducted by an occupational therapist, documented the experiences of eight mental health

care users in a two-year action research project. The study explored the journey of these mental health care users from being socially excluded people that were occupationally deprived, to being full occupational beings and participating members within their local communities. According to these mental health care users, their main need was not for their psychiatric symptoms to be alleviated, but rather living a satisfying life. This was achieved through using occupation as a basis of treatment. Using occupation as basis of treatment to reach recovery goals is referred to as occupation-as-means. These mental health care users reported that engaging in meaningful occupations was an integral part of their recovery in building relationships, increasing motivation and expanding their role performance.⁶³ Similarly, another study conducted at day treatment centres in Sweden reported that less psychiatric symptoms and more time spent at the day centre itself were indicators for improved occupational engagement, which can include activities in the domains of self-care, work, leisure and independent living skills.⁶⁴

The matching of activity demands to the needs of the mental health care user across the domains of self-care, work and leisure occurs within a number of psychiatric settings, including community day treatment centres. The focus of occupational therapy in community mental health is to improve mental health care users' ability to live independently within their communities.⁴⁵ This involves improving skills necessary for activities of daily living like shopping, cooking or cleaning; overcoming loneliness by creating opportunities to interact and participate in social, leisure and recreational activities; and also medication management. Improving these skills in turn increases self-esteem, creates a more positive self-perspective and greater life satisfaction.³³ It is documented that people with mental illness often have impaired cognition and that cognitive abilities are closely related to independent community functioning.⁵⁹ Therefore, cognitive stimulation forms an integral part of occupational therapy treatment given at community level.

A difference between in-patient occupational therapy treatment and community occupational therapy is that the family is also seen as a client and treating the family is just as important as giving therapeutic input to the mental health care user.⁶⁵ The occupational therapist needs to be aware of the expectation that the family have of the mental health care user and the expectation that the mental health care user has of the family. This will ensure that the mental health care user will have a sense of belonging within a family and that both parties have realistic expectations of each other and what improvements can be expected. The occupational therapist also has a responsibility in addressing stigma against mental illness

within families and the wider community.⁶⁶ Working with the community is not seen as a traditional role of occupational therapists but is essential for reintegrating those with mental illness back into their communities. Due to cultural and religious beliefs, community members are often scared of people with mental illness and hold fast to damaging myths, for example, hallucinations are interpreted as witchcraft or the wrath of the ancestors.⁶⁵ The myths around mental illness further exacerbate stigmatisation against mental health care users. Occupational therapists should therefore educate community members on the signs and symptoms of mental illness as well as possible side effects of medication, like tardive dyskinesia, that are unknown and can be misinterpreted.⁶¹

Community occupational therapy treatment is often provided in groups. Group therapy creates a natural learning environment with many opportunities for interaction. If facilitated correctly, groups can create an atmosphere of energy and can stimulate creativity. A group environment can also challenge mental health care users to venture out of their comfort zone, which can create better engagement with occupations.⁶⁷ A variety of different group interventions are used by occupational therapists working in the community with mental health care users.⁶⁷ Group interventions frequently used by occupational therapists include cognitive stimulation, art and craft, life skills, horticulture, psycho-education and drumming. Nevertheless, the evidence supporting the use of these types of groups is often not conclusive.

There is no systematic review on the use of cognitive stimulation for people with psychoses. In 2012, a Cochrane review was published that evaluated the effectiveness of cognitive stimulation programmes aimed at improving the cognition of people diagnosed with dementia. Woods et al.⁶⁸ reported on 15 randomised control trials with 718 participants. There was consistent evidence that cognitive stimulation benefits cognitive functioning of people with mild to moderate dementia. Four studies included in the review, self-reported on improvements in the quality of life and well-being of participants. Staff working with participants observed an improvement in communication and social interaction when participants partook in cognitive stimulation programmes.⁶⁸ Thus, there is no literature on the effect of cognitive stimulation for psychoses, other than dementia.

Creative activities like art and craft groups are very widely used by occupational therapists.⁶⁹ However, a Cochrane review reporting on two randomised controlled trials found insufficient evidence for the use of art therapies for people with schizophrenia and schizophrenia-like

illnesses.⁷⁰ In contrast to this, in a qualitative study conducted to determine whether art therapies reduce the psychopathology of people with schizophrenia, participants reported an improved sense of self. The author argued that a stronger sense of self reduces the anxiety associated with social interaction, which results in better social competence.⁷¹ The same results were reported in another qualitative study exploring the perceptions and experiences of mental health care users who partook in an art therapy. Participants reported increased levels of self-esteem and empowerment.⁷²

Occupational therapists also use music as part of their creative activity groups. A Cochrane review evaluating the effects of music therapy for mental health care users with schizophrenia reported that music therapy can improve negative symptoms and social function. Mössler et al.⁷³ reported on 8 randomised control trials where standard care with music therapy was compared to standard care alone or no care. Four trials reported improvement in negative symptoms, two trials in depression and one trial in anxiety. One trial, with 70 participants, reported an improvement in social functioning. Some data in the study were inconsistent depending on the number of musical sessions and the quality of music therapy provided. The authors state that a sufficient number of therapy sessions should be provided by trained music therapists.⁷³ There is little research regarding using African drums in mental health treatment contexts. Nevertheless, studies have shown that drumming is a complimentary therapy for addiction, especially for people with repeated relapse. Drumming groups have also been shown to create a sense of connectedness with self and others as well as induce relaxation.⁷⁴

There is currently no good evidence to demonstrate that life skills groups are beneficial for mental health care users. In a review published in 2012 by the Cochrane Collaboration, seven randomised control trials with 483 participants were reviewed to measure the effect of life skills programmes for people with mental illnesses.⁷⁵ It was found that there is no added benefit for mental health care users who partook in life skills programmes. Six studies were reviewed that compared life skills programmes with standard care and one study that compared life skills programmes with peer support programmes. Quality of life, mental state evaluation and general day-to-day functioning were used as measurements. There was no significant difference in quality of life or social performance skills between the participants in the control group and those in the life skills training group. Tungpunkom et al.⁷⁵ reported that the quality of evidence is low since all data that were reviewed was short term data, with no study presenting data for longer than 24 weeks.

Although gardening is also a popular activity in occupational therapy, a Cochrane review published in 2014 only identified one randomised control trial on horticultural therapy for schizophrenia.⁷⁶ Due to the limited data, insufficient evidence was found to conclude whether horticultural therapies (gardening) are beneficial or harmful for people with schizophrenia. There is, however, other literature in which mental health care users reported improvement in their general well-being and life satisfaction when partaking in horticultural activities.^{77,78} Perrins-Margalis et al.⁷⁹ reported on the horticultural experience from the perspective of the mental health care users, focussing on the impact that group based horticultural activities have on quality of life. The effect of group horticultural activities on life satisfaction, self-concept, health and functioning and socio-economic factors were evaluated. Mental health care users were asked to partake in two horticultural sessions per week for a period of six weeks. Data were gathered using journals, observations by five independent researchers and a semi-structured interview. It was concluded that due to mental health care users experiencing a sense of accomplishment, improved skills and improved interpersonal relationships that group horticulture activities have a positive effect on quality of life.⁷⁹

On the other hand, there is good evidence to support the use of psycho-education in treatment programmes for people with enduring mental health problems. A Cochrane review compared the effect of treatment with psycho-education to standard knowledge-care treatment for people with schizophrenia.⁸⁰ The review included 5142 participants from 44 randomised control trials over a time period of 21 years. All participants were in-patients, ranging between the ages of 18-60 years. The duration for which mental health care users received psycho-education treatment varied, with the median at 12 weeks. Xia et al.⁸⁰ concluded that there were less incidents of non-compliance in the group who received psycho-education as part of their treatment regime. Eleven trials reported that the psycho-education group had a lower relapse rate and also a decrease in admissions, especially over a longer period of time. Two trials with small sample sizes reported that mental health care users receiving psycho-education treatment spent less days in hospital compared to the standard knowledge group. Evidence further suggested better global and social functioning. In addition, participants receiving psycho-education are more likely to be satisfied with mental health services and have a better quality of life compared to the standard knowledge group. Authors advocate for the use of psycho-education as part of treatment for people with schizophrenia.⁸⁰

Although the evidence supporting the use of occupational therapy group interventions for people in day treatment centres is moderate to weak, there is also little evidence supporting individual interventions in the community. A study by Cook et al.⁸¹ reported that attendance of a long-term occupational therapy programme was not effective. The study, conducted in the UK, compared the social functioning and negative symptoms of mental health care users with psychotic conditions who receive occupational therapy treatment with mental health care users receiving only standard care. Forty-four mental health care users received additional individualised occupational therapy, in addition to standard care for a 12-month period. Treatment focused on self-care, leisure activities, occupational engagement within the community, balanced lifestyle and skills development. The results showed no difference in outcomes for mental health care users receiving occupational therapy compared to those who received only standard care. The mental health care users receiving occupational therapy only show slight functional improvements in subcategories of the social functional scale. These domains were relationship, independent performance, independent relation and recreation.⁸¹

However, a study conducted in Sweden⁸² investigated the effectiveness of group-based occupational therapy in a psychiatric care facility and reported positive results. What is different between this study compared to previous studies is that this study evaluated occupational therapy as a 'package'. The study did not evaluate individual group intervention but evaluated all interventions done by occupational therapy as a whole. Twenty mental health care users were examined on admission, noting psychiatric symptoms, quality of life and occupational performance. Participants were mainly female, between the ages of 21-50, and had a diagnosis of schizophrenia or schizo-affective disorder. The duration of illness varied from 1 to 17 years. The aim of the occupational therapy treatment programme was to improve independence in activities of daily living, improve self-knowledge and expand life roles. Activities that were included in the programme were crafts, horticulture, cooking skills and body awareness. The programme comprised 20 hours a week distributed over 4 days and participants were in treatment between 4-30 months. On discharge, participants were re-evaluated and scores compared to initial measurements on admission. Improvements were reported in psychiatric symptoms, general mental health and occupational functioning. The improvements in occupational functioning were in the three domains of motivation, habitation and communication and interpersonal skills. This shows that a treatment programme consisting of a variety of occupational therapy inputs can be beneficial to mental health care users. Unexpectedly, the results showed that the attendance of the occupational therapy treatment resulted in no significant improvement in quality of life.⁸²

2.6 Mental health care in the Western Cape province of South Africa

In most of the developing world there are limited community psychiatric services.⁶ Africa is not an exception. Only 50% of African countries have existing mental health care policies and only 56.6% of African countries have community mental health care services.⁸³ In South Africa, the Mental Health Care Act (2002)³² emphasised the importance of community health care in an attempt to decrease the pressure on specialized psychiatric hospitals and to make mental health care more accessible to all.^{32,84} Due to insufficient resources and structural changes required, the implementation of these aspects of the act were not always successful. Only a quarter of the mental health care professionals in South Africa are employed in the community, the majority of whom are still practicing in institutional settings.⁸⁵

The scarcity of community-based mental health professionals combined with the quick turnover in psychiatric hospitals limits the quantity and quality of treatment mental health care users receive when they move from in-patient services to out-patient community care. This has resulted in a dramatic increase in the numbers of HFUs. A study conducted in the Western Cape province of South Africa identified factors contributing to HFUs in a developing country and Botha et al.⁴ report that some of the factors predicting rates of HFUs in a developing country, are premature discharges and underutilization of depot antipsychotics. Another study also conducted in the Western Cape province of South Africa by Lund et al.⁸⁶ reported that poor treatment adherence was the most likely cause for readmissions of HFUs. The strengthening and development of community-based services were suggested as possible solutions to minimise the effect of the revolving door phenomenon in South Africa.^{2,86}

The strategy used in the Western Cape province of South Africa to manage the constant pressure on in-patient units has been the implementation of early ('crisis') discharge policies. This controversial strategy entails discharging mental health care users who are not yet fully stabilised in order to make beds available to mental health care users who are more acutely ill. According to this policy, in-patient staff identify the mental health care user who is the most stable, does not pose an immediate threat to him- or herself and who has practical follow-up arrangements, like access to community clinics and resources that can be put in place. This mental health care user is then discharged to make a bed available for a more acutely mentally ill health care user. However, this strategy has a demoralizing effect on staff and families² and according to Botha et al.⁴ is a contributing factor to HFUs.

As is the case for hospitals in many countries, high bed pressure that leads to premature discharge of mental health care users is also a challenge faced at Stikland Hospital. Stikland Hospital is a state psychiatric hospital serving a mixed urban and rural community of approximately 1.5 million people. It is one of three large state psychiatric hospitals in the Western Cape province of South Africa and mainly focuses on in-patient services.² Stikland Hospital also implemented the 'crisis' discharge policy to manage the constant pressure on in-patient units. A retrospective study conducted at Stikland Hospital examined data on all acute psychotic male mental health care users discharged during 2004. The aim of the study was to determine the effects of the crisis discharge policy on readmission rates for in-patients. The study reported that premature discharges are linked to increased readmission rates.²

Another study conducted at Stikland Hospital found that a modified version of the international model of assertive community treatment may successfully reduce admission rates, decrease days spent in hospital and improve overall levels of functioning. It also identified that these services do not need to be expensive, especially when pre-existing infrastructure and resources can be used.³⁴ This raises the question, that if that was the case with assertive community treatment can it also be the case with day treatment centres? Akpula et al.⁸⁵ stated that due to the scarcity of community health care services in developing countries, day treatment centres might improve mental health care users' engagement with services, since these may be the only easily accessible health care service mental health care users have.

From an occupational therapy viewpoint, it is important to document the role that occupational therapy can play in establishing new treatment strategies since there is a scarcity of studies on the effectiveness of occupational therapy within community mental health.⁸⁷ Previous international research has examined the effectiveness of different group interventions on mental health care users and found that the findings were inconclusive, like the case with life skills, art and craft and gardening.^{70,75,76} This emphasizes the need to evaluate the effectiveness of occupational therapy as a 'package' of interventions, rather than the effectiveness of each individual group. In South Africa, only 2% of published health research is on mental health.⁸⁸ Therefore literature emphasises the need for research in the field of mental health, especially to demonstrate the efficacy of treatment programmes developed by occupational therapists to support evidence-based practice. This, in turn, will help to support the role of occupational therapy in mental health care.^{45,89}

Chapter 3 Methodology

3.1 Introduction

As a result of the immense pressure on in-patient services, the management team of Stikland Psychiatric Hospital decided to introduce a community day treatment centre as part of the services that the hospital renders to its service users. To the knowledge of the researcher this type of service had not been offered before as a component of community mental health care in South Africa. The possibility of starting an out-patient treatment programme based on the principles of psychosocial rehabilitation was welcomed by hospital staff as a possible solution for the revolving door phenomenon. It was expected that the service would bridge the gap between in- and out-patient services.

The community day treatment centre, referred to as the Specialized Ambulatory Treatment Service Centre (SATS Centre) was launched in February 2009. Two members of the occupational therapy department - an occupational therapist and an occupational therapy technician - were assigned to the development and management of the SATS Centre. Therefore the purpose of the study was to determine the effect of an occupational therapy-led day treatment centre for mental health care users in South Africa.

This chapter present an outline of the SATS Centre by reporting on the aim of the centre, attendance criteria and the treatment programme at the Centre. Then the study design, study participants, methods for data collection and data analysis will be discussed. The chapter will conclude with the ethical considerations.

3.2 The Specialized Ambulatory Treatment Services Centre

3.2.1 Location

A freestanding building on the hospital grounds was allocated for the SATS Centre. A recreational area was set up in the foyer of the building, with a pool table, table tennis table and a darts board. This created an informal welcoming atmosphere upon entering the

centre. In the central area of the building was a large open plan space which was set-up as an activity room with different spaces for lounging, dining and crafts. Out of the central area ran eight single rooms that were assigned as follows: two rooms for group sessions, one seating a maximum of 15 people and the other a maximum of 35 people; two rooms for staff offices for administration duties, individual interventions and family interviews; a store room; a kitchen and separate male and female toilet facilities. Outside there was an established garden with a lawn and flower beds. The garden with its benches and veranda was used as a smoking area and occasionally as an informal intervention area during summer.

3.2.2 The aim and attendance criteria

One of the aims of the SATS Centre was to provide an environment free of discrimination where mental health care users may come to socialise or simply relax. Having access to a space free of social exclusion, mental health care users had opportunity to develop their social skills and create friendships with other mental health care users. Having an out-patient treatment centre also allowed for early identification of relapse signs and consequently, early intervention to avoid relapse. Another aim was the continuation of rehabilitation on an out-patient basis by rendering a service to mental health care users who were unable to complete rehabilitation due to high bed pressure in acute wards.

Inclusion and exclusion criteria for the SATS Centre service users were agreed upon (Table 3.1). These guided referrals and helped occupational therapy staff to manage the centre.

Table 3.1 In- and exclusion criteria of the SATS Centre

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> • Age: 18-59 years • Residing in the catchment area of Stikland Psychiatric Hospital • Mental health diagnosis and on medication • Independent in travelling, eating, grooming, taking medication 	<ul style="list-style-type: none"> • Diagnosis of Alzheimer's disease or dementia

All mental health care users who made use of the centre were adults of 18 years or older, resident in the Stikland Hospital catchment area, had a mental health illness and received medication. Because of the low staffing level, mental health care users needed to be

independent in eating, transport use, grooming and medication use. Mental health care users with a diagnosis of Alzheimer's disease or dementia were excluded because of their higher care needs. The treatment programme and aims were also not appropriate for pensioners; therefore a cut-off age of 59 was set in place.

3.2.3 The treatment programme

Although attendance to the SATS Centre was voluntary, one of the centre rules that was agreed upon by staff and mental health care users was that each mental health care user had to attend at least two therapeutic groups of his/her choice per day. Mental health care users were actively involved in setting up the treatment programme, thereby improving interest in attending groups. The types of interventions given by the occupational therapist and occupational therapy technician changed annually according to the needs or preferences of the mental health care users, the skills set of staff, resources and the number of mental health care users attending the centre. The table below outlines the number and type of therapeutic groups offered per day over a four-year period.

Table 3.2 Development of the therapeutic programme at the SATS Centre

Year	2009	2010	2011	2012
Number of groups per day	2	4	4	4
Number of days per week therapy was offered at the centre	3	4	4	4
Type of groups	Orientation Art and craft Life skills	Orientation Art and craft Life skills Gardening	Actuality Art and craft Life skills Psycho-education Nutritional Drumming	Actuality Art and craft Life skills Psycho-education Nutritional Drumming Individual sessions

Orientation groups originally started as a 30-minute 'welcome' group, facilitated daily to introduce mental health care users to each other, encourage social interaction and set out the programme for the day. Staff used these groups to do observational assessments of

mental health care users' level of functioning. Over time, the orientation groups developed into actuality groups - informal discussion groups where mental health care users presented relevant national or international news incidents to the group members. Actuality groups were 60-minute group sessions run on a daily basis. Mental health care users were encouraged to present news items of interest to them, at their own level of awareness. Occupational therapy staff facilitated social interaction, discussions, awareness of surroundings and world events. They also focussed on memory and concentration, vocabulary, social conduct and self-esteem. A daily local Afrikaans newspaper was delivered and maps of the world and South Africa were displayed in the area to help mental health care users prepare for the groups and orientate themselves to the international news.

Art and craft groups were initially started as a means of engaging new attendees, improving low motivation and drive, increasing self-esteem and giving mental health care users an opportunity to express emotions in a non-verbal way. It was the occupational therapist's responsibility to match the activity requirements with the skills of the mental health care users to ensure that mental health care users had an acceptable end product and positive experience. The amount and type of craft groups offered depended on the variety and quantity of consumables that were available. Art and craft groups ranged from low-cost activities like making mobiles with recycled waste, to more expensive and labour intensive activities conducted over a few sessions, like mosaic or fabric painting.

Life skills groups consisted of a combination of discussion, activity based and introspective sessions. Topics included budgeting, anger management, communication skills, assertiveness training, personal hygiene, food preparation skills, child care skills, balanced lifestyle, day-night routine, planning process, problem-solving process, stress management and goal setting. Life skills groups were 30-45-minute sessions depending on the topic. At the SATS Centre, life skills training is a continuous intervention.

Gardening groups were initiated in 2010 after mental health care users identified that gardening was a skill they would like to learn. A monetary donation was received to contract a landscaping company. The company offered skills development to mental health care users while they planned and developed the garden surrounding the centre. Six months after the completion of the garden project, the enthusiasm of the mental health care users to use their skills and maintain the garden decreased. In 2011, the gardening groups were stopped and the staff took it on themselves to maintain the garden.

Traditionally psycho-education focuses on teaching mental health care users about their specific illnesses and treatment. At the SATS Centre it was identified that mental health care users needed to expand their knowledge regarding a variety of medically related topics, not just psychiatric illnesses and medication. Since psycho-education groups are not occupational therapy specific, this was identified as one of the areas where the involvement of other professions could be utilised. Final year medical students were asked, as part of their training, to present psycho-education groups every second week for 30-45 minutes. Topics ranged from traditional medically related topics (knowing your illness, medication and side effects, discussing general medical conditions like cancer, tuberculosis and HIV prevention), to more general topics (identifying and reporting child abuse and how to give mouth to mouth resuscitation).

Final year students from the Department of Nutrition were asked to present a 45 minute group every month regarding topics such as healthy balanced diet, food preparation methods, economic food options and portion size. Mental health care users with diagnoses like diabetes, cholesterol or obesity were also treated on an individual basis by the dietetic students. Occupational therapy staff took responsibility for all student presentations, guiding students in selecting relevant topics and being present when students presented the psycho-educational groups. Psycho-education with individuals or smaller groups was the responsibility of occupational therapy staff. These smaller psycho-educational treatment sessions were closed groups. Groups often ran for 3-6 weeks due to topics, like sexual education, that were too complex to present in one session.

Drumming groups were introduced in 2011. African drums; a goblet shaped drum carved from wood, covered with animal skin and played by using your hands; were used. Groups accommodated 6 to 11 mental health care users and were held every second week. As the number of mental health care users that attended the SATS Centre increased, the need for smaller groups and individual interventions arose. Six hours per week were allocated for individual treatment sessions. Individual treatment would focus on any input the specific mental health care user may need like goal setting and reviewing of goals, family sessions and education, creating a CV and doing work-preparation, referrals to additional services within the community or to vocational rehabilitation programmes, behavioural modification and supportive counselling.

3.3 Study design

A retrospective pre-test/post-test quasi-experimental study design was used to determine the benefits of attending the occupational therapy-led day treatment centre. This type of study design aims to evaluate an intervention without randomisation.⁹⁰ Although randomised control trials have the highest credibility to assess causality,⁹¹ quasi-experimental study designs are becoming more prevalent in the medical field. Due to small sample sizes, ethical considerations, and difficulty randomising participants, quasi-experimental study designs are often used. The advantages of this type of pre-test/post-test design are that a control group is not required. Another advantage is that it gives the researcher the opportunity to retrospectively demonstrate causality between an intervention and an outcome. It gives a comparison between pre- and post-test scores that can be statistically analysed and more widely interpreted than data in a post-test only or descriptive study design.⁹⁰ In this study there was no separate control group due to the study being done retrospectively. The same group of participants were used for pre-test (initial data measurements before the intervention) and post-test comparison. Pre-existing data for 2009 - 2012 was used.

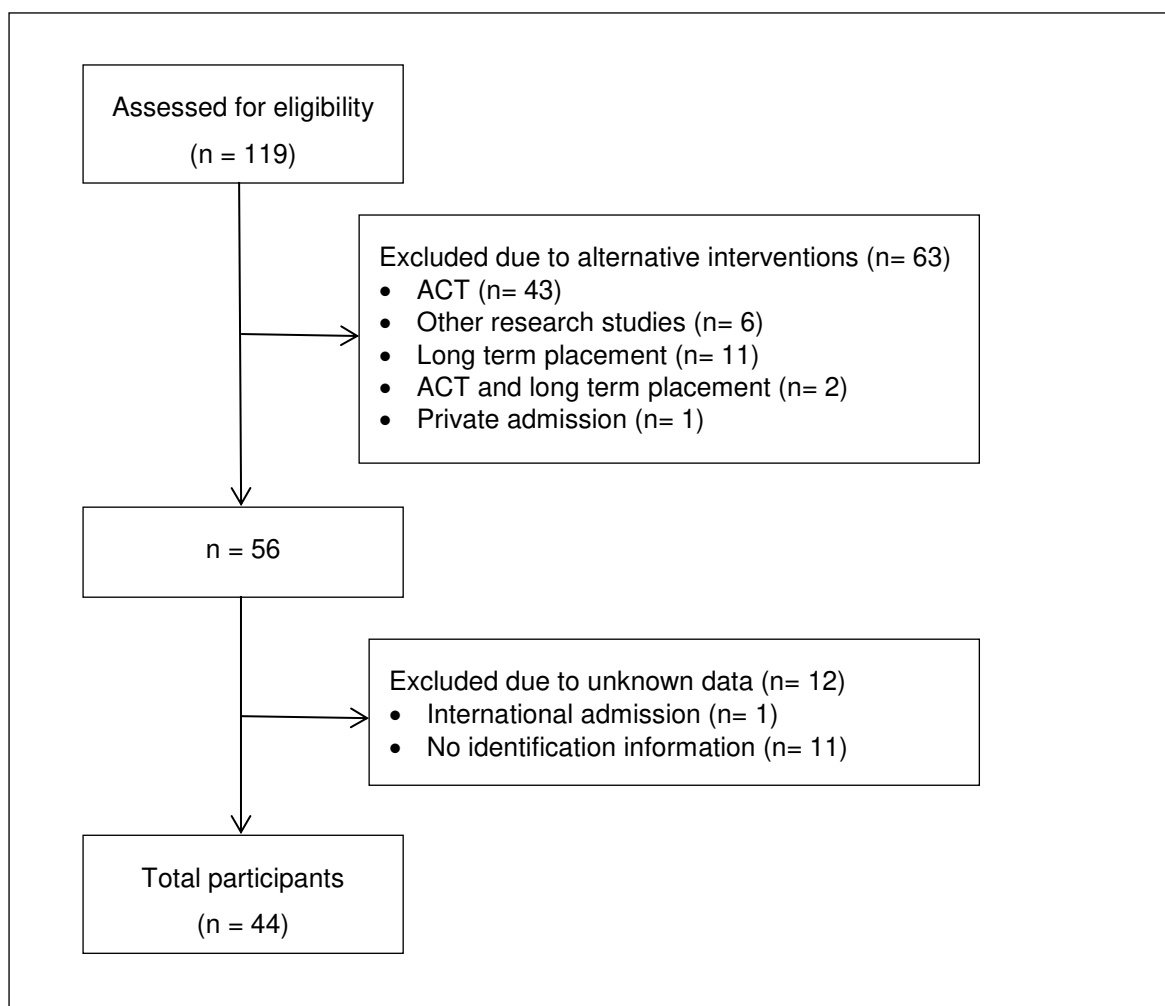
3.4 Study participants

Total population sampling was used for this study.⁹⁰ All mental health care users that attended the occupational therapy-led day treatment centre for a 12-month period from 1 July 2009 to 30 June 2010 were considered as possible candidates to include in the study. A total of 119 mental health care users were accepted to join the centre in accordance with the centre's inclusion and exclusion criteria (set out in Table 3.1).

To ensure that the only variable to standard care given to the participants was attendance at the occupational therapy-led day treatment centre, all attendees that received additional care were excluded. As a result, a total of 75 attendees were excluded as possible participants to this study. Of the 75 excluded attendees, 43 attendees were part of the assertive community treatment (ACT) programme. This meant that they received a home visit from a medical professional at least once every two weeks to check compliance and give support to the mental health care users and their families. Six attendees were part of a research study, where follow-up appointments were held more regularly than in standard care. Eleven attendees were placed or already residing in long-term care facilities during the study period.

These long term care facilities had professional staff to support mental health care users, administer medication and oversee general well-being. Two attendees were residing in group homes as well as receiving input from the ACT-programme. One attendee was excluded due to additional support and care he received after being admitted in a private psychiatric facility. One attendee was excluded due to numerous admissions in Holland during the 24 months prior to attending the day treatment centre. No clear information could be found regarding the number of admissions and the time periods of these admissions. Eleven (n = 11) attendees were excluded from the study due to insufficient personal information, including identification numbers or diagnoses. This limited the researcher's ability to identify the specific attendees in the data base to extract the relevant data. The total number of participants in the study was therefore 44.

Figure 3.1 Study participants (n = 44)



In determining the appropriate sample a statistician did a sample size calculation.⁹² The results indicated that a sample size of 41 would be sufficient to achieve significant levels of $p = .05$.

3.5 Data collection and management

Data pertaining to admission rates and days spent in hospital was extracted from the Clinicom data base. Clinicom is a computerised record keeping programme used in all state medical institutions in South Africa. When Clinicom was initially launched it was known to have some data integrity problems. To ensure that this did not influence the outcome of the study, the researcher verified all Clinicom data by manually checking all individual medical folders. It is standard care at Stikland Hospital that paper statistics are kept on admission and discharge by ward nursing staff. This paper data were available to use as comparator to the Clinicom data. No participants were identified by name during the study, but were allocated numbers to ensure their confidentiality. The medical folders were also used to extract data regarding participants' age, diagnosis, race and gender. Data pertaining to participant's frequency of attendance at the SATS Centre were extracted from attendance registers. Attendance registers of all participants attending treatment were kept by SATS Centre staff since 2009. A data collection sheet was created to manage all collected data (Appendix 1).

To ensure consistency in managing data for number of admissions, no admission shorter than 5 days was recorded as an admission. The Mental Health Care Act (2002) states that prior to admission in a state psychiatric facility each individual should complete a 72-hour observation period at a community health clinic to exclude any general medical condition or the use of substances as a cause for the episode.³² This 72-hour period was seen as the beginning of an admission and thus was part of the calculation for days spent in hospital. In the case where the participant was not admitted to a psychiatric facility after the 72-hour observation period was completed, the episode was not seen as an admission and therefore, excluded from the data. In accordance with the Act, no admission was shorter than 72 hours or in other words, 3 days. To account for deviations from the established admission protocols the researcher did not consider less than 5 days as an admission.

The calculation for frequency of attendance was based on the participants' attendance rates over the 24-month period after their first attendance at the centre. The 44 participants were divided into two groups, regular and occasional attendees. The median of the groups' attendances (13 visits) was used to divide the participants. Thirteen or less visits were coded as occasional attendance and 14 or more visits were coded as regular attendance. The allocation of participants in these two groups provided greater statistical power than analysing three groups or more.

3.6 Data analysis

The Statistical Package for the Social Sciences (SPSS for Windows; Version 21) was used for data analysis. The data were run through a basic analysis to identify possible missing data, descriptive criteria and to check distribution. Histograms were used to determine the use of parametric or non-parametric testing. The Kolmogorov-Smirnov tests⁹³ and Shapiro Wilks test⁹³ were also used to evaluate the distribution of the data and support the use of non-parametric tests. Cohen's R was used to calculate effect size, with criteria .1 = small effect size, .3 = medium effect size and .5 = large effect size.⁹³ Each objective will be discussed separately with regard to the data analysis method used to reach that specific objective.

To determine the client factors that affect the number of admissions over the 24-month period prior to attending the occupational therapy-led day treatment centre.

The Kruskal-Wallis test⁹³ was used to assess the association between each of the client factors and the outcome of admission rates prior to the intervention. This test was selected because admission rate was a discrete non-normally distributed numerical variable.

To determine whether there is a difference in the number of admissions over the 24-month period before and after attending the occupational therapy-led day treatment centre.

The Paired Wilcoxon⁹³ signed ranks test was used to compare the admissions rates between pre- and post- periods. The pre- and post- periods refer to the 24 months prior to attending the occupational therapy-led day treatment centre and the 24 months after attendance started.

To determine whether there is a difference in the number of days spent in hospital over the 24-month period before and after attending the occupational therapy-led day treatment centre.

The Paired Wilcoxon signed ranks test⁹³ was used to compare the days in hospital between pre- and post- periods.

To determine whether there is any difference in the number of admissions over a 24-month period based on the frequency of attendance at the occupational therapy-led day treatment centre.

The difference between pre- and post- admissions was compared between the two attendance groups using the Mann Whitney test.⁹³

To determine whether the frequency of attendance at the occupational therapy-led day treatment centre has an effect on the number of days spent in hospital over a 24-month period.

The difference between pre- and post- days in hospital was compared between the two attendance groups using the Mann Whitney test.⁹³

3.7 Ethical considerations

Written approval and permission to conduct the study was obtained from the Health Research Ethics Committee of the University of Stellenbosch. (Reference no: S12/03/072, Appendix 2, 3 and 4) Permission was granted by the academic health institution (Appendix 5) and the Department of Health: Western Cape (Appendix 6) before data gathering commenced. A waiver of patient consent was granted since pre-existing data extracted from medical records was used. No additional actions or attendances were required from the mental health care users for the research study. The privacy and confidentiality of all the participants were protected as all identifiable information were removed from data sheets. Participants were allocated a study number as reference during the study period. The researcher was the only person that had access to the identities of study participants. This information was stored in a password protected file.

3.8 Reliability and validity

The credibility of the study was ensured by incorporating the principles of reliability and validity in all aspects of the research process. Reliability refers to all criteria involved with the stability, consistency and equivalence in the study. It is the degree to which the assessment tools used in a study produce stable and consistent results.⁹⁴ All data relating to admission rates and days in hospital that were extracted from the Clinicom data base was compared with data from individual mental health care user folders. This was done to verify that all data were correct and to ensure reliability of results. As stated earlier in this chapter (section 3.5), measures were put in place with regards to calculation of number of admissions and number of days spent in hospital to ensure consistency throughout the study. Accuracy and precision of data analysis were checked by a statistician to ensure that the researcher did not make any mistakes that could influence the reliability of the study. Although the researcher was familiar with all the study participants, the use of quantitative measures prevented bias on the part of the researcher. The study reported on pre-existing data which ensured that the researcher did not give more therapeutic input to study participants, thereby influencing the outcome of the study.

Validity ensures that changes in the dependent variable are only due to the independent variable and not confounding factors.⁹⁴ Within this study, measures were put in place to control for internal validity by excluding all attendees that received additional interventions or partook in other research during the study period of 48 months. This was done to ensure that the only variable was attendance at the occupational therapy-led day treatment centre. All attendees that were placed in community group homes, even if they did not receive any therapeutic intervention while residing there, were also excluded from the study. This was done to ensure that the administering of medication by staff and the stability that a supervised placement provides did not have an influence on the outcome of the study. Another possible threat to the validity of this study was the grouping of participants in regular and occasional attendance categories. The attendance rates of participants were very variable. To limit the threat, statistical principles of needing two equal groups for statistical analysis were used.

Validity also refers to the ability to generalise the results from the research sample to the larger population.⁹⁵ In order to do this, literature suggests that researchers should be familiar with their data and make use of thick descriptions.^{94,95} Pilot et al.⁹⁵ argued that, even with

quantitative study designs, it is important that researchers are involved in the process of data collection and analysis. The authors state that if researchers are disconnected from their data it undermines their capacity for insightful interpretations and generalisation of the results.^{95,96} During this study the researcher was involved in all steps of the research process and collected data herself to ensure a thorough knowledge and understanding of data to make relevant interpretations. Thick description refers to the sharing of precise information regarding the context of the study to allow for judgement of transferability to be made by the reader. During this study, detailed descriptions of the context of the study, the occupational therapy treatment programme and participant attributions were given.

Chapter 4 Results

4.1 Participants

The study included 44 participants, 30 (68.2%) of whom were male and 14 (31.8%) female (Table 4.1). The age of the participants varied from 17 to 57 years, with a mean age of 28.84 years (SD = 9.037). Participants were divided into two categories according to their race. The majority of participants were of mixed ethnicity (n = 35, 79.5%) and categorized in the mixed ethnicity race group. The seven participants that were Caucasian (n = 7, 15.9%), one participant that was Black African (n = 1, 2.3%) and one participant that was Indian (n = 1, 2.3%) were grouped together in the other category (n = 9, 20.5%).

DSM-IV⁹⁷ criteria were used to identify participants' diagnoses, of which nine different diagnoses were identified. Participants were divided by the researcher into 3 categories according to their diagnoses: major psychotic disorders, mood disorders and other disorders (Table 4.1).

Twenty-nine participants (n = 29, 65.9%) were categorized as having major psychotic disorders. Of this group, twenty-three participants had a diagnosis of schizophrenia (n = 23, 52.3%) and eight participants were diagnosed with schizo-affective disorder (n = 8, 18.2%). Twelve participants (n = 12, 27.3%) were included in the mood disorders category, which included participants with bipolar mood disorder I (n = 5, 11.4%); major depressive disorder (n = 2, 4.5%); major depressive disorder with psychosis (n = 2, 4.5%); and bipolar mood disorder II (n = 1, 2.3%). The 'other disorders' category consisted of three participants (n = 3, 6.8%). Their diagnoses were psychosis due to general medical condition (n = 1, 2.3%); personality change due to general medical condition (n = 1, 2.3%); and substance induced psychotic disorder (n = 1, 2.3%).

Table 4.1 Characteristics of participants

Characteristics of participants		Total sample: n = 44	
		n	%
Gender	Male	30	68.2
	Female	14	31.8
Race	Mixed ethnicity	35	79.5
	Other	9	20.5
Age	17-27 years	23	52.3
	28-59 years	21	47.7
Diagnostic Categories	Major Psychotic Disorders	29	65.9
	Schizophrenia	23	52.3
	Schizo-affective disorder	8	18.2
	Mood Disorders	12	27.3
	Bipolar mood disorder I	5	11.4
	Major depressive disorder	2	4.5
	Major depressive disorder with psychotic features	2	4.5
	Bipolar mood disorder II	1	2.3
	Other	3	6.8
	Psychosis due to general medical condition	1	2.3
	Personality change due to general medical condition	1	2.3
Substance induced psychotic disorder	1	2.3	

4.2 Characteristics of the data

Using the Kolmogorov-Smirnov test of normality, the following variables were not normally distributed: age, number of admissions before and after the intervention, difference in admission rates, days in hospital after the intervention, and attendance rates (Figure 4.2).

The number of days in hospital before intervention ($D(44) = .125$, $p = .084$) and difference in days in hospital ($D(44) = .107$, $p = .2$) were normally distributed when using the Kolmogorov-Smirnov test. However, the Shapiro-Wilks test, which produces exact significant values, showed that both these variables were non-normal. Non-parametric tests were consequently used for further analysis.

Table 4.2 Results of test for normality

Categories	Kolmogorov-Smirnov		Shapiro-Wilk	
	Statistics	p-value	Statistics	p-value
Age	0.152	0.012*	0.910	0.002
Admissions before	0.362	0.000*	0.730	0.000
Admissions after	0.392	0.000*	0.660	0.000
Admissions difference	0.225	0.000*	0.833	0.000
Days in hospital before	0.125	0.084	0.929	0.010
Days in hospital after	0.389	0.000*	0.622	0.000
Days in hospital difference	0.107	0.200	0.940	0.024
Attendance	0.287	0.000*	0.661	0.000

*Significance level $p \leq 0.05$

4.3 Results for each objective

4.3.1 Objective 1:

To determine the client factors that affect the number of admissions over the 24-month period prior to attending occupational therapy-led day treatment centre

Analysis using Kruskal-Wallis showed that there was no significant relationship between age, gender, race, diagnosis and admission rates. Results showed that neither diagnosis ($X^2(x) = 2.657$, $p = .27$), gender ($X^2(x) = 2.776$, $p = .25$), age ($X^2(x) = 4.222$, $p = .12$) nor race ($X^2(x) = 5.307$, $p = .07$) had a significant influence on admissions before intervention started. The null hypotheses that client factors did not influence number of admissions for the 24 months prior to attendance to the occupational therapy-led day treatment centre was therefore accepted.

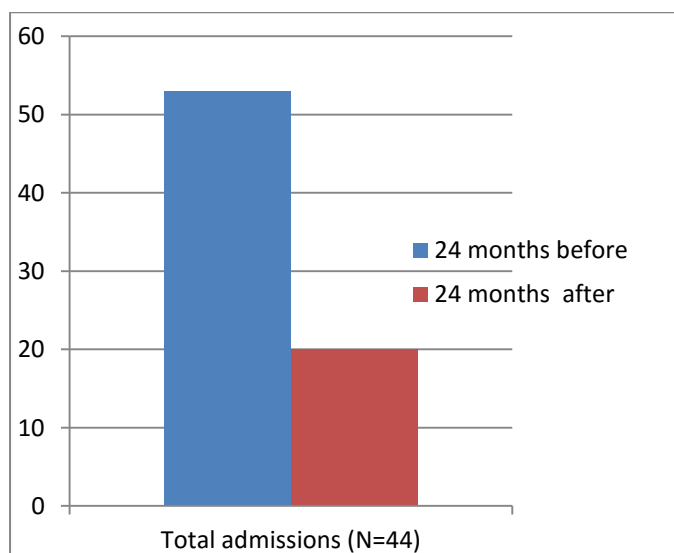
4.3.2 Objective 2:

To determine whether there is a difference in the number of admissions over the 24-month period before and after attending the occupational therapy-led day treatment centre

Analysis using the Wilcoxon Signed Ranks Test showed a significant difference in the number of admissions before and after the intervention ($z = -4.093$, $p = .00$). The null hypothesis was rejected. Attendance at the occupational therapy-led day treatment centre had a medium effect size on number of admissions ($r = .436$).

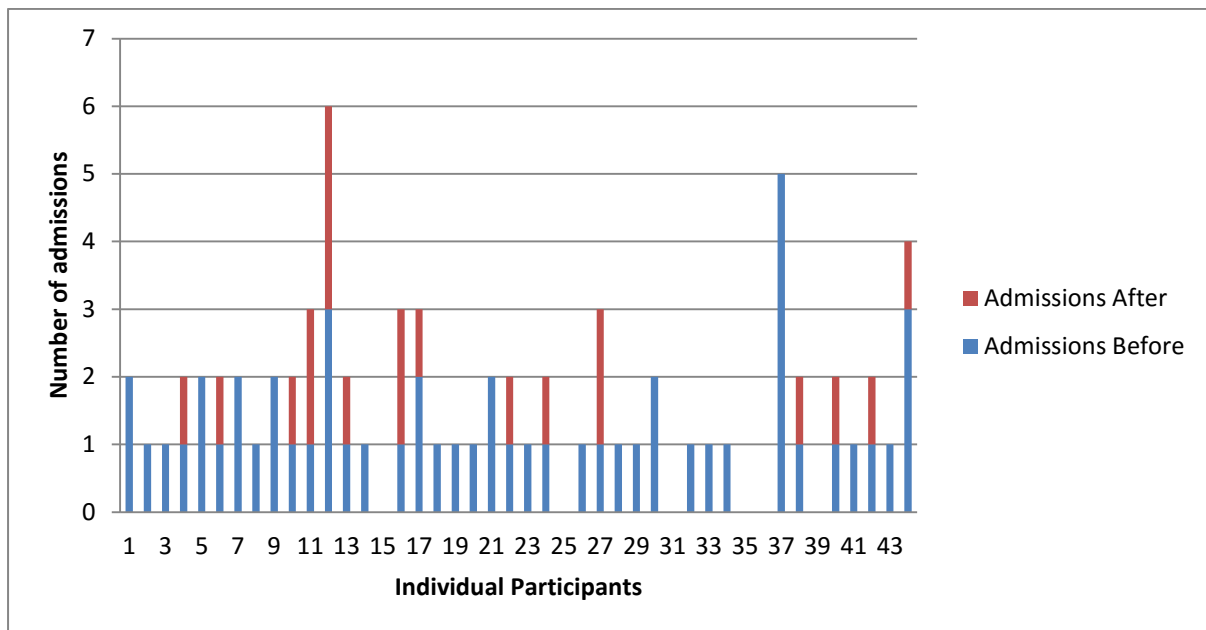
The group as a whole had a total of 53 admissions before intervention and only 20 admissions after intervention (Figure 4.1). This shows a decrease in the number of admissions of 33 (62.3%) after attendance at the occupational therapy-led day treatment centre.

Figure 4.1 The effect of the occupational therapy intervention on the number of admissions for the whole group ($n = 44$)



At an individual level, the number of admissions before intervention ranged from 0 to 5 (median = 1.0, SD = 0.90). The number of admissions after intervention ranged between 0 and 3 (median = 0.0, SD = 0.73) for each participant (Figure 4.2).

Figure 4.2 The effect of the occupational therapy intervention on the number of admissions for each participant (n = 44)



Twenty-five (n = 25, 56.8%) of the 44 participants had less admissions after intervention than before (mean rank = 14.98, sum of ranks = 374.50). Seventeen (n = 17, 38.6%) participants had one less admission; seven (n = 7, 15.9%) participants had 2 less admissions; and one (n = 1, 2.3%) participant had 5 less admissions after intervention. Three participants (n = 3, 6.8%) had more admissions after the intervention than before (mean rank = 10.5, sum of ranks = 31.5). These three participants each had 1 additional admission. Sixteen participants (n = 16, 36.4%) had the same number of admissions before and after intervention (Table 4.3). In total twenty three (n = 23, 52.3%) participants who had at least one admission before intervention had no admissions for the 24 month period after intervention.

Table 4.3 Change in number of admissions before and after intervention (n = 44)

	n	%
Admissions after < Admissions prior	25	56.8
1 Less admission	17	38.6
2 Less admissions	7	15.9
5 Less admissions	1	2.3
Admissions after > Admissions prior	3	6.8
1 More admission	3	6.8
Admissions after = Admissions prior	16	36.4

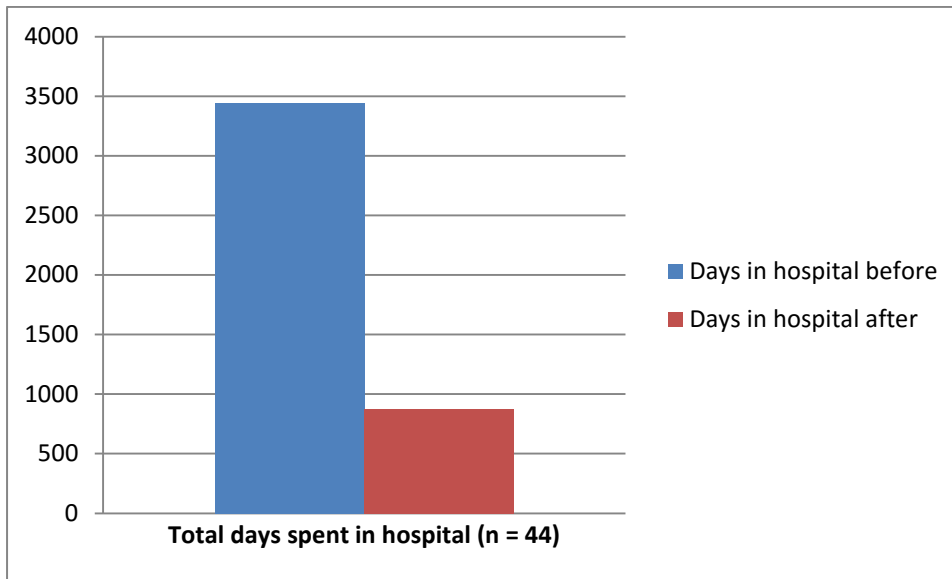
4.3.3 Objective 3:

To determine whether there is a difference in the number of days spent in hospital over the 24-month period before and after attending occupational therapy-led day treatment centre

Analysis using the Wilcoxon Signed Ranks test showed a significant difference in the number of days spent in hospital before and after the intervention ($p = .00$, $z = -4.730$). The null hypothesis that attendance of an occupational therapy-led day treatment centre does not influence number of days spent in hospital was therefore rejected. Attendance at the occupational therapy-led day treatment centre had a large effect size on number of days spent in hospital ($r = .504$).

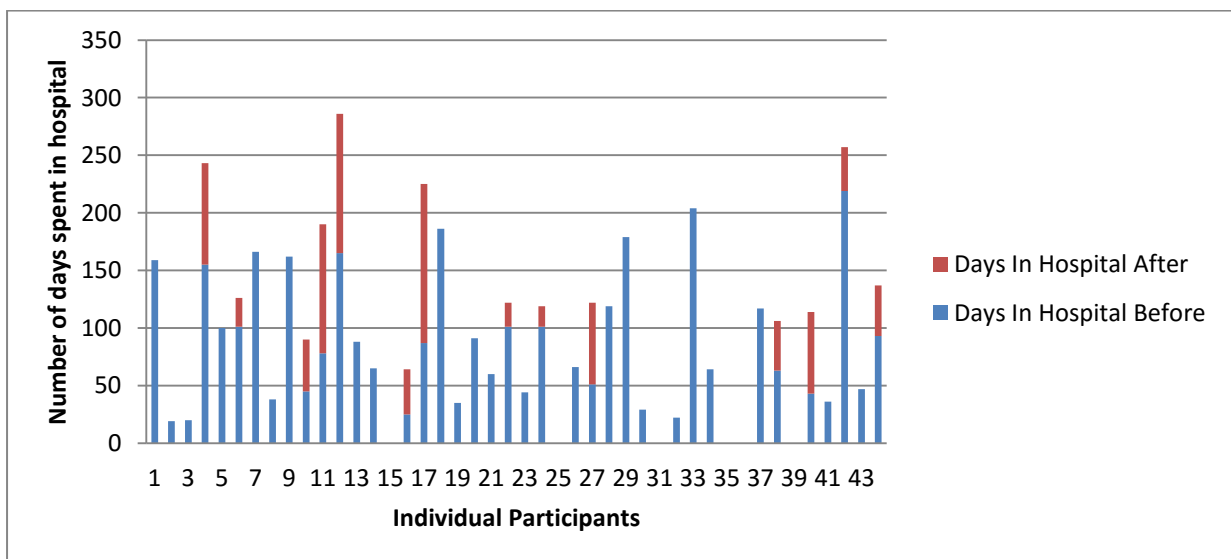
Total days spent in hospital for the whole group prior to intervention was 3443 days compared to 874 days after intervention. This shows a total of 2569 days less in hospital after intervention, with a reduction of 74.6% (Figure 4.3).

Figure 4.3 The effect of the occupational therapy intervention on the number of days spent in hospital for the whole group



At an individual level, the number of days spent in hospital before intervention ranged between 0 and 219 days (median = 64.50, SD = 61.276). Number of days spent in hospital after intervention ranged between 0 and 138 days (median = 0.0, SD = 36.365) for each participant (Figure 4.4).

Figure 4.4 The effect of the occupational therapy intervention on the number of days spent in hospital for each participant (n = 44)



Thirty-two participants (n = 32, 72.7%) spent more days in the hospital before intervention than after (mean rank = 20.78, sum of ranks = 665.00). The number of additional days that participants spent in hospital varied for each participant and ranged from 19 to 204 days. The majority of participants (n = 16, 36.7%) spent either 31- 60 or 61-90 more days in hospital before intervention than after intervention. Five participants (n = 5, 11.4%) spent more days (14, 20, 28, 34 and 51 days) in hospital after the intervention than before (mean rank = 7.60, sum of ranks = 38.00). Seven participants (n = 7, 15.9%) spent the same number of days in hospital before and after intervention (Table 4.4).

Table 4.4 Change in number of days spent in hospital before and after intervention (n = 44)

	n	%
Days in hospital after < Days in hospital prior	32	72.7
1-30 Less days in hospital	5	11.4
31-60 Less days in hospital	8	18.2
61-90 Less days in hospital	8	18.2
91-120 Less days in hospital	4	9.1
121-150 Less days in hospital	0	-
151-180 Less days in hospital	4	9.1
181-210 Less days in hospital	3	6.8
Days in hospital after > Days in hospital prior	5	11.4
1-30 More days in hospital	3	6.8
31-60 More days in hospital	2	4.5
Days in hospital after = Days in hospital prior	7	15.9

Three of the 5 participants that spent more days in hospital also had more admissions after intervention than before. The remaining 2 participants that spent more days in hospital had the same amount of admissions or less admission but for a longer period of time.

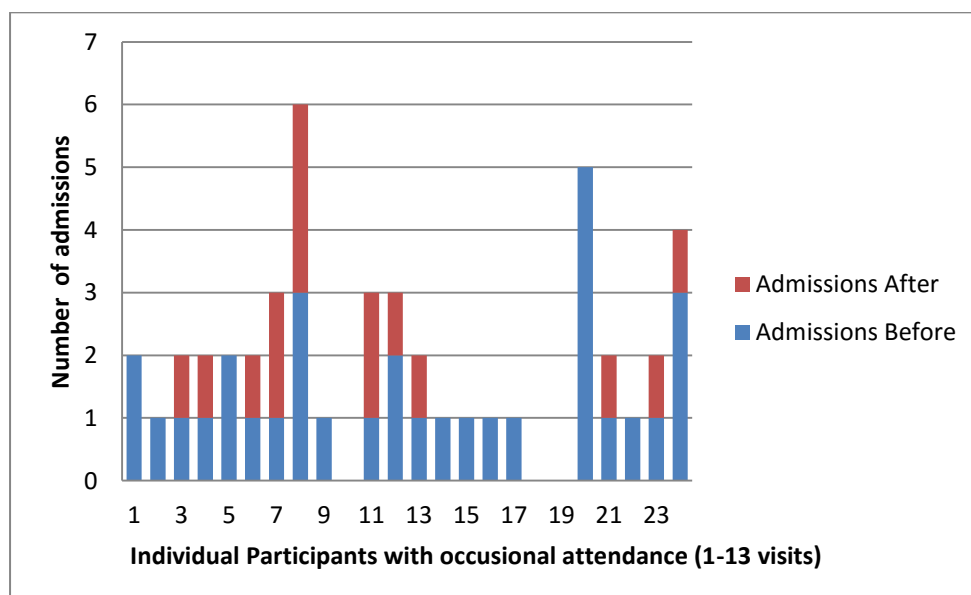
4.3.4 Objective 4:

To determine whether there is any difference in the number of admissions over a 24-month period based on the frequency of attendance at the occupational therapy-led day treatment centre

The number of visits to the occupational therapy-led day treatment centre ranged from 1 to 255, with a median attendance rate of 13 visits (SD = 71.68) per participant. The total attendance rate for the group was 2101 visits. Participants were divided into 2 categories according to their number of visits to the centre. The occasional attendance category (1-13 visits) had twenty-four participants (n = 24, 54.5%); and the regular attendance category (14+ visits) had twenty participants (n = 20, 45.5%).

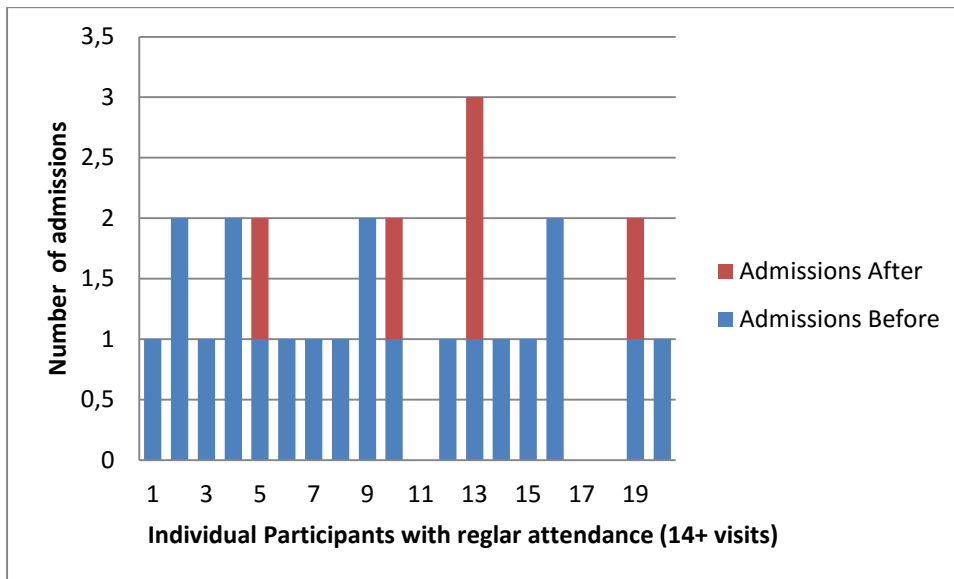
The participants in the occasional attendance category had a total of 32 admission before intervention and only 15 admissions after intervention. This shows a decrease in the number of admissions of 17 (53.1%) for the occasional attendance category. On an individual level 11 of the 24 participants in the occasional attendance category had an admission after intervention (Figure 4.5).

Figure 4.5 Number of admission for occasional attendance participants (n = 24)



The participants in the regular attendance category had a total of 21 admissions before intervention and only 5 admissions after intervention. This shows a decrease in number of admissions of 16 (76.2%) for the regular attendance category. On an individual level only 4 of the 20 participants in the regular attendance group had admission after intervention (Figure 4.6).

Figure 4.6 Number of admission for regular attendance participants (n = 20)



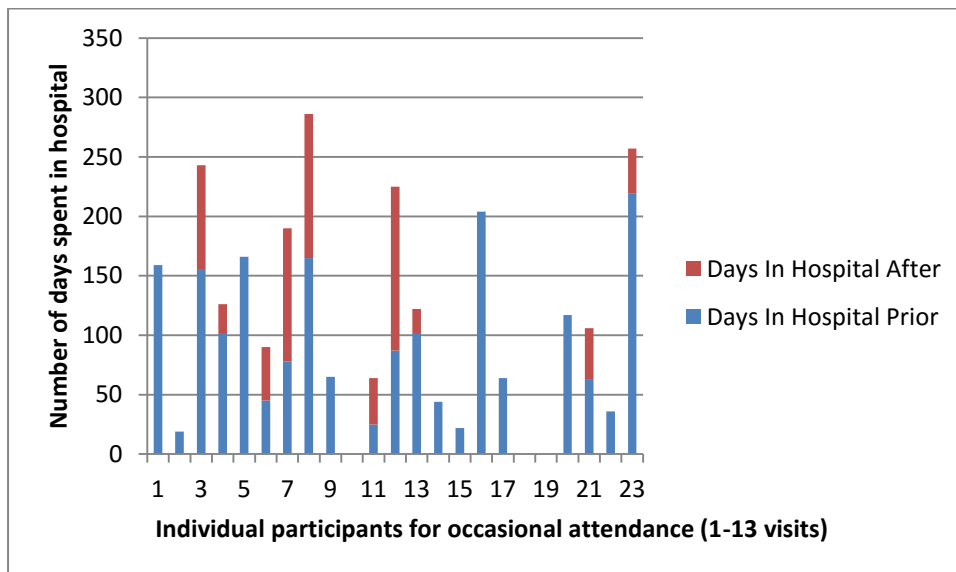
Analysis using the Man Whitney test showed that frequency of attendance had no influence on number of admissions after intervention ($p = .410$). The null hypotheses that the number of visits to the occupational therapy-led day treatment centre does not influence number of admissions was therefore accepted.

4.3.5 Objective 5:

To determine whether the frequency of attendance at the occupational therapy-led day treatment centre has an effect on the number of days spent in hospital over a 24-month period

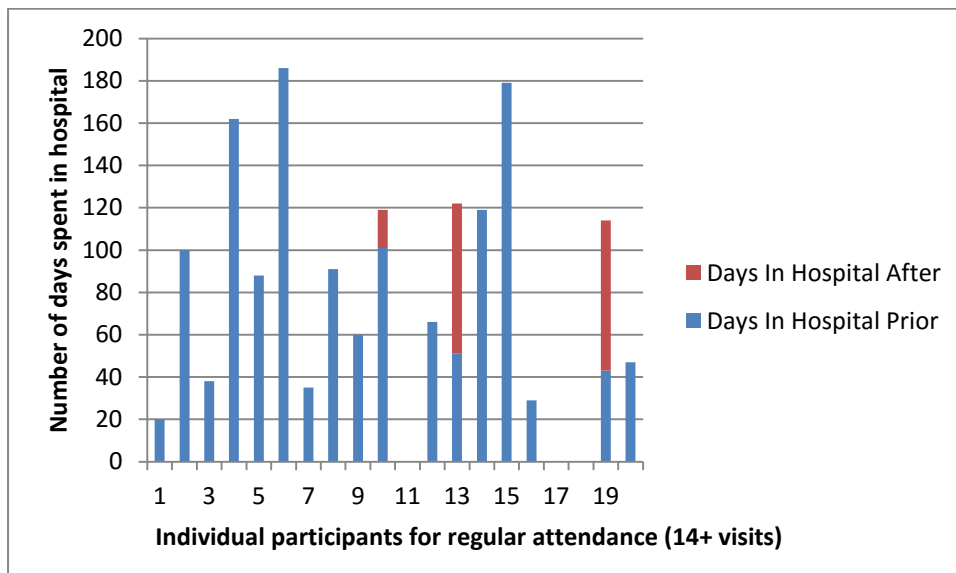
Data showed that the participants in the occasional attendance category had a total of 2028 days in hospital before intervention and only 714 days in hospital after intervention. This shows a total of 1314 days less in hospital for the occasional attendance category, with a reduction of 64.8% (Figure 4.7).

Figure 4.7 Number of days spent in hospital for occasional attendance participants (n = 24)



The participants in the regular attendance category had a total of 1415 days in hospital before intervention and only 160 days in hospital after intervention. This shows a total of 1255 days less in hospital for the regular attendance category, with a reduction of 88.7% (Figure 4.8).

Figure 4.8 Number of days spent in hospital for regular attendance participants (n = 20)



Analysis using the Man Whitney test showed that frequency of attendance has no influence on the number of days spent in hospital ($p = .579$). The null hypothesis that the number of

visits to the occupational therapy-led day treatment centre does not influence number of days spent in hospital was therefore accepted.

Conclusion

The main findings of this chapter were:

- Client factors do not affect the number of admissions over the 24-month period prior to attending the occupational therapy-led day treatment centre
- There is a difference in the number of admissions over the 24-month period before and after attending the occupational therapy-led day treatment centre
- There is a difference in the number of days spent in hospital over the 24-month period before and after attending occupational therapy-led day treatment centre
- There is no difference in the number of admissions over a 24-month period based on the frequency of attendance at the occupational therapy-led day treatment centre
- The frequency of attendance at the occupational therapy-led day treatment centre has no effect on the number of days spent in hospital over a 24-month period

Chapter 5 Discussion

5.1 Introduction

The aim of this study was to determine whether an occupational therapy-led community day treatment centre for mental health care users is effective in reducing the use of in-patient services in the Western Cape province of South Africa. This study found that attendance at the community day treatment centre significantly reduced both the number of times participants were admitted to hospital, as well as the number of days they spent in hospital, in comparison to the previous two years. The study further found that attendance at the community day treatment centre has a medium effect size on reducing the number of admissions and a large effect size on reducing number of days spent in hospital.⁹³ This suggests that an occupational therapy-led day treatment centre is indeed effective in reducing use of in-patient psychiatric services.

The effect of regular versus occasional attendance at the day treatment centre was also measured. This was done in order to assess whether the frequency of treatment received had a significant impact on the outcome. Data showed that both groups benefitted from attendance, and that the benefit appears bigger for the regular attendance group. However, the analysis showed that the frequency of attendance did not have a statistical significant impact on the use of in-patient services. Due to the small sample size of participants in the occasional and regular attendance categories it is possible that a Type 2 error occurred. This error occurs when the null hypothesis is accepted when it should be rejected, indicating that frequency of attendance did influence use of in-patient services.⁹³

My study adds to the limited data on the extent to which day centre attendance reduces the use of in-patient mental health care services. On the whole, the 44 participants in my study spent 2569 days less in hospital, and had 33 fewer admissions after they attended the occupational therapy-led day treatment centre, compared to the two years before attendance. The Japanese study by Yoshimasu et al.⁹ reported a reduction in time spent in hospital by up to three months after day centre attendance. In my study time spent in hospital was reduced by up to 7 months. This suggests that our day treatment centre was possibly more effective in reducing days in hospital than the day treatment centre in Japan.

The Turkish study also reported a decrease in time spent in hospital, but the decrease was not quantified.¹⁰ Similar to the results of my study, the study conducted in Minnesota, USA reported a decrease in both admission rates and days spent in hospital for day centre attendees.⁸ This confirms that the results of my study are in accordance with international data, indicating reductions in both length of in-patient stay and number of admissions after day centre attendance.

Other community-based interventions, such as assertive intervention, have also shown a reduction in the use of in-patient services. Two studies conducted in South Africa reported a positive outcome with regards to both length of stay and number of admissions with follow up assessments at 12 months and 36 months respectively, after inclusion into the ACT intervention programme.^{34,98} This indicates that both day treatment centres and community based interventions are effective in reducing the use of in-patient services in South Africa.

The first section of this chapter will focus on discussing and interpreting the possible reasons for the success of this intervention. The discussion will focus on the basic needs of mental health care users, social support, the value of engaging in meaningful activities and effective case management. The chapter will then consider the limitations of the study.

5.2 Discussion of results

5.2.1 Meeting the basic needs of the participants

Mental health care users often experience low motivation and functional impairments.^{27,30,99} Providing meals and safety at the SATS Centre may have provided external motivation to engage with services. Meeting these needs may also have allowed participants to focus their attention on higher needs like the need for belonging and building relationships. Maslow grouped all human needs into five hierarchical levels, starting with basic needs such as food and drink and concluding with the highest need of self-actualization.¹⁰⁰ Recent research using this model suggests the lack of fulfilment of a need motivates people to direct their behaviour to meet that need. Maslow also states that the more each lower level need is satisfied the more the next level need will be satisfied. It follows then, that a person must first fulfil his biological needs (like those for food and drink) before higher level needs can be reached.¹⁰⁰ By providing breakfast and lunch daily to all participants at the centre, the

biological needs of participants were met. Providing meals may also have been a motivator for participants to attend the centre. Influencing service utilization by fulfilling basic needs is an engagement strategy which is not unique to South Africa. In a rural community in the West of Ireland the unavailability of affordable food was identified as a hindrance to utilizing healthcare services.¹⁰¹ As this factor could be identified as a barrier to health care utilization, it could be assumed that by supplying meals better utilization of services was achieved.

The second need on Maslow's hierarchy is the need for safety. Although it was not recorded many of our participants live in impoverished communities, often plagued by gangsterism, violence and the consequences of substance abuse. Many participants have reported being robbed when walking around in their communities. A South African crime statistics report published in 2010 stated that robbery is the type of crime most likely to cause a decline in feeling safe. In a national survey 56% of respondents in 1998 indicated that they 'felt safe' walking in their communities after dark, compared to only 21% in 2007. The report also stated that although aggravated robbery has decreased during 2009 to 2010, it's still at a consistent high level compared to other countries.¹⁰² The SATS Centre was a place of safety with limited access to substances, no crime and limited stigmatisation against mental health care users.

Using public transport was not just unsafe, but also provoked anxiety for many of the participants due to the large number of people making use of public transport and the unpredictability of transport being on time. So by providing free and reliable transport to and from the centre we ensured an improved sense of security. In South Africa as well as in the South of Australia the lack of reliable transport to and from mental health facilities has been identified as a barrier for medication compliance and attending appointments.^{34,103} In London the availability of a free bus pass to older adults had an improved effect on well-being, specifically because it counteracts social isolation.¹⁰⁴ Whether the success lies in having access to places to engage with, or the opportunity to engage on the bus itself, it is clear that mental health care users, who also tend to suffer from social isolation, might benefit from this service in the same way as the elderly. One of the principles of psychosocial rehabilitation is that services should be rendered in as normalised environment as possible. It is possible that by providing meals and safety at the SATS Centre the clinical environment normally associated with hospitals was normalised and improved mental health care user's engagement with service.⁴⁴

5.2.2 Providing a support network and facilitating social inclusion

During the intervention period, the social support that our participants received when they started to attend the centre may have had a significant influence on the outcome of the study. It is a well-known fact that mental health care users with poor support struggle to reintegrate into society and are admitted more regularly.¹⁸⁻²⁰ Although social support was not recorded during this study, it is worth mentioning that many of the participants who attended the SATS Centre did not have good social support within their family structures and communities. Their fellow attendees were often their only support network. This is similar to the observations made in Sweden, where day centre attendees identified socialisation as one of the strongest motives for attending day treatment centres.¹² The social support participants received from fellow attendees at our centre may have played a major role in decreasing admission rates as well as ensuring continued engagement with services at the centre.

The social interaction between participants was strengthened by the similarities participants shared with regards to gender, age and diagnoses. The majority of the participants in this study were male. This is similar to day centre attendees in rural Japan⁹ and Italy⁵⁵ but differs from day centre attendees in rural Minnesota⁸ who were mostly female. At our centre women attended the programme less frequently than their male counterparts. Through clinical experience the researcher is of opinion that factors such as household tasks and child care duties often prevent women from leaving their homes to attend therapy and this may explain the low attendance rates of females found in my study.

Similar to studies in USA,⁸ Italy⁵⁵ and Japan,⁹ most of the participants in my study had a diagnosis of schizophrenia. The majority of the participants were younger than the age reported in international literature. The USA study reported a mean age of 45 years, the Japanese study of 44 years, the Swedish study by Leafstadius et al.⁷ of 45 years for males and 47 years for females. In the Italian study the majority of participants were between the ages of 28 and 47 years, with only 13.2% of the participants between the age of 18 and 27 years. In contrast, the majority of participants in my study were between the age of 17 and 27 years. Being the same age meant that participants shared the same developmental stage of early adulthood.¹⁰⁵ According to the Erikson developmental stages, most of the participants are in the intimacy vs. isolation crises of their lives and find significance through relationships with friends and partners.¹⁰⁵ The SATS Centre gave participants the

opportunity to build these significant relationships with fellow mental health care users, especially in the light of limited support and friendships in their home environment.

Another similarity the participants at the SATS Centre shared was stigmatisation they experienced from community members, highlighting the PSR principle of the need to transform attitudes and behaviour within services provided (Table 2.1).⁴⁴ Mental health care users often reported being teased or being called names in the communities. This resulted in many of them becoming socially isolated. A systematic review of 144 studies found that stigma was the fourth highest ranked barrier to seeking help for mental illness, with unwillingness to disclose information about mental health as the most commonly reported stigma barrier. Ethnic minorities, youth, men and those in military and health professions were discouraged by stigma to engage in mental health services.¹⁰⁶ The majority of participants in my study were young males. Therefore, being aware of and sensitive to the effects of stigmatisation encountered by our participants in their daily lives, played an integral part in creating acceptance and improve social interaction. An example of one of the ways that this was achieved at the SATS Centre was by asking permission to laugh at participants when they did something funny. Participants interpreted laughter as being directed at their mental illness because they are crazy, and not as laughter directed at something they said or did that was funny. By asking permission and explaining the funny behaviour, we corrected the participant's own false beliefs conditioned by previous stigma experienced in their communities.¹⁰⁷

To further improve engagement with SATS Centre the principles of the Occupational Spin-off Model were used to facilitate support between attendees.¹⁰⁸ This correlates with the PSR principles that emphasise the use of a social rather than a medical model of care.⁴⁴ The social environment is the foundation of the Occupational Spin-off Model, where mental health care users need to be accepted as worthy persons and encouraged as competent people to engage in occupation. This was done by using group therapy, where participants were engaging with each other, rather than with the therapist. A social environment that was supportive, accepting and facilitated a sense of belonging was created in which participants could give feedback to each other. In this way their basic worth as human beings was affirmed by their peers. Having this supportive environment at the centre encouraged participants to engage in occupation as they received the necessary encouragement by staff and peers as proposed by the model.

Although it was not recorded, during the course of the study it was observed that participants started to meet up on weekends to join in leisure time activities and referred to each other as friends. The same happened in Sweden where it was observed that day centre attendees are more engaged in social interaction than non-attendees.¹¹ This highlights the influence the social structure at the centre may have had on participants' general well-being and engagement in a variety of occupations even outside the safety of the centre. It can also be interpreted as an example of how occupational spin-off occurred within the day treatment centre.¹⁰⁸

5.2.3 Participating in meaningful activities

A surprising finding of my study was that it appears that frequency of attendance did not influence number of admissions or number of days spent in hospital. It was expected that participants who attended the day treatment centre more regularly and therefore received more occupational therapy input, would have better clinical outcomes than those participants only attending occasionally, following previous studies conducted in Minnesota, USA⁸ and Japan.⁹ The American study reported that mental health care users who completed their day treatment programme had a readmission rate of 5.3% compared to those who only attended a few sessions and showed a readmission rate of 46.4%.⁸ In the same vein, the Japanese study reported that day treatment was effective in reducing readmission rates if mental health care users attended the centre continuously for four months or more with at least one visit per week.⁹ Perhaps it was not the intensity of treatment that resulted in the decrease in number of admission and number of days spent in hospital. Instead, it is possible that it was how meaningful service users found the activities at the SATS Centre.

The importance of engaging in meaningful occupations may also explain why Cochrane reviews reporting on the effect of specific types of groups, such as life skills groups, found that there is no added benefit for mental health care users to attend these groups.⁷⁵ Instead, it is possible that the benefit is not in the individual group or therapy but rather in meaningful participation of an occupation. Being taught a life skill like money handling may not appear to have meaning to a participant. But learning money handling as part of the process to independently manage a social grant and to stick to a budget, changes the perceived value of having the skill. This emphasises the use of occupations-as-means to reach recovery goals during intervention.

Lim et al.¹⁰⁹ reported that groups with an occupational focus that are meaningful and relevant to mental health care users are seen as most effective in ensuring a desired outcome during intervention. Lim et al.¹⁰⁹ also stated that all meaningful activities should be determined in consultation with mental health care users to ensure that interventions are client centred and will be meaningful to the specific mental health care user. At the SATS Centre participants reported that the orientation group was educational and enjoyable. Over time the group developed and became longer, more challenging and was renamed by the participants to 'Actuality Group'. In contrast to the meaningful participation of the actuality group were the garden groups. Garden groups were an example of a meaningful activity that became non-meaningful. Over time participants perceived the garden work as a punitive activity due to the manual labour involved and stopped attending the groups. These groups were consequently removed from the treatment programme.

It was important that participants experienced meaningful participation in occupation to ensure continued engagement with SATS Centre services. Therefore modern-day activities that were relevant to the young patient population were incorporated as part of the treatment programme. Participants had the opportunity to choose between different groups and the programme was adapted as the needs of participants changed. Providing a choice to the participant is one of the guiding principles of both occupation-as-means and psychosocial rehabilitation.^{44,110} Using the Occupational Spin-off Model further improved participants' occupational engagement. Implementing the model enabled participants to accomplish occupational engagement through improvement in self-worth and their sense of identity, based on feedback received from peers and a growing belief in their own abilities. Based on this model the therapist used her knowledge to match activity requirements to the skills of the mental health care user to ensure mastery of the occupation. Through mastery of an occupation a mental health care user's self-worth as well as self-identity further improves to encourage engagement with a new occupation.¹⁰⁸

Blank et al.¹¹¹ stated that occupations are the building blocks of an evolving identity. A qualitative research study found that occupations were a way for people to express their belief about their core characteristics.¹¹² By engaging and mastering occupations one becomes an occupational being with an identity based on the skills you learnt to master.¹¹¹ Lahberte-Rudman et al.¹¹² reported that when these occupations are limited by the environment or personal capacity, a person may experience limits in how they perceive themselves. Occupations are seen as an important way to maintain an acceptable sense of

self and a sense of continuity after the onset of disability.¹¹² This is also the case for mental health care users. It is reported that by having an occupation, the biggest improvements observed in a mental health care user are increased self-confidence and higher self-worth¹¹³ and that participation in chosen occupations can impact the health and wellness of mental health care users.¹¹⁴ Improved health and wellness further adds to the development of identity since mental health care users then do not perceive themselves as 'disabled' but as occupational beings that have a purpose and value.

Better engagement with occupation also results in improved occupational balance.⁸⁸ Spending more time on meaningful activities translates to less time spent sleeping, watching television or using substances. Many of the participants in this study had low motivation and drive, difficulty to initiate actions and most daily activities were triggered by basic, immediate life needs.²⁷ In Sweden day centre attendees had a higher perceived level of occupational value.¹¹ This may also be the case in my study and could possibly be one of the reasons for engaging with services. Blank et al.¹¹¹ found that participation in occupations was seen as essential to recovery from mental illness. At the SATS Centre participants had an opportunity to participate in occupations. Participation in meaningful activities may have positively influenced participants' perceived ideas of their health and wellness and subsequently influenced the decrease in the number of admissions and number of days spent in hospital.

5.2.4 Improved case management

The continuity of staff members at the SATS Centre may have been an added incentive for participants to attend the centre. The two occupational therapy staff members that started the centre in 2009 are still working at the centre, showing no staff turnover for the duration of the study. This correlates with the PSR principle of maximum commitment that is required from staff.⁴⁴ The continuity of staff members may have had an influence on the outcome of the study. The involvement of the same staff members further ensured that, over time, staff became familiar with each participant's individual symptoms. This was often missed by staff that were not as familiar with these participants. From the participants' perspective there was also a familiarity when attending the centre because the same staff would welcome them every day. Staff knew the participants and participants knew the staff members. This may also have contributed to participant engagement with our services.

Some of the participants may have engaged with SATS Centre services while still an in-patient in the hospital. The alternative intervention of continuity of care is based on the principle that the same clinicians are responsible for mental health care user across in and out patient's services. Continuity of care interventions showed a decrease in admissions and in number of days spent in hospital.³⁷ Since the centre was on the hospital grounds there was easy access for in-patients to attend the centre as part of their pre-discharge treatment programme. This may have influenced mental health care users' engagement with services since they were introduced to the day centre service and staff while still an in-patient and then followed up by the same staff as out-patient.

The involvement of other health care staff at the centre ensured improved use of mental health care services during different stages of recovery. Participants who were acutely unwell could be evaluated and referred for admission whereas participants who showed improvement could be referred to other rehabilitation facilities. Having mental health care staff at the centre further ensured early identification of relapse signs. This resulted in early evaluation of participants by a psychiatrist and revision of medication dosages, leading to the early intervention recommended in psychosocial rehabilitation programmes, and subsequently often avoiding an imminent admission.⁴⁴ The involvement of specifically occupational therapy staff that could identify and refer participants to vocational rehabilitation programmes ensured continued improvement of participants' skills and occupations.¹¹³ Vocational activities/work have also been connected to a better quality of life.¹¹⁵ and according to the PSR principles are central to rehabilitation.⁴⁴ Therefore, having the opportunity to be referred from the centre to vocational rehabilitation may have added to participant engagement with services since they could see themselves improve over time. Many mental health care users experience a need to work.¹¹¹ The SATS Centre may have been seen as a stepping stone for many participants to achieve this goal. The positive experience of participants at the SATS Centre may have also improved participants' consistency in use of other services within the hospital.

5.3 Limitations of the study

Arguably the factor that influenced the study the most is that it was done retrospectively.⁹¹ Prior to establishing the occupational therapy-led day treatment centre it was unknown that a study will be conducted, preventing the assigning of a control group or randomisation of

participants. However, even if the researcher was aware of the planned study, ethical considerations would have prevented the researcher from withholding therapy from certain participants to create a control group.⁹¹ The small group of participants that voluntarily attended the centre prevented the researcher from randomly selecting participants to partake in the study. Therefore total population sampling was used to ensure a significant viable sample size.

Using a total population sample and including all participants that met the criteria for attendance of the SATS Centre in this study invariably created selection bias.¹¹⁶ Mental health care users often experience low motivation and do not engage with services.^{27,99} The participants that voluntarily attended the SATS Centre did, however, already display some level of motivation to engage with services. Therefore, by employing total population sampling and not randomly selecting participants, we have possibly created a sample with an unexpected higher level of motivation. This raises the question if attendance to a day treatment centre will be as effective for participants less motivated to engage with services.

According to a systematic review conducted by Harris et al.⁹⁰ one of the main threats to quasi-experimental studies within the medical field lies within the difficulty of controlling for or measuring of confounding factors. During this study measures were put in place to control for confounding factors such as multiple treatment interference, race, age, gender and diagnoses. However, it is important to note that some confounding factors like the natural course of the illness, medication adherence and changes in social support were not controlled for and could have an influence on the internal validity of the study.

The natural course of mental illness could have had an influence on the outcomes of this study such as the decrease in number of admissions and number of days spent in hospital. Some mental health care users show improvement over time without any additional input. This is often connected to medication use. Psychiatric medication takes time to take full effect and optimal dosages are often only achieved after discharge through out-patient management.^{117,118} Therefore it is possible that improvement in participants' clinical functioning was not only achieved due to attendance to the day treatment centre, but also due to the natural course of the illness and management thereof.

Another confounding factor which can possibly obscure the effects of the intervention is the extended period of time between pre- and post-testing.⁹⁵ During the study period, data were collected for each participant for 24 months before and 24 months after day centre attendance. During this time many events such as the birth of a child or change in financial circumstances could have occurred in the participants' lives. These events, referred to as 'change producing events' could have changed the conditions of this study and were not controlled for during this study. Another confounding factor is changes in social support networks. It is well known that social support plays a major role in general well-being and that good social support is linked to lower admission rates.²² The researcher did not control for any changes in participants home environments, level of support from family members or changes in living conditions.

There is also an uneven distribution of participants in categories of gender, age, race and diagnoses. The majority of the participants were male, between the ages of 17 to 27 years, of mixed ethnicity and had a diagnosis of schizophrenia. The mixed ethnicity race is predominantly populated in the Western Cape province of South Africa.¹¹⁹ This raises the question whether an occupational therapy-led day treatment centre will be as effective in other provinces of South Africa where other ethnic groups are more prevalent. The same question applies for other diagnoses, older participants and females. Because attendance of the occupational therapy-led day treatment centre was completely voluntary, the researcher had no control over the age, gender, diagnoses or race of participants who attended the centre. The study participants are therefore not a true representation of the South African population and this limits the generalisation of these results to the general mental health user population in South Africa.⁹¹

Finally the use of services varied. Due to voluntary attendance some participants attended regularly for a brief period of time while other participants had sporadic attendance for longer periods of time. To ensure that the results were statistically valuable it was important to have equal distribution of participants in each attendance group and the mean attendance rate for the group was used as the divider.⁹³ The result was that participants with 14 visits and those with 120 visits ended up in the same attendance category. The results of my study that frequency of attendance did not influence the number of admission or number of days spent in hospital contradicts international literature.^{8,9} This indicated that the possibility of a Type 2 error should be considered. A Type 2 error can be avoided by having a larger sample size to lessen the likelihood that results will differ substantially from the population.⁹³ However, the

small amount of mental health care users attending the centre and being eligible to participate in the study prevented the researcher from having bigger sample size for occasional or regular attendance categories. This limits the conclusions that can be made with regards to the effect of frequency of attendance on clinical outcomes.

Chapter 6 Conclusion

6.1 Implications of the study

The following chapter will highlight the implication of the results for mental health care in South Africa. The chapter will focus on the implications for occupational therapy as profession, national policy, education and future research.

6.1.1 Occupational therapy practice

In contrast to other studies^{8,55,56} this was the only centre where an occupational therapist was not only responsible for the treatment programme, but also for the management of the centre. The success in reducing the number of admissions and days spent in hospital of this day treatment centre emphasises the role that occupational therapists can play in addressing the current need in mental health care services. This researcher hopes to encourage occupational therapists to engage in discussion with other professionals about the needs in the current mental health care setting and to identify the role occupational therapists can play in addressing these needs.

Although not part of the objectives, a number of aspects came to the fore that are worth mentioning. One of which is the value of using occupation-as-means to improve health and well-being of mental health care users.¹¹ The success of this study is largely due to the opportunities which were created for participants to engage in a broad range of meaningful activities at the day treatment centre. This emphasises that the focus of day centre interventions should be on providing multiple opportunities to engage in a variety of occupations rather than focussing on splinter skills. Using occupation-as-means also entails employing a client centred approach, giving participants a choice of different activities and ensuring that the activity is a good fit for each individual participant.

6.1.2 Policy

The World Health Organization highlighted the fact that the greatest quantity and frequency of mental health care needs are at community level and that a variety of services should

therefore be rendered at this level. An added advantage of intervention at this level would be lower costs of these services.¹²⁰ Similarly, the South African Mental Health Care Act (2002) emphasises the provision of community based care and the need to provide care in the least restrictive manner.⁶⁵ The day treatment centre at Stikland Hospital contributes to the achievement of the community-based services campaigned by the World Health Organization and the Mental Health Care Act (2002).

The centre functions as a community centre, attendance was voluntary and participants were free to come and go as they pleased. Although the centre was not situated in the community itself, it was centrally located in order to accommodate a variety of communities. The successful implementation of a community day treatment centre on the grounds of a tertiary hospital is in line with a systematic review documenting possible solutions to close the treatment gap in South African mental health care. Jack et al.¹²¹ reported that the integration of mental health care into existing health systems may be the most effective approach to increase access to mental health services in South Africa.

By utilising existing resources, the SATS Centre at Stikland Hospital demonstrates that the development of day treatment centres for mental health care users in a developing country is indeed possible. The barriers to accessing mental health care globally such as scarcity of resources and infrastructure, staffing, and funding are also experienced in South Africa.¹²² This study demonstrates that plans can be put in place to prevent the growing population of HFUs and the revolving door phenomenon, regardless of adversity and barriers to care - even at tertiary management level.

The day treatment centre may be a possible solution to the growing population of HFUs that was exacerbated after the early discharge policy was implemented at Stikland Psychiatric Hospital. The implementation of the early discharge policy has been linked to a higher readmission rate.² This is often secondary to inadequate follow up care in the community, substance use and non-adherence.¹²³ Attendance at a day treatment centre can prevent an admission shortly after crisis discharge by providing support, administering medication and setting up a balanced day programme. Therefore participants engage in meaningful activities as opposed to time spent on the streets and possibly engaging in substance use. Ideally all mental health care users who were not able to achieve remission before discharge due to pressure on treatment services, must have the opportunity to attend a day treatment centre. Unfortunately many of these mental health care users are admitted as involuntary

patients under the Mental Health Act and may not be motivated to engage with day treatment services.³³ A possible solution to this problem might be to follow the example set in Europe, USA and Australia. These countries have implemented compulsory out-patient services.⁶ However, forcing mental health care users to attend a day treatment centre may counter the positive results reported in this study since all participants in this study attended the centre voluntarily.

6.1.3 Educating occupational therapy students to work in the community

This study urges occupational therapy educators to focus community mental health training around occupation-as-means. Educators should encourage students to understand the importance of participation in meaningful activities and how to incorporate occupations in all interventions. The shortage of community based mental health care practitioners versus the high demand of care,¹²² emphasises the importance of having efficient group handling skills to manage large numbers of mental health care users simultaneously. Good observational skills also improve the management of large numbers of mental health care users. The nature of community interventions are often unpredictable and a variety of factors such as substance use and non-adherence may influence a mental health care users' clinical picture and therapeutic need from one day to the next.¹⁷ At the SATS Centre participant attendance was variable, with some participants coming regularly and others only attending once every second month. Educators should therefore help students to develop the ability to be flexible and to adapt therapy to suite mental health care users' current needs.

Occupational therapy students should also be made aware of the stigma and social exclusion that mental health care users experience on a daily basis.¹⁰⁶ Students should be sensitive towards mental health care users with regards to previous negative experiences in their communities and how it might influence the individual's perspective of him-/herself. Often students are unaware of the social circumstances of many of these mental health care users. There should be an effort by training institutions and by students themselves, to familiarize themselves with low socio-economic environments. This will enable students to be more realistic and empathic in their treatment approach. Another essential skill when working in the community setting, is mastering the technique of motivational interviewing.¹²⁴

Training institutions should also make students aware of the slow turnover that is often experienced in community mental health.⁵⁵ Recovery from mental illness can often take

years, if at all. Therapists often need to rejoice about the small milestones that are achieved. Arguably, some of the most important skills that a student needs to develop are to continuously build relationships with community members, to use resources within the community and to be aware of and incorporate the socio-economic, political and cultural beliefs of the community in daily practice.⁶⁵

6.1.4 Research

A recommendation for future research in this field, is to consider a well-planned randomised control trial with larger sample size. Hopefully such a study can confirm the results obtained in this study.¹¹⁶ It is advised that researchers ensure that the study population is representative of the South African population with regards to age, gender and race. It will also be beneficial if participants with a spectrum of diagnoses can be included in such a study.

It is also recommended that future research studies assess functional outcomes as part of positive outcomes. This can be achieved by doing a standardised functional assessment on all participants before attending a day treatment centre to establish a baseline functioning for comparison with later results. An assessment tool that is widely used and that can assess a variety of subcategories of functioning will be advised. Currently the Vona du Toit Model of Creative Ability¹²⁵ is used at the SATS-Centre. The Activity Performance Outcome Measure that is specifically relevant to the South African population may be a good indicator of changes in occupational performance.¹²⁵ Other assessment that can be considered is the performance based skills assessment (UPSA) since it can also be a predictor for independent living¹²⁶ or the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0).¹²⁷

The SATS Centre is the ideal setting to measure the trends in recovery for mental health care users. Therefore it will be recommended to implement routine outcome measures over a longer period of time. A study doing longitudinal tracking of functional outcomes and the use of in-patient services while attending the SATS Centre, may be an ideal research project for a PhD student. It will also be advisable to use a larger sample size for this comparison. This will ensure more attendance categories with a more even distribution of frequency of attendance between the categories.

Lund et al.¹²³ stated that for the last 12 years the majority of mental health research in South Africa focused on the burden of mental illness and the status of mental health services within the country. Lund et al.¹²³ further stated that there is an urgent need to shift the research agenda and rather focus on the evaluation of current interventions, including the costing of these services. In line with this statement, it is recommended that a cost benefit analysis is done on day treatment services in South Africa. This will help service providers to make informed decisions with regards to the initial costs when setting up this type of service versus the cost savings associated with the reduction in use of in-patient services.

This study touched on the value of occupation-as-means as well as the benefits of rendering a 'package' of care for out-patient mental health care users which was based on the 15 principles of psychosocial rehabilitation. Therefore it is recommended that more research is done on the use of occupation-as-means in day treatment units and the effect thereof. The influence of occupation-as-means on recovery may add to the limited literature available on this topic. Further research may indicate that rehabilitation programmes need to provide multiple opportunities for meaningful participation in a broad range of valued occupations within the social environment to be effective. This may even result in adding a 16th principle to psychosocial rehabilitation focussing on the importance of meaningful participation in a variety of occupations.

Although this study adds to the limited research field of occupational therapy it is still recommended that further research on the role of occupational therapy in mental health care will be done and documented.⁸⁷ This will help legitimise the occupational therapist in the academic domain of mental health and also demonstrate the role of the occupational therapist in improving mental health care users' well-being.^{45,89}

6.2 Conclusion

This quantitative pre-test/post-test study demonstrated that a day treatment centre is a feasible option for alleviating the pressure on in-patient units within South Africa. Attendance at an occupational therapy-led community day treatment centre decreases the number of admissions and number of days spent in hospital and is therefore beneficial to service users and service providers. The study also indicates that the successful implementation of a

community day treatment centre on the grounds of a tertiary hospital by utilising existing resources is possible, and that it effectively reduces the use of in-patient services.

Appendix 2: Permission letter from Health Research Ethics Committee of the University of Stellenbosch (S12/03/072)



UNIVERSITEIT-STELLENBOSCH-UNIVERSITY
Lea kennis en woorde - your knowledge partner.

Approval Notice New Application

11-Jun-2012
ENGELBRECHT, Riskie

Ethics Reference #: S12/03/072

Title: **ASSESSING THE EFFECTIVENESS OF A STRUCTURED OCCUPATIONAL THERAPY DAY PROGRAMME FOR MENTAL HEALTH CARE USERS IN A DEVELOPING COUNTRY - A COST BENEFIT ANALYSIS**

Dear Mrs Riskie ENGELBRECHT,

The New Application received on 14-Mar-2012, was reviewed by members of Health Research Ethics Committee 1 via Expedited review procedures on 08-Jun-2012 and was approved.

Please note the following information about your approved research protocol:

Protocol Approval Period: 08-Jun-2012 - 08-Jun-2013

Please remember to use your **protocol number** (S12/03/072) on any documents or correspondence with the REC concerning your research protocol.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:

Please note a template of the progress report is obtainable on www.sun.ac.za/rd and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number projects may be selected randomly for an external audit.

Translation of the consent document in the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.
For standard REC forms and documents please visit: www.sun.ac.za/rd

If you have any questions or need further help, please contact the REC office at 0219389637.

Included Documents:

Application Form
Checklist
Protocol
Investigators declaration

Sincerely,

Franklin Weber
REC Coordinator
Health Research Ethics Committee 1

Appendix 3: Extension letter from Health Research Ethics Committee of the University of Stellenbosch (S12/03/072)



UNIVERSITEIT-SELLENBOSCH-UNIVERSITY
Jou kennisennoot - your knowledge partner.

Ethics Letter

01-Jul-2013

Ethics Reference #: S12/03/072

Title: ASSESSING THE EFFECTIVENESS OF A STRUCTURED OCCUPATIONAL THERAPY DAY PROGRAMME FOR MENTAL HEALTH CARE USERS IN A DEVELOPING COUNTRY :A COST BENEFIT ANALYSIS

Dear Mrs Riekie ENGELBRECHT,

At a meeting of the Health Research Ethics Committee that was held on 19 June 2013, the progress report for the abovementioned project has been approved and the study has been granted an extension for a period of one year from this date.

Please remember to submit progress reports in good time for annual renewal in the standard HREC format.

Approval Date: 19 June 2013 Expiry Date: 19 June 2014

If you have any queries or need further help, please contact the REC Office 0219389207.

Sincerely,

REC Coordinator
Mertrude Davids
Health Research Ethics Committee 2

Appendix 4: Extension letter from Health Research Ethics Committee of the University of Stellenbosch (S12/03/072)



UNIVERSITEITSTELLENBOSCH-UNIVERSITY
JOU KENNISVOORLOF • YOUR KNOWLEDGE BETTER

Ethics Letter

25-Jul-2014

Ethics Reference #: S12/03/072

Title: ASSESSING THE EFFECTIVENESS OF A STRUCTURED OCCUPATIONAL THERAPY DAY PROGRAMME FOR MENTAL HEALTH CARE USERS IN A DEVELOPING COUNTRY :A COST BENEFIT ANALYSIS

Dear Mrs Riekie ENGELBRECHT,

At a review panel meeting of the Health Research Ethics Committee that was held on 6 June 2014, the progress report for the abovementioned project has been approved and the study has been granted an extension for a period of one year from this date.

Please remember to submit progress reports in good time for annual renewal in the standard HREC format.

Approval Date: 6 June 2014 Expiry Date: 6 June 2015

If you have any queries or need further help, please contact the REC Office 0219389207.

Sincerely,

REC Coordinator
Mertrude Davids
Health Research Ethics Committee 2

Appendix 5: Permission letter by the academic health institution; Stikland Hospital



Stikland Hospital, PGWC

13 March 2013

Ms R Engelbrecht

RE: SUBMISSION OF RESEARCH PROPOSAL FOR MASTERS OF OCCUPATIONAL THERAPY: ASSESSING THE EFFECTIVENESS OF A STRUCTURED OCCUPATIONAL THERAPY DAY PROGRAMME FOR MENTAL HEALTH CARE USERS IN A DEVELOPING COUNTRY: A COST BENEFIT ANALYSIS

This letter serves to confirm that you have submitted the above research proposal for the attention of Executive Management of Stikland Hospital and that your request to perform the research on the grounds of our hospital has been provisionally granted pending completion of DOH procedures.

We take note that you have ethics approval from the US Faculty of Medicine and Health Sciences (S12/03/072) and would like to remind you that you need to adhere strictly to their guidelines at all times.

As soon as you receive approval from DOH structures you are welcome to present us with proof of this and then you will be able to commence.

Regards

A handwritten signature in black ink, appearing to read 'L. Koen'.

Prof Liezl Koen
Clinical Head: Stikland Hospital
liezlk@sun.ac.za

De la Haye Road, Bellville, 7530
tel: +27 21 9404400 fax: +27 21 9404543

Private Bag X13, Bellville, 7530
www.capegateway.gov.za

Appendix 6: Permission letter by the Department of Health: Western Cape



STRATEGY & HEALTH SUPPORT

Health.Research@westerncape.gov.za
Tel: +27 21 483 6857; fax: +27 21 483 9895
5th Floor, Norton Rose House, 8 Riebeeck Street, Cape Town, 8001
www.capegateway.gov.za

REFERENCE: RP 046/2014
ENQUIRIES: Ms Charlene Roderick

R Engelbrecht
45 Bergsig Garden Village
59 Springfontein Laan
Amanada Glen
Durbanville

For attention: **Riekie Engelbrecht, Nicola Plastow, and Dr Ulla Botha**

Re: Assessing the effectiveness of a structured occupational therapy day programme for mental health care users in a developing country: a cost benefit analysis

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact the following people to assist you with any further enquiries in accessing the following sites:

Stikland Hospital **Dr A Jacobs** **Contact No. 022 487 9203**

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final report within six months of completion of research. This can be submitted to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).
3. The reference number above should be quoted in all future correspondence.

We look forward to hearing from you.

Yours sincerely

DR J EVANS
ACTING DIRECTOR: HEALTH IMPACT ASSESSMENT

DATE:

CC **C BESTER**

DIRECTOR: WEST COAST

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