A comparison of two occupational therapy group programmes on the task-oriented functioning of mental health care users with major depressive disorders

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Declaration

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I, Enos Morankoana Ramano, hereby declare that the work on which this thesis is based, is original (except where acknowledgement indicates otherwise) and neither the whole work nor any part of it, has been, is being, or shall be submitted for another degree at this or any other university, institution for tertiary education or examining body.

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Signed

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Date

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LIST OF ACRONYMS USED

Acronym	Meaning
ANOVA	Analysis of variance
AOTA	American Occupational Therapy Association
APA	American Psychiatric Association
BADL	Basic Activities of Daily Living
BaFPE-R	Bay Area Functional Performance Evaluation-Revised
CBT	Cognitive Behavioural Therapy
CMOP-E	Canadian Model of Occupational Performance and Engagement
DSM-5	Diagnostic and Statistical Manual of Mental Disorder, 5th Edition
ECT	Electro-convulsive Therapy
ERT	Emotion Regulation Skills Training
ES	Effect Size
F	Frequency
GBD	Global Burden of Disease
GDP	Gross Domestic Product
GP	General Practitioner
HPCSA	Health Professional Council of South Africa
ISI	International Society of Indexing
M	Means
MDD	Major Depressive Disorder
MHCA	Mental Health Care Act
MHCU	Mental Health Care User
MAOIs	Monoamine Oxidase Inhibitors
ML	Maximum Likelihood
MOCA	Model of Creative Ability
MOHO	Model of Human Occupation
OPHI-2	Occupational Performance History
OT	Occupational Therapist
OT1$_P$ and OT2$_P$	Occupational Therapists responsible for offering the programme
OT1$_T$ and OT2$_T$	Occupational Therapists responsible for participants testing
OTASA	Occupational Therapy Association of South Africa

Acronym	Meaning
OTPF	Occupational Therapy Practice Framework
P	Participant who took part in SC_N
PS	Participant who took part in SC_O
PD	Personality Disorder
PHQ-9	Patient Health Questionnaire
POTS	Psychiatric Occupational Therapy Support Group
SA	South Africa
SD	Standard Deviation
SRQ	Self Report Questionnaire
QUAL	Qualitative
QUAN	Quantitative
SC_N	Existing Standard Care
SC_O	Standard Care Plus
SIS	Social Interaction Scale
SNRI	Selective Norepinephrine Reuptake Inhibitors
SSRI	Selective Serotonin Reuptake Inhibitors
Rtms	Transcranial Magnetic Stimulation
TOA	Task Oriented Assessment
UP	University of Pretoria
USA	United States of America
VNS	Vagal Nerve Stimulation
VdTMoCA	Vona du Toit Model of Creative Ability
WHO	World Health Organisation
Δ	Improvement
%	Percentage

ABSTRACT

Background: Occupational therapists, as part of the multi-disciplinary psychiatric team, frequently include activity and or discussion groups in an attempt to reduce the symptoms of the MHCUs with MDD and to improve their functional ability. The evidence to support occupational therapy group interventions seems to be limited.

Aim: To compare a Standard Care Plus (SC_O) occupational therapy group programme, which included tangible activities in each of nine sessions with a Standard Care (SC_N) group programme, which included tangible activities in only five of nine group sessions and to explore the participants' experiences of either the SC_O or the SC_N group programmes.

Research design: A concurrent embedded mixed methods intervention research design was employed. A qualitative strand was embedded in a comparison pre-test post-test study.

Methods: One hundred participants, 50 from each programme, were pre- and post-treatment tested in order to compare the interventions in respect of cognitive, performance and affective functioning, social interaction and severity of MDD symptoms. Their experiences of the intervention were established. The study took place at the psychiatric wards of two private general hospitals in South Africa.

Results: The SC_O significantly improved the total outcome ($p<0.005$) in comparison to the SC_N on the MDD symptom reduction (PHQ-9) and social interaction (Client Response by Situation) ($p<0.004$). Five themes emerged, viz. happiness, social interaction, self-esteem, learned coping skills and being part of the solution.

Conclusion: The results suggest that the SC_O, which included tangible activities in each group session , was superior to the SC_N.

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Concept clarification

In this study, the following definitions and descriptions of concepts were applied:

Affective functioning

Affective functioning is defined as the emotional responsiveness inferred from facial expressions, including the amount, appropriateness and range of expressive behaviour.[1] In this study, it included the assessment of motivation, frustration tolerance, self-confidence and general affective impression.[2]

Cognitive functioning

In this study, cognitive functioning seeks to assess brain functioning[1] which includes memory, concentration and attention, abstract thoughts, organisation of time and materials and evidence of thought disorder.[2]

Concurrent embedded design

In concurrent embedded design, the supplemental qualitative data set is collected at the same time as the collection and analysis of the dominant quantitative data set, as is the case in this study. This qualitative data set is used to examine the occupational therapy group programme as part of the intervention.[3]

Effect

Effect is synonymous with influence or results, or outcome or impact.[4]

Existing Standard Care (SC$_N$) occupational therapy group programme

The **SC$_N$** occupational therapy group programme is the occupational therapy group programme that is already in use. It comprises a mixture of occupational therapy group sessions with and without tangible activities.[5] Some groups may be discussion groups (life skills groups, psycho-education groups and supportive groups). Life skills groups, psycho-education groups and supportive groups and others may have tangible activities (creative activity groups and leisure

activity groups). The existing SC_N occupational therapy group programme, excludes tangible activities in four of the nine group sessions.

Global Burden of disease

The global burden of disease (GBD) is the observational epidemiological study that describes mortality and morbidity from major diseases, injuries and risk factors to health at global, national and regional levels.[6]

Group procedure

Group procedure is a concrete structure of the group that provides a logical starting and ending of the group.[7] It is the steps that the group leader follows to facilitate the group session.

Group therapy

Groups involve "sharing and support and they provide the opportunity for social learning as we interact, model on and advise each other."[8(p.4)] Group therapy can facilitate the exchange of social support and encouragement among MHCUs as they derive hope for their own futures from observing others mastering similar challenges.[9]

Independent occupational therapist

Four occupational therapists participated in this research study. Two were situated at each of the two hospitals; while one at each hospital, administered the pre-and post-testing, and the other one conducted the intervention group programme. Testing and treatment were divided among the two therapists at their respective hospitals in order to prevent personal biases. In the study the two therapists at Hospital A were collectively referred to as OT1 ($OT1_T$ and $OT1_P$) and those at Hospital B as OT2 ($OT2_T$ and $OT2_P$). The two independent occupational therapists who administered the testing ($OT1_T$ and $OT2_T$) and treatment programme ($OT1_P$ and $OT2_P$) of the participants at each hospital had no interaction with those at the other hospital and were not acquainted. The hospitals were 69.4 kilometers apart from each other. Furthermore, all four occupational therapists were blinded to the hypothesis and the objectives of the study. The two independent occupational therapists ($OT1_P$ and $OT2_P$) who facilitated the group programmes were previously taught by the researcher (during their postgraduate studies) at different times. The other two independent occupational therapists ($OT1_T$ and $OT2_T$) who assisted with the pre-and post-testing, were also trained for that by the researcher.

Major depressive disorder (MDD)

Based on the five non-somatic DSM-5 classifications, the criteria for MDD include depressed mood, diminished interest or pleasure, feelings of worthlessness or inappropriate guilt, diminished ability to think or concentrate, or indecisiveness and recurrent suicidal ideation.[1,10-12] A psychiatrist would normally have made the diagnosis.

Mental health care user (MHCU)

A mental health care user is a person receiving care, treatment and rehabilitation services or using a health service at a health establishment aimed at enhancing the mental health status of the user, state patient and mentally ill prisoner.[13] A patient is a person who is receiving medical care. In this study, the terms "patient" and "mental health care user" are used interchangeably.

Occupations

Occupations are the things that people do as individuals to occupy their time, and attention; meaningful, purposeful activity; the personal activities that individuals choose or need to engage in and the ways in which each individual actually experiences them.[14] Occupations are the group of activities that have personal and socio-cultural meaning, are named within a culture and support participation in society. Occupations can be categorised as self-care, productivity and or leisure.[7] For the purpose of this study, occupation and activity are used interchangeably.

Occupational therapy groups

According to Howe and Schwartzberg,[15] occupational therapy groups include groups aimed at energy conservation, psycho-education, social skills, activities of daily living, reminiscence, and sensory stimulation, amongst others. The age range of members of these groups is very broad, from children to older adults, and the setting includes all areas of practice. It is critical to underline that "There are sets of dynamics that operate in small groups regardless of setting."[16(p.387)]

Performance functioning

Performance functioning includes the assessment of task completion, errors and efficiency. It assesses the ability to complete tasks according to instructions, ability to correctly accomplish each task and the time used to accomplish such task.[2]

Social interaction

In the Social Interaction Scale (SIS) the participants' social interaction in functional areas and their Social Response by Situation is assessed as set out in Appendix B.[2,17]

Standard Care Plus (SC$_O$), the proposed alternative occupational therapy group programme

The SC$_O$ is the proposed alternative occupational therapy group programme in which a tangible activity is inherent in each occupational therapy group session, which means it includes tangible activities in each of the nine group sessions.

Tangible activities

For the purpose of this study, tangible activities are activities in which mainly material handling will occur or is operative, and can include both work-related and leisure activities that are not confined to discussions only. Tangible activities will have a concrete end-product or practical tasks that are executed during the session by performing creativity or leisure activities.[18]

Task-oriented functioning

Task-oriented functioning refers to the Task Oriented Assessment (TOA) which includes cognitive functioning, performance functioning and affective functioning as set out in Appendix B.[17]

CHAPTER 1

1 BACKGROUND TO THE STUDY

1.1 Introduction

Major Depressive Disorder (MDD) is a major public health concern.[19-21] Furthermore, the World Health Organisation (WHO) ranks MDD as one of the most burdensome diseases in the world.[22] Globally, MDD is already the disease with the third highest burden, and the WHO estimates that it will be the leading one by 2030.[6]

The lifetime prevalence of MDD is almost 17% in the general population, but varies in different countries.[10] Developing countries such as South Africa also face problems associated with mental health care users (MHCUs) with MDD due to rapid social changes, risks of violence and ill-health.[23] Tomlinson, Grimsrud, Stein, Williams and Myer[24] suggest that South Africa has lower rates of depression with a lifetime prevalence of 9.7% in comparison with the United States of America but higher rates than Nigeria. Major Depressive Disorder can be classified as mild, moderate or severe.[25]

Major Depressive Disorder is associated with substantial disability,[26-27] poor quality of life,[27] occupational and social dysfunction,[28] decreased work productivity,[26] high socio-economic costs,[29] and increased mortality from suicide.[6] About 10% to 15% of MHCUs with MDD commit suicide and 67% have suicidal ideations.[10,25]

Major Depressive Disorder is suggested to have a number of causes.[30] According to Sadock, Sadock and Ruiz[10] the common causes of MDD could be abnormalities in genetics and physiological factors such as abnormalities in levels of norepinephrine, serotonin, dopamine and or histamine and biological factors such as hippocampal atrophy. The psychosocial factors might include stressful life events and personal stresses such as loss and unemployment and interpersonal

conflicts.[10] It could also occur in people without close interpersonal relationships[10] and with impaired social interaction. [6,10]

As psychosocial stresses negatively impact on the interpersonal relationships and self-esteem of MHCUs with MDD,[1] it could often cause challenges in their areas of occupation.[31] Areas of occupation include activities such as self-care, leisure, work, socialisation,[32] sleep, rest and motivation.[33] Crepau, Cohn and Schell[31] point out that the pervasiveness of MDD could affect the MHCU's entire repertoire of daily routines or occupation. Deficits in areas of occupation could also be related to cognition (impairment of memory, poor attention, difficulty in planning and organisation); emotions (low mood, low motivation); task performance[34] and social interaction or interpersonal relationships.[10,35]

In order to address MDD, a wide spectrum of healthcare providers, following a multidisciplinary psychiatric team approach, may be required.[36] Occupational therapists as part of the multidisciplinary psychiatric team who assist with the assessment, remediation and/or rehabilitation of MHCUs could also be valuable in the treatment of MDD[37-38] and some might even use a bio-psychosocial and spiritual approach to address the biological, psychological, social and spiritual problems associated with MDD.[39]

Occupational therapy intervention often includes occupational therapy groups. The purpose of these groups is to give the MHCUs with MDD an opportunity to engage in occupations of daily life and for social interaction like conflict resolution or communication skills.[40] Chetty and Hoque[41] suggest group therapy could be effective in assisting MHCUs with problem solving, in building support for each other and cohesion, in developing new coping skills and assisting in dealing with guilt, loss and grief. The purpose of occupational therapy groups could often be externally extended by encouraging MHCUs to return to work[40] or by developing and maintaining life skills necessary for present and future community interaction.[42]

1.2 Rationale

In primary health care settings, an estimate of forty-two percent (42%) of MHCUs with MDD are identified.[43] Only perhaps one-third of all MHCUs with MDD receive adequate treatment in the USA.[44] According to the National Mental Health Policy Framework and Strategic Plan 2013-2020,[45] around three quarters of MHCUs in South Africa who suffer from mental disorders might not receive any mental health intervention. Only limited statistics could be suggested of the number of MHCUs with MDD who receive occupational therapy in groups.

As early as 1992, Deveraux and Carlson supported the notion that engagement in occupation is mostly associated with a reduction in depressive symptoms.[46(p.179)] A systematic review by Zuiderveen, Ivey and Dordan[47] suggest that life review and reminiscence therapy are effective in treating depressive symptoms in older adults. The cross-sectional survey study by Odom,[48] which examined the relationship of leisure engagement to levels of depression and life satisfaction, revealed a higher amount of time spent engaging in leisure activities correlated with lower levels of depression and higher life satisfaction. There is only a limited literature relating to a series of occupational therapy groups being included for treatment of MHCUs with MDD in an acute setting either internationally or in South Africa. Gutman[49] is also of the opinion that there is a paucity of literature on the influence of occupational therapy on mental health internationally owing to a lack of trained researchers who are able to carry out intervention outcome studies.

Occupational therapists have been using group therapy as their preferred legitimate treatment modality in mental health care practices since the origin of the profession.[15,40] These groups include both verbal therapy groups and activity groups to improve interpersonal communication skills.[50] A study by DeCarlo and Mann[50] as early as 1985, suggest that occupational therapy groups involving mainly the use of activities attained a higher level of interpersonal communication skills than groups that used mostly verbal therapy. Their study however, has several limitations and "suggest [s], rather than provide conclusive evidence that activity groups are more effective …than verbal groups."[50] On the other hand Cowls and Hale,[5] believe that occupational therapists value the use of psycho-educational or verbal therapy groups as more challenging or prestigious than traditional activity groups.

Studies by Lim, Morris and Craik[51] and Sundsteigen, Eklund and Dahlin-Ivanoff[40] suggest that occupational therapists have a valuable contribution to make by using occupational therapy groups in the treatment of mental health care problems, including MDD. Lim, Morris and Craik[51] concluded that 82.8% of their participants suggested occupational therapy intervention being helpful. More than 50% of their participants valued occupational therapy groups, which they identified as essential for improved concentration, daily structuring and proper planning. They further saw occupational therapy groups as affording opportunities for socialisation, promoting creative expression and improving self-confidence.[51] Also notable about occupational therapy groups was the aspect of empowerment to practise a new skill, offering support, relaxation and relief from boredom.[51]

1.3   Problem statement

Various authors suggest that mental health care practitioners need more advanced and cost effective strategies to treat MHCUs with MDD.[19,52] Researchers are also investigating easily accessible, evidence-based and cost effective treatments for MHCUs with MDD.[53]

Even though research by Lim, Morris and Craik[51] and Sundsteigen, Eklund and Dahlin-Ivanoff[40] indicates the valuable contribution rendered by occupational therapy groups in the treatment of MHCUs, Gutman[49] on the other hand was of the opinion that the types of topics discussed in occupational therapy literature are quite irrelevant in the current clinical setting. Gutman and Raphael-Greenfield[54] further reported that the occupational therapy profession has inadequately addressed the evaluation and treatment of depression. Moreover, the preponderance of research on occupational therapy group intervention has been conducted mostly in outpatient settings.[40,55]

It would appear that the value of occupational therapy group interventions for MHCUs with MDD has not been explored and clarified as regards either their outcomes or their task-oriented functioning in acute mental health settings. The researcher's literature search did not yield sufficient evidence either of occupational therapy groups for treating MDD symptoms or of task-oriented functioning of MHCUs with MDD in the South African context. Regarding their position statement on therapeutic group-work in occupational therapy, the Occupational Therapy

Association of South Africa[56] suggested that there is a critical need for evidence-based research on group-work in South African occupational therapy practices.

The problem therefore is that there is a lack of documentation of the experiences of MHCUs with MDD about the reduction of MDD symptoms and the improvement of task-oriented functioning, as well as the value of an occupational therapy group programme that included tangible activities in the treatment of MHCUs with MDD. Bathje,[57] Mullersdorf and Ivarsson[58] and Perruzza and Kinsella[59] were, like this researcher, also concerned about the decline in the therapeutic use of activities by occupational therapists, and which, according to Mullersdorf and Ivarsson[58] was suggested to be only 56%. Also Mullersdorf and Ivansson[58] whose results in Sweden suggest that 44% of occupational therapists were using creative activities in the area of mental health in comparison to the 80-82% reported for the United Kingdom (UK) according to Craik, Chacksfield and Richards[60] and Griffiths and Corr.[61] This researcher believes the use of activities as being unique to the occupational therapy profession.

This raises the question whether using occupational therapy group programmes with tangible activities included in each group session can be influential and effective in the treatment of the MDD symptoms and task-oriented functioning of MHCUs with MDD.

This researcher has been implementing an occupational therapy group programme, the Standard Care (SC_N), as treatment for MHCUs with MDD since 1998. The SC_N, entails a combination of discussion groups (i.e. life skills groups, psycho-education groups and supportive groups) and activity groups (i.e. creativity groups and leisure activity groups), which took place in differing group therapy sessions.

However, as occupational therapists believe in the use of occupation as a means to achieve recovery[18] - in other words, "the doing and the being in action as a means for clarifying feelings, motives, needs and response patterns"[18(p.396)] – the researcher queried the efficacy of his existing SC_N programme which lacks proven documented research. The researcher decided to compare the existing SC_N programme with an alternative occupational therapy group programme, the Standard

Care Plus (SC$_O$), whereby a tangible activity is inherent in each group therapy session that underpins the occupational therapy practice.

1.4   Significance of the study

The proposed enquiry in this study appears to have been neglected in the occupational therapy profession. Also, the available studies appear outdated.[42,50] The significance of this study encompasses the following:

1.4.1 Promoting clinical evidence

This study may possibly assist occupational therapists in South Africa to offer relevant occupational therapy group programmes at acute hospital settings in the treatment of MDD's symptom and task-oriented functioning by proposing a programme that might be effective. It may thus promote an evidence-based rationale to occupational therapy group programmes and maybe add value to occupational therapy as a profession by delivering high quality, effective treatment of MDD symptoms and task-oriented functioning.

Gutman and Raphael-Greenfield[54] are concerned that there is only limited occupational therapy research addressing the effectiveness of occupational therapy intervention. Therefore, the researcher hopes that this study may influence occupational therapy practices towards an understanding of occupational therapy group programmes that include tangible activities, and which may thus enhance the future integrity of occupational therapy as a profession and the use of occupational therapy groups as a technique. Other multidisciplinary psychiatric teams may possibly gain a better understanding then of the value of occupational therapy group programmes, and might thus yield improved confidence in the value of occupational therapy group programmes with tangible activities in mental health care practices by adding clinical evidence to prove it.

1.4.2 Saving on treatment costs

Occupational therapists need to take into account cost savings and benefits for all stakeholders including medical aid schemes, families and employers in order to assist in reducing unnecessary recurrences and relapses of MHCUs with MDD. The proposed treatment programme might limit readmission to hospitals by equipping MHCUs with MDD with improved community survival or life skills and may possibly reduce treatment costs as it is viewed as less costly to treat MHCUs with MDD in groups than on an individual basis.[62] Relapses and recurrences following treatment of MHCUs with MDD are common and often carry massive social costs as the risk for repeated episodes exceeds 80%.[63] Therefore, the researcher assumes that promotion of mental health contributes substantially to both the social and economic development of the country even though the econometric data were not collected.[45]

1.4.3 Improvement of MHCUs' with MDD symptoms and task-oriented functioning

This study could assist in establishing an appropriate intervention to reduce the MDD symptoms and improve task-oriented functioning of MHCUs with MDD. This might then assist MHCUs with MDD to be able to function effectively in their respective areas of occupation after discharge.

1.5 Research question

The research question for this study is two-fold as follows:
- How does the proposed alternative occupational therapy group programme, the SC_O, compare with the existing occupational therapy group programme, the SC_N, in respect of MDD symptoms and task-oriented functioning of MHCUs with MDD?
- How are the two programmes experienced by MHCUs with MDD in respect of MDD symptoms and task-oriented functioning?

1.5.1 Quantitative enquiry

The null-hypothesis was formulated as follows:

The proposed alternative occupational therapy group programme, the SC_O, will not lead to a better treatment outcome for MHCUs with MDD than the existing SC_N occupational therapy group programme.

1.5.2 Qualitative enquiry

How do MHCUs with MDD experience either the SC_O or the SC_N occupational therapy group programmes in respect of their MDD symptoms and task-orientated functioning.

1.6   Research aim and objectives

The research aim and objectives of this study are explained next.

1.6.1 Aim of the study

The aim of this study was to compare if the proposed alternative occupational therapy group programme, the SC_O, was superior to the occupational therapy group programme, the existing SC_N, for the treatment of MDD symptoms and task-oriented functioning of MHCUs with MDD. The study also aimed at finding out how MHCUs with MDD experienced occupational therapy group programmes.

In order to address the research aim and achieve the objectives of the study, the study was conducted in three consecutive phases. The objectives of the study will be set out with reference to each phase.

1.6.2 Objectives of the study

Phase I

- To establish the severity of MDD symptoms among MHCUs with MDD prior to their participation in either of the two occupational therapy group programmes (the existing SC_N occupational therapy group programme), or the SC_O (the proposed alternative occupational therapy group programme).

- To assess participants' task-oriented functioning (*cognitive, performance and affective functioning) and social interaction* prior to implementation of either the existing SC_N occupational therapy group programme or the SC_O - the proposed alternative occupational therapy group programme.

Phase II

- To explore, describe and compare the participants' experiences of both the SC_O and the SC_N occupational therapy group programmes.

Phase III

- To assess whether the SC_O - the proposed alternative occupational therapy group programme, is superior to the existing SC_N occupational therapy group programme in respect of improved *cognitive functioning* upon discharge of the MHCUs with MDD.

- To assess whether the SC_O - the proposed alternative occupational therapy group programme, is superior to the existing SC_N occupational therapy group programme in respect of improved *performance functioning* upon discharge of the MHCUs with MDD.

- To assess whether the SC_O - the proposed alternative occupational therapy group programme, is superior to the existing SC_N occupational therapy group programme in respect of improved *affective functioning* upon discharge of the MHCUs with MDD.

- To assess whether the SC_O - the proposed alternative occupational therapy group programme, is superior to the existing SC_N occupational therapy group programme in respect of improved *social interaction* upon discharge of the MHCUs with MDD.

- To follow up on the participants' progress in respect of the *MDD symptoms* after their participation in either of the two occupational therapy group programmes upon discharge.

1.7 Chapter overviews

Chapter 2 will focus on relevant literature, viz. MDD, multi-professional treatment of MDD and occupational therapy for MDD.

Chapter 3 will cover the methodological and theoretical frameworks and will consist of the following:

Research design;

Rationale for selection of the Mixed Methods Research design;

Philosophical world views;

Specific mixed methods research design;

Quantitative enquiry; and

Qualitative enquiry.

Chapter 4 will cover the measuring instruments that were used to collect quantitative data, viz. first the PHQ-9 and the BaFPE-R, followed by the self-report questionnaires and the focus groups that were used to gather qualitative data.

Chapter 5 will focus on the intervention strategy that was used, viz. an occupational therapy group programme.

Chapter 6 will focus on the research methods of the study.

In *Chapter 7* the quantitative results will be presented and discussed as follows:

Demographic profile of the participants.

Comparison of the pre- and post-test results in the PHQ-9 of the SC_O, with the pre-and post-test results in the PHQ-9 of the SC_N.

Comparison between the mean differences and Effect Sizes of SC_N and SC_O from the PHQ-9 results. Comparison of the pre- and post-test results in the BaFPE-R of the SC_O with the pre- and post-test results in the BaFPE-R of the SC_N, and

Comparison between the mean differences and effect sizes of SC_N and SC_O from the BaFPE-R results.

Chapter 8 will report on the participants' inter-subjective experiences of the SC_N and SC_O occupational therapy group programmes in both the self-report questionnaires and the focus group interviews.

Chapter 9 will discuss the integration of quantitative and qualitative results by means of a joint display.

Chapter 10 will reflect on the study, make recommendations for further research and conclude.

CHAPTER 2

2 LITERATURE REVIEW

2.1 Introduction

Dealing with a comparative study in which two occupational therapy group programmes on the severity of MDD symptoms and task-oriented functioning of MHCUs with MDD are compared is a complex issue, as indicated in occupational therapy literature.[8,15,50,64] The researcher suggests it to be relevant for this chapter to fully focus on topics that encompass this subject.

In order to provide an adequate background to the study, the literature review will cover various topics on MDD, occupational therapy and occupational therapy groups. This chapter will cover relevant topics in the following order:

Major depressive disorder (MDD)

    Prevalence of MHCUs with MDD;

    Causes of MDD;

    Signs and symptoms of MDD;

    Impact of MDD symptoms on MHCUs' functional performance;

    Treatment of MHCUs with MDD in an acute setting.

Occupational therapy

    Philosophy of occupational therapy, and

    Occupation, activities and doing in occupational therapy.

Occupational therapy intervention

    Client-centred approach;

    Occupational therapy for MHCUs;

    Group work in occupational therapy, and

    Occupational therapy intervention for MHCUs with MDD.

2.2 Major depressive disorder

The "DSM-5 Criteria for MDD"[10(p.357)] is commonly used as a guideline to make diagnosis of MDD. The major symptoms of MHCUs with MDD are (1) a depressed mood and (2) a decreased interest or pleasure in doing activities. The MHCUs with MDD may experience single or recurrent episodes.[11] In addition, MHCUs with MDD may experience changes in appetite and weight, changes in sleep and activity, lack of energy, feelings of guilt, challenges in thinking and making decisions, and recurring thoughts of death.[10-11] To make a diagnosis of MDD, a person should experience at least four of these symptoms and the episode must last for at least two weeks.[10-11]

On an occupational performance level these symptoms have a negative impact on social and task orientated functioning.[65]

2.2.1 Prevalence of MHCUs with MDD

Major depressive disorder is a psychiatric disorder that occurs frequently.[66] The lifetime prevalence of MDD is almost 17%[10] and it is one of the fastest growing diseases worldwide.[67] During 2013, the prevalence of MDD in 18 to 29 year old persons was threefold higher than the prevalence in those aged 60 years and older.[11] The mean age of onset is 40 years, and 50% of patients have an onset between age of 20 and 50 years.[10] The prevalence of MDD was suggested to be higher in females than in males.[68-69] In a study in Germany, it was mentioned that females, lack of partnerships and social support are significantly correlated to depression.[20]

The burden of depression is projected to increase to 5.7% of the total global burden of disease (GBD) by 2020.[69] Furthermore, there is an increase in MDD as it is expected perhaps to be the second cause of the GBD (mortality and morbidity rates from major diseases) in the world by 2020 and thus might require serious attention in comprehensive health care services.[18] The World Health Organization (WHO) estimates that MDD will be the leading GBD by 2030.[6]

South Africa is reported to have 9.8% of major depressive episodes in a lifetime of MHCUs.[24] Depression occurs in possibly 8% to 15% of the global population in South Africa.[70] One out of ten South Africans might experience an episode of depression in their lifetimes.[24]

Major depressive disorder may result in high personal and social problems, self-harm and a need for health care provisions.[66] Major depressive disorder is a common condition with a high rate of recurrence, chronicity, economic burden and disability in the work force;[71-73] increased mortality and suicide;[29] increased morbidity;[69] poor quality of life;[27] decreased work productivity and higher absenteeism.[26,71-72] The risk of recurrent depression increases with each successive episode.[69]

2.2.2 Causes of MDD

Major depressive disorder is suggested to have a number of causes.[30] Sadock, Sadock and Ruiz[10] explain the common causes as abnormalities in genetics and physiology, in biological factors, in psychosocial factors and in personal stressors. Similar to most mental health disorders, MDD appears to be the result of a complex interaction between biological vulnerabilities and dispositions, and environmental and psychosocial events.[70,74] For purposes of this study, common causes of MDD will be described briefly.

2.2.2.1 Biological factors

From a biological perspective, activation of B2 receptors may result in a decrease of the amount of norepinephrine that is associated with pathophysiology of depression.[10] Neurotransmitter norepinephrine plays a role in the regulation of cognition, motivation and intellect.[75] Depletion of serotonin is associated with precipitating depression.[10] The neuronal circuits bridging cognition and depression are created by reciprocal actions of serotonin which regulates cognitive flexibility, attention and impulsivity.[75] Serotonin may further influence psychomotor speed.[75] Reduction of dopamine is associated with depressive symptoms.[10] This may result in fatigue, inability to concentrate, lack of motivation, forgetfulness and failure to finish tasks.[76] Refer to *Table 2-1: Symptoms of MDD caused by biological factors* for the summary of biological factors. The

amygdala modulates mood congruency and self-referent memory in individuals who are vulnerable to depression relapse.[77]

Table 2-1: Symptoms of MDD caused by biological factors

	Norepinephrine	**Serotonin depletion**	**Dopamine reduction**
Cognition	Cognition Intellect	Cognitive flexibility (attention and impulsivity)	Inability to concentrate Forgetfulness
Mood	Depression	Depression	Depression
Conation/ Performance	Motivation	Psychomotor speed	Lack of motivation Fatigue Failure to finish tasks

2.2.2.2 Genetic factors

Sadock, Sadock and Ruiz[10] suggested that if one person in the family has a mood disorder, there is a risk of 10% to 25% for mood disorder in a child. The risk to a child could increase if more members of the family are affected.[10] Belmaker and Agam[30] comment that severe depression in late teens or early 20s may be related to genetic factors.

2.2.2.3 Psychosocial factors

Interpersonal relationships

Several theories have been proposed to explain the psychological factors underpinning MDD. In the widely cited work of Yalom & Leszcz[78(p.47)] the point is made that "psychological symptomology emanates from disturbed interpersonal relationships." In line with this statement, Vorster[79] also maintained that there is a correlation between a person's interpersonal relationships and his degree of mental health, whilst Lepine and Briley[6] point out that mental disorders are associated with social interaction and close relationship problems. The nature of the "troubled" interpersonal contact was described by Van der Berg[80] as (1) inadequate contact, (2) strained contact, (3) tense contact or (4) absent contact.

The cause of interpersonal difficulties in psychiatry is explained in the work of Sullivan[81] and in research conducted by Boyce, Harris, Silove, Morgan, Wilhelm and Hadzi-Pavlovic[82] where it was suggested that MHCUs with MDD could be associated with rejection during childhood, low care from a current partner, a vulnerable personality style, increased reporting of stressful life events and an unsatisfactory social support network.

From the literature reviewed it seems that the quality of a person's interpersonal relationships, and by implication feedback from others, have an impact on a person's self-esteem[79] and ultimately on his emotional well-being.[78]

Life events and environmental stress

Life events such as losing a parent before the age of 11 years are associated with depression.[10] Environmental stressors such as loss of a spouse and unemployment are also associated with episodes of depression.[10] In a study by Kagee,[23] factors such as single motherhood, unplanned pregnancy, unemployment and marital conflict were associated with depression. Therefore, it is evident that life events and environmental stressors are associated with depression.

2.2.3 Signs and symptoms of MDD

According to the DSM-5 classification for a diagnosis of MDD to be made, symptoms must last for at least two weeks.[10] In addition, the MHCUs with MDD may experience appetite and weight changes, sleep disturbance, a change in psychomotor behaviour, lack of energy or tiredness, low self-esteem and guilt feelings, poor concentration and decision making, and recurring thoughts of death or suicide.[10-11]

Sheehan, Mancini, Wang, Berggren, Cao, Duenas and Yue[75] suggest that executive dysfunction still remained during the remission stage of MDD. Furthermore, these symptoms may impact on the functional performance of MHCUs with MDD which includes both social and task orientated functioning.[65]

2.2.4 Impact of MDD symptoms on MHCUs' functional performance

The summary of MDD symptoms and functional performance is illustrated in *Table 2-2: Impact of MDD symptoms on MHCUs' functional performance* with information were obtained from Baumann,[83] Baune, Miller, McAfoose, Johnson, Quirk and Mitchell,[84] Crouch and Alers,[18] the APA,[11] Lam, Kennedy, McIntyre and Khullar,[72] and Trivedi and Greer.[85]

Table 2-2: Impact of MDD symptoms on MHCUs' functional performance

Cognitive changes	Emotional changes	Performance	Social interactions
Impaired attention and concentration	Low mood	Decreased energy/Fatigue	Social withdrawal
Memory impairment	Anhedonia	Minimum effort	Strained interpersonal relationships
Indecisiveness	Irritability	Psychomotor changes	
Problem solving	Low self-esteem	Reduced efficiency	
Processing speed	and feelings of	Difficulty in	
Executive function	worthlessness	completing tasks	
Difficulty in making decisions		Decreased	
Learning		productivity at work	

Cognitive impairments are seen as features of depression in the domains of immediate memory and attention.[84] Mohn and Rund[86] add that impairment in cognitive functioning (processing speed, attention, vigilance and visual learning) are common in depressive disorders and improve after symptom remission. Cognitive deficits such as an impaired memory and increased cognitive reactivity may be present even after remission.[87] Trivedi and Greer[85] cite cognitive impairment in executive functions, working memory, psychomotor processing, and impaired divided attention as common amongst MHCUs with MDD. They add that cognitive dysfunction may have an important impact on functional recovery and disability.[85]

2.2.5 Treatment of MHCUs with MDD in an acute setting

Mental health care users with MDD may require hospitalisation when there is a risk of suicide or homicide and other types of self-endangerment[10] as they cannot safely stay in their own environment.[88] Acute treatment in the hospital setting is frequently provided by a multi-disciplinary psychiatric team consisting of psychiatrists, psychologists, nursing professionals, social workers and occupational therapists.[45] Other studies refer to different therapies that include pharmacotherapy, occupational therapy, unstructured support from nurses and psychotherapy for the treatment of depression.[88-89]

Hengartner, Angst, Ajdacic-Gross and Rossler[90] suggested early treatment for depression including young men who mostly go untreated. In developing countries like South Africa, depression is mostly untreated and undetected.[23] Vergouwen, Bakker, Katon, Verheij and Koerselman[91] in their article on improving adherence to antidepressants: a systematic review of interventions, suggests that collaborative interventions showed significant improvement in treatment adherence during the acute phase of MDD. In an article on the "treatment of depressive disorders," the suggested standard protocol includes pharmacotherapy (predominantly antidepressants), psychotherapy (cognitive behavioural therapy, psychoanalytic psychotherapy and interpersonal psychotherapy) and supportive therapy.[25] Sadock, Sadock and Ruiz[10] also refer to various suggested treatment modalities for MDD.

There is limited research on diverse interventions as there is no single effective treatment for MDD. The combination of the treatment modalities (pharmacotherapy, psychotherapy and supportive therapy) are seen as advantageous in acute settings.[25]

2.2.5.1 Pharmacotherapy

There are available drugs and psychotherapeutic treatments for MDD, but the majority of MHCUs remain undiagnosed and inadequately treated.[66] One in four people with depression may receive pharmacological treatment.[92] The antidepressant medication targets the brain monoamine systems (serotonin, norepinephrine or dopamine).[93]

The commonly prescribed antidepressants are selective serotonin reuptake inhibitors (SSRI), selective norepinephrine reuptake inhibitors (SNRI) and monoamine oxidase inhibitors (MAOIs) used for treatment of depression.[18] With regard to medication, Israel[87] in his publication in *Pharmaceuticals* addressing "the impact of residual symptoms in major depression" suggested that approximately 55% of MHCUs with MDD respond to an initial trial of antidepressants. The MHCUs' nonadherence to pharmacological treatment is almost 80%[70] which reduces the effectiveness of depression (antidepressants) medication.[90] Better adherence to treatment was suggested amongst patients with cluster C personality disorders.[94] Cluster C personality disorder includes the avoidant, dependent and obsessive-compulsive personality disorders, which share a high level of anxiety.[10] Bushnell, Sturmer, White, Pate, Swanson, Azrael and Miller [95] agreed with the APA[11] recommended guideline of the minimum treatment length of six months for MDD. General practitioners (GPs) could also play a role in improving adherence to antidepressants treatment in the community.[96]

In a study by Vourilehto, Melartin, Riihimaki and Isometsa,[94] focusing on the "pharmacological and psychological treatment of depression in primary care; low intensity and poor adherence and continuity resulting in a decline in antidepressant treatment" was common after the first treatment as the patients discontinued their medications. The relapse rate of MDD after an initial response to acute treatment is between 40-60%.[97] Treatment resistance by MHCUs accounts for approximately 12% to 20% of those diagnosed with depression.[93] As much as twenty percent of treatment resistance may be attributed to poor adherence.[87]

Other psychiatric treatments for MDD besides pharmacological treatment may include electroconvulsive therapy (ECT), vagal nerve stimulation (VNS), transcranial magnetic stimulation (rTMS) and phototherapy.[10,87,93] Ketamine is used for the treatment of resistant depression.[93,98-99] Electroconvulsive therapy is effective in cases where pharmacotherapy has failed.[10,87,98] A similar response rate between ECT and rTMS was suggested and rTMS was supported in the treatment of depression.[100] Vagus nerve stimulation is associated with greater symptoms reduction but longer treatment may be necessary to achieve clinically meaningful benefits.[101]

2.2.5.2 Psychotherapy

Richards, Lovell, Gilbody, Gask, Torgerson, Barkham, Bland, Bower, Lankshear, Simpson, Fletcher, Escott, Hennessy and Richardson[92] in their study on "Collaborative care for depression in UK primary care: a randomized controlled trial" suggest that less than 10% of depressed patients received talking therapy. In a study that focused on "psychological treatment of depression in inpatients: A systematic review and meta-analysis", psychotherapy was suggested to have a smaller effect with hospitalised patients with depression and gave a positive outcome in only one out of every six patients.[88]

Various types of short-term psychotherapy (cognitive therapy, interpersonal therapy, behavioural therapy, psychoanalytically oriented psychotherapy and dynamic therapy) are suggested for the treatment of MDD.[10] Comparison of psychological treatment for depression includes cognitive behavioural therapy, behavioural activation therapy, problem solving therapy, interpersonal therapy, social skills training and family therapy.[88] In Sadock, Sadock and Ruiz[10] and Cuijpers, Clignet, Meijel, Straten, Li, Anderson,[88] interpersonal therapy and behavioural therapy are cited as the commonly used psychotherapies for the treatment of MDD. In a related study by Kontunen, Timonen, Muotka and Liukkonen,[102] it was suggested that both interpersonal counselling and interpersonal psychotherapy could be effective treatments of mild to moderate depression.

Cognitive therapy has been suggested to have the same efficacy as pharmacotherapy.[10] Cognitive behavioural therapy (CBT) and emotion regulation skills training (ERT) were also suggested to improve treatment for MDD.[97]

The most effective method for the treatment of severe MDD is perhaps interpersonal therapy.[10] Individual interpersonal therapy and medication demonstrated the same efficacy in treating mild to moderate major depression.[103] Group interpersonal therapy was suggested to be cost-effective in comparison with individual interpersonal therapy.[103] Interpersonal therapy is seen as a common psychotherapy for the treatment of MDD as highlighted by the reviewed literature.[10,102-103]

In conclusion it was suggested that a combination of both psychotherapy and pharmacotherapy could be seen as an effective treatment for MDD.[10] Katzman, Anand, Furtado and Chokka[104]

suggested a move away from monotherapy to a combination/integrative treatment encompassing medication and non-pharmaceuticals approaches. Studies have also shown that integrative treatment which includes pharmacotherapy and psychotherapy, has been suggested as being optimal and superior in the treatment of MHCUs with MDD.[19,89] Incomplete or nonresponse to pharmacotherapy and psychotherapy in acute treatment of patients with depression is rated at 20% to 60%.[62]

2.2.5.3   Supportive therapy and family involvement

Lack of social support and poor relationships are strongly associated with poor depression outcomes.[105] Guidelines for the treatment of depression suggest the provision of support and education for patients with MDD.[94] Family therapy is mostly recommended if MDD affects the marriage or family functioning.[10] Fortunately, family involvement was linked to both depression improvement and medication adherence.[105] High levels of support from family or friends can assist in improving the well-being of MHCUs with MDD.[105]

As it is beyond the scope of this study to review intensive literature pertaining to other health care professions and in order to compare various interventions, occupational therapy for the treatment of MHCUs with MDD will be discussed only.

2.3   Occupational therapy

Lim, Morris and Craik[51] suggest that three quarters of their patients had positive views about occupational therapy intervention given to them, and had suggested it to be useful and enjoyable. Occupational therapy intervention along with medication were also associated with improvement in the MHCU's areas of body functions and interpersonal relationships.[64] Occupational therapy is seen as the type of behavioural therapy that focuses on functioning.[73] An integrative treatment programme that included medication management, group-based interpersonal psychotherapy and group occupational therapy was found to be optimal in the treatment of chronic depression as the remission rate was significantly greater in a multi-modal, multidisciplinary treatment programme than in treatment as usual.[89] The prognosis of MDD is suggested to be good if it is appropriately and consistently treated.[25] Gutman and Raphael-Grenfield[54] asserted that the profession of

occupational therapy has perhaps not adequately addressed the evaluations and treatments of depression, which is actually imperative in current clinical practices.

In order to clearly describe the occupational therapy group intervention, the philosophy of the profession will have to be explained first.

2.3.1 Philosophy of occupational therapy

The evidence of occupational therapy's effectiveness in treating MHCUs of all age groups is widespread.[7,18,106] Since its inception, the occupational therapy profession moved through different focal world views or paradigms, core constructs and values. A paradigm explains how a profession shares a common vision for its own identity and the service it provides.[107] Before discussing the current paradigm, a brief overview of the shift in paradigms will be discussed next.

2.3.1.1 First paradigm

Occupational therapy first started with the pre-paradigm of the moral treatment to care, which emerged from the humanitarian trends in the 18th and 19th centuries.[108] The moral treatment came with the idea of engaging people in occupation as a form of therapy.[107] The principles of moral treatment were applied at the beginning of the 20th century and later applied to occupational therapy.[107]

As early as 1922, Meyer identified humans as occupational beings.[37,107] After the First World War until the 1950s, the emphasis was on the use of activities to restore function and treatment was underpinned by a paradigm of occupation.[109]

2.3.1.2 Second paradigm

Criticism from medicine and injuries from World War II directed occupational therapists' use of the medical model paradigm, which focused on body systems and adopted a mechanistic or reductionist paradigm.[110] It focused on remediating impairment, and consequently the psychodynamic perspective was employed in mental health.[107] In the 1960s and 1970s, a

professionalism paradigm came into existence as it distanced itself from the medical model paradigm and allowed the profession to establish its own monitoring and education systems.

2.3.1.3   Third paradigm

Since the 1980s, a third paradigm emerged as occupational therapists became more client-centred and followed a more holistic approach.[109] Moving from a biomedical explanation and approach to dysfunction, occupation and its impact on a person's quality of life became the focus.[111] The focus of occupational therapy service recognise problems of participating in occupation as a contemporary paradigm.[107]

Kielhofner who was instrumental in the development of the third paradigm believed that "humans have an occupational nature … humans can experience occupational dysfunction … and occupation can be used as a therapeutic agent".[109,112(p.4)] Molineux[109] emphasised that occupation is … active … purposeful … meaningful … contextualised … and impacts on health. According to this paradigm and vision of occupational therapy, occupational therapy intervention should be "holistic, occupation based, client-centred, collaborative,"[113(p.437)] contextualised and evidence-based.[37] Stav, Hallenen, Lane and Arbesman[114] are also of the opinion that the paradigm shift put emphasis on a holistic approach that supports the goal of occupational therapy in the promotion of well-being. Power sharing and adopting a holistic perspective in respect of the client[115] as well as allowing clients to take control of their health and wellbeing[116] are the key elements in this approach. However, according to Ripat, Wener, Dobinson and Yamamoto,[115] the rhetoric around the concept of client-centredness as a defining feature of professional value is still not clearly understood by occupational therapy practitioners. The emphasis however of holism in the third paradigm is well set out in the third edition of the Occupational Therapy Practice Framework (OTPF).[37]

The third and current paradigm in the history of occupational therapy has been influenced by growing research and theoretical knowledge within the profession of occupational therapy and occupational science.[117] Occupational science assists in generating knowledge about the meaning of human occupation.[109]

Occupation, activity, or doing have traditionally been identified as the hallmark and essential uniqueness of occupational therapy practice as explained in the third edition of the OTPF.[37] These three concepts will be discussed separately.

Occupation

Ramukumba[118] observed that South African occupational therapists still struggle to explain the difference between activities and occupation. In the past, it has been posited that "the core concept of occupation, purposeful activity, and function had been used interchangeably in the literature and practice of occupational therapy."[119(p.864)] Occupational therapists gave up on function to become experts in occupation.[120] Kielhofner[121] referred to occupation as "human activity" … Hocking[122] referred to occupation "as groups of activities and tasks of everyday life, being everything that people do to occupy themselves, including basic self-care, enjoying life (leisure), and contributing to the social and economic fabric of their communities (work productivity)". Occupation in this sense denotes personal care, household maintenance, leisure and work activities.[122]

Occupation includes activities or tasks which engage a person's time and energy, especially self-care, productivity/work and leisure.[123] Ross[124] argues that of all the occupations in which people engage during their lifespan, work occupies the central position. Therefore, if mental illness or any mental health problem interferes with the normal way of how people occupy their time, or engage themselves in work, then occupational therapy is indicated. Hocking[122] observed that survival, spirituality and sexuality were excluded from the occupations. Furthermore, it was clarified that occupation includes things people need to, want to and are expected to do.[125] Therefore, occupation is summarised as human activity involving tasks of everyday life such as personal management (basic and instrumental), leisure activities, work activities, social activities, spiritual activities and sexual activities.

Chan[126] further refers to occupation as functional roles that a person adopts. Occupation requires active participation, energy, interest and attention as it is directed towards a specific goal.[127] Yerxa[128] supports the statement that occupation is a self-initiated, self-organised activity, which is

goal directed. In terms of dynamic systems theory, occupation embraces the person, environment and task.[129]

Gray[130] was of the opinion that occupation is an intervention with characteristics that include (1) purposefulness, (2) goal directedness, (3) meaningfulness, and (4) wholeness with an inherent beginning, middle and an end. Royeen[131] supported the characteristics of occupation with four simple concepts as (1) purposeful activity, (2) activity plus meaning, (3) doing with meaning, and (4) participation in context. Occupations are the everyday, meaningful activities that people engage in and are related to work, leisure and self-care.[132-133] Gray[130] referred to occupation as ends and as means which represent the unique realm of occupational therapy expertise. The occupational therapy profession has claimed the use and application of occupation as means.[134] Occupation as means is viewed as a way of using engagement in and performance of occupation as an intervention for therapeutic change to remediate impaired abilities or capacities towards an outcome[130] This will lead to occupation as an end, which is the outcome of the intervention or goal of the occupational therapy intervention.[130]

Rowles[135] brings a new dimension by suggesting that meaning is shaped by environment and is discovered by achieving a sense of worth through the process of engaging in occupation. Various authors agree that occupation provides meaning to a client's life.[136-137] Therefore, clients' engagement in occupation, health promotion, and social inclusion are interagency agendas of occupational therapists in mental health.[138]

Occupation is epitomised as a combination of doing, being and becoming, which are integrated into the health and well-being of everyone.[127] Hitch[139] presented a critical analysis of this dimension of occupation that includes doing, being, becoming and belonging in order to guide ongoing development in occupational science and occupational therapy. Hitch, Pepin and Stagnitti[140(p.14)] further advised that if occupational therapists accept that "holistic practice is good practice," they need to engage with the dimension of doing, being, becoming and belonging. This dimension highlights that MHCUs with MDD cease doing many of their life's occupations, they lose their sense of being, but through engagement in daily occupations in occupational therapy they become themselves again and start to belong in their communities. Whalley Hammell[141]

advised that in order to address meaningful occupations, occupational therapists should focus on occupations concerned with belonging, connecting and contributing to others as well.

Activity

Purposeful activities and occupations have been used interchangeably to describe the unique focus of occupational therapy. Purposeful activity is a meaning used with an expected outcome during enhancement or facilitation of performance.[142] Zemke and Clark[143(p.43)] suggested that activities that have an occupational nature are those that are "serious and productive or playful, creative and festive." Therefore, the use of activity as a medium of treatment is unique to occupational therapists and vital to improve mental health.[144]

Doing

Westhorp,[33] Yerxa,[128] and Blanche and Henny-Kochler[145] argue that we need to review our concept of activities of daily living beyond self-care and should include the entire repertoire of daily routines such as play, work, sleep and rest. Ayres cited in Clark, Parham, Carlson, Frank, Jackson, Pierce, Wolfe and Zemke[146] referred to the intelligence of doing as the optimal balance of work, rest, and leisure at different stages of the human life span. The intelligence of doing was later referred to as "balance in lifestyle; or balance in occupation."[33(p.99)] Westhorp[33] raised the point that inner balance and tranquillity are of paramount importance as they lead to a feeling of being focused. Relatedly, Sundsteigen, Eklund and Dahlin-Ivanoff,[40] suggest that one needed to balance occupation and rest, which could be organised through structure and rest.

Westhorp[33] concluded that balance involves not only the complete range of occupations, but also the level of demands in those occupations in order to control our capabilities (mental, physical, social, emotional and spiritual), our resources (time, energy, money and material) in order to engage in occupations that will maintain and promote health and wellbeing for ourselves, others and the environment.

2.3.2 Occupational therapy intervention

Engagement in occupation was valued as the primary therapeutic agent and goal of intervention by occupational therapists since the beginning of the profession.[147] The formation of the profession focused on occupation, health and well-being.[114,148] Engagement in occupation was further linked to influencing and promoting a person's health and well-being.[32,114,134,149] Law, Steinwender and Leclair[150] concur that occupation has an important influence on health and well-being ranging from physiological to functional outcome. Bejerholm and Eklund[151] added that engagement in occupation affects health and influences quality of life. Several articles in mental health literature mention the importance of occupation for people with mental illness.[121,124,130,152] Occupation is vital for human health[130] and preventive occupation can maintain or enhance health status.[122]

Traditional occupational therapy interventions include leisure, social and practical activities, and they are also perceived as relieving boredom in the ward.[153] Donaldson as cited in Yerxa[128] suggested that human beings may learn to regulate their emotions by engaging in occupations because they are occupational beings. The benefits of participation in creative occupation provides opportunities for trying out ideas, experiencing feelings of mastery over tools, building confidence and adapting to the environment.[154]

Occupational therapists tend to focus and base their professional scope of practice on occupation and disability.[155] This could be because they are skilled in identifying and treating the determinants of areas of occupation (activity of daily living, spiritual activities, sexual activities, rest and sleep, education, work, play, leisure and social participation).[155] Occupational therapists also focus on client factors (body functions, body structures, values, beliefs and spirituality); performance skills (sensory perceptual skills, cognitive skills, emotional regulation skills, communication and social skills), and performance patterns (habits, routines, roles and rituals).[155] Furthermore, occupational therapists also consider the contextual and environmental aspects (cultural, personal, physical, social, temporal and virtual) and activity demands (objects used and their properties, space demands, social demands, sequencing and timing, required actions, required body functions and

required body structures).[155] Thus, occupational therapists view their clients holistically from a biological, systemic, personal and environmental perspective of their circumstances.[156]

In conclusion, the researcher supports Wilcock's[157] notion that engagement in occupation gives patients a sense of competence and knowledge about their limitations. Hasselkus[32(p.22)] also concludes that occupational therapists are "custodians of meaning and meaning givers." Overall then, occupation is a vehicle that allows people and patients to experience the world.[32]

2.3.2.1 Client-centred approach

Rogers[158] was the first to describe the term "client-centred" as early as 1939 using the principle of a non-directive approach such as warmth, and non-judgemental, unconditional positive regard, acceptance, empathy, respect and genuineness because the client is the main recipient of the health care system. Canadian occupational therapists have embraced and defined the client-centred approach as the core value of the occupational therapy profession for more than 30 years.[159] Several client-centred models were developed and used by occupational therapists. The models include the Canadian Model of Occupational Performance and Engagement (CMOP-E).[34,123,160] and the Model of Human Occupation (MOHO).[156]

Client-centred occupational therapy embraces the philosophy of respect and partnership.[161] The clients have information about themselves and their needs while the therapist is an expert professional who embraces partnership by engaging them in a decision-making process and allows respect for the clients' needs to improve their occupational performance.[162-163] During client-centred practice, an occupational therapist uses critical thinking as an essential component[164] of expert clinical reasoning.[165] The emphasis for occupational therapists should be to work in partnership with clients in developing mental health services that will maintain, restore and transform the existence of those whose lives have been disrupted by enduring mental health problems[154] and in providing a therapeutic change. This means that when the patient is doing the task, he/she becomes transformed in an unpredictable way.[166] The task may need to be challenging in order to assist MHCUs with MDD.

Furthermore, collaborative client-centred practice promotes engagement and a relationship between those healthcare providers working with clients and their families.[115] Client-centredness in occupational therapy should thus conceptualise the interpersonal relationship of rapport and working alliance.[161]

2.3.2.2 Occupational therapy intervention for MHCUs

In the past, activity-based occupational therapy groups were criticised for existing merely to keep the hospital MHCUs busy or to exploit free labour.[167] Occupational therapists have a major role to play in an acute mental health setting[153] The work of occupational therapists within acute in-patient settings require further acknowledgement, reflection and debate.[153]

It is known that human ill health restricts occupational choices.[154] The essence of occupational therapy is built on a belief in the necessity and value of occupation.[124] The value of occupation has also been advocated by Reilly, cited in Ikiungu[113(p.343)] who stated that "human beings by use of their hands, as directed by their minds and energised by their will can influence the state of their own health." Dysfunction then, is the problem that causes, or may cause difficulty in a person's occupational performance. Consequently, the client might seek or be referred for occupational therapy.[168] The use of activity as therapy in institutions for the MHCUs lay dormant for decades as stated in the third edition of OTPF.[37]

The benefits of participation in occupation include an improved feeling of self-worth and well-being, a sense of occupational achievement and a joy in successful achievements and improved control over the illness and ability to cope with the challenges.[154] It is further agreed that occupation influences health, self-respect, sense of dignity, social competence, happiness, well-being and satisfaction with meaning of life.[146] Therefore, different researchers in occupational therapy suggest that engagement in occupation promotes health, well-being, physiological and functional outcomes and quality of life.

There are criticisms and assumptions that occupational therapy was suggested primarily on empiricism rather than science.[146] It is currently evident that occupational therapy profession is both objective and credible in the healthcare world.[32] Occupational therapy perceives a person as

an occupational being.[109] Therefore, occupation is used in occupational therapy because it is central to occupational science.[169]

If mental illness or any mental health problem interferes with the normal way of how people occupy their time, or engage themselves in work, then occupational therapy is indicated. Therefore, occupational therapy is like a bridge that spans and links the world of medical health with the world of everyday life.[32] Occupational therapy practitioners enable MHCUs to seize, take possession of, or occupy the space, time, and roles of their lives at home, school, the workplace and places where they engage in recreation or leisure.[170] The simplest and best way to explain occupational therapy is that it enables individuals of all age groups to cope with their roles and tasks at home, in social settings and at work despite the presence of some residual symptoms of illness.

The relevance of occupational therapy is supported by findings which point to the conclusion that problems in daily functioning of a person are the reason for a decrease in quality of life.[171] Lloyd, King and Bassett[172] suggest that occupational therapists working with mental health spend between 25% and 74% of their time on occupational therapy specific tasks as opposed to generic tasks. They advise that occupational therapists should maintain a distinctive professional focus and identity while functioning with multidisciplinary teams.[172] Occupational therapy may only be valued as an adjunct to the use of psychotropic medications or as counsellors who conduct talk groups.[173] Occupational therapy intervention however focuses on psycho-education, life skills training and occupation-centred changes to lifestyle.[18] An applied science of occupational therapy would specifically address treatment efficacy and methods.[143] Occupational therapists are concerned that patients with illness or disability need to have personal independence in work (productivity), play/leisure, and self-care activities.[33] Westhorp[33] also expresses concern regarding non-inclusion of personal independence in spiritual, social, relationship and sexual occupation.

An occupational therapist needs to uphold professional excellence and accountable leadership.[174] Competency is the ability of a professional to use knowledge, skills, attitudes, and judgement associated with a profession in order to practice with skill, efficiency and safety and in order to provide high quality care that improves his or her clients' outcomes.[175]

2.3.2.3 Group work in occupational therapy

Occupational therapists have been using group therapy as their preferred legitimate treatment modality in mental health care practices since the origin of the profession.[15,40,42,176-178]

Models in occupational therapy group work

Different models in occupational therapy have been applied during occupational therapy groups such as the Model of Human Occupation (MOHO) by Kielhofner,[112,,121,156] the OTPF by AOTA,[37] the Canadian Model of Occupational Performance and Engagement(CMOP-E) by Law, Baum and Dunn,[34] and the Yalom and Leszcz[78] model of group psychotherapy.

The uniqueness of occupational therapy lies in the therapeutic use of everyday life activities (occupation) with individuals or groups in order to enhance participation in life roles, habits and routines in different contexts[37] as illustrated in the MOHO.[107,112,121,156,179] The OTPF by AOTA,[37] highlighted the importance of the occupational therapy practice that is holistic, occupation based, client-centred, collaborative, contextualised and evidence based. The CMOP-E,[34,160] was seen as an important model in occupational therapy because it is client-centred. The CMOP-E is a valuable tool that might help occupational therapists to provide holistic treatment for MHCUs with MDD.[180] It can devise a framework whereby the MHCU and the occupational therapist are equal partners[180] as it is a client-centred outcome measure.[123,160] The occupational therapist must engage the MHCU in partnership and goal setting.[180] Engagement in occupational therapy groups allows the MHCUs to undergo different stages while the group develops and matures.

Tuckman's stages of group development

Members in the group are to manifest themselves interpersonally in their own microcosm and forces of group dynamics which influence the development of the group.[78] Groups pass through several stages during their existence.[177] Tuckman[181] proposed the model of group development in 1965 suggesting the group process to be moving towards social problems and task problems.[176] Tuckman encapsulated the developmental stages of small group development as forming, storming, norming, performing and adjourning.[182]

The <u>forming stage</u> is seen as the period of orientation, anxiety, testing and dependence on the group members.[8] The group members need to know each other, their resources, talents and tasks.[177]

The <u>storming stage</u> is a period of intra-group conflict[8] and disagreement.[177] There is a lack of unity and resistance from the group members.[8] Issues of power and control versus withdrawal or dependence are raised by the group members.[8]

The <u>norming stage</u> is a period of cohesion whereby group members are close to each other and able to resolve conflict, work together and disclose things.[8] The group is able to develop norms and procedures to execute activities.[177]

 The <u>performing stage</u> is a period wherein group members focus their energy on issues and are able to express positive and negative feelings as they trust and support each other.[8] The group is now in control.[177] As the group matures, the group members focus on the here-and-now.[78]

The <u>adjourning stage</u> is a period of termination, which is concerned with disengagement or ending of the group.[181,183]

Therapeutic factors in occupational therapy groups

The model that mostly and strongly guides occupational therapy group treatment is based on the theory and practice of group therapy as devised by Yalom from his first publication in the seventies.[78] It is assumed that MHCUs with MDDs may have disturbed interpersonal relationships which could be addressed in occupational therapy groups. Patients value the relationship developed with other group members during group therapy.[184] Yalom further highlights various therapeutic factors that are facilitated during group therapies to assist with healing.

Therapeutic factors reflect those qualities that are inherent in group therapy and are valued by patients.[78] Yalom and Leszcz[78] divide the therapeutic experience into eleven primary factors facilitated as common mechanisms for change, such as instilling hope, universality, imparting information, altruism, the corrective recapitulation of the primary family group, development of socialising techniques, imitative behaviour, interpersonal learning, group cohesiveness, catharsis

and existential factors. Group members are interdependent on each other as a result of self-acceptance and being accepted by others.[78]

Universality, self-understanding and cohesiveness are viewed as important therapeutic factors.[185] Finlay[8] explains that the level of trust and cohesiveness predetermine the depth of member involvement. In short-term therapy groups, the significance of cohesion is seen as valuable.[184] This allows group members to take risks[8,177] as there is a sense of security which allows them to self-disclose.[8] A supportive atmosphere creates a sense of togetherness, being accepted and valued and leads to experiencing catharsis which further lessens depression and increases life satisfaction.[186]

Occupational therapy groups are believed to be strong in cohesiveness, interpersonal learning, altruism, hope and cathartic factors and they are ranked at the same level as psychotherapy groups.[187] A study by Falk-Kessler, Momich and Perel,[42] which focused on therapeutic factors in occupational therapy groups, suggests that cohesiveness, hope and interpersonal learning, be considered important by both the therapists and patients. Both studies of Webster and Schwartzberg[187] and Falk-Kessler, Momich and Perel[42] agreed on the effectiveness of cohesiveness, hope and interpersonal learning in occupational therapy groups. Their results differed in terms of altruism and catharsis however, as these two aspects were not considered in the study of Falk-Kessler, Momich and Perel.[42]

The group therapeutic factors by Yalom were not broad enough to encompass occupational therapy groups.[178] In occupational therapy groups, the therapist is also seen as a therapeutic factor.[178] Furthermore, Eklund[178] also suggested therapeutic factors that are related to occupational therapy groups, such as relaxation, creativity, distractions, enjoyment and increasing a new skill. These are perceived as forming therapeutic factors in occupational therapy.[178] The therapeutic values of occupational therapy groups are arousal of positive feelings, self-expression, stimulation of new understanding, clarifying problems, reaching possible solutions and practicing new procedures and habits.[40]

In order to facilitate therapeutic factors in occupational therapy groups a sound theoretical frame-work is necessary. The theoretical framework will be discussed next.

Theoretical frame of reference used in occupational therapy groups

The theoretical frame of reference that mostly guides occupational therapy treatment during occupational therapy groups is client-centred (refer to subsection 2.3.2.1.), which has been suggested as an empowering factor during treatment as it allows the clients to feel respected, listened to, being treated as adults and that the therapist believes in their potential[1,40,114,167,185] and cognitive remediation.[98,133,185,188]

Some theoretical frames of reference that are used in occupational therapy groups are also used in group psychotherapy and include: (a) psycho-analytical/psychodynamic frames of reference,[1,39,42,78,167,185,189-190] (b) cognitive-behavioural frames of reference,[7,78,167,189] (c) interactive approaches,[39] (d) cognitive therapy,[7,39,189-190] (e) behavioural group therapy[1] and (f) as psycho-educational.[78]

DeCarlo and Mann,[50] pointed out that there has been little research that compares the effectiveness of various approaches in clinical settings. Be that as it may, it is clear that occupational therapists apply an eclectic/integrative frame of reference in their treatment during occupational therapy groups.[133,167,191-192]. Borg and Bruce[176] support the use of an eclectic frame of reference as it allows cogent sharing of information and effective adaptation of activity. Ikiugu and Rosso[193] argue that occupational therapists need to focus mostly on occupation-centred practice (authentic occupational therapy). They view a human as an occupational being, occupation as a medium of change and occupational therapists as agents of change.[193] Furthermore, Ikiugu, Smallfield and Condit,[192] concluded that clinicians need to use theory so that their reasoning skills are based on logical and defendable ideas in order to be able to explain how their interventions guide changes in the clients' well-being.

Description of occupational therapy groups

The occupational therapy practice framework describes occupational therapy groups in terms of "functional groups, activity groups, task groups and social groups."[37(p.S31)] The occupational therapy groups can be used at inpatient units to allow clients to "explore and develop skills participation, basic social interaction skills, tools for self-regulation, goal setting and positive

choice making."[37(p.S31)] The various ranges of occupational therapy groups that are mostly used by occupational therapists are work-related skills, projective groups, psycho-educational groups,[40] role play,[50] life skills groups,[18] reminiscence therapy,[194] creative arts (art, pottery, dance, music, creative writing), craft activities, sports and game playing,[5,38,51,167,194-195] skills orientated groups,[42] cookery groups,[5,51,195] and music and relaxation groups.[51] Psycho-educational groups may offer assistance with self-esteem, conflict resolution and stress solution.[5]

The use of occupational therapy groups such as activity based groups (end-product focused), support based groups, social groups, and communication groups is a core part of occupational therapy practice in the acute mental health setting.[153]

Benefits of occupational therapy groups

Yalom and Leszcz[78] highlighted the fact that group pressure changes a person's attitude and behaviour. In the occupational therapy profession, the purpose and effect of occupational therapy groups have been studied and published by different researchers.[8,176-178] Research studies on occupational therapy groups is dated though and in some cases, not well documented. The researcher nevertheless looked at studies by DeCarlo and Mann,[50] Falk-Kessler, Momich and Perel,[42] Howe and Schwartzberg,[177] Eklund,[178] Cowls and Hale,[5] Lim, Morris and Craik,[51] Sundsteigen, Eklund and Dahlin-Ivanoff,[40] Bullock and Bannigan,[55] who all highlighted the benefits of the occupational therapy group with MHCUs.

DeCarlo and Mann,[50] as mentioned already, conducted a pre and post experiment and suggested that activity-based occupational therapy groups attained a higher level of interpersonal communication skills than groups which mostly involved discussions. Their study however, has several limitations and suggests, rather than provides, conclusive evidence that activity groups are more effective … than verbal groups. Additionally, the study lacks rigour. Klyczek and Mann[196] in their comparative study within day treatment also agreed with the statements of DeCarlo and Mann[50] that activities and the process of doing are inherent in occupational therapy treatment, and that they facilitate the patients' return to higher or more adaptive levels of functioning faster than do verbal therapy techniques. They further pointed out that the value of activities was less well understood, in spite of having been cited as more beneficial.[50] Klyczek and Mann,[196] further

pointed out that MHCUs receiving activity therapy experienced greater gains in symptom reduction, leading to increased self-esteem, better decision making skills, clearer cognitive processing, increased use of leisure time, awareness of their own feelings and decreased potential for self-harm. These gains improved their functional independence in the community.

Much as that may be the case, Bullock and Bannigan[55] in their publication, "Effectiveness of activity-based group work in community mental health: A systematic review", highlighted the lack of scientific rigour in occupational therapy research that supports the practice of activity-based group work. This lack of scientific rigour was also observed in the study by DeCarlo and Mann.[50] Despite the lack of scientific rigour found in occupational therapy research, Bullock and Bannigan[55] continued to encourage and recommend continued use of activity-based groups in occupational therapy. They further suggested that there is a lack of evidence on activity-based groups which does not mean that they are necessarily ineffective.[55] Falk-Kessler, Momich and Perel[42] were of the opinion that the role of activities was viewed as a means of learning through doing and discussion, and thus supported the statement of DeCarlo and Mann[50] that activities are more effective.

Occupational therapists however are able also to use occupational therapy groups to address the individual's therapeutic goals rather than merely performing socialisation.[42] Thompson and Blair[167] in their literature review reported that the benefits of creative arts activities facilitated projection and emotional self-expression, as well as increasing satisfaction and self-esteem, thereby increasing motivation and enhancing learning. Thompson and Blair[167] also supported the findings of DeCarlo and Mann[50] on the effectiveness of activity groups and that of Bullock and Bannigan[55] that activity-based groups are not ineffective. Interestingly, Thompson and Blair[167] further advised occupational therapists to do research on seeking an understanding of the therapeutic use of creative arts (activities).

Study participants in Cowls and Hale[5] reported that it was beneficial to be in groups with people who are in similar stages of recovery. The question of when clients are ready to absorb and utilise information in groups remains unclear and needs to be investigated. Nonetheless, Cowls and Hale[5] concluded that traditional occupational therapy activities such as arts and crafts and socialisation

were viewed as beneficial as group psychotherapy. Similarly, three quarters of the participants in a study by Lim, Morris and Craik[51] suggested occupational therapy intervention to be helpful, and most of them valued occupational therapy groups as these assisted patients in improving concentration, daily structuring, proper planning, opportunities for socialisation, promoting their creative expression and improving their self-confidence, practicing of new skills, support, relaxation and relieving boredom. Thus, by taking part in meaningful occupations, the activity group is suggested as a means to stimulate spontaneity, humour, and energy, and influencing self-efficacy and well-being.[40] Hutcheson, Ferguson, Nish and Gill[144] suggest that activities are useful to assist MHCUs in gaining problem solving skills, distraction from thoughts of illness and in promoting interaction. Furthermore, they stated that activity encouraged continued participation in the community.

Interpersonal therapy is premised on the idea that triggers of depression are often due to interpersonal difficulties.[188] Group interpersonal therapy may assist MHCUs with MDD to establish the link between depression and current life stressors and to assist in developing new ways of communication and interpersonal skills.[188] Both these types of groups differ from activity based groups as employing activities is not mentioned in them.

Different studies assert that the occupational therapist's unique service should remain that of providing the patient with a treatment that is both valuable and free from a repetitious overlap by other service providers through continued use of activities. Occupational therapists are part of the mental health care practitioners who assist with the assessment, intervention and rehabilitation of mental health care users, and therefore, occupational therapy is valuable in the treatment of mental health care users,[7,18,38-39,66] including those suffering from MDD.

During an acute episode of depression, the occupational therapist can be helpful in measuring reduction of depressive symptoms that are expressed during activity participation.[31] Studies by Klyczek and Mann,[196] Thompson and Blair,[167] Lim, Morris and Craik,[51] Sundsteigen, Eklund and Dahlin-Ivanoff,[40] and Hutcheson, Ferguson, Nish and Gill,[144] all attempted to show that occupational therapy groups can assist in symptoms reduction by focusing on concentration, problem solving, decision-making, emotional expression, cognitive processing, self-esteem and

energy levels. Furthermore, occupational therapy groups improved social interaction or interpersonal skills.[40,50,51,144,196]

Lastly, occupational therapy groups were suggested as being useful in improving the MHCUs' level of functioning as established in studies by Klyczek and Mann[196] and Eklund.[178] There are unfortunately few studies that show the benefits of occupational therapy groups in the occupational performance of MHCUs, especially those with MDD. More studies with scientific rigour are needed to measure the effectiveness of activity on MHCUs as suggested by Klyczek and Mann,[196] Cowls and Hale[5] and Bullock and Bannigan.[55]

Occupational therapy for MHCUs with MDD

The first contact with MHCUs with MDD is typically through an interview which can be done formally or informally[197-198] and focuses on their occupational being. This includes their occupational history, occupational environments and current occupational performance.[18] The therapist may observe the abilities (strengths and limitations) of MHCUs with MDD during the interview.[197] The interview instruments used in occupational therapy are the Occupational Performance History (OPHI-2), the CMOP-E and the Occupational Self-Assessment.[18] Another way of obtaining information about the MHCUs is by asking them to write an essay about themselves.[197-198] The occupational therapist can also use standardised tests such as Beck's Depression Inventory and Hamilton's Depression Inventory as part of the assessment.[18]

Furthermore, some occupational therapists use a bio-psychosocial perspective as a holistic multimodal treatment approach in an acute setting.[7,39] Various therapies that include cognitive therapy (distraction techniques, reattribution techniques), behavioural therapy (monitoring activities, scheduling activities, graded tasks), cognitive behavioural therapy (identifying and evaluating dysfunctional thoughts),[198] client-centred therapy and a psychodynamic approach,[132] can be used for MHCUs with MDD. These therapies may be complemented by the commonly used approaches that are person-centred, reality-focused and solution-orientated.[18]

The intervention with MHCUs with MDD may be carried out individually or in a group. Suggested activities are self-care activities, craft activities, sport and leisure activities and work related

activities,[39,197] which can be used during therapy as an occupational means. Additionally, occupational therapists may reduce depression by using other skills such as psycho-education, life skills training and occupation-centred changes to lifestyle.[18]

Occupational therapy groups for MHCUs with MDD may include discussion groups, role play, projective techniques,[197] life skills groups, psycho-education groups, support groups and creative activity groups.[18] Depressive and suicidal thoughts are often expressed during projective activities such as art, music, collage and movement groups.[194] Usually the occupational therapy groups should start with task-oriented groups, and expressive and socio-emotional groups only at a later stage.[197]

Other techniques such as social skills and assertiveness training and evocative techniques may be used to promote insight and to equip MHCUs with basic self-regulation strategies.[39] Consequently, occupational therapy treatment for MHCUs with MDD should strive to be holistic, occupation-based, client-centred, collaborative, contextualised and evidence-based.

2.4 Conclusion

This literature review gave a brief review on MHCUs with MDD, the use of a conceptual framework in occupational therapy groups, occupational therapy intervention and stages of group development. It further suggested that more extensive research needs to be conducted to illustrate the benefits of different types of occupational therapy groups. Occupational therapy groups are an important technique that is used by occupational therapists as part of their valuable intervention to MHCUs.

The next chapter covers the philosophical world view and research design that was used to address this study, which has taken into account the comparison of two occupational therapy group programmes.

CHAPTER 3

3 RESEARCH DESIGN AND PHILOSOPHICAL WORLDVIEW

3.1 Introduction

This chapter will present the research design, types of this research design, rationale for the research design and the philosophical worldview that underpinned the research. Research methods employed in this study, i.e. the measuring instruments to collect quantitative data and the self-report questionnaire, and focus group interviews to generate qualitative data, will be discussed in Chapter 4. The intervention that took place will be explained in Chapter 5 and in Chapter 6, the procedures that were followed will be set out. The research design and rationale are discussed below.

3.2 Research design

An embedded mixed methods research design was employed.[199] A qualitative enquiry was embedded in a comparison group pre-test, post-test study. Collecting data from "multiple perspectives" the researcher alleged that he could draw on the strengths of both forms of enquiry.[200(p.554)] The types of enquiry are depicted in *Table 3-1: Embedded mixed methods research design*

Quantitative enquiry

Phases I and III necessitated a quantitative enquiry in order to compare the effect of two occupational therapy group programmes on the task-orientated functioning of MHCUs with MDD by means of two standardised tests, the Patient Health Questionnaire (PHQ-9) and the Bay Area Functional Performance Evaluation-Revised (BaPFE-R).

Table 3-1: Embedded mixed methods research design

Phase I		Phase II		Phase III	
Quantitative enquiry		Qualitative enquiry		Quantitative enquiry	
Pre-test		Intervention		Post-test	
The Patient Health Questionnaire PHQ-9	The Bay Area Functional Performance Evaluation-Revised BaFPE-R	Self-report open ended questionnaire	Focus group interviews	The Patient Health Questionnaire PHQ-9	The Bay Area Functional Performance Evaluation-Revised BaFPE-R
Statistical analysis		Text analysis		Statistical analysis	

During both the pre-test and post-test, the researcher used the same standardised measuring instruments,[201] the PHQ-9 and the BaFPE-R, to measure the effect change achieved by participants in the SC_N or SC_O occupational therapy programmes, and whether one programme was superior in terms of its treatment outcomes to the other or not. These instruments will be discussed in Chapter 4.

Qualitative enquiry

In Phase II it was deemed appropriate to obtain an in-depth understanding of the participants' inter-subjective experiences of the occupational therapy group programme by means of self-report questionnaires and focus-group interviews.

3.3 Specific mixed methods research designs

Guetterman, Fetters and Cresswell[200] describe three types of basic designs, viz. exploratory, explanatory and convergent. The features of basic designs result in advanced designs, viz. intervention, case study, multistage evaluation and participatory approaches.[200] Each type of basic design will be briefly described next as well as the intervention advanced design applicable to this study.

3.3.1 Exploratory sequential design

This type of design begins at first with the collection and analysis of qualitative data, which then extends into influencing the subsequent second collection and analysis of quantitative data.[3,200]

3.3.2 Explanatory sequential design

This type of design occurs in two distinct interactive phases where it begins with the collection and analysis of quantitative data, which then broadens into influencing the subsequent second analysis of qualitative data.[3,200]

3.3.3 Convergent parallel design

This type of design involves the collection and analysis of both qualitative and quantitative data at similar times, followed by integrated analysis where the two sets of results are merged during overall interpretation.[3,200]

3.3.4 Advanced designs/frameworks

The above three basic designs result in advanced designs, which are the intervention advanced design, the case study, the multistage evaluation and the participatory approaches.[200,202]

3.3.5 Intervention advanced design

The intervention advanced design in this study employed the type of mixing which was embedded in a dominant quantitative approach whereby a supplemental data-set that is qualitative was added.[3,200,203] The embedded mixed methods intervention design, which was part of the intervention advanced design, occurred when the researcher collected and analysed both quantitative and qualitative data within a traditional quantitative approach. The researcher added a qualitative strand within an intervention.[200] Because a concurrent embedded mixed methods

intervention advanced design was implemented in this study, the timing of the major category of this embedded mixed methods intervention advanced design was also concurrent.[3,200,202]

The qualitative strand (self-report questionnaire and focus group interviews) was embedded within the primary dominant quantitative design to add meaning to the empirical quantitative results and identified key constructs in comparing the impact of the interventions.[3]

| Casual comparison of two parallel group programmes |

Standard Care Plus (SC_O)

Quantitative data collection Pre-test data and results → **Intervention** Standard Care Plus group programmeme (SC_O) **Qualitative** data collection → **Quantitative** data collection Post-test data and results

Existing Standard Care (SC_N)

Quantitative data collection Pre-test data and results → **Intervention** Existing Standard Care group programmeme (SC_N) **Qualitative** data collection → **Quantitative** data collection Post-test data and results

PHASE I   PHASE II   PHASE III

Figure 3-1: Concurrent embedded mixed methods intervention design

The quantitative design, a comparison group pretest-posttest design, was the primary research method that guided the study, and the qualitative design was thus secondary and supportive of the

quantitative design. The design is depicted in *Figure 3-1: Concurrent embedded mixed methods intervention design.*

3.4 Rationale for the concurrent embedded mixed methods intervention design

The concurrent embedded mixed methods intervention design was chosen for the following reasons:

- To compare the two different interventions, i.e. the existing SC_N occupational therapy group programme with the proposed alternative occupational therapy group programme, the SC_O, for the treatment of MHCUs with MDD.

- At a general level, it enabled the researcher to balance the weaknesses and strengths of both the qualitative and quantitative approach.[199,203-204]

- At a procedural level, both quantitative and qualitative data were necessary to provide a deeper understanding of the effectiveness of the two occupational therapy group programmes in treating MHCUs with MDD. The qualitative findings helped to explain why one programme seemed to be more effective than the other.[199]

- The qualitative and quantitative results were brought together in order to explore possible contradictions. The qualitative phase was used to support the results obtained in the quantitative phase. Multiple aspects of quantitative and qualitative approaches combined to augment each other and provided more evidence and a better argument in the study.[199] It allowed diversity in order to obtain divergent findings that would ideally be compared and contrasted.[204-205]

- The value of the mixed methods research design is firstly, that it increases confidence in the results of a study;[206] secondly, that it provides more evidence through confirmation of results that have deeper meanings; thirdly, that it has multiple perspectives and rigour and, finally that it gives multiple strengths from qualitatitve and quantitative approaches.[207-208] This should all contribute in assessing the fidelity of the perceived differences in the interventions and ultimately in ensuring future treatment integrity

3.5 Quantitative enquiry

Comparison group pre-test, post-test design[209]

The researcher compared the two different interventions, the existing SC_N occupational therapy group programme, and the proposed alternative occupational therapy group programme, the SC_O, which were both running at the same time.

Before the participants took part in the two afore-mentioned interventions, they had to be recruited by either of the independent occupational therapists ($OT1_T$ or $OT2_T$). Occupational therapists ($OT1_T$ or $OT2_T$) determined their baseline (pre-testing) by using the Patient Health Questionnaire (PHQ-9) and Bay Area Functional Performance Evaluation-Revised (BaFPE-R) as illustrated in Table 3.1 and discussed in subsection 3.5. The independent occupational therapists ($OT1_T$ or $OT2_T$) also used the same measurement instruments (PHQ-9 and BaFPE-R) during comparison of both the pre- and post-testing. This was done to determine and compare the effect change achieved by the two interventions programmes SC_O and SC_N[201] which were running parallel to each other and were offered at the same time (refer to Figure 3.2).

The researcher ensured that participants in the occupational therapy programmes, the SC_O and the SC_N, received the same pre- and post-testing, viz. the PHQ-9 and the BaFPE-R,[209-210] as illustrated in *Figure 3-2: Comparison group pre-test, post-test design.[209]*
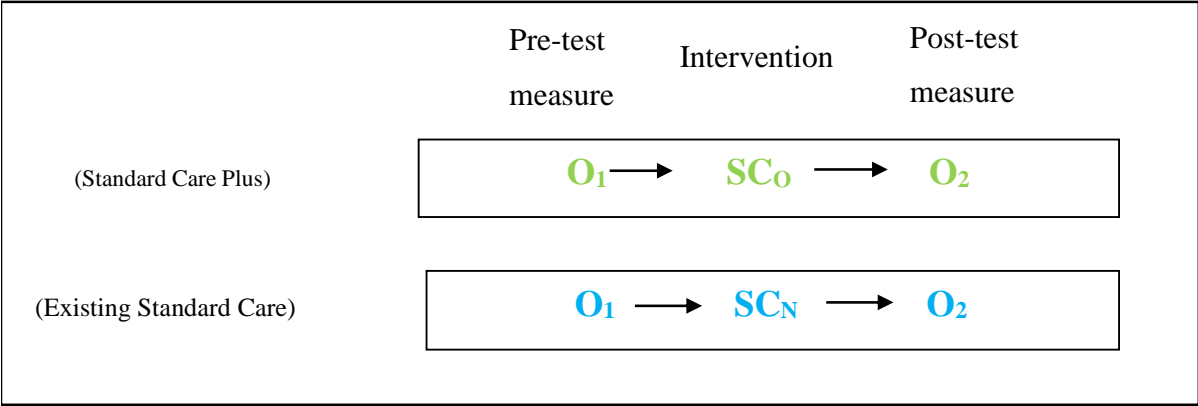
Figure 3-2: Comparison group pre-test, post-test design

Superiority trial

In this comparison group pre-test, post-test design,[209] the researcher intended to establish the superiority of the participants' responses between the parallel groups SC_O and SC_N occupational therapy group programmes. The null hypothesis of this study was that the proposed alternative occupational therapy group programme, the SC_O, will not lead to a better treatment outcome for MHCUs with MDD than the existing SC_N occupational therapy group programme at a statistically significant ($p<0.05$) level.

3.6 Qualitative enquiry

Qualitative data were generated and captured in an open-ended questionnaire that was completed at the end of each occupational therapy group session and through focus group interviews at the last i.e. tenth group session, in the research process.

3.7 Rationale for the selection of the mixed methods research design

Various authors embrace the use of quantitative and qualitative research in a single study and articulate several reasons for doing so.[3,200,204] According to Johnson, Onwuegbuzie and Turner,[211] a combination of methods appears to be effective as it extends the researcher's insight into the research question. Greene, Cracelli and Graham[212] published a rationale for using mixed methods,

and was suggested by the researcher to be all-encompassing. These authors postulated that a study can be improved if it demonstrates the following five elements: (1) development, (2) initiation, (3) expansion, (4) triangulation and (5) complementarity. With the exception of development, this study complied with the other four elements. Bryman (2006) cited in Creswell and Plano Clark[3] expanded on the work of Greene, Cracelli and Graham[212] with an additional applicable typology of reasons for mixing methods in this study, viz. enhancement and credibility, completeness, explanation, offset and incrementality. The elements pertinent to this study are discussed next.

3.7.1 Initiation

Initiation was used to find contradictions and paradoxes in the results of one method in contrast to the other.[3] In this study, the researcher thus used the findings of the qualitative enquiry to check for contradictions in the outcome of the quantitative effect of the intervention on the participants.

3.7.2 Complementarity

The typologies of reasons for mixing methods from the strengths drawn from both the qualitative and the quantitative approach in this study were used complementarily in order to achieve completeness of the study.[196,213-214] This was also used to answer research questions, to gain complementary views about the phenomenon with each adding value to attain credibility for the study.[3,204] The researcher concurred with Bryman, cited in Creswell and Plano Clark[3] that complementarity in this study would elaborate, enhance, apprehend and clarify results of one method with the results of the other.

3.7.3 Triangulation

According to Denzin and Lincoln[215] triangulation is the simultaneous display of multiple realities with less risk of biases. The following forms of triangulation were applied to help with correspondence of results from different methods.[3]

3.7.3.1 Methodological triangulation

Methodological triangulation was employed by using a qualitative approach (i.e. a self-report, open-ended questionnaire and focus group interviews) and a quantitative approach (i.e. pre-test and post-test using the PHQ-9 and the BaFPE-R). The researcher used these different methods of data collection in different phases of the study to enhance consistency of the results.

3.7.3.2 Data triangulation

The multiple sources for both qualitative and qualitative data enabled cross-data checks. The researcher also combined and compared data produced by the two different methods described in the previous section.[204]

3.7.3.3 Person triangulation

Person triangulation involved collecting data from different participants (males and females, different age groups, religions, etc.) who took part in the intervention groups[216] until the sample size as determined by the statistician was achieved.

3.7.3.4 Multiple group triangulation

The researcher also used group participants to provide accounts from different perspectives about their experiences during group participation in the focus group interviews. Multiple groups of participants served as a kind of triangulation on the experience, locating its core meaning by approaching it through different accounts.[217] Using multiple groups of participants served to deepen understanding of the investigated experience[218-219] of the occupational therapy group intervention.

3.7.4 Expansion

Mixed methods design helped to answer questions that could not be answered by quantitative and qualitative approaches alone[3] The quantitative approach was useful for its objectivity[212] and the

numerical data.[218] The qualitative approach was useful for investigating meaning and subjectivity.[220]

3.7.5 Enhancement and credibility

A supplemental qualitative strand was added for enhancement of the overall quantitative approach[3,218] since it would enhance the interpretation of the integrated quantitative and qualitative data[200] which Bergman[204(p.92)] referred to as "putting meat on the bones of dry quantitative results." The rationale for mixing the qualitative and quantitative approach was to further enhance the trustworthiness of data results.[205,221-223] The credibility of this study was thus enhanced by the integrity and validity of the qualitative and quantitative results.[3]

3.7.6 Completeness

Different research methodologies were combined in this study with the researcher including a complete account of both approaches for comprehensiveness in order to ensure that a complete picture of the phenomenon was obtained.[3,204]

3.7.7 Explanation

To explain the participants' reaction to the intervention outcomes with qualitative data allowed the researcher to clearly hear the voices of the participants as they were represented in the quantitative results.[3,200] The researcher wanted to establish a clearer picture in understanding the impact of the intervention on the participants as it helped to explain results generated.[3]

3.7.8 Offset

The researcher combined the quantitative and qualitative approach to offset their weaknesses and draw on the strengths of both[204] as each clearly had both strengths and weaknesses. Their strengths assisted the researcher in answering the research question.

3.8 Philosophical worldview

In order to design a study, it is necessary to investigate possible worldviews that can assist in answering the research question in an appropriate way. According to Creswell and Plano Clark[3] different types of research methods can be associated with different types of philosophical worldviews that guide the research. For the purpose of this study, the researcher employed a pragmatic worldview.

Pragmatism is derived from the work of a number of authors such as Dewey,[224] Cherryholmes,[225] Patton,[226] and Rorty.[227] For them pragmatism as a worldview arises out of actions, situations and consequences.[228] According to Tashakkori and Teddlie[208] the pragmatic worldview focuses on the research problem and all available methodologies and methods that may be used to understand the research problem. Creswell[199(p.11)] is of the opinion that pragmatism allows the researcher to use "multiple methods, different worldviews, and different assumptions as well as different forms of data collection and analysis." As the research question of this study necessitated both quantitative and qualitative forms of enquiry, a pragmatic worldview was deemed appropriate.[3,199-200,204,211,218,223,229-230] The ontological, epistemological, axiological, methodological and rhetorical assumptions of this worldview will be discussed next.

Ontological assumptions

Ontology refers to the nature of reality.[231-232] A "stable external reality" is associated with quantitative research, while an "internal reality of subjective experience" is associated with qualitative research.[232(p.6)] In this study the researcher explored the participants' objective and subjective realities[3] in respect of the treatment outcomes. Therefore by using pragmatism it avoided arguing about the truth and reality but focused instead on multiple realities to answer the research question.[233]

Epistemological assumptions

Epistemology refers to the relationship between the researcher and what is being researched.[231-232] In this study the researcher adopted an objective stance to collect data from participants'

performance scores (derived from standardised tests), and an interactional epistemological stance to generate knowledge about the participants' internal subjective reality about the occupational therapy group programme they attended. The latter was based on the assumption that the researcher was free to liaise with the participants during the focus group interviews, which for this research study, was appropriate.[233]

Axiological assumptions

The axiological assumptions refer to the role of values employed in research.[3] Values formed an integral part of this research process as it ensured that participants were treated with utmost respect during data collection and during the intervention process. Furthermore the researcher was accountable for the research process at all times. In addition the researcher practised reflexivity and self-bracketing in an attempt to control his own biases.[199] while analysing the captured qualitative data.

Methodological assumptions

The methodological assumptions that guided the mixed methods during this research project[233] were related to the process of research.[3] Quantitative data were obtained by means of objective, standardised measures (PHQ-9 and BaFPE-R) about the severity of the participants' MDD symptoms, their task-oriented and their social interaction functioning during pre- and post-intervention.

Qualitative data were based on the assumption that the human life-world is fundamentally constituted in language and that language constructs reality.[232] Therefore, a self-report open-ended questionnaire as well as focus group interviews were used in applying an in-depth understanding of the participants' inter-subjective experiences of the intervention they received. Through the interaction with the participants, the researcher endeavoured to engage in a meaningful dialogue with them to generate knowledge[233] about the treatment of MHCUs with MDD at two private general hospitals with a psychiatric ward in Gauteng.

Collecting data from "multiple perspectives" the researcher intended to drew on the strengths of both forms of enquiry.[200(p.554)]

Rhetorical assumptions

The rhetorical assumptions refer to the language of research that has an influence on the writing style of a research report.[3,223,234-235] For this study the sections concerning quantitative results were formal by using statistics, whereas the sections related to the qualitative findings were presented in a narrative format using themes.

3.9   Conclusion

This chapter explained the rationale for choosing the concurrent embedded mixed methods intervention design. It further highlighted the benefits of the mixed methods research design in addressing the research question. The pragmatic philosophical worldview underpinning this research study was also addressed. The next chapter will discuss the measuring instruments that were used in the study.

CHAPTER 4

4 MEASURING INSTRUMENTS AND QUALITATIVE RESEARCH METHODS

4.1 Introduction

This chapter will focus on the measuring instruments that were used to collect quantitative data during Phases I and III of the study and the qualitative methods that were employed to generate qualitative data in Phase II. The Patient Health Questionnaire (PHQ-9) and the Bay Area Functional Performance Evaluation-Revised (BaFPE-R) research instruments will be discussed first, followed by the self-report questionnaire and focus group interview methods.

4.2 Measuring instruments

4.2.1 Patient Health Questionnaire (PHQ-9)

The PHQ-9 was used as the first research instrument in the study.

4.2.1.1 Description

"The PHQ-9 is a simple, easy to use multi-purpose instrument for screening, diagnosing, monitoring and measuring the severity of depression."[36] It was developed as a self-administered version[28] for making criteria-based diagnosis for depression.[36] The PHQ-9 questionnaire was developed in line with the diagnostic criteria for depression as set out by the DSM-5.[236] It represents the threshold for mild, moderate, moderately severe, and severe depression respectively.[36,237]

4.2.1.2 Validity and reliability

The instrument's validity was tested at eight primary care and seven obstetrical clinics.[36] It was further studied in different settings, including general hospitals, in patients[43] and also the

depression of chronic care patients.[36] It was increasingly used for dual purposes as a brief diagnostic and severity measure in both research and clinical practice.[237-238] It had a sensitivity of 78% and specificity of 85% with depressed patients.[43] The internal reliability of PHQ-9 for patients with depression was at a Cronbach's alpha of 0.89 and it was thought to be excellent.[36]

Its external validity was established by replicating the findings.[36] Internal consistency of the PHQ-9 revealed a Cronbach's alpha of 0.76.[239] The PHQ-9 is a valid instrument for measuring depression outcomes and monitoring depression treatment.[238,240] The criterion and construct validity of the PHQ-9 had been established as both the diagnostic and severity measures of depression.[36,237,239] Its utility as a depression severity measure was also established.[238]

4.2.1.3 Advantages and disadvantages

This instrument is brief and useful in practice. It can be completed by participants in a short space of time, quickly scored by the clinician and repeatedly administrated. With regard to efficiency, the instrument is easy and quick can be administered in less than five minutes.[241] It has also demonstrated sensitivity to change in depression over time.[241] Furthermore it was used as a useful measure for monitoring outcomes of the treatment of depression.[36] A minimum time interval of two weeks between the usage of the questionnaire is required.[240]

4.2.1.4 Administration and interpretation

The PHQ-9 required patients to indicate how they had been bothered by the problems relating to MDD symptoms during the previous two weeks.[239] The highest score of PHQ-9 depression severity was thought to be in the major depression group as it was based on the diagnosis for MDD.[43] It has nine items, each of which is scored from 0 to 3 (0 = not at all; 1 = several days; 2 = more than half the days and 3 = nearly every day), providing a severity score of 0 to 27.[239] Scores of 10, 15 and 20 represent cut-points for mild, moderate and severe MDD respectively.[239] A score of 15 or more (moderately severe to severe depression), usually signified the presence of major depression and a score of less than 5 as remission.[237]

4.2.1.5 Application of PHQ-9 in the study

The quantitative data was collected by using an existing measurement instrument, the self-report PHQ-9 (Appendix A). This self-report questionnaire was thought to be useful and appropriate for use in this study and it gave a baseline (pre-test) of participants prior to their involvement in the study. It was also relevant in determining the end line (post-test) or progress of the participants at the end of the intervention. There is evidence that supports the PHQ-9 being clinically important in assessing the severity of depression.[28,36,43,236-238]

4.2.2 Bay Area Functional Performance Evaluation (BaFPE-R)

After participants had completed the PHQ-9, had fulfilled the inclusion criteria, and had given their consent to participate in the study, the BaFPE-R (Appendix B) could be administered as part of pre-testing and post-testing.

4.2.2.1 Description

The BaFPE-R was developed for use with MHCUs by occupational therapists as early as 1978.[2] It was revised in 1987 to meet the need for a standardised assessment and for measuring broad aspects of functional performance in occupational therapy.[2] It consisted of two parts: the Task Oriented Assessment (TOA) and the Social Interaction Scale (SIS).[2,17,65]

The TOA provided information about three components which included cognitive, performance and affective aspects, and were evaluated in the context of completing five specific tasks rated on a 4-point scale.[2]

These tasks, according to Houston, Williams, Bloomer and Mann,[65] were the following:
- Sorting shells: Sorting ten categories of shells by size, shape and colour.
- Money and marketing: In which the patient is asked to calculate the cost of the items in a shopping list, to cash a check, and to calculate the change.
- House floor plan: The patient is asked to draw a floor plan for a house.

- Block design: The patient must view a design printed on a card and is asked to duplicate the design with coloured blocks, either from memory or with a cue card.

- Kinetic person: The patient is asked to draw a picture of a person doing something.

Each component of the TOA was divided into several parameters in terms of which MHCUs were rated. The 12 parameters[2,17,65] were grouped as follows:

a. **Cognitive components** (memory of written and verbal instructions, organisation of time and materials, attention span, evidence of thought disorder, ability to abstract).

b. **Performance components** (task completion, errors and efficiency).

c. **Affective components** (motivation, frustration tolerance, self-confidence and general affective).

The Social Interaction Scale (SIS) was used as the clinical observation of participants' skills or deficit areas in relation to others. The participants were observed in different social situations (one-to-one, at mealtime, in an unstructured group, in a structured activity group and in a structured verbal group) in order to determine their **social response** in these situations and establish from that parameter scores for the following specific **functional areas**.[2,17,65]

a. Verbal communication.

b. Psychomotor behaviour.

c. Socially appropriate behaviour.

d. Response to authority figures.

e. Degree of independence/dependence.

f. Ability to work with others.

g. Participation in group activities.

4.2.2.2 Validity and reliability

The BaFPE-R was developed as a reliable and valid measuring tool in order to assess certain general components of functioning that are needed to perform activities of daily living. Its inter-rater reliability, internal consistency/reliability and clinical utility had been established for MHCUs and some evidence on the validity of the measurement instrument published.[2,242-243] The BaFPE-R's validity (concurrent, discriminant, predictive and construct) and its reliability were

thus established for MHCUs.[17] Four therapists in acute psychiatry using 91 MHCUs for the Task Oriented Assessment (TOA) tested the BaFPE-R and achieved an inter-rater reliability ranging from 0.93 to 0.98.[242]

The factor analysis and internal reliability coefficient were then used to evaluate and compare the TOA.[244] The BaFPE-R showed clear indications of its sensitivity to culturally influenced functional performance components.[245] The BaFPE-R also offered a measure of functional performance sensitivity to the cultural environment and could be used as a discharge readiness measure.[245] Clinical application of the BaFPE-R was also provided in order to evaluate the progress of psychiatric inpatients in research studies.[17] The track record of BaFPE-R applicability with a pre-test and post-test was established by Bloomer and Williams in 1987.[17]

4.2.2.3 Advantages and disadvantages

Since the BaFPE-R was suggested as a sensitive measure for discharge purposes, the researcher considered it to be sensitive enough to be used for pre-test and post-test purposes. It also helped to give insight into the participants' performance and needs.[242]

The following reasons were considered important for using the BaFPE-R in this study as stated by Klyczek and Stanton.[17]
- It could be administered and scored quickly.
- It could be used to determine if a participant could be placed in a particular occupational therapy group.
- It was used as a standardised assessment tool.
- It emphasized the participants' performance of action rather than their self-report.
- It was useful to evaluate the participants' progress in order to compare the effectiveness of the two interventions.

The disadvantage however for using the BaFPE-R is that the tasks are timed.

4.2.2.4 Administration and interpretation

The scoring sheet showing the scoring parameters for testing the TOA and SIS are attached in Appendix B, and assessed the task-oriented functioning. The full set of items for TOA accounts for 100% of the variance in the total.[244]

The Social Interaction Scale was completed by direct observation by the examiner, and completed within one or two days of observation.

4.2.2.5 Application of BaFPE-R in the study

The quantitative data were collected by using an existing measurement instrument, the BaFPE-R. The participants were tested at a table or desk in a room with few distractions.[17] The researcher used the TOA to assess each individual participant's task-oriented functioning using the BaFPE-R. A stop watch was used to time each task, and the participants were asked to stop if the maximum allowable time had elapsed.[17]

In this study, the BaFPE-R was initially used during the pilot study to measure its applicability and usefulness. It was therefore used in Phase I prior to the intervention and was repeated in the same manner at the end of the intervention as part of a post-test in Phase III. BaFPE-R is a responsive measurement instrument to use in this study as there is evidence that support its effectiveness to assess cognitive, performance and affective functioning and social interaction (functional area and clients social response by situation). [2,17,65,242-244]

4.3 Qualitative research methods

4.3.1 Self-report questionnaire

The open-ended self-report questionnaire (SRQ) was given to the participants at the end of each group intervention (SC$_O$ or SC$_N$) session as it had to be completed in writing. Patton[246] comments that open-ended responses allow the researcher to understand the world as seen by the participants.

4.3.1.1 Advantages of a self-report open-ended questionnaire

The researcher chose an open-ended questionnaire as it allowed the participants to write their experiences in their own words. The main advantage of the open-ended questionnaire was to ascertain the opinions of the participants who took part in the study. It also made the participants aware that their opinions were valid and valuable. Furthermore, it helped the researcher to ensure that for the benefit of the research no written information was omitted.

4.3.1.2 Limitations of a self-report open-ended questionnaire

The researcher considered the limitations of an open-ended questionnaire during data collection in writing questionnaires, as discussed by Patton,[246] which included the impossibility of probing the participants' different writing skills and their writing efforts. The researcher overcame this limitation by adding the focus group at the end of the intervention (refer to subsection 4.4.2).

4.3.1.3 Completion of self-report open-ended questionnaire

The open-ended questions allowed the participants to give the name of the group attended. The participants were expected to give their experiences of the group session at the end of each group intervention session, and the open-ended questionnaire was the easiest way of allowing them to respond immediately at the end of each session. Therefore, the questions allowed the participants to reflect on their thinking, feelings, experience, belief and changes in relation to the intervention. There were seven questions in total that had to be completed by each participant. This allowed the participants to elaborate on the benefits or dissatisfaction they felt about the intervention (SC_O or SC_N). The researcher was responsible for developing the open-ended questionnaire, which was constantly scrutinised by the supervisor before its finalisation and use. The open-ended questionnaire was initially used and tested during the pilot study. Appendix C shows the list of open-ended questions that the group facilitators ($OT1_P$ and $OT2_P$) had to request the participants to complete at the end of each group intervention session.

4.3.2 Focus group interview

4.3.2.1 Description of a focus group interview

A focus group interview is a research technique employed to generate data through group interactions on a topic determined by a researcher.[247-248] It is defined by Terre Blanche, Durrheim and Painter[232(p.304)] as "a group of people who share a similar type of experience, but a group that is not 'naturally' constituted as an existing social group." For the purpose of this study, focus group interviews were used to generate data from participants' inter-subjective experiences about the occupational therapy group programmes (SC_N or SC_O) at the end of the series of nine group sessions.

4.3.2.2 Advantages of focus group interviews

As the focus group interviews in this study were conducted in a non-judgmental environment, the participants were allowed to disclose their inter-subjective experiences about the intervention they received. Their self-disclosure helped the researcher to understand how they felt and thought about the SC_N and SC_O programmes.[209] In addition, given that they were interviewed together in each focus group, the researcher managed to receive multiple viewpoints about the intervention in a shorter period of time.[209]

4.3.2.3 Disadvantages of focus group interviews

The focus group disadvantaged the findings of this study since detailed individual views could not be obtained.[209] Another disadvantage noticed was that the less active participants, who needed to feel accepted in the group, tended to agree with the stronger personalities at times.[209]

4.3.2.4 Development of focus group interview guide

The researcher developed an interview guide by preparing seven tentative open-ended questions[249] for the focus group interviews. The open-ended questions were based on the purpose of the study. The researcher brainstormed the questions, constantly revising them before consulting the research supervisor.[209] The wording of the questions was direct, simple and short to enable participants to

answer as they saw fit.[209] Then the final revised interview guide was completed. The researcher formulated seven questions for the focus group interview guide (refer also to Appendix E):

1. What are your comments about the occupational therapy groups you attended?
2. What helped you the most during the occupational therapy groups?
3. Which occupational therapy group came out the strongest for you and why?
4. Which group touched where it had to touch and why?
5. In your opinion which occupational therapy group is rated the lowest and should be removed from the programme?
6. What do you think should be added to the occupational therapy group programme?
7. Any other information you feel is important to comment about?

4.3.2.5 Piloting of the interview guide

After the first focus group interview with the participants, the researcher was able to modify some of the questions for the other focus groups that followed. The questions were constantly asked in a sequenced manner with some paraphrasing, clarifying questions and prompting from the researcher.

4.3.2.6 Focus group procedure

- **Introduction**

Prior to their participation in the focus group interviews the participants were once more reminded of the purpose of the research study. Next they were informed that their opinions would be recorded, that they didn't have to answer if they were not comfortable to do so, that all information would be treated as confidential and that their identity would not be revealed. Following on this the participants were asked to complete the consent form (Appendix D).

- **The interview**

The researcher, who was also the moderator of the focus group interviews, used simple language which was easily understood by the participants because English was not their mother tongue. The participants did most of the talking while the researcher facilitated their discussions. All views were accepted as questions had no right or wrong answer. Key questions were repeated throughout

the interview. The researcher acknowledged each participants' point of view during the discussion and considered each response as valuable. The interview was concluded with a general question such as "Is there anything else you feel is important to share?"

- **Wrap-up**

Before concluding the interview the moderator highlighted the main themes that emerged from the discussion to verify the general understanding.

- **Closing statements**

Participants were thanked for their willingness to participate in the focus group interview, again stressing confidentiality.[250]

4.3.2.7 The moderator's style

The researcher created an accepting environment by listening with empathy and a non-judgmental attitude allowing participants to freely express their inter-subjective experiences of the occupational therapy group programme that was offered.

4.4 Rigour in conducting the intervention

Relatedly, the researcher ensured that the group treatment for the comparison parallel group was precisely written step-by-step as written in chapter 5 so that $OT1_P$ and $OT2_P$ could follow the same structured sequence of steps and group sessions.

4.5 Conclusion

The efficacy and appropriateness of the PHQ-9 and BaFPE-R measurement instruments were both described. The researcher explained their validity, reliability and applicability in this study. This was followed by a description of the self-report questionnaire and focus group interview used to generate qualitative data in the study. The next chapter will discuss the occupational therapy group programmes as intervention.

CHAPTER 5

5 INTERVENTION

5.1 Introduction

This chapter will focus on the intervention that was developed as an alternative occupational therapy group programme, the SC_O, to the existing or standard care occupational therapy group programme, the SC_N. The intervention formed part of Phase II of the study.

5.2 Theoretical framework for the SC_N group programme

The intervention, the SC_O, was developed and adapted from the SC_N that has been used in occupational therapy for MHCUs since 1998. From the outset, the SC_N was based on (1) *the theory of occupation in occupational therapy,*[109,157,179,251-253] (2) *the clinical reasoning process in occupational therapy,*[165,254] (3) *the therapeutic factors* as put forward by Yalom during the 1970s,[183] and (4) *the group process and procedures,*[7-8,78,255] as discussed in Chapter 2. The development and design of the SC_N will have to be described first before the SC_O group programme as intervention is described.

5.3 Development and design of the SC_N group programme

As soon as this researcher started his private practice during the 1990s, he developed and designed a group programme, the SC_N, to form part of the total occupational therapy intervention. Clinical reasoning, a multi-faceted reasoning process,[165] guided the researcher in developing and designing the SC_N. Six modes of clinical reasoning were employed, viz. (1) scientific reasoning,[256] including occupational diagnostic reasoning,[257] and procedural reasoning,[258] (2) interactive reasoning,[258] (3) narrative reasoning,[259] (4) pragmatic reasoning,[254] (5) conditional reasoning,[258] and (6) ethical reasoning.[252] In addition, graded interpersonal demands were considered. Each aspect will be discussed separately to indicate how the group programme was developed and designed.

5.3.1 Clinical reasoning

The following aspects of clinical reasoning were considered and applied during the development of the intervention.

5.3.1.1 Scientific reasoning

Scientific reasoning will be discussed in terms of occupational diagnostic reasoning and procedural reasoning.

a. Occupational diagnostic reasoning

According to Rogers[260(p.29)] occupational diagnostic reasoning is the process that formulates problems before they are "summarized as occupational diagnosis." This process consists of four components, viz. (1) a "descriptive component" which describes the occupational dysfunction such as difficulty in relating to others, (2) an "explanatory component" which describes the most likely cause of the problem, for instance social anxiety, (3) a "cue component" that was responsible for a problem in the MHCU, such as withdrawal and isolation, and finally (4) a "pathological component" that specifies the medical condition, for example depression.[261] A top-down approach was therefore employed to identify the functional problems first, followed by explanation of the cause, then describing the symptoms and finally the medical diagnosis made by the specialist psychiatrist.

The researcher however, followed a predominantly bottom-up approach as referral from the psychiatrist indicated the provisional psychiatric diagnosis. Following on the referral, the occupational therapist focused on the signs and symptoms using an interview and two standardised tests, the PHQ-9 and the BaFPE-R, as well as an evaluation of the MHCU's level of creative ability.[262] Finally, the assessment was concluded on the possible impact the symptoms could have on the MHCU's task performance and occupational functioning.

The majority of MHCUs suffered from MDD and although in the minority, there were also MHCUs who were diagnosed with psychotic depression, bipolar mood disorders, psychotic disorders and schizophrenic spectrum and substance abuse disorders.

b. Procedural reasoning

Following on the occupational diagnostic reasoning or problem identification, the researcher employed procedural reasoning[165] to plan the intervention or SC_N group programme.

Firstly, the medical diagnosis made by the psychiatrist and the outcomes of the occupational therapy assessments of the MHCUs were considered. From a psychopathological point of view, the main symptoms were depressed mood due to feelings of unhappiness, anhedonia, low self-esteem, poor concentration, poor decision making skills, lack of coping skills, interpersonal challenges, and a lack of energy and interest to participate in daily activities such as leisure time activities. Following a humanistic theoretical framework, this researcher took cognisance of Vorster's[79] assumption that the quality of a person's interpersonal relationships equates with his/her "degree of mental health"[(p.85)] and Yalom and Lesczc's[78] belief that "ineffective relationships are the result of psychiatric symptoms."[(p.47)] Therefore, group sessions necessitated interpersonal communication, either verbally or by means of tangible activities, in order to improve MHCUs' mental health.

Secondly, literature on MHCUs obtained from the DSM-5, as well as appropriate occupational therapy literature on the signs and symptoms and functional ability of MHCUs admitted for short-term psychiatric treatment, were taken into account. For the selection of appropriate activities in the treatment of MHCUs, the task-focused activity-analysis format of the third edition of the Uniform Terminology for Occupational Therapy[263] and the BaFPE-R[17] were used as guidelines. Activities had to include: (1) cognitive elements such as memory of verbal instructions, concentration, ability to abstract, problem solving and learning, (2) task performance elements such as planning and organisation, sequencing, self-correction of errors and task completion, (3) affective elements such as the opportunity for affective expression, mastery and success, and (4) social interaction elements such as verbal communication, "doing" with others, sharing, receiving and giving feedback.

Thirdly, the theory of creative ability in occupational therapy as developed and described by du Toit[262] was also considered. As the majority of MHCUs functioned in different phases of the level of passive participation, this was also kept in mind. Each aspect will be briefly described next.

With regard to their level of creative ability, which was the level of passive participation,[262] the MHCUs had the ability to (a) handle their physical world, i.e. materials and tools, (b) handle their social world, i.e. people and situations, (c) handle the negative effects of anxiety, (d) show initiative and (e) show maximum effort and all of these had to be considered. Each of these aspects is described below.

- **Handling of physical world**

At the level of passive participation, MHCUs have the basic knowledge about the properties of materials and tools to feel secure in their contact with these materials and they are therefore more competent and skilled in tool handling. They are also product directed and have a task concept, that is, they understand a task in its entirety, can identify with the task, execute the task with guidance, realise when the task is complete and derive a sense of task satisfaction after task completion. Activities presented in the programme could therefore have a number of steps and can be completed with or without support from the therapist.[262]

- **Handling of social world**

When MHCUs' ability to maintain interpersonal relationships become more stable, they however often form relations for egocentric reasons in order to feel more accepted, worthy and comfortable. In the selection of activities, it was important to stimulate their awareness of the interpersonal needs of others and to enhance their ability to relate effectively.[262]

- **Ability to handle the negative effects of anxiety**

Since MHCUs at this level often have a low self-esteem, they cannot handle the threat of failure and great care had to be taken to keep their anxiety level under control.[262]

- **Ability to show initiative**

As they do not show initiative in the execution of tasks, no initiative was required of the MHCUs.[262]

- **Ability to make maximum effort**

In order to maintain the MHCUs' effort to perform a task or participate in discussion groups it has to be a meaningful experience.[165,262]

5.3.1.2   Interactive reasoning

Since occupational therapists follow a client-centred approach, the MHCUs' needs, values and requests were also considered in designing the intervention. Interactive reasoning as a continual process aimed at engaging the MHCUs with MDD in the treatment plan.[264] This process helps both parties' to be aware of each other's expectations. The African belief of Ubuntu, viz. that "a person is a person through other persons" which includes notions of sensitivity towards the needs of others, empathy and man as a social being,[265-270] formed the basis of the interactional reasoning process.

5.3.1.3   Narrative reasoning

Narrative reasoning played an important role in the selection of (1) group objectives, (2) topics for group discussions, and (3) activities, given that the MHCUs were from both African and Western cultural groups which could have an impact on how they viewed their symptoms, their world and their realities. As a result of this, the type of activities selected had to be meaningful to them and valued by both groups. The majority of the MHCUs admitted to the psychiatric wards were females between the ages of 20 to 60 years. Every one of them had schooling and the majority were in possession of tertiary education. All stayed and worked in an urban area.

Since the fundamental ethics and values upon which African people base their mode of conduct are explained by means of the spirit of Ubuntu, the researcher had to make sure the occupational therapy group programme facilitated brotherhood, sharing and caring for one another.[268,271-272] Furthermore, as these values customarily feature prominently in the activities of individuals; "a

cooperative endeavour in which people help one another on a specific task" had to be considered.[273(p.292)]

The researcher was aware of both the stigma and vulnerability attached to MHCUs with MDD, and who were voluntarily hospitalised for psychiatric intervention.[274] Participants' vulnerability and how to manage challenges once discharged from hospital had to be considered throughout occupational therapy in order to ensure that they returned to their community with the necessary survival skills.[198]

5.3.1.4 Pragmatic reasoning

The researcher had to take into account practical aspects such as treatment resources, reimbursement issues, facilities and trends in the profession.[275]

High-quality facilities and resources were available in the psychiatric wards of the two private general hospitals. The only disadvantage was the lack of outdoor facilities for performing sport-related activities. Materials and equipment in the Occupational Therapy Department allowed for the creation of valuable and meaningful end-products. Furthermore, because the length of hospitalisation on average was two to three weeks, objectives for the group programme required careful planning. As all the MHCUs were employed, each belonged to a medical aid scheme that funded their stay in hospital. Moreover, all the MHCUs were South African citizens, represented different cultures, and stayed in Gauteng, the economic hub of South Africa.

5.3.1.5 Ethical reasoning

After deciding on what would be scientifically sound, practically possible, and within the MHCUs' cultural values, interests and realities, the researcher reflected on "what ought to be done" [276(p.344)] during the occupational therapy programme in an acute psychiatric setting. Of utmost importance was to be mindful of the danger of suicide with MHCUs, and safety precautions had to be put in place.

5.3.1.6 Conditional reasoning

Finally, conditional reasoning was employed. This multi-dimensional process involving thinking across dimensions in time, past behaviour, present status and possible future outcomes were

considered in order to construct an image of MHCUs with MDD's possible challenges and future goals.[258] Since conditional reasoning seldom happens in isolation, the researcher realised that he would have to shift between the modes of reasoning during the therapy process.[275]

5.3.2 Researcher's previous experience

The researcher worked in a psychiatric setting before starting his own private practice and also had previous experience in the treatment of MHCUs in acute settings. This accumulated experience was thought to be very valuable on various levels.[277]

The SC_N group programme was therefore based on the interaction between the researcher's analytical or deductive and creative or inductive reasoning skills.[256,278]

5.3.3 SC_N occupational therapy group programme

After much deliberation and problem-solving, the researcher came up with a provisional SC_N programme in the 1990s. The MHCUs' symptoms, functional abilities, level of creative ability, gender, age group, educational level and work, socio-economic status, culture and the facilities available were all considered. The majority of MHCUs complained of (1) high stress levels, (2) feelings of unhappiness and hopelessness, (3) inability to face life's challenges, (4) feelings of inadequacy, (5) lack of energy owing to sleep disturbances, (6) poor concentration, (7) poor interpersonal relationships, and (8) lack of interest to participate in daily activities. Following on the clinical reasoning process, objectives and expected outcomes were formulated as follows:

- Improved social interaction.
- Relieving tension and improving strategies to control the negative effects of anxiety.
- Providing positive emotional experiences.
- Improved energy levels.
- Improved self-confidence.
- Increased concentration span.
- Enhanced problem solving and decision making skills.

- Revival of assertiveness skills.
- Increased commitment to use leisure-time constructively.

Points that had been considered in determining the choice of activities in the occupational therapy programme were; (1) the MHCUs' symptoms and aims of treatment, (2) the MHCUs' input in respect of their values, needs and interests as well as their response towards suggested activities, (3) space and resources available, (4) the occupational therapist's knowledge and skill in presenting such activities, and (5) activity analysis with emphasis on the sequence in which group topics were to be handled with regards to the interpersonal demands of each group. Therefore, the first group session required only sharing of superficial personal information, but the ninth session giving and receiving personal feedback. Activities, games and discussions were adapted in an attempt to prepare the MHCUs, who felt, according to them, "alone" and "worthless" and who had to make a living in a "stressful environment".

These were the nine group topics that were selected: (1) Getting acquainted (discussion group), (2) Stress awareness (discussion group), (3) Beadwork (activity group), 4) Assertiveness skills (discussion group), (5) Relaxation therapy (relaxation technique and discussion), (6) Fingerboard (game and discussion), (7) Paper collage (activity and discussion), (8) Creative drawing (activity and discussion), and (9) Feedback (activity and discussion). The SC_N group programme however included only activities in five of the above nine group sessions.

During 2012, after much reflection on the philosophy of the occupational therapy profession which is based on using activities,[37,50,55,58] the researcher decided to alter the SC_N group programme by including tangible activities in each group session. Stated differently, it was assumed that the inclusion of a tangible activity in each occupational therapy group session, would lead to an improvement in the task-oriented functioning of the MHCUs. Furthermore, the benefits of occupations or activities have been widely researched as they are primarily used to facilitate group processes.[132,279]

5.4 Development and design of the SC_O occupational therapy group programme

Before adding tangible activities and grading the activities already in the SC_N group programme, the researcher had to apply his clinical reasoning skills once more and used activity analysis to develop and design the proposed SC_O group programme for it to be meaningful for the MHCUs. The sessions in the group programme were again graded, whereby the MHCUs initially focused on the level of interaction that started from first initiating interaction and then to giving positive feedback to one another.

The researcher classified the groups according to the activity-support continuum, in which the main elements included tasks, social activities and communication,[8] all being inherent in each group therapy session. The researcher also ensured the following: (1) that there was a tangible activity/task (occupation), and (2) socialisation and communication in each group therapy session.

After designing the SC_O group programme, the researcher embarked on this research study. The study included MHCUs with MDD as will be explained in Chapter 6. MHCUs who did not comply with the inclusion criteria received individual occupational therapy and selected groups appropriate for their intervention.

The concurrent embedded mixed-methods intervention design together with a comparative parallel group programme that ran concurrently helped the researcher to determine if the SC_O was superior to the SC_N group programme.

The participants took part in both the SC_N and the SC_O occupational therapy group programmes for a period of two weeks and each session lasted 90 minutes. The intervention was provided consistently to all the participants in respect of the content, intensity and duration of the group session and programme.[249] The contents of these sessions are shown in *Table 5-1: SCN and SCO occupational therapy group programme*

Table 5-1: SC_N and SC_O occupational therapy group programme

No	Group topic	Group purpose	SC$_N$	SC$_O$
1	Getting acquainted	Initiate interaction between members	Verbal interaction	Verbal interaction plus an adapted card game
2	Stress management	Share thoughts on stress management to acquire coping skills	Discussion on stress management	Discussion on stress management plus making a stress ball
3	Acquiring a skill in crafts	Share materials and tools to create a unique end product	Beadwork bracelet	Beadwork necklace
4	Assertiveness	Share thoughts on assertiveness methods to enhance self-control	Discussion on assertiveness	Discussion on assertiveness plus an assertiveness game
5	Relaxation therapy	Share thoughts on and learn relaxation methods	Jacobson's relaxation therapy	A balloon volleyball game followed by Jacobson's relaxation therapy
6	Board games	Work as a team and stimulate positive emotional responses	Playing a game of finger board	Playing a game of finger board plus a game of blokus
7	Magazine paper collage	Encourage members to disclose their thoughts in a supportive group environment	Create a collage of memories with magazine pictures	Create a collage of memories with a variety of arts and craft materials
8	Creative drawing	Encourage members to give general feedback on each other's drawings	Create a drawing of positive events in the past	Decorating a gift box of positive events in the past
9	Positive feedback	Give members the opportunity to give and receive positive feedback	Write a positive comment about each member on a piece of paper and place it in each member's envelope. Return the envelope to its owner. After reading comments discuss one or two comments	Write a positive comment about each member on a card they have created themselves. Return card to its owner. After reading comments discuss one or two comments

Published[280]

5.4.1 Application of the SC$_O$ occupational therapy group programme

5.4.1.1 The group leader

Group leaders needed to be aware of group procedures and recognise that their style of leadership could influence the overall performance of a group.[109] A group leader was obliged also to create an atmosphere that is open, accepting and supportive so that group members would feel safe enough to explore and take interpersonal risks. Moreover, the leader had to be able to read the group process, follow the group process and intervene at an appropriate time.[78,255]

A number of South African occupational therapists often follow a particular group procedure based on the principles of Yalom in Beyers and Vorster,[255] Creek and Lougher,[7] Finlay,[8] Vorster and de Beer,[281] and Yalom and Leszcz[78] when conducting groups. This kind of group procedure starts with an initial phase, activity phase and a reflection and discussion phase.

The group procedure that was applied throughout the research intervention by OT1$_P$ and OT2$_P$ was in line with the above procedure. The group sessions only differed with regard to the inclusion of tangible activities in each group session of the SC$_O$. The group procedure applied in each of the nine sessions of the SC$_O$ is described next.

5.4.1.2 Implementation of the SC$_O$ occupational therapy group programme

The SC$_O$ occupational therapy group programme was implemented in nine group therapy sessions as follows:

5.4.1.2.1 Group session one: Getting acquainted

Getting acquainted is an important activity as it serves to quickly get to know each other and prepares MHCUs for future interactions with each other.[282]

Expected outcomes
- Group members to get to know each other.
- Trust and group cohesiveness.

Phase I: Orientation, warm-up and bridging

Orientation

The purpose of the orientation was to create structure for the group session as "the provision of external structure … promotes the acquisition of internal structure .…"[283(p.115)]

The first group session started with the group leader acknowledging and welcoming each group member.[8] Next the group leader introduced himself[7,283] followed by the group members introducing themselves. Then the group leader self-disclosed something as simple as his place of birth and requested similar disclosure from the MHCUs.[7-8] The group leader at this point had to both set the norm of what was required and to lessen anxiety. Following on the introductions, the group members were informed about the length of time for the group sessions and that each would last about 90 minutes.[15]

As it is important to set norms from the outset, group members and the group leader formulated explicit group norms or rules and ethical aspects such as confidentiality, honesty, open sharing, respect for each other, giving each other a chance to talk and that no one should leave the room until the group session was completed, unless approved by the group members, and so decided upon.[15] After explicit norm setting, interactional norms were created wherein each group member was met on his or her emotional level in the here-and-now through selective self-disclosure.[255] Group members had to reflect on their feelings within the group context.

Warm-up activity

The aim of the warm-up activity was to create a frame of reference for what was to follow in the main activity. It was a short activity that lasted approximately five to 10 minutes.[7] From clinical experience, the researcher was aware that MHCUs who enter a group programme for the first time often feel apprehensive and unsure. With this in mind the warm-up activity had several purposes. Firstly it had to lessen the MHCUs' anxiety;[7-8] secondly, social interaction had to be stimulated;[109] thirdly, universality had to be facilitated in order to develop group cohesiveness and trust;[78] fourthly, spontaneity had to be increased;[284] and finally, the warm-up had to direct the MHCUs' attention towards their needs or the challenges they had to overcome in the main activity.[7,284]

For this warm-up activity, group members had to be arranged in a circle. The number of chairs had to be one less than the number of members (10 members would therefore need 9 chairs) so that one member would be left standing. The one standing would say something about what he or she liked and those members who liked the same thing that was mentioned, would stand up and move to a different available chair than the one they were sitting on. Once someone stood up, he or she could not sit on the same chair. The one who remained standing would be the one who would ask a question until every member had a chance to ask a question.

Bridging

Bridging is mainly used to link the warm-up activity with the main activity in stage two of the group procedure. The first step in bridging from the warm-up to the main activity is what Yalom[283(p.56)] refers to as "problem spotting". The MHCUs were asked questions about the warm-up activity: How was the activity? What was their experience of the activity? Working from these questions helped the group leader to be able to spot the problem that needed to be addressed. Once the MHCUs were aware of the problem they needed to work on, the group objective would be formulated, an agreement had to be undertaken by all the MHCUs to work on the problem and to participate in the main activity. This process is also referred to as engaging in a verbal contract.[255] During their verbal contract, the group leader also engaged in a verbal contract with all the group members. Following on this step, the frame of reference of the MHCUs' with MDD regarding their handling of similar challenges in the past was obtained.

Phase II: Main activity

The main activity selected was a card game that gave the MHCUs with MDD the opportunity to talk about themselves. Since the majority of the MHCUs with MDD, at the hospitals where the research was conducted, functioned at a level of passive participation according to the Vona du Toit Model of Creative Ability (VdTMoCA),[262] the group activities were presented according to those principles and techniques.

First of all, a clear and simple definition of the total activity was given before the MHCUs engaged in the activity. As such, the entire card game was discussed. Then the sequence of steps and content of each step were described. A simple statement about the outcome of the card game was then

made. Following on this, the therapist first started by demonstrating to the group members how the card game worked so as to set the norm of what was expected. Owing to the MHCUs with MDD's feelings of inadequacy on the level of passive participation, ample support was provided by the therapist while participating in the card game.

Phase III: Discussion and closing of the group

During this phase, the group leader facilitated feedback from the group members about their inter-subjective experience of the group session, and also to what extent the group objective was achieved. Open-ended questions such as "How did you experience the game?"[7] were employed. Each MHCU with MDD was encouraged to evaluate his or her effort. Retrospective, informative and positive evaluation was encouraged. In addition, task satisfaction was also encouraged by positive feedback from others.

Despite the short duration of the group session of only 90 minutes, the intensity and vulnerability experienced by each MHCU with MDD were always kept in mind. The impact on each group member therefore was not underestimated.[255]

In addition, the group leader facilitated those therapeutic factors as described by Yalom and Leszcz.[78] Once more, universality was facilitated to create a feeling of safety for the group members to take interpersonal risks in order to enhance cohesiveness. Other therapeutic factors that were facilitated were interpersonal learning, altruism, instilling hope and the development of socialising techniques.[8,15,78]

In closing the occupational therapy group session, the group leader ensured reinforcement of confidentiality regarding sensitive and any confidential issues that had been discussed in the group. Opportunity for final comments was given so that each member of the group could give their opinion about what they had learned or might suggest as important for themselves in the group. Finally, the group leader made sure there was no unfinished business left.

The last step was to thank the group members for their participation and sharing on the group experience.[8]

5.4.1.2.2 Group session two: Stress management

Following on the "getting acquainted" group session, the second session focused on stress management. From a clinical reasoning perspective, stress played a major role in the participants' life. They would often refer to the problem as, for example "*I think too much with my heart.*"

Expected outcomes

- Awareness of factors that could contribute to high stress levels;
- Sharing knowledge about stress alleviators, and
- Creation and successful completion of a stress ball.

Phase I: Orientation, warm-up and bridging
Orientation

In this, once again, group members were orientated to the purpose of the occupational therapy group programme and the duration of the group session. This was followed by introducing themselves and by saying something about what they did in order to relax. Rules set during the previous session were recapped before they were met on their emotional level. The group leader used coloured crayons that represented how they felt at that moment. The group leader then touched base with every MHCU with MDD on how they were feeling in the here-and-now.

Warm-up activity

In this activity a word search was employed as a warm-up activity. Each group member received a word search sheet. Their brief was to find 10 words in two minutes. They had to work under pressure in order to complete the task on time. After one minute the group leader placed additional pressure by indicating how much time was left.

Bridging

Here the group members' experience of the activity was explored. The group leader wanted to know, how the activity was experienced? Also how did it feel when the group leader mentioned that there was only one minute left? The problem was spotted and a verbal contract agreed on to work on stress management during the group session. During their verbal contract the group leader

also agreed on a verbal contract with all the group members. Following on this step, the frame of reference of the MHCUs' with MDD regarding symptoms of stress and handling of stress in the past was obtained.

Phase II: Main Activity

In this a stress awareness questionnaire was completed by each MHCU with MDD and discussed afterwards. Following on the discussion, a stress ball was made by using a balloon and flour. One cup of flour was inserted, by means of a funnel, into a large balloon and closed by knotting the opening of the balloon to ensure that the flour would not escape from the balloon. Although the task was simple to complete, group members had to assist one another in filling and in closing the opening of the balloon, and this facilitated interaction.

Phase III: Discussion and closing of the group

Following on making the stress ball, the group leader facilitated feedback from the members about their experience of the group session and also to what extent the group objective was achieved. Possible stress alleviators were shared with the group members. Then MHCUs with MDD had to comment on how to apply what they had learned to their own lives, such as which part of the group would be of benefit to them in future. Every group member had the opportunity to contribute to the final comments.[7]

5.4.1.2.3 Group session three: Beadwork

As early as 1948, Gardener[285(p.1)] stated that "Art is essential to man's well-being … works of art are experiences … that we apprehend through our senses [which in turn] lead to emotional reactions." Following on this logic, by creating bead-work necklaces, participants could become aware of themselves as the creators of a pleasing visible product.[262]

Expected outcomes
- Sharing materials and tools in creating a beadwork necklace;
- Mastery and successful completion of a beadwork necklace;
- Awareness of a potential new leisure activity, and
- Inproved self-esteem.

Phase I: Orientation, warm-up and bridging

Orientation

Since group members were *au fait* with each other, as well as the duration and the norms of the group, there was no need to repeat those steps. However, members were met on their emotional level so that they could reflect on and become aware of their feelings in the here-and-now.

Warm-up

A similar warm-up activity to that of the first group session was employed. Group members sat in a circle. The number of chairs had to be one less than the number of members so that the group member without a chair stood in the middle of the circle. The group used the theme of their favourite colour/s, which was then explored. The one who stood in the middle of the circle would say something about the colour he or she liked and those members who liked the same colour that was said, would stand up and move to the next available chair than the one they were sitting on. Once someone stood up he or she could not sit on the same chair. The one who remained standing would be the one who would ask the question about the favourite colour until every member had the same chance.

Bridging

The group members' experience about the activity was then explored. Since colours are often associated with creative activities, members' frames of reference regarding previous experiences with creative activities, and in particular beadwork, were obtained. This discussion was followed by a verbal contract. During their verbal contract the group leader also agreed on a verbal contract with all the group members. Following on this step, the frame of reference of the MHCUs' with MDD was obtained about making beadwork in the past.

Phase II: Main Activity

A beadwork necklace end-product was shown to the group members and the total task was described first before each step and technique were explained in detail. The MHCUs were informed that they each had to design their own beadwork necklace. By allowing members to work together and giving each other ideas, an opportunity for communication with each other was

created. On completion of the necklaces, members also gave each other feedback about the end result.

Phase III: Discussion and closing of the group

The members had the opportunity to express their feelings about the process of making a beadwork necklace, including feedback about the end-product. The discussion was based on what the MHCUs experienced while making the beadwork, the benefit to them of making the beadwork, and how they felt now that they had completed the beadwork. They also had to comment on how similar activities could possibly be applied to their own lives. Every group member had the opportunity to contribute to the final comments.[7]

5.4.1.2.4 Group session four: Assertiveness training

Many MHCUs with MDD often lack the necessary assertiveness skills to express their needs when appropriate. Effective assertiveness strategies treated in group context can, it was thought, yield significant improvement in self-esteem.[286]

Expected outcomes

- Verbal expression of the need to be assertive;
- Sharing knowledge about assertiveness techniques, and
- Learned coping skills.

Phase I: Orientation, warm-up and bridging

Orientation

The same procedure as discussed under the beadwork session was applied.

Warm-up

The warm-up activity was performed by group members working in pairs. They were seated facing each other. Each member received an object with the brief to convince their partner to buy the item. At the end of three minutes, each group member had to give feedback about his or her experience of trying to convince the partner.

Bridging

Group members were asked to reflect on their experience. They were asked if they thought it was difficult to say no. Also how they felt when they were unable to say no. A verbal contract was agreed upon how to be assertive. During their verbal contract the group leader also agreed on a verbal contract with all the group members. Following on this step, the frame of reference of the MHCUs' with MDD about their knowledge of assertiveness and any situation in which they could not be assertive in the past was acquired.

Phase II: Main Activity

The group leader first enquired about the participants' understanding of assertiveness and then explained the basic distinction between non-assertive, assertive and aggressive responses before the game started. Once everybody understood the three styles, the rules of the assertiveness game were explained. The assertiveness game was played with a dice, tokens and cards with various scenarios written on it. Each member had to cast the dice and move his or her token according to the number on the dice. Once they arrived at the correct spot they had to choose a card with a specific scenario and react to it. This was followed by evaluation from the group about the effectiveness of the behaviour. Finally the group leader read another card with the correct response. All the group members took part in this game.

Phase III: Discussion and closing of the group

In the end the members had the opportunity to discuss and reflect on assertiveness and the benefit it could have in their lives. They also had to comment on how it could be applied in their day to day existence. Every group member had the opportunity to contribute to the final comments.[7]

5.4.1.2.5 Group session five: Relaxation therapy

One of the ways of reducing stress is through relaxation and rest. It is important to have an occupational balance that includes rest and sleep. The researcher thought it beneficial to include relaxation therapy in the programme.

Expected outcomes

- Mastery of a relaxation technique or "contrast relaxation"[287(p.156)] based on Jacobson's progressive relaxation.[288]

- Relaxed state of body and mind. Facilitating recognition of the difference between tension and relaxation.[287]

Phase I: Orientation, warm-up and bridging

Orientation

The same procedure as discussed under session three was applied.

Warm-up

A balloon volley ball game was played before the adapted relaxation therapy was performed. The group was divided into two teams. The rules were explained by the group leader. Each team had to toss blown-up balloons in the direction of their opponents. They both had to keep the balloons in the air for as long as possible, punching them upwards every time they floated downwards. The team who managed to keep their balloon in the air won the game.

Bridging

The members were asked about their experience of the game before the topic of relaxation was introduced. Their frames of reference about relaxation was obtained first, followed by a verbal contract to learn about an adapted relaxation technique.

Phase II: Main Activity

An adapted relaxation technique was performed as they were lying down. The leader gave instructions on how they could contract and relax different parts of the body. During the relaxation soft instrumental music was played in the background.

Phase III: Discussion and closing of the group

The session was ended off by reflecting on how the members experienced the relaxation technique. Finally they were asked how they would apply the technique in their daily lives.

5.4.1.2.6 Group session six: Fingerboard and blokus

Depression is often accompanied by a loss of interest in leisure activities.[180] The researcher included a leisure activity group to encourage constructive use of leisure time and to stimulate positive emotional responses.

Expected outcomes
- Active participation in social group games;
- Positive emotional responses (or fun), and
- Focussed attention and decision making.

Phase I: Orientation, warm-up and bridging

Orientation

Each member introduced themselves and named one game they enjoyed playing.

Warm-up

MHCUs were paired in groups to play the fingerboard game. Only three pieces per group were used in the game. Each group was given 10 minutes to score and complete the game. Following the rules of the game was required and had to be played while standing.

Bridging

Group members were asked about the activity and also when last they played a game for fun. The group leader then enquired about their previous leisure activities and contracted with them whether they were willing to engage in more leisure activities. All agreed and a verbal contract was agreed upon and also one by the group leader with all the group members as well. Following on this step, the frame of reference of the MHCUs' with MDD regarding participation in leisure activities in the past was obtained.

Phase II: Main Activity

The main activity was the blokus game. MHCUs had to play in pairs and were allowed to choose their partners. Each pair was allowed to choose a colour and started at their own corner. The group

members took turns to play. Blokus rules were explained to the group members. The objective of the game was that the player (in this case the pair) with the least remaining pieces was the winner. Each piece equalled the number of blocks on it.

Phase III: Discussion and closing of the group

On completion of the game the emotions experienced during the game were discussed. Group members were asked how they experienced the activities, and discussed the importance of physical activities and how it could impact on how they felt. Later a discussion was held about the strategies that were gained in the activity. Every group member had the opportunity to contribute to the final comments.[7]

5.4.1.2.7   Group session seven: Picture collage

Expected outcomes

- Increased self-disclosure of authentic self-perception.

Phase I: Orientation, warm-up and bridging

Orientation

The same procedure as discussed under session three was applied.

Warm-up

Musical chairs was played. Chairs were put in a circle with the backs against each other. The number of chairs was one less than the number of members. Then tempo music was played. Members moved around the chairs and when the music stopped, each member had to sit on a chair. The member who was left out was out of the game and left together with one chair. The game continued until there was only one chair and one winner.

Bridging

Questions were asked of the group members: How was the activity? How did they feel being out of the game, and for the winner, how did he/she feel about winning the game? Further general

questions were: What do you do and how do you feel when you fail, are rejected, or feel you do not fit in with the others at work? Have you been rejected or have you failed before in your life? The group leader asked the members to look at their good and bad experiences in life and how these had affected them emotionally. The other questions led to the main activity: Looking at the good and bad experiences in life of each using a collage. Would they like to do that? Do they have previous good experiences in their lives? Can anyone tell what a collage is? Has anyone done a collage before? If yes, what was the theme?"

Phase II: Main Activity

A picture collage was done. Each MHCU was expected to create a collage of good and bad memories (times in their lives) using a variety of magazines, art and craft materials.

Phase III: Discussion

The therapist facilitated feedback from members during this and gave each MHCU a chance to present their collage, starting with the bad memories then moving on to the good ones. The group leader focused the discussion mostly on the bad memories as the group members were expected to support and guide each other. The therapist asked the MHCUs how they experienced the activity. A question was also asked on how they would use what they had learned outside. The group members were allowed to comment and give each other feedback. Every group member had the opportunity to contribute to the final comments and on how the session impacted on them.[7]

5.4.1.2.8 Group session eight: Create a gift box

Expected outcomes
- Improved insight through sharing and feedback.
- Acknowledgement of self-growth.

Phase I: Orientation, warm-up and bridging
Orientation
The same procedure as discussed under session three was applied.

Warm-up

Group members were given 5 minutes to build a 50 piece puzzle together.

Bridging

Here the MHCUs were asked about the warm up activity: How was the activity? What was their experience of building the puzzle together? Working from these questions helped the group leader to spot the problem that needed to be addressed. Once the MHCUs were aware of the problem they needed to work on, the group objective could be formulated, an agreement had to be taken by all the MHCUs to work on the problem and to participate in the main activity. Are you fine if we create a gift box together? This process is also referred to as a verbal contract.[255] During their verbal contract the group leader also engaged in a verbal contract with all the group members. Following on this step, the frame of reference of the MHCUs' with MDD regarding decorating the gift box in the past was obtained by the question when last did they decorate a gift box?

Phase II: Main Activity

Various art materials (paper, acrylic paint, pastels, charcoal, etc.) were presented to the group members with the brief to decorate a gift box that would be a visual representation of the best time of their lives. As far as the visual presentation was concerned, they could choose any art material. That gave the members a sense of responsibility and control. Each member was allowed to assist in decorating each group member's box.

Phase III: Discussion

During the activity the impact on the members was constantly monitored. The group leader had to read each one's behaviour so that they could move in a safe interpersonal space. The group leader therefore constantly mobilised the members into a healthy direction. The focus of the discussion was on the best time of their lives and on how the decoration represents that. Every group member had the opportunity to contribute to the final comments and on how the session impacted on them.[51]

5.4.1.2.9 Group session nine: Feedback

The feedback group was employed in the last session. The group members had met long enough for feelings of trust to have developed amongst them.

Expected outcomes

- Improved self-esteem through giving and receiving positive feedback;
- Icreased personal insight and self-growth;
- Achieving a peak experience, and
- Formal closing of the group programme.

Phase I: Orientation, warm-up and bridging

Warm up activity

Using a mirror, members looked at their selves in the mirror, closed it and passed it to the person on their right until each one had had a chance.

Bridging

The MHCUs were asked about the warm up activity. How was the activity? What did you see when you looked in the mirror? Did you like what you saw in the mirror? Working from these questions helped the group leader to be able to spot the problem that needed to be addressed. Once the MHCUs were aware of the problem they needed to work on, the group objective could be formulated, an agreement had to be taken by all the MHCUs to work on the problem and to participate in the main activity. Are you fine to hear from other group members on what they see when they look at you? This process is also referred to as a verbal contract.[255] During their verbal contract the group leader also engaged in a verbal contract with all the group members. Following on this step, the frame of reference of the MHCUs' with MDD regarding receiving feedback from other people in the past was obtained: When last did they receive feedback and how did they feel about it?

Phase II: Main Activity

The group members created a card of their choice using different materials. On completion of the card, it was sent to the other group members to write positive feedback in the card about the owner of the card.

Phase III: Discussion

Members were asked to share what they felt about the feedback and what they had learned about themselves. Members were given a chance to ask for clarity on comments in the card. Then, questions were asked by the group leader which included the following: How did it feel to give positive feedback to other members in the group? Were they surprised at any of the feedback they received? If so, why? Every group member had the opportunity to contribute to the final comments and on how the session impacted on them.[7]

Following on the discussion the group leader announced the formal closure of the occupational therapy group programme.

5.5 Conclusion

This chapter focused on how both intervention programmes (SC_N and SC_O) were established. It explained how clinical reasoning, activity analysis, the Vona du Toit Model of Creative Ability, Yalom's therapeutic factors and group procedure were structured and applied in the groups. A summary guideline of the intervention programme was also presented with emphasis on the application of the SC_O. The next chapter will discuss the methods used in the study.

CHAPTER 6

6   METHODS

6.1   Introduction

This chapter will give a description of the methods that were used in the study. Methods refer to the systematic modes, procedures or tools used in the collection and analysis of data.[289] The chapter is structured as follows:

- Research setting;
- Sampling and recruitment;
- Data collection;
- Data analysis;
- Data integration;
- Quality of the study;
- Ethical and legal considerations, and
- Conclusion.

6.2   Research setting

6.2.1   Research site

The study took place at two private general hospitals in the Gauteng Province, each with a psychiatric ward. Gauteng is the smallest province in South Africa, accounting for only 1.5% of the land's area. As of 2015, it had a population of nearly 13.2 million, making it the most populous province in South Africa. It is considered the economic hub of the country and it is responsible for a third of South Africa's gross domestic product (GDP) as it generates 10% of the total GDP. For the purpose of this study the two general hospitals will be referred to as Hospital A and Hospital B.

6.2.2 Professional services

At the time of the study, each psychiatric ward at both hospitals had a 16 bed capacity for MHCUs. Health care professional services included psychiatrists, psychologists, nursing staff, social workers and occupational therapists. As part of their intervention services, psychiatrists and social workers each led one group therapy session per week. The clinical psychologist had daily group therapy sessions. The occupational therapists though, presented a discussion and/or activity group on a daily basis.

6.2.2.1 Hospital A

Health care professionals at Hospital A comprised two psychiatrists, three psychologists, two nursing assistants, two professional nurses and one nursing manager, one social worker and two full time independent occupational therapists ($OT1_T$ and $OT1_P$).

6.2.2.2 Hospital B

At Hospital B the health care professionals comprised three psychiatrists, two psychologists, two nursing assistants, four professional nurses, one social worker and two full time independent occupational therapists ($OT2_T$ and $OT2_P$).

The researcher as the fifth occupational therapy practitioner alternated between the two private general hospitals. The participants received the same occupational therapy group programme intervention at both hospitals (refer to Chapter 5).

6.2.3 Facilities and materials

The two hospitals were owned and ran by different business groups and different management. There was no relationship between the hospitals. The hospitals were far apart from each other as one was located in the East-Rand and the other in the South Rand.

6.2.3.1   Hospital A

The psychiatric ward in Hospital A, consisted of a reception area, five dormitories of 16 beds in total, a nursing station, kitchen and dining hall, television room, four consulting rooms and two group areas. The materials and equipment used for treatment were of high quality and comprised materials for creative arts such as paper and paint; crafts for beading, weaving and mosaics; games such as table board games, finger board, table tennis and snooker; and mats for relaxation exercises.

6.2.3.2   Hospital B

The psychiatric ward in Hospital B consisted of a reception area, four dormitories with four beds each, a nursing station, kitchen and dining hall, television room, three consulting rooms and one group area. The materials and equipment used for occupational therapy were the same as for Hospital A with the exception of the snooker table. A soccer table was used instead.

6.2.4   Information management system

6.2.4.1   Referral of MHCUs

The reasons for referrals to a private general hospital were related to the expectation of receiving quality services from different health care professionals. The MHCUs were mostly admitted by one of the psychiatrists who referred them for individual and group therapy sessions to the teams. There were multidisciplinary team meetings once a week during which the MHCUs' progress and discharge planning were discussed. The psychiatrists were responsible for the discharge of the MHCUs from the hospitals.

6.2.4.2   Registration of MHCUs and record keeping

On arrival, the MHCUs were registered by a registered nurse who used hospital forms to gain the necessary information about each MHCU and which included the medical history, previous admissions, medications and the vital signs of each. After registration, the MHCU was referred to the designated disciplines for other assessments and interventions. Record keeping forms form an

integral part of MHCUs' care. On the admission form, there was also a section to be completed for purposes of medico-legal requirements and record keeping.

6.2.4.3   Archiving of information

On discharge, all records were archived for follow-up care. Both paper-based and electronic systems were used in the hospitals. The MHCUs' information was stored in a secure location owing to ethical obligations and medico-legal investigations.

6.2.4.4   Initial contact with occupational therapist

The psychiatrist who assessed the MHCUs referred each of them to the relevant team members. The majority of the MHCUs admitted to the psychiatric ward underwent occupational therapy. The independent occupational therapists that were employed at Hospital A had no relationship with or contact with those at Hospital B, or vice versa.

In the initial stages, each occupational therapist collected data by means of an interview in order to gain biographical information (refer to Appendix F). This was followed by employing the Patient Health Questionnaire (PHQ-9)[36,237] and the Bay Area Functional Performance Evaluation-Revised (BaPFE-R)[17,196,242], both standardised evaluations as part of the assessment of all the MHCUs that were referred. Following on the assessment the occupational therapist, in collaboration with the MHCUs, developed a unique intervention plan for each depending on his/her needs and interests. The activities included in either the SC_O or SC_N group programmes remained the same however. The occupational therapists worked in different hospitals and they were not aware of the hypothesis or objectives of the study. Their different roles were to assist with the assessment and facilitation of the group programmes.

6.3   Sampling and recruitment

6.3.1   Population

The study population admitted to the psychiatric wards at Hospital A and Hospital B consisted of both male and female MHCUs with MDD.

6.3.2 Sampling strategy

The researcher's aim was to generate a sample that would provide rich information and be representative of the study population. Two sample strategies, both non-probability and probability, were implemented in the study.

6.3.3 Non-probability sampling

The non-probability sampling involved convenience sampling strategies. The sample in this research was a convenience sample[216,218] in that the participants were selected because they were conveniently available[213,218] in the hospitals during their admission and were willing and had given their consent to take part in the study.

6.3.4 Probability sampling

The probability sampling in this comparison group pretest-posttest study involved both random and cluster sampling.

6.3.4.1 Random sampling

The researcher selected two private general hospitals with psychiatric wards in which participants were treated in group context. To determine which group programme should start first and at which hospital, the researcher decided by flipping a coin to choose the hospital wherein either the SC_O or SC_N should commence. This is referred to as a biased coin design for randomly assigning participants to their respective groups.[290] The first group of MHCUs with MDD admitted to Hospital A were therefore randomly assigned to attend the SC_N (occupational therapy group programme of 9 sessions), whereas the MHCUs with MDD admitted to Hospital B were consequently assigned to attend the SC_O (occupational therapy group programme also of 9 sessions) during the same period. This was the only time random sampling was employed since the group programme (whether SC_O or SC_N at the respective hospitals) subsequently changed for

each new group of hospitalised MHCUs with MDD in which the groups were then alternatively assigned parallel to each other.

6.3.4.2 Cluster sampling

As each group contained between 5 to 11 (about 8 on average) participants, and the study design required 25 participants at each hospital for each of the two treatment programmes (Refer 6.8.3 below), a total of 12 groups were included, 6 per hospital; 3 for SC_N and 3 for SC_O. Rather than 4 groups for the 2 programmes per hospital, the 12 groups above were considered clusters for the purpose of the study as there might be specific influences at work in each grouping. The inclusion of a specific participant in a cluster doing either SC_N or SC_O was contingent on the initial random allocation of SC_N or SC_O, his choice of hospital which was largely determined by his locality, and his admission date which was independent of the phasing of the study.

6.3.5 Permission to conduct the study

The researcher wrote a letter to each of the hospital managers of Hospital A and B in which the study was to take place (refer to Appendix G). In the letter, the researcher explained the aims of the study to the managers who had to discuss the letters with the board members of each hospital. Attached was the letter of approval for conducting this study from the Research Ethics Committee of the Faculty of Health Sciences, University of Pretoria (226/2015) (refer to Appendix H). Permission was subsequently granted to conduct the study at the respective hospitals. The letters granting permission were both signed and stamped (Appendix G).

The researcher also presented the research proposal to the multi-disciplinary teams of both hospitals for their support and cooperation during data collection. Furthermore, they were informed that permission to conduct the study had been granted by their hospital management team.

6.3.6 Recruitment for the study

Independent occupational Therapists 1 and 2 (hereinafter referred to as $OT1_T$ and $OT2_T$) assisted in recruiting the participants for the study. It was not easy to recruit the participants because they misinterpreted the term "research". After the information leaflet and informed consent were read and explained, in both English and in their mother tongues, the majority agreed to participate as they realised that the information would be anonymous and the results would be used for improving the occupational therapy intervention. It was however, made clear to all the MHCUs that participation or non-participation would have no impact on the health care they received.

6.3.7 Selection criteria

The selection criteria included both the inclusion and exclusion criteria and will be described next.

6.3.7.1 Inclusion criteria

The occupational therapy group programmes (SC_O or SC_N) ran for two weeks and the same participants in each group were expected to complete the entire two-week programme. It only included the participants admitted in the psychiatric wards with no primary psychiatric diagnosis other than MDD (from moderate to severe) with single or recurrent episodes. These were MHCUs who were willing to participate in the ward programme as part of their hospital treatment. The groups ranged in age from 23 to 60 years since it was an adult psychiatric unit and a working age group. The number of admissions (recurrent) and time off from work were recorded but did not influence inclusion as all participants were homogeneous with the diagnosis of MDD. The participants were unaware of the type of group intervention they were receiving and $OT1_P$ and $OT2_P$ were also blinded or unaware of which intervention programme was SC_O or SC_N as only two differing types of groups were mentioned.

6.3.7.2 Exclusion criteria

Mental Health Care Users who were diagnosed with other mental conditions classified in the DSM-5[10-11] (such as personality disorders, substance-related disorders, schizophrenia and other

psychotic disorders, anxiety disorders, somatoform disorders, chronic fatigue syndrome, factitious, dissociative and eating disorders) were not included in this study. When MDD was caused by co-morbidity, it was also excluded in the study as the presence of psychiatric co-morbidities confound the diagnoses.[104] The MHCUs diagnosed with other disorders that co-occur with MDD such as substance related disorders, panic disorder, obsessive-compulsive disorder, anorexia nervosa, bulimia nervosa and borderline personality disorders were also excluded.[10-11] Other MHCUs that were excluded were those diagnosed with MDD with psychosis, adjustment disorder with depressive mood, and those who received electro-convulsive therapy (ECT) and high dosages of antipsychotics as a mode of treatment.

6.3.8 Sample size

The sample size was established as discussed below.

6.3.8.1 Pilot study

The study set out to assess whether the SC_O was superior to the SC_N. The researcher used the pilot study to determine the sample size. The participants were pre- and post-tested to establish the complexity of variables. A representative sample size was calculated using a sufficient statistical power analysis of 90% to detect statistically significant treatment effects and to assist in generating quality research results.[290] Refer to Appendix J for the data of the pilot study.

6.3.8.2 Participants recruited for the study

The actual sample size for both intervention programmes was the same.[200] The representative sample size of at least 50 participants for both the SC_O and the SC_N was determined for the comparison of two parallel groups as proposed by the statistician (refer to Appendix K). The same sample size was used in both the qualitative and quantitative enquiry so that the potential biases was the same across both groups.[204] This meant that the total number of participants who took part and completed the whole study was 100. The two study groups were compared in respect of the change occurring from the onset until the end of the two weeks intervention programme. The sample size for both the SC_O and SC_N is illustrated in *Table 6-1: Actual sample size*

Table 6-1: Actual sample size

Setting	Hospital A	Hospital B	Total sample size
SCo	25	25	50
SC$_N$	25	25	50
	50	50	100

Table 6-2: Drop-outs in programme illustrates the total number of participants that were recruited to take part in the study and the drop outs per programme and hospital.

Table 6-2: Drop-outs in programme

Programme	Hospital	Recruited	Dropped out	Percentage of drop-outs	Participants	Percentage of participants
SC$_O$	A	51	26	51%	25	49%
SC$_O$	B	46	21	45.6%	25	54%
SC$_N$	A	36	11	31%	25	69%
SC$_N$	B	45	20	44.4%	25	55.6%
Total		178	78	43.8%	100	56.2%

The number of drop-outs who did not complete the intervention programme was 44% of the total. The reason for this high percentage was because some participants either had quicker spontaneous improvement than expected or lacked sufficient funds from their medical aid schemes and hence had to be discharged from the hospital before they had completed the two weeks' intervention programme. Furthermore, some MHCUs were discharged by the treating psychiatrist to return to the community as soon as they were found to be stable.

The highest number of drop-outs occurred during the SC$_O$ as opposed to the SC$_N$ since some of the participants showed spontaneous recovery in less than two weeks.

6.3.8.3   The actual sample size

The total number of participants who completed the study was 100 as was determined by the feasibility study. Fifty participants were required for the SC$_O$ and 50 for the SC$_N$. Each cluster series of the intervention programme was expected to have a group sample size of 10 to 12

participants per group with five groups estimated for SC_O and SC_N. During the study the group sample size ranged from 5 to 11 participants per group with six groups for both SC_O and SC_N. Code (P) was given to participants who followed SC_N and code (PS) to SC_O. These clusters will be considered in the data analysis. Table 6-3 therefore indicates the total number of participants in clusters that completed the entire programme in the study.

Table 6-3: Actual Sample size per parallel group for SC_O and SC_N

Hospital A (n = 50)				Hospital B (n = 50)			
Program-me	Particip's / group	Participant ID No.	Cluster No.	Program-me	Particip's / group	Participant ID No.	Cluster No.
SC_N	10	P1-P10	A1	SC_O	9	PS76-PS84	B1
SC_O	9	PS51-PS59	A2	SC_N	5	P26-P30	B2
SC_N	9	P11-P19	A3	SC_O	8	PS85-PS92	B3
SC_O	9	PS60-PS68	A4	SC_N	11	P31-P41	B4
SC_N	6	P20-P25	A5	SC_O	8	PS93-PS100	B5
SC_O	7	PS69-PS75	A6	SC_N	9	P42-P50	B6
Total:	50	SC_N: P1-P25 SC_O: PS51-PS75	6	Total:	50	SC_N: P26-P50 SC_O: PS76-PS100	6

6.4 Data collection

The study was designed to be conducted in three consecutive Phases. Phase I, Phase II and Phase III are depicted in *Table 6-4: Overview of the concurrent embedded intervention design.* A mixture of the qualitative and quantitative enquiry involved multiple types of data collection at different times.[291] The data collection in this study included gathering of both quantitative and qualitative data using more than one data collection strategy.[213] The data were collected from March 2016 to June 2016.

Table 6-4: Overview of the concurrent embedded intervention design

	QUANTITATIVE		QUALITATIVE		QUANTITATIVE	
DATA COLLECTION	Pre-test (OT1$_T$ + OT2$_T$)		Intervention (OT1$_P$ + OT2$_P$) Nine group sessions		Post-test (OT1$_T$ + OT2$_T$)	
	PHQ-9	BaFPE-R	Self-report questionnaire	Focus group interview (10th session) conducted by researcher	BaFPE-R	PHQ-9
	Self-report Questionnaire to determine the severity of MDD	Measurement of: Cognitive Performance Affective functioning and Social interaction	Completed by each participant at the end of each group session of the SC$_N$ or SC$_O$ programme	Following on each group programme (either SC$_N$ or SC$_O$), MHCUs participated in a focus group	Measurement of: Cognitive Performance Affective functioning and Social interaction	Self-report Questionnaire to determine the outcome of MDD
DATA ANALYSIS	Statistical analysis		Induce themes from self-report questionnaires and focus groups		Statistical analysis	
			Quantify self-report categories (Transformation)			
	Merge quantitative and qualitative results					

The quantitative method used in Phase I, the qualitative method in Phase II and again the quantitative method in Phase III will each be discussed below.

6.4.1 Phase I: Quantitative data collection

Phase I comprised completion of a biographical form and two tests, the PHQ-9 and the BaFPE-R. This is a standard assessment procedure for all MHCUs admitted to the two hospitals. Assessments of MHCUs were filed for record purposes. Conducting the two tests was done individually for each MDD by OT1$_T$ and OT2$_T$. The data collection methods are indicated below in *Table 6-5: Measurement tools for quantitative data collection.*

Table 6-5: Measurement tools for quantitative data collection

Research enquiries	Measurement tools
Quantitative enquiry (comparative two-group parallel study)	• Biographical form • PHQ-9 • BaFPE-R

6.4.1.1 Biographical information

As part of the clinical interview during the first contact with the participants, the background information of each was first collected (refer to Appendix F). The information was collected by either the researcher or $OT1_T$ or $OT2_T$. The information included gender, marital status, age, level of education, place of work and medical history. Data were numerically captured on an excel spread sheet.

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6.4.1.2 PHQ-9

Before the PHQ-9 could be administered, participants' consent had to be obtained first (refer to Appendix I).

After $OT1_T$ or $OT2_T$ had completed the biographical information, the participants were given the PHQ-9 self-report questionnaire to complete with the assistance of either $OT1_T$ or $OT2_T$. This was used as a pre-test to determine the severity of the MDD. The PHQ-9 assisted in establishing the baseline of the participants as either moderate or severe MDD. A score of 15 or more confirmed the diagnosis of the MDD (moderate to severe).[36,236-237] The participants were expected to score 15 or more in the PHQ-9 before they could be recruited for the study (Appendix A). This was conducted in one of the consulting rooms in the ward. Numerical data were entered on an excel spreadsheet.

6.4.1.3 BaFPE-R

Before the second pre-test, the BaFPE-R could be employed, participants' consent had to be obtained (Appendix B).

The BaFPE-R, was used to test participants' dependent variables (*cognitive, performance, affective functioning and social interaction*) by a formal testing of their task-oriented functioning. It took a

maximum of one hour for $OT1_T$ or $OT2_T$ to complete the testing of each MHCU in order to establish their baseline (Appendix B).

Consent

The participants' information leaflet which was first read by the participants was clarified either by the researcher or $OT1_T$ or $OT2_T$ prior to the participants' involvement in the study. The leaflet clarified information about the study such as the nature and purpose of the study, its duration, possible risks and benefits, ethical approval for the study, confidentiality of the programme and finally the researcher's contact details. After $OT1_T$ or $OT2_T$ or the researcher had cleared all the participants' concerns, the latter had to give their consent in writing to participate by signing a copy of the informed consent agreement (refer to Appendix I).

6.4.2 Phase II: Qualitative data generation

Phase II entailed generating qualitative data by using self-report questionnaires and focus group interviews.

The independent occupational therapists ($OT1_P$ and $OT2_P$)who facilitated either of the occupational therapy group programmes (SC_O and SC_N) were selected on the grounds that they had postgraduate qualifications which included occupational therapy group training and at least five years' clinical experience as an occupational therapist treating MHCUs. $OT1_P$ and $OT2_P$ alternated in facilitating the occupational therapy group programmes (SC_O and SC_N) in order to avoid contamination of the study. $OT1_P$ conducted the group programme (SC_O and SC_N) in Hospital A and $OT2_P$ at Hospital B. Each ran one group programme, consisting of nine group sessions at a time, as they alternated between the SC_O and SC_N.

Table 6-6: Measurement tools for qualitative enquiry

Research enquiries	Measurement tools
Qualitative enquiry	- Self-report questionnaires - Focus groups

6.4.2.1 Self-report questionnaires

At the end of each of the nine group sessions, which formed part of the entire group programme, all the group participants were invited to complete the self-report questionnaire. They were requested to give written feedback on how they experienced the group session which they had attended. Incomplete questionnaires were accepted in order to avoid putting pressure on those MHCUs who did not answer all the questions.

Variables: It must be noted that there were confounding variables which the researcher attempted to control. The participants received medication prescribed by the psychiatrist and attended individual therapy sessions with their psychiatrist, clinical psychologist, occupational therapist, physiotherapist and social worker. They also underwent other group therapy sessions from the same disciplines of the multi-disciplinary team. It was difficult to achieve control for these interventions as it was part of the routine daily treatment during the participants' hospital stay given the acuteness of their MDD. It was also noted that $OT1_P$ and $OT2_P$ had their own individual style of facilitating groups which may have been a confounding variable. $OT1_P$ and $OT2_P$ worked at different hospitals and they were expected to facilitate the programmes either SC_N or SC_O. The environmental variables could not be controlled since the researcher conducted the study in the participants' treatment environment.[290] The demographic variables established were age, gender, educational level, number of hospital admissions and co-morbid diagnosis.

6.4.2.2 Focus group interview

During the tenth or last session a focus group interview was held by the researcher himself to tap into the participants' perspectives and experience[292] about the occupational therapy group programme they had received. A total of 12 focus groups were held, six with SC_O and six with SC_N.

a. Duration of the focus group

Each focus group session lasted 60 to 90 minutes.

b. Size of the focus group

Kruger and Casey[293] suggested that focus groups should have six to eight participants for the greatest potential as a small group. If the focus group is small, it allows each participant the

opportunity to share his/her perspective. The focus groups in this study consisted of between five to 11 participants. The small group allowed participants to have the opportunity to share their experiences of the intervention.[294] Unfortunately, some of the participants did not get an opportunity to take part in the focus group as they were discharged by the treating psychiatrist prior to completing the intervention programme or attending the focus group.

c. Consent

Before the participants could take part in the focus group, their consent had to be obtained first (Appendix D). They therefore had to read the participants' information leaflet and the informed consent with the researcher prior to their involvement. After the researcher had clarified all the participants' concerns, their consent to participate was given and they signed consent forms.

d. Information leaflet

The participants' information leaflet clarified the information related to the study such as the nature and purpose of the study, its duration, possible risks and benefits, ethical approval, confidentiality and the researcher's contact details. The researcher had to reiterate this information to the focus group participants and explained the reason for the focus group (Appendix D).

e. Information about the participants

The participants who took part in the focus groups had received and completed the group intervention programme and had each completed the self-report questionnaire at the end of the intervention (i.e. end of each group therapy session). The participants met in hospital for the focus group interview session and the focus group interview also took place prior to their discharge from the hospital.

f. Interview guide

An interview guide with provisional open-ended questions was formulated to ensure smooth management of the interview process (Appendix E). The guide had ten questions which were asked to the participants during the focus group interview. These questions focused on the participants' experiences of the intervention programme, its impact and recommendations for future programmes.

g. Moderator

The focus group took place at the end of the intervention group programme. The researcher acted as moderator and facilitated each focus group interview since he was experienced, knowledgeable and skilled in the facilitation of focus groups. Semi-structured open-ended questions with prompting were asked during the focus group interview (Appendix E).

The moderator initiated spontaneous expression of the participants' experience of the occupational therapy group programme, either SC_N or SC_O, that they had received during their hospitalisation. Techniques such as reflection, mirroring and paraphrasing were employed to facilitate communication. The moderator also took note of the participants' non-verbal behaviour during the focus groups. Immediately after each focus group, the researcher and the scribe reflected on and recorded observations made during the focus group.

h. Focus group procedure

Occupational therapists ($OT1_T$ or $OT2_T$) acted as scribes during the focus groups and took detailed notes of the participants' statements.[294] They shared their observations regarding the participants' non-verbal behaviour immediately after the focus groups. The scribes however, were not allowed to make comments and contribute to the discussions during the focus group interviews.

i. Data saturation

A total of 12 focus group sessions were conducted in Hospital A and Hospital B. Six focus groups were held at Hospital A (three focus groups on SC_O and three focus groups on SC_N) and six focus groups at Hospital B (three focus groups on SC_O and three focus groups on SC_N). Data analysis occurred after data were collected. Thus although data saturation occurred during the analysis, i.e. the themes and categories became repetitive and all data were still analysed to ensure that no new themes emerged.[216]

6.4.3 Phase III: Quantitative data collection

Quantitative data collection

Finally, in Phase III quantitative data were collected as follows:

6.4.3.1 BaFPE-R

As soon as the participants had completed all the group therapy intervention programmes, the BaFPE-R was used as a post-test in order to test participants' progress on dependent variables (*cognitive, performance, affective functioning and social interaction*). The consulting rooms were used while conducting each participant's progress. It took a maximum of one hour for $OT1_T$ or $OT2_T$ to complete the testing of each participant in order to establish their end-line (Appendix B), and assist in measuring the intervention effect on the participants' task-oriented functioning.

6.4.3.2 PHQ-9

Upon completion of the BaFPE-R it was immediately followed by completing the participants' progress on their MDD after the intervention using the Patient Health Questionnaire-9 (PHQ-9) or self-report questionnaire (Appendix A). The PHQ-9, was used to establish the status of the participants' MDD by indicating whether there was remission, which was indicated by a score of less than 5. Either $OT1_T$ or $OT2_T$ handed the PHQ-9 self-report questionnaire to the participants in the same consulting room where the BaFPE-R was conducted. While the participants were completing the PHQ-9, either $OT1_T$ or $OT2_T$ was present to offer clarity and assistance to ensure that the participants were clear about expectations.

Table 6-7: Measurement tools for quantitative data collection

Research enquiries	Measurement tools
Quantitative enquiry (comparative two-group parallel study)	- PHQ-9 - Bay Area Functional Performance Evaluation- Revised (BaFPE-R)

The independent or predictor variables were both interventions that included the existing and the proposed alternative occupational therapy group programmes with the tangible activities,[196] whereas the dependent or response variables were the symptoms of MDD task-oriented

functioning.[199,295] Both groups were measured by the dependent variables of task-oriented functioning (*cognition, affective, performance functioning and social interaction*) as they were labelled in the BaFPE-R.[296] This approach was appropriate for measuring change and could determine the differences between the two parallel groups.[201]

6.5   Validity and reliability

6.5.1 Validity

Validity refers to the degree in which an instrument measures what it was intended to measure[214,216,218,295,297] in order to give true and accurate findings. The researcher ensured both the validity and reliability of the standardised measurements being used for the pre-test and post-test.

6.5.1.1   Internal validity

Internal validity is the degree in which the independent variables caused the observed effect.[216(p.557)] The researcher had previously used the BaFPE-R and PHQ-9 for administration purposes. The BaFPE-R has been standardised and its sensitivity to different cultures established. The PHQ-9 is a valid standardised instrument for monitoring depression treatment[238,240] This is an example of ensuring internal validity. [214,216,218,295] Introducing qualitative data into an intervention experiment influences biases during quantitative data collection which would then affect the experiment's internal validity.[3] The selection maturation biases of the participants may exist due to the different dynamics in respect of the participants' involvement in the group, such as tiredness or boredom.[210] The researcher verified the socio-demographic profiles of participants at the two hospitals to confirm equal distribution of characteristics.[199] Additionally, the researcher ensured that data was not collected over a long period of time[209] and estimated that collecting all the data would take three months. The participants in this study were not selected randomly per se because they were conveniently available at these hospitals. There was a two week intervention programme between the pre- and post-test for each group of participants which enabled direct comparison of pretest-posttest study results. The researcher took cognisance of social desirability biases that could arose during data collection through familiarity of participants with $OT1_P$ and $OT2_P$. The researcher therefore did the focus group interviews personally.

6.5.1.2   External validity

External validity is the degree in which study results can be generalised to settings or samples other than the one studied.[216(p.554)] The sample of participants used by the researcher comprised only those who suffered from MDD[199] and treated by a multi-disciplinary psychiatric team. The study was carried out at two private general hospitals in Gauteng, each with a psychiatric ward. The characteristics of the settings were similar[199] and the findings can plausibly be extrapolated to institutions where similar conditions and socio-demographics prevail.

6.5.1.3   Face validity

Face validity is the extent in which the instruments look as though it is measuring what it purports to measure. [216(p.554)] The questions on the researcher's questionnaire were scrutinised by experts to ensure that they were relevant, clear and unambiguous and tailored to the needs of the participants.[298]

6.5.1.4   Construct validity

Construct validity is the degree in which the instruments measure the construct under investigation.[216(p.550)] Construct validity was obtained by triangulating multiple sources of evidence to ensure that the conclusion generated by the researcher was valid. These sources included standardised test results which were quantified as well as findings from the qualitative methods employed. According to Osborne,[214] content validity in a study of this nature needs to address the content relevance and to be substantiated by both theoretical and empirical relevance and generalisability.

6.5.1.5   Statistical conclusion validity

Statistical conclusion validity is the degree in which inferences about relationships and differences from a statistical analysis of the data are accurate.[216(p.569)] Statistical conclusion validity was concerned with ensuring that the statistical analysis was an accurate reflection of the real world.[249] The threats to statistical conclusion validity such as statistical power, reliability of the PHQ-9, the BaFPE-R, the effect of clustering and standardisation of the interventions (intervention fidelity) were all taken into consideration.[199]

6.5.2 Reliability

A synonymous term for reliability is reproducibility.[214] Reliability refers to the accuracy and consistency of information obtained in a study. [214,216,218,295] The researcher strove to ensure accuracy and consistency in the application of both the instruments used as well as all other information obtained in the study.

6.6 Data analysis

In this study, analysis of quantitative and qualitative data was an ongoing process that occurred concurrently during data collection activities. This is called mixed-methods analysis.[200] The two forms of data were integrated in the design analysis by merging and embedding of the data.[199]

6.6.1 Phase I

Statistical data analysis

The aim of any statistical analysis is to convert and condense the data into an organised, visual representation in a variety of ways in order to facilitate reading for meaning.[299] Data summary for this phase will only report observed mean (M) and standard deviation (SD) by treatment group (SC_N and SC_O) of pre-test scores.[290] The clustering of data stemming from having 12 treatment groupings will be taken into consideration in the detailed analysis in Phase III.

6.6.2 Phase II

Qualitative data analysis

A top down approach was used to analyse data generated from the self-report questionnaires and a bottom up approach was used to analyse data generated from the focus group interviews. In a top-down approach the researcher used "ready-made categories" and looked for occurrences of similar concepts or ideas fitting the categories.[232(p.322)] In a bottom-up approach the researcher looked for "the organising principle" … that underlies the data.[232(p.322)]

6.6.2.1 Content analysis - Self-report questionnaire

The data from the self-report questionnaire were analysed by means of content analysis. Content analysis is described as a method for identifying core consistencies, meanings, themes and patterns.[246] Although content analysis is classified as a qualitative technique, a number of qualitative researchers are opposed to this idea. They argue that it "simply means doing a word count."[300] Advantages of data coding however, helped to enter the data as thoroughly as possible, as well as at a faster pace. In carrying out the content analysis of the self-report questionnaires, the researcher was guided by the following steps:[199]

Organizing the data for analysis

Codes were given to participants according to the type of programme (SC_O or SC_N) they followed, as well as the hospital of admission. Code (P) was given to participants who followed SC_N and code (PS) to SC_O. A file was opened for each participant in which the raw data was kept, and the file given a code and number. The raw data were captured on excel spread sheets for each participant. The researcher decided to code the data manually because English was not the participants' mother tongue and numerous indigenous words, phrases and expressions were used as is evident from the direct quotes in Chapter 8.

Data coding

Familiarisation with data

The raw data from the participants' self-report questionnaire were analysed by the researcher and two independent coders. Transcripts were read and re-read in order to have an understanding as well as a general idea of the meanings expressed by the participants.[199]

Data coding

The techniques used in this research were based first on counting word repetitions, then comparison of words (i.e. similarities and differences), indigenous words or phrases, analysis of linguistic features (metaphors), searching for missing information and cutting and sorting of information to compare the categories and themes of the focus group.[301] Then, the researcher used a top-down approach and kept cognition, performance, affect and social interaction components

of the BaFPE-R in mind while identifying codes. Thus meanings were given in accordance with the task-oriented functioning and social interaction scale of the BaFPE-R, the PHQ-9, as well as other meanings according to the researcher's understanding when they arose repeatedly during the analysis. The same data were given to two independent coders for counting.

For the aim of this study however, both qualitative and quantitative components of content analysis were used during the data analysis phase.

Data transformation

Data transformation is one of the objectives of mixed-methods analysis.[302] The researcher converted the meanings of qualitative data from self-report questionnaires by coding them into quantitative numerical codes so that he could count the comments that were converted into frequencies.[294,302] This allowed him to establish the greatest number of participants who expressed a particular view or comment.[294] The numbered responses were ranked in order of preference by the participants.[303] This was referred to as data transformation as the qualitative data were converted into quantitative numerical codes that could be represented and explained statistically.[202-203,292]

The qualitative data were reduced into quantitative numeric codes.[204] This transformative perspective[3] that uses frequent counts of categories to convert qualitative data into quantitative data[204,304] assisted in transforming the participants' experiences and meanings into a numeric code.[305] This represented a number of times a code appeared in the transcript. The other data were transformed into quantitative variables and correlated with the dependent variables.[204] The findings were highlighted by use of direct quotations[306] and were transformed for easier comparison.[197] During the top-down approach the researcher used "ready-made categories" and looked for occurrences of similar concepts or ideas fitting the categories.[232 (p.322)]

6.6.2.2 Thematic analysis - Focus groups

Thematic analysis was used to analyse the focus group data. Thematic analysis is a foundational method for qualitative analysis and is compatible with constructivist paradigms.[304] Thematic analysis was carried out to compare and contrast similarities across the data sets.[205,216] The

researcher scrutinised the texts to identify, analyse and report patterns or recurring themes within the data[212,245] along with supporting quotations from the participants.[307] Paterson and Higgs[307(p.351)] describe themes "as a means of understanding or clarifying the notion being studied." The theme identified, coded and analysed was an accurate reflection of the content of the entire data-set since thematic analysis was data driven. The researcher read and re-read the data to answer the research question.

The study endeavoured to understand the experiences of the participants and how they constructed their social world through broader patterns of meanings encoded in language.[232,246] Thematic analysis was used whereby the researcher reported on the participants' meanings, experiences and their reality applying constructivism.[304] As a constructivist, the researcher used participants' views to build broader themes during the analysis. The bottom-up approach was extensively applied to analyse the focus groups and self-report open-ended questionnaire. Even during the inductive coding of the focus groups and self-report questionnaire, the researcher continued to use the bottom-up approach, starting with the data transcripts, noting patterns for categories and formulating themes as he continued to read through the transcript texts.

The researcher used the following steps of thematic analysis to manually analyse the focus group recordings as suggested by Braun and Clarke:[304]

a. **Step 1: Familiarising with data and finding meaning and patterns (Familiarisation)**

The process of data analysis began during data collection in the focus groups.[294] The researcher organised and prepared all the data by ensuring that the audio-recordings of all the focus group interviews were transcribed verbatim into written texts. Repeated reading of the data was performed in order to familiarise the researcher with the depth and breadth of the content of the data and its overall meaning. This repeated reading of the data in an active way, helped the researcher to search for meanings and patterns during textual analysis.

b. Step 2: Generating initial codes and highlighting potential patterns

After the researcher had read and familiarised himself with the transcripts and data, he highlighted interesting codes to give meaning to the data. The researcher wrote notes in the margins of the transcript texts in the form of short phrases, ideas or concepts.[294] The researcher also organised the data into meaningful groups by bracketing them. This coding was done manually as the researcher was working through the entire data set. The researcher continued to analyse the coded materials and wrote a word that represented a category in the margins. The researcher labelled the categories with a term used by the participants and identified interesting aspects in the data items in order to form as a basis for repeated patterns across the entire data set. Theresearcher gave equal attention to each data item. The researcher also used different colour highlighters to indicate potential patterns. By so doing, the researcher looked for relationships between the codes and links between the data as a whole.[294] The researcher then clustered similar categories and grouped these to show the interrelationships.

c. Step 3: Searching for themes in a systematic and sequential way

The researcher continued to sort potential codes into possible themes as he kept on recording the categories and the whole data. The researcher combined different codes to form overarching themes and gave names to potential themes, subthemes and their categories.

d. Step 4: Reviewing themes (interpretation of data)

The researcher reviewed themes at the level of the coded data extracts and recoded the data set to continue to review the themes in relation to their extracts.

e. Step 5: Defining and naming themes in a verifiable and continuous way

The researcher reviewed the themes in relation to the research question. Themes were also renamed and revisited in relation to their extracts and meanings for the researcher.

6.6.3 Phase III

Quantitative data analysis

Similar to Phase I, described in subsection 6.5.1, the data summary reported mean and standard deviation of the post-test scores as well as the resulting change or improvement (Δ) by treatment group (SC_N and SC_O).

Treatment groups were compared in respect of change from pre-test to post-test scores of MDD, *Patient Health Questionnaires* (PHQ-9), *cognitive, performance and affective functioning* (TOA), and *social interaction* (SIS) using a mixed-effects maximum likelihood regression analysis to describe the relationship between the foregoing and the fixed effects program (SC_N and SC_O) as well as hospitals (A and B) along with the interaction using the baseline value as covariate. The P>|z| values derived for programme and hospital and the interaction between them were included in Appendix L. The use of pre-test scores as covariate eliminated systematic biases.[308] Patient treatment groups, as shown in Table 6.3, were considered 'clusters' and specified as the random component.

From the mixed-effects Maximum Likelihood (ML) regression, the p-value for the linear prediction of the fixed portion by program, was reported[199] along with the adjusted treatment improvement margin and the 95% confidence interval of the intervention for each treatment group of SC_N and SC_O.

The effect size (ES) of the difference in improvement apparently realised by the two treatment programmes was established using Cohen's d-value.[309] The effect size denotes the difference in improvement or **change** from baseline (pre-testing) to end-line (post-testing) between programmes. The magnitude of change (Δ) from one programme to the other used the formula where the difference in means (M) is divided by the pooled standard deviation (SD): Cohen's d= $(M_{\Delta Prog1} - M_{\Delta Prog2})/SD_{pooled}$, where $SD_{pooled} = \sqrt{[(SD_{\Delta prog1}^2 + SD_{\Delta Prog2}^2)/2]}$.[309] Thomas and Nelson,[310] interpreted an ES of 0.8 as large, 0.5 as moderate, 0.2 as small and 0.01 as very small. The effect sizes were included in the data summary tables.

6.7 Data integration

This characterised the final stage of data analysis whereby both quantitative and qualitative data were integrated into two coherent wholes.[292]

6.7.1 Integrated quantitative and qualitative data source

After all the data had been integrated and interpreted into the analysis of numbers and words,[311] the researcher elaborated one set of results with data from the qualitative and quantitative enquiry in order to expand potential results.[305] The researcher assumed that combining data from both the qualitative and quantitative enquiry would generate a greater outcome[305] for the study.

Data invited integration of qualitative and quantitative enquiry.[305] Illustrated codes from the self-report open-ended questionnaire and focus group data were used to supplement quantitative data.

6.7.2 Data display

This helped the researcher to easily create a matrix,[203] which enhanced validity through data triangulation.[305] The matrix was used in comparing data from quantitative and qualitative enquiry, side by side into one table to illustrate a joint display with clearer information of the results side by side.[204]

6.7.3 Data comparison

This led to completion of the analysis of results as they were compared, contrasted, infused, interpreted and modified on the basis of each other. The matrix was used to ensure that the quantitative data were compared side by side with the qualitative data for clarity.[204]

6.8   Quality of the study

Trustworthiness involved examining aspects of truth-value, rigour, integrity, applicability, consistency and neutrality in research.[214,216,297] Lincoln and Guba (1994) cited by Polit and Beck[216] suggested five criteria for developing the trustworthiness of a qualitative approach: credibility, dependability, confirmability, transferability and authenticity.

6.8.1   Credibility of the findings

Credibility is similar to internal validity and it refers to confidence in the truth-value or believability of the findings.[216,307] Credibility also helped to enhance the integrity of the results.[3] Triangulation (refer to subsection 3.7.3) enhanced rigour and credibility. The following processes and research aspects were employed to achieve credibility:

6.8.2   Dependability of data

Dependability refers "to the stability (reliability) or consistency of data over time and over conditions."[214,216(p.492)] The researcher ensured that the study methodology was documented accurately and in detail. All the steps of the study were explained. There was inter-coder agreement (cross checking) concerning the coding of the self-report questionnaire in order to ensure consistency of the coding and to assist with qualitative reliability.

6.8.3   Confirmability of findings

Confirmability refers to "objective neutrality, that is, the potential for congruence between two or more independent people about the accuracy, relevance, or meaning of a phenomenon."[216(p.492)] In an effort to achieve confirmability, the researcher considered using additional external auditors (independent coders) to code the transcripts[208,218,312] of the data that were collected, all already independently coded by the researcher, as well as a consensus discussion between coders to agree on themes and checked by the research supervisor. The researcher documented the process of checking and rechecking of the data throughout the study.

6.8.4 Transferability of findings

Transferability is the criterion for applicability[297] and refers "to the extent to which qualitative findings can be transferred to other settings or groups or samples."[216(p.492)] The researcher honestly gave clear details of the steps that he followed during the research process and the setting in which the study took place to ensure that the study could be repeated in another setting.

6.8.5 Authenticity of the findings

Authenticity refers to "the extent to which the researcher will fairly and faithfully show a range of different realities. Authenticity emerges in a report when it conveys the feeling of participants' lives as they are lived."[216(p.493)] The researcher used direct quotations to convey the feelings of participants. The aim in this research was to gather an authentic understanding of the participants' experiences of the interventions, and the researcher was of the opinion that open-ended questions and focus groups were the most effective means towards that end.[307]

6.8.6 Strategies to ensure mixed method rigour

Interpretive rigour is the degree in which the credibility of research results and its interpretations were obtained.[204,307] Interpretive consistency was achieved as there was agreement of the same results with multiple conclusions.[204] There was also extensive discussions between the researcher, research supervisor, external auditors (independent coder) and the use of literature. Theoretical consistency was achieved when the researcher explained and compared the results with current theories in order to ensure consistency.[204]

The researcher engaged three external auditors who were requested to formulate their own themes related to the study. The researcher then met with the external auditors in order to achieve consensus about their own perspectives of their themes and his themes in order to formulate the

final themes and to ensure interpretive agreement.[204] Different perspectives about the themes helped to ensure that the themes were realistic and richer.[199]

Interpretive distinctiveness is the degree to which the inferences are dinstinctively different from the interpretation of the results.[3,204] Interpretive distinctiveness was also achieved as the researcher ensured that the results of the study were the truth and defensible.[204] Interpretive efficacy was also achieved when the inferences from qualitative and quantitative approaches were effectively integrated into interpretative and theoretical consistency, interpretative agreement and distinctiveness since they were widely considered as indicators of quality.[204]

6.9   Ethical considerations

The ethical considerations were taken into account throughout the study. The ethical principles which were considered during this study will be discussed next.

6.9.1 Principle of beneficence

The principles of beneficience included the right to freedom from harm and discomfort and the right to appropriate treatment.

6.9.1.1   The right to freedom from harm and discomfort.

The principle of beneficence imposes the obligation, duty and responsibility on the researcher to minimise harm and to maximise benefits.[216] Following this principle during the various phases of the study, the researcher ensured that the questions asked to the participants in the open-ended questionnaire in Appendix C were not harmful to them, and ensured that the questions did not upset them in any way.[313]

Beneficence is manifested in the risk/benefit ratio,[201] which means there were more benefits to the participants than risks,[216,231-232,314] as all the participants in the comparison of two parallel groups were taking part in occupational therapy groups (SC_O and SC_N) during data collection. By taking part in the occupational therapy groups, they were thus afforded the opportunity to reflect on the treatment experience they had received, including its benefit to them.

Furthermore, the researcher took cognisance of clinical equipoise,[315-316] with the assumption that there is no better intervention for MHCUs with MDD. As the researcher was in a state of uncertainty and an ethical dilemma, he became cautious in reducing harm by ensuring that MHCUs with MDD were not compromised and should benefit from receiving either a SC_O or SC_N intervention programme. Again, the researcher maintained clinical equipoise by ensuring that $OT1_P$ and $OT2_P$ were blinded to the programmes (SC_O and SC_N) offered to the MHCUs with MDD.[315]

It must be noted that protecting human beings from physical harm is often straightforward, but it is not as easy to address the psychological consequences of participating in a study, which can be subtle.[216(p.121)] The researcher ensured that all the participants in both programmes received the intervention and tried to protect the participants from any form of harm, intended or otherwise, in the execution of the study.

6.9.1.2   The right to appropriate treatment

The researcher was aware that participants were not supposed to be denied beneficial services or treatment for purposes of study.[209] Therefore, he ensured that all the participants received the appropriate care that was expected during their hospitalisation. For comparison, a group of participants were offered either an intervention entailing proposed alternative occupational therapy groups, the Standard Care Plus, or an existing Standard Care occupational therapy group programme. The participants were supported and encouraged throughout their hospitalisation while being given individual treatment from the treating therapists.

The researcher also continued to offer occupational therapy treatment in a non-prejudicial manner to participants who declined to participate in the study.[216,317]

6.9.2 The principle of respect for human dignity

The principles[213] of respect for human dignity included the right to full disclosure, informed consent, professional standards and the value of veracity as discussed below.

6.9.2.1 The right to full disclosure

Respect involves caring for others, honouring them and treating them with dignity.[215] The researcher therefore fully outlined the reasons for data collection in order to put the participants at ease.[318]

6.9.2.2 Informed consent

The researcher ensured that each participant received a document entitled "informed consent" to be completed in order to encourage voluntary consent.[3,248] They were given all the relevant information about the study and made aware that they could withdraw at any time prior to or during their participation. All the participants were given the opportunity to consent voluntarily (Appendix I). The researcher also obtained permission from the relevant hospital authorities with regard to the study and the participants' participation. The researcher kept all the copies of the informed consent form secure.

6.9.2.3 Professional standards

This research was constantly submitted for review and criticism and for guidance and support to the research supervisors from the University of Pretoria (UP) as well as an allocated internal and external examiner by the same University. It was submitted to the UP Research Committee and UP Faculty of Health Sciences' Research Ethics Committee for perusal, guidance and approval with the ethics reference number 226/2015 (refer to Appendix H). The National Health Act[319] (2004) states that, "a health research ethics committee must review research proposals and protocols in order to ensure that the research conducted by the relevant institution, agency and establishment will promote health and meet their ethical standards."[(p.76)] This happened before any recruitment of participants or data collection began in order to ensure that those requirements were met.[318]

6.9.2.4 The value of veracity (truth and telling the truth)

Veracity refers to truth and telling the truth and not misleading participants.[201] During data collection, analysis and report writing, the researcher did his best to render true knowledge by

being honest with the participants in reporting the results and in the publication of the study findings in order to uphold the value of veracity.[201]

6.9.3 The principle of justice

Justice is interpreted as fair, equitable, and appropriate treatment in the light of what is deserved by the participants.[320] The principle of justice includes the right to privacy and the right to confidentiality.

6.9.3.1 The right to privacy

The researcher implemented fair selection of participants[232] throughout the study by allowing voluntary participation and autonomous action from the participants themselves.[320] The participants were reassured about their rights to privacy and sensitivity,[231,248,299,321] and that those rights were protected.[3,216]

6.9.3.2 The right to confidentiality

The participants were reassured that the information or data collected would only be used for research purposes and be treated confidentially.[201,213] They were assured that their participation would not be divulged or identified in any form as confidentiality would be enforced.[313,318]

6.10 Conclusion

The data collection consisted of three distinct consecutive phases: Phase I (pre-test of dependent variables using the PHQ-9 and the BaFPE-R); Phase II (collection of qualitative data obtained during the group interventions); and Phase III (post-test of the dependent variables using the BaFPE-R and the PHQ-9). The sampling techniques used were random sampling, cluster sampling and convenience sampling. The quantitative data analysis used the mixed-effect maximum likelihood (ML) estimation. The qualitative data analysis used content and thematic analysis. Measures to ensure trustworthiness, validity and reliability were all taken into consideration. Furthermore, the researcher ensured compliance of his ethical obligations.

CHAPTER 7

7 QUANTITATIVE RESULTS

7.1 Introduction

The purpose of this study was to determine whether the proposed alternative occupational therapy group program, the Standard Care Plus (SC_O), was superior to the existing Standard Care (SC_N) occupational therapy group program, in respect of the task-oriented functioning of MHCUs with MDD at two private general hospitals in Gauteng.

Reporting on the findings will be as follows:

- Socio-demographic profile of the patients with MDD in the sample.
- Comparison of the Standard Care Plus (SC_O), the proposed alternative occupational therapy group programme, with the existing Standard Care (SC_N) occupational therapy group programme, in respect of the Patient's Health Questionnaire (PHQ-9).
- Comparison of the Standard Care Plus (SC_O), the proposed alternative occupational therapy group programme, with the existing Standard Care (SC_N) occupational therapy group programme, in respect of improved *cognitive functioning* upon discharge.
- Comparison of the Standard Care Plus (SC_O), the proposed alternative occupational therapy group programme, with the existing Standard Care (SC_N) occupational therapy group programme, in respect of improved *performance functioning* upon discharge.
- Comparison of the Standard Care Plus (SC_O), the proposed alternative occupational therapy group programme, with the existing Standard Care (SC_N) occupational therapy group programme, in respect of improved *affective functioning* upon discharge. Comparison of the Standard Care Plus (SC_O), the proposed alternative occupational therapy group programme, with the existing Standard Care (SC_N) occupational therapy group programme, in respect of improved *social interaction* upon discharge.

7.2 Sociodemographic profile of MHCU's with MDD in the study

Demographic information regarding the 50 MHCUs with MDD who participated in the SC_N occupational therapy group programme and the 50 MHCUs with MDD who participated in the SC_O occupational therapy group programme is set out in the tables below in the order of age, gender, marital status, educational level, workplace, employment level, stressors, religion, medication and treatments.

7.2.1 Age group

The "mean age of onset for major depression is about 40 years."[10(p.349)] In this study, the average age of participants in the SC_N programme was 41.4 years and that for the SC_O programme 37.3 years, giving an overall average of 39.35 years. The age distribution is given in *Table 7-1: Demograhic information about age of participants in the 2 programmes*

Table 7-1: Demograhic information about age of participants in the 2 programmes

	SC_N A (n=50)			SC_O (n=50)		
	Age (years)	Frequency	Percentage	Age (years)	Frequency	Percentage
	20-30	8	16.0%	20- 30	14	28.0%
	31-40	15	30.0%	31-40	20	40.0%
	41-50	16	32.0%	41-50	11	22.0%
	51-60	11	22.0%	51-60	5	10.0%
Average	41.4	50	100	37.3	50	100

7.2.2 Gender

There is a greater prevalence of MDD in females than in men,[10] which is also evident in *Table 7-2: Demographic information about the participant's gender* which illustrates the gender profile of participants. There was no difference in distribution between the two programmes.

Table 7-2: Demographic information about the participant's gender

Gender	SC$_N$ (n=50)		SC$_O$ (n=50)	
	Frequency	Percentage	Frequency	Percentage
Male	7	14.0%	7	14.0%
Female	43	86.0%	43	86.0%

7.2.3 Marital status

Sadock, Sadock and Ruiz[10] reported that persons without close interpersonal relationships (single, divorced and separated) often suffer from MDD. It is therefore not surprising that the majority of participants in both programmes in this study were single.

Table 7-3: Demographic information about the participants' marital status

SC$_N$ A (n=50)			SC$_O$ (n=50)		
Marital status	Frequency	Percentage	Marital status	Frequency	Percentage
Single	21	42.0%	Single	31	62.0%
Married	20	40.0%	Married	15	30.0%
Divorced	4	8.0%	Divorced	3	6.0%
Widowed	5	10.0%	Widowed	1	2.0%
Total	50	100	Total	50	100

7.2.4 Level of education

All 100 participants were literate with the ability to read and write. The SC$_O$ programme participants showed a slightly higher level of tertiary education than SC$_N$ participants.
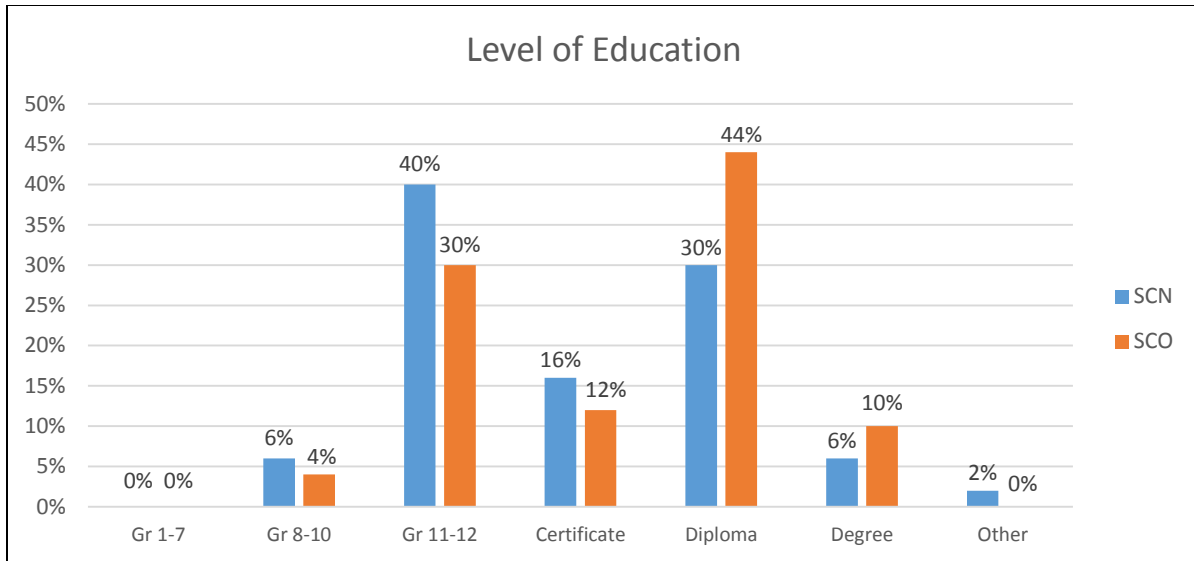
Figure 7-1: Participants' level of education

7.2.5 Common areas of work amongst study participants

The majority of the participants in both programmes were employed in private companies and government departments (mostly education, police service, department of health and other public services). There were few participants who were self-employed in either of the programmes.
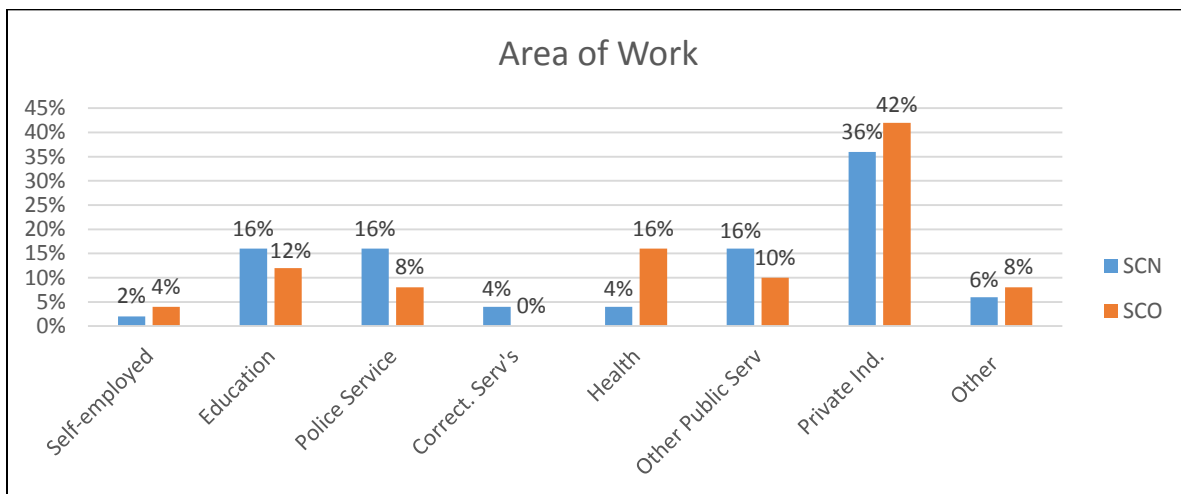
Figure 7-2: Participants' area of work

7.2.6 The employment level of the participants

More than 50% of participants were involved in administrative duties and professional employment in both programmes. Supervisory and management occupations together accounted for less than 10%. The only large difference in employment levels between the two programmes was in the labourer category where in the SC_N 20% of participants were labourers in comparison to 2% of SC_O participants.
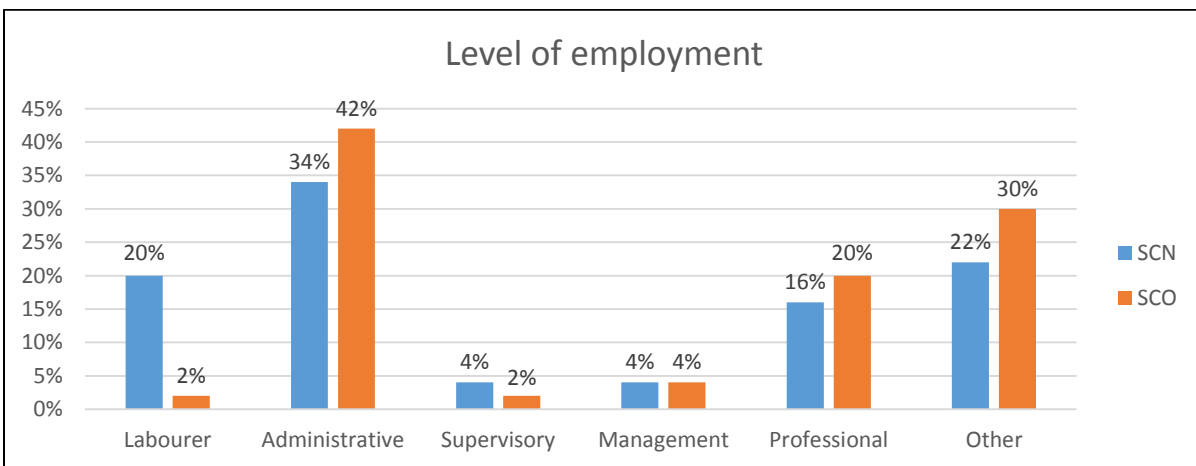
Figure 7-3: Participants' level of employment

7.2.7 Common stressors experienced by participants

It is generally reported that losing a parent or spouse and unemployment are two common psychosocial stressors that lead to an episode of MDD.[10]

Fig 7-4 below indicates precipitators for MDD amongst participants in both the two programmes, with marriage and relationship problems being common to both programmes, but work problems and loss/death being featured highly in the SC_N, and family and financial problems being high among the SC_O.
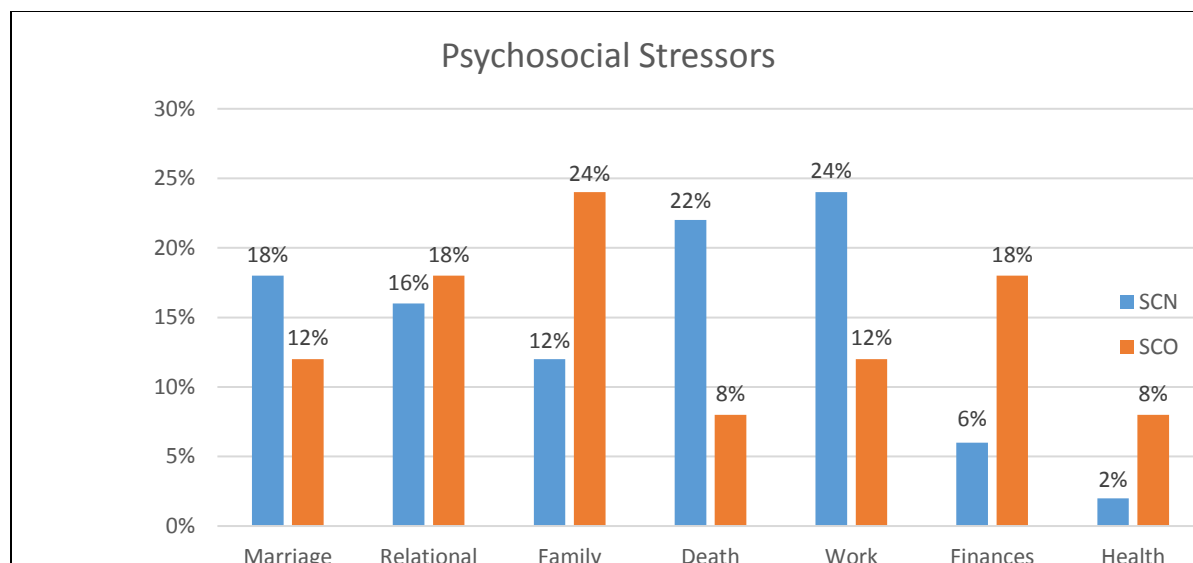
Figure 7-4: Demographic information about common stressors experienced by participants

7.2.8 Religion

The religious profiles for the two programmes are very similar as shown below.

Table 7-4: Participants' religious believes

SC$_N$ A (n=50)			SC$_O$ (n=50)		
Religion	Frequency	Percentage	Religion	Frequency	Percentage
Christian	47	94.0%	Christian	49	98.0%
Muslim	2	4.0%	Muslim	0	0.0%
Hindu	0	0.0%	Hindu	0	0.0%
African	0	0.0%	African	0	0.0%
Other	1	2.0%	Other	1	2.0%

7.2.9 Type of medication prescribed to participants

The medications that were used in this study for the treatment of acute MDD were antidepressants, anxiolytics and neuroleptics as shown in *Figure 7-5: Medication prescribed to participants whilst in hospital.* The two programmes were very similar in terms of the medication profile. Neuroleptics were not seen as an exclusion criteria as participants were not on high dosages. Furthermore, the

researcher is aware that certain types of second generation anti-psychotics are used in the treatment of MHCUs with MDD.
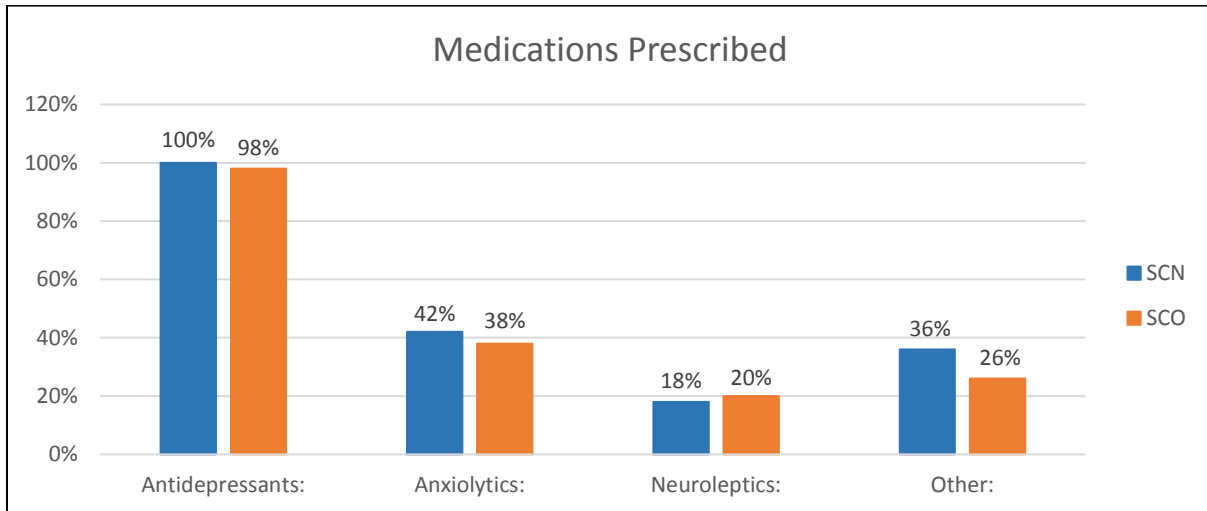
Figure 7-5: Medication prescribed to participants whilst in hospital

7.2.10 Different other disciplines involved during treatment of participants

A comprehensive team treatment was provided to the participants as shown in *Figure 7-6: Patients' treatment by different disciplines.*
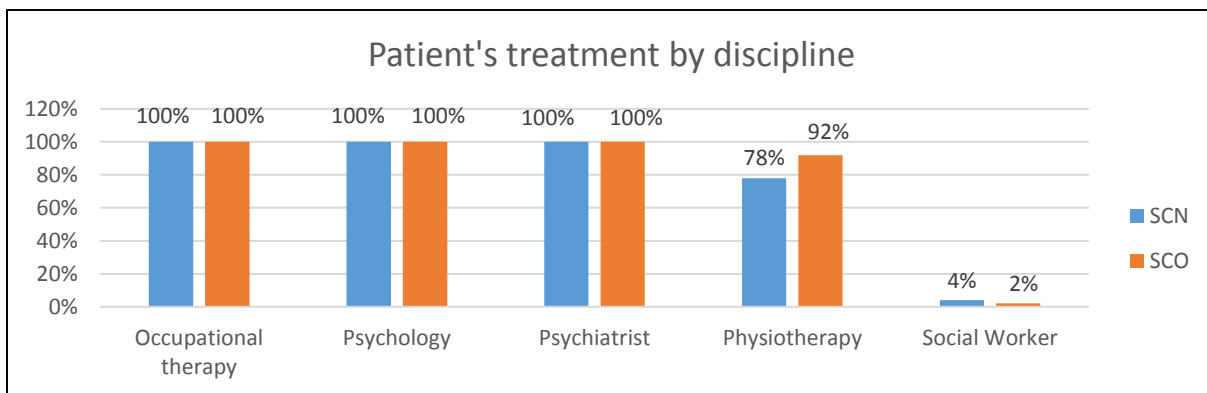
Figure 7-6: Patients' treatment by different disciplines

None of the participants were deprived of any treatment during their acute treatment for MDD while in hospital. Referrals to social workers were surprisingly few given that most of the participants in both programs presented with marital, relationship and family problems as shown in Fig 7-4.

7.2.11 Conclusion

The participants in the two programmes exhibited fairly similar profiles in terms of the demographics. No obvious difference between the SC_N and SC_O participants presented as a major factor to be given special consideration in the analysis of the results. That notwithstanding, those areas that do show discrepancies between the programme participants, such as the preponderance of labourers in the SC_N programme, were considered in the interpretation of the results.

7.3 Quantitative Results

The quantitative results of the three specific tests that were performed at pre- and post-treatment on participants will be considered here. The three tests were:

- Patient Health Questionnaire or PHQ-9,
- Task Orientated Assessment or TOA, comprising cognition, performance and affective functioning components, and
- Social Interaction Scale or SIS comprising functional areas and the client's social response by situation components.

All of the above measured the patient's perception, status or performance in a number of discrete areas. The analysis of the results primarily focused on the differences, or improvement (Δ), between the pre- and post-tests as indicators of the effectiveness of the SC_N and SC_O programmes taking cognisance of the possible impact of the clustering effect as treatment and testing that took place over 6 sessions at each of the two different hospitals. (The pre- and post-test scores and improvement (Δ) for the 25 patients in each of the 4 groups were initially aggregated to establish

overall group Means (M) and Standard Deviations (SD) as a basis for a preliminary Ancova[216,290] analysis - this was not reported and only used as an independent check on veracity.

The data were analysed by means of a mixed-effect maximum likelihood (ML) regression taking cognisance of the 12 clusters (See *Table 6-3: Actual Sample size per parallel group for SCO and SCN*) to account for possible effects of interaction between MHCUs with MDD in these treatment groups. Reported from this analysis are the p-value for the difference in improvement experienced between the two programmes, and the linear predicted programme margins and 95% confidence intervals for both SC_N and SC_O. Results for between and within the variable is available but not reported. Finally, the effect size (ES) of the difference in improvement brought about by the SC_N and SC_O programmes was calculated in terms of Cohen's d-value and reported.

7.3.1 Patient Health Questionnaire (PHQ-9)

As the main research question centred on the relative effectiveness of the two programmes (SC_N and SC_O), information pertinent to this is presented in *Table 7-5: Data summary of the PHQ test for the SCN and SCO programmes.* The mean and standard deviation of the pre- and post-treatment test results, as well as the improvement (Δ) for the two programmes' total and overall function (measured by the PHQ-9 for the 9 dependent variables), are presented in the table. From the mixed effect maximum likelihood regression analysis, the p-value (where $P<0.05$ denotes a significant difference between Δ SC_N and Δ SC_O), was included as well as the predictive programme margins and the 95% confidence interval adjusted for baseline and hospital. Lastly, Cohen's d-value denoting the effect size of the difference in improvement between the two programmes was incorporated.

Table 7-5: Data summary of the PHQ test for the SC_N and SC_O programmes

PhQ9 - Comparison of Improvement from SC_N and SC_O Programmes	Program	Overall						Linear Predicted programme margins adjusted for Clusters			Effect Size (Cohen)** $(SC_O > SC_N)$
		Pre-Interv. (n = 100)		Post-Interv. (n = 100)		Improvem Δ (Pre-Post)					
		Mean	SD	Mean	SD	Mean	SD	P-value*	Margin	Conf.Interv.	d
1. Little interest or pleasure in doing things	SC_N	2.440	0.760	1.100	1.074	1.340	1.022	0.011	1.389	1.150 1.628	0.51
	SC_O	2.600	0.670	0.720	0.757	1.880	1.003		1.831	1.592 2.070	
2. Feeling down, depressed or hopeless	SC_N	2.740	0.527	0.940	0.935	1.800	1.125	0.113	1.778	1.548 2.008	0.32
	SC_O	2.700	0.544	0.680	0.741	2.020	0.892		2.042	1.812 2.272	
3. Trouble falling or staying asleep, or sleeping too much	SC_N	2.740	0.527	0.980	0.958	1.760	1.021	0.007	1.637	1.420 1.855	0.54
	SC_O	2.480	0.789	0.540	0.613	1.940	1.038		2.063	1.812 2.280	
4. Feeling tired or having little energy	SC_N	2.640	0.749	1.020	0.915	1.620	1.048	0.030	1.531	1.293 1.770	0.44
	SC_O	2.420	0.731	0.600	0.904	1.820	1.082		1.909	1.670 2.147	
5. Poor appetite or overeating	SC_N	2.220	0.954	0.720	0.882	1.500	1.216	0.136	1.480	1.258 1.703	0.30
	SC_O	2.180	0.896	0.480	0.762	1.700	1.249		1.720	1.497 1.942	
6. Feeling bad about yourself, that you are a failure, or having let yourself or your family down	SC_N	2.440	0.929	0.840	1.017	1.600	1.143	0.358	1.578	1.330 1.826	0.18
	SC_O	2.380	0.855	0.660	0.872	1.720	1.107		1.742	1.494 1.990	
7. Trouble concentrating on things; reading newspaper or watching TV	SC_N	2.600	0.728	0.900	0.886	1.700	0.953	0.261	1.608	1.383 1.834	0.23
	SC_O	2.360	0.851	0.660	0.798	1.700	1.093		1.792	1.566 2.017	
8. Moving or speaking slowly or being fidgety or restless	SC_N	2.160	0.997	0.780	0.910	1.380	1.067	0.008	1.310	1.112 1.508	0.53
	SC_O	1.980	0.937	0.360	0.563	1.620	1.008		1.690	1.492 1.888	
9. Thoughts that you would be better off dead, or of hurting yourself	SC_N	1.780	1.266	0.580	0.992	1.200	1.414	0.009	1.236	1.019 1.452	0.52
	SC_O	1.860	1.107	0.180	0.560	1.680	1.220		1.644	1.428 1.861	
Total	SC_N	21.760	3.159	7.860	5.617	13.900	5.152	0.005	13.664	12.368 14.959	0.57
	SC_O	20.960	2.857	4.880	4.207	16.080	5.005		16.316	15.021 17.612	
10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home or get along with other people	SC_N	2.520	0.646	1.060	0.867	1.460	0.908		1.336	1.071 1.601	
	SC_O	2.120	0.689	0.680	0.713	1.440	0.884	0.220	1.573	1.309 1.838	0.25

Linear predictions from Mixed-Effects ML Regression

* P<0.05 denotes significant differences between Δ SC_N and Δ SC_O.

** Effect Size = Standardised group mean difference between SC_N and SC_O

The following are specifically worth noting in respect of the improvement effected by the SC_N and SC_O programmes:

- Both the SC_N and SC_O programmes resulted in a statistically significant improvement in patient health (MDD), as measured by the PHQ-9 for all dependent variables.

In five of the nine dependent variables measured by the PHQ-9 [i.e. little interest or pleasure in doing things (Pleasure), trouble falling or staying asleep (Sleeping), feeling tired or having little energy (Energy), moving or speaking slowly or being fidgety or restless (Conation) and thoughts that you would be better off dead (Suicide)], the SC_O programme shows a statistically significant better improvement Δ than the SC_N programme as is evident from $P < 0.05$ and an ES with the Cohens d-value of 0.44 to 0.54 for these variables. In the case of the other four dependent variables [feeling down, depressed or hopeless (Depressed), poor appetite or overeating (Appetite), feeling bad about yourself, that you are a failure, or having let yourself or family down (Self-concept) and trouble concentrating on things, reading newspapers or watching TV (Concentration)] the SC_O programme is still better than the SC_N but with an average ES, Cohens d-value of 0.25, denoting only a small difference. However, the aggregate or total ES using Cohens d-value is 0.57 and $P = 0.005$ indicating that the SC_O resulted in a statistically significant better improvement compared to the SC_N.

- The general function (focusing on difficulty to do work, taking care of things at home or getting along with other people), in number ten shows only a small difference between the programmes.

The difference in improvement due to SC_N and SC_O is graphically depicted below in *Figure 7-7: PHQ-9; Comparison of improvement in participants' health.* The predictive margins, as adjusted, show that the SC_O generally resulted in a significantly better improvement (Δ) for participants than the SC_N..
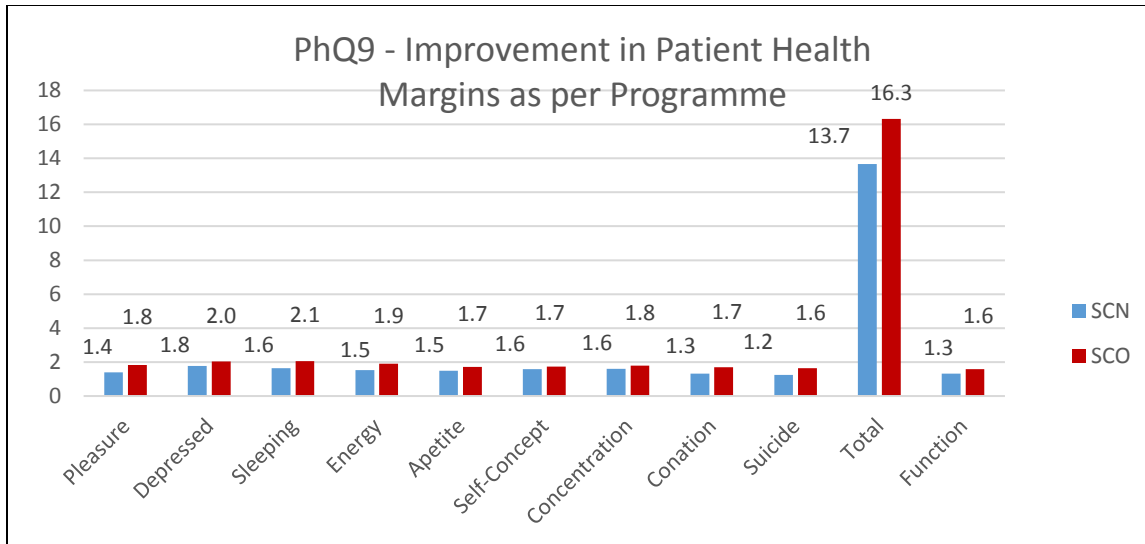
Figure 7-7: PHQ-9; Comparison of improvement in participants' health

The effect size of the difference in the improvement Δ of SC_O over SC_N is shown in *Figure 7-8: PHQ-9; Effect Size of differences in improvement in participants' health* and clearly shows that SC_O was generally better than SC_N in the participants' improvement with a small to medium effect size.
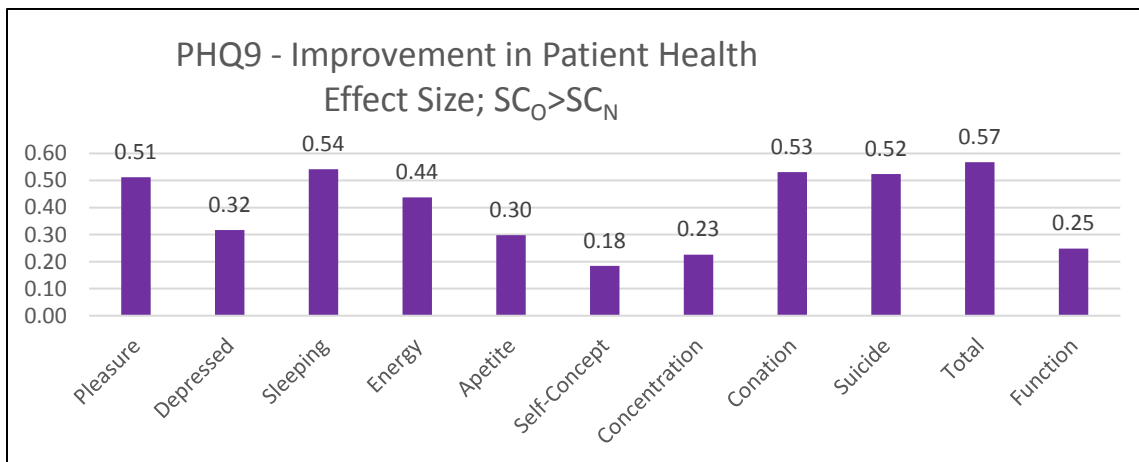
Figure 7-8: PHQ-9; Effect Size of differences in improvement in participants' health

7.3.2 Task Oriented Assessment (TOA)

The TOA of the BaFPE-R test measures three distinct functional components; i.e. Cognition, Performance and Affect, each comprising a number of areas as shown in *Table 7-6: Summary of the TOA test for the two programmes*

Data ordering were similar to that described for the PHQ-9 test regime in that the means and standard deviations of the Pre-, Post and Improvement Δ for SC_N and SC_O were reported on.

Linear Predicted programme margins and 95% confidence limits for the programme and hospital factors as adjusted for a baseline (which was determined by the average mean of the pre-treatment clusters) were then generated through mixed effect maximum likelihood (ML) regression.

7.3.2.1 Improvement in Cognitive Functioning attained with the SC_O and SC_N programmes.

From Table 7.6, the following observations can be made regarding the improvement in Cognitive functioning due to the SC_N and SC_O interventions:

- Both the SC_N and SC_O programmes as incorporated in the overall treatment regime achieved significant improvements in all Cognition variables with the exception of thought disorder.
- There is little or no difference between the effectiveness of SC_N and SC_O as is evidenced by P-values that are much larger than 0.05 for all variables and Cohen's d-values of between -0.2 and 0.15.

A comparison of the effectiveness of the SC_N programme to improve cognitive functioning with the effectiveness of the SC_O programme to do so is shown in *Figure 7-9: TOA; Comparison of improvement in cognitive functioning*

Table 7-6: Summary of the TOA test for the two programmes

Task Orientated Assessment - Comparison of Improvement from SC_N and SC_O Programmes	Program	Overall						Linear Predicted programme margins adjusted for Clusters				Effect Size (Cohen)** (SC_O > SC_N)
		Pre-Interv. (n = 100)		Post-Interv. (n = 100)		Improvem Δ (Post - Pre)						
		Mean	SD	Mean	SD	Mean	SD	P-value*	Margin	Conf.Interv.		d
COGNITION:												
Memory	SC_N	13.44	2.09	16.32	1.97	2.88	2.14	0.915	2.80	2.32	3.28	0.02
	SC_O	13.76	2.15	16.52	2.14	2.76	1.91		2.84	2.36	3.32	
Organisation	SC_N	14.32	2.16	16.96	2.04	2.64	2.21	0.666	2.55	2.09	2.99	0.09
	SC_O	14.64	2.55	17.24	1.77	2.60	1.97		2.69	2.25	3.13	
Attention Span	SC_N	15.46	2.28	17.82	1.80	2.36	2.70	0.455	2.57	3.08	2.98	0.15
	SC_O	14.98	2.56	18.00	1.67	3.02	2.05		2.85	3.35	3.30	
Thought Disorder	SC_N	19.96	0.28	20.00	0.00	0.04	0.28	0.312	0.03	0.00	0.06	-0.20
	SC_O	19.98	0.14	19.98	0.14	0.00	0.20		0.01	-0.02	0.04	
Ability to Abstract	SC_N	17.38	2.67	18.84	1.68	1.46	2.62	0.945	1.63	1.25	2.01	0.01
	SC_O	16.92	2.57	18.74	1.58	1.82	2.06		1.65	1.27	2.03	
Cognition Total	SC_N	80.56	7.73	89.94	6.38	9.38	7.81	0.518	9.46	8.04	10.88	0.13
	SC_O	80.28	9.00	90.48	6.19	10.20	6.35		10.12	8.70	11.54	
PERFORMANCE:												
Task Completion	SC_N	15.04	2.08	16.76	2.20	1.72	2.33	0.4370	1.86	1.31	2.40	0.16
	SC_O	14.54	2.82	16.84	2.48	2.30	2.45		2.16	1.62	2.71	
Errors	SC_N	9.94	2.94	13.42	2.67	3.48	2.78	0.642	3.51	2.80	4.21	-0.09
	SC_O	9.82	3.10	13.12	3.36	3.30	3.08		3.27	2.57	3.98	
Efficiency	SC_N	8.56	2.47	10.68	2.56	2.12	2.34	0.026	2.28	1.65	2.92	0.45
	SC_O	7.62	2.26	11.10	2.94	3.48	2.55		3.32	2.68	3.95	
Performance Total	SC_N	33.54	6.76	40.86	6.41	7.32	5.53	0.301	7.60	6.00	9.20	0.21
	SC_O	31.98	7.53	41.06	8.31	9.08	7.09		8.80	7.20	10.40	
AFFECTIVE:												
Motivation	SC_N	17.86	3.00	18.80	2.13	0.94	3.52	0.936	1.37	0.81	1.92	-0.02
	SC_O	16.92	3.65	18.68	2.12	1.76	3.61		1.33	0.78	1.89	
Frustration tolerance	SC_N	17.40	2.01	18.70	1.36	1.30	2.22	0.408	1.59	1.10	2.09	0.17
	SC_O	16.82	3.04	18.94	1.63	2.12	2.72		1.89	1.40	2.38	
Self-Confidence	SC_N	18.06	2.34	19.22	1.25	1.16	2.49	0.484	1.64	1.27	2.00	0.14
	SC_O	16.94	3.35	19.24	1.52	2.30	3.03		1.82	1.46	2.19	
General Affect Improvement	SC_N	15.24	2.16	18.78	1.49	3.54	2.20	0.545	3.84	3.34	4.34	-0.12
	SC_O	14.50	3.16	18.42	2.20	3.92	3.34		3.62	3.12	4.12	
Affective Total	SC_N	68.56	8.72	75.50	5.09	6.94	8.95	0.722	8.33	6.89	9.78	0.07
	SC_O	65.18	12.59	75.28	6.17	10.10	11.39		8.71	7.26	10.15	

Linear predictions from Mixed-Effects ML Regression

* P<0.05 denotes significant differences between Δ SC_N and Δ SC_O.

** Effect Size = Standardised group mean difference between SC_N and SC_O
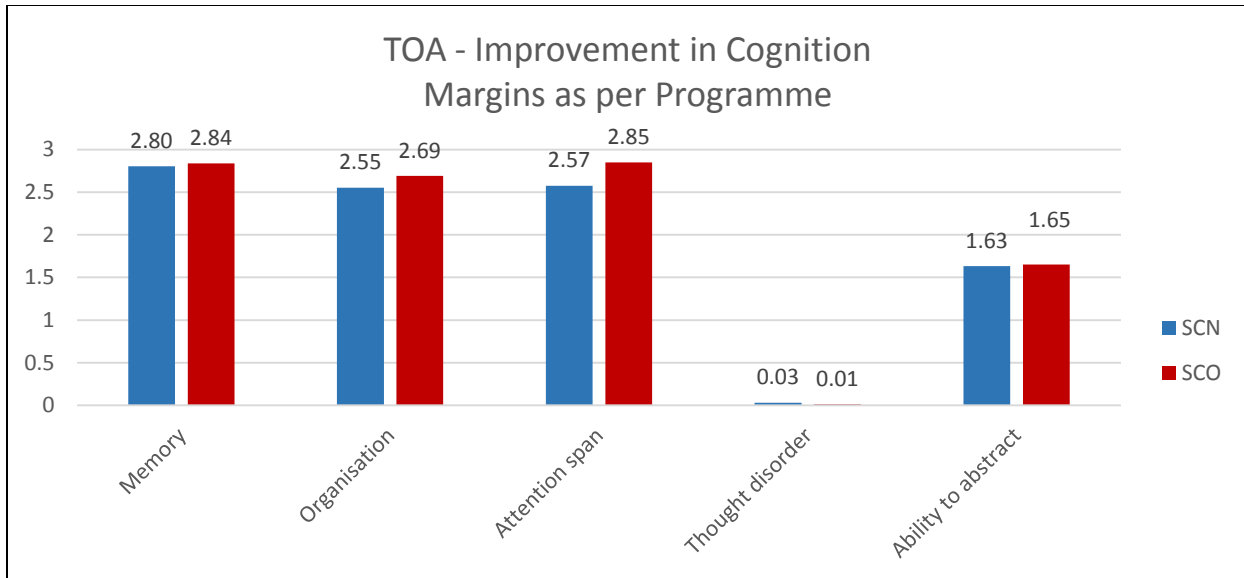
Figure 7-9: TOA; Comparison of improvement in cognitive functioning

The ES d-values of the differences between the improvements achieved by the two programmes in cognitive functioning are generally small as can be seen in *Figure 7-10: TOA; Effect size of difference in improvement in Cognition* .
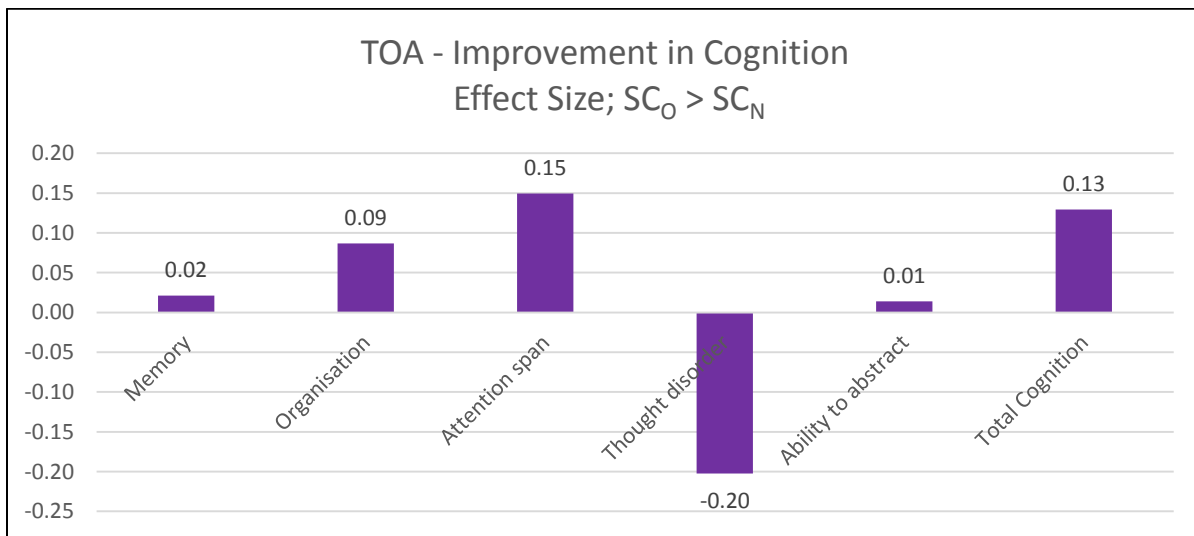
Figure 7-10: TOA; Effect size of difference in improvement in Cognition

7.3.2.2 Improvement in Performance Functioning attained with the SC$_O$ and SC$_N$ programmes.

A comparison of the effectiveness of the SC$_N$ programme to improve performance functioning with the effectiveness of the SC$_O$ programme to do the same is shown in *Figure 7-11: TOA; Comparison of Improvement in Performance functioning.*
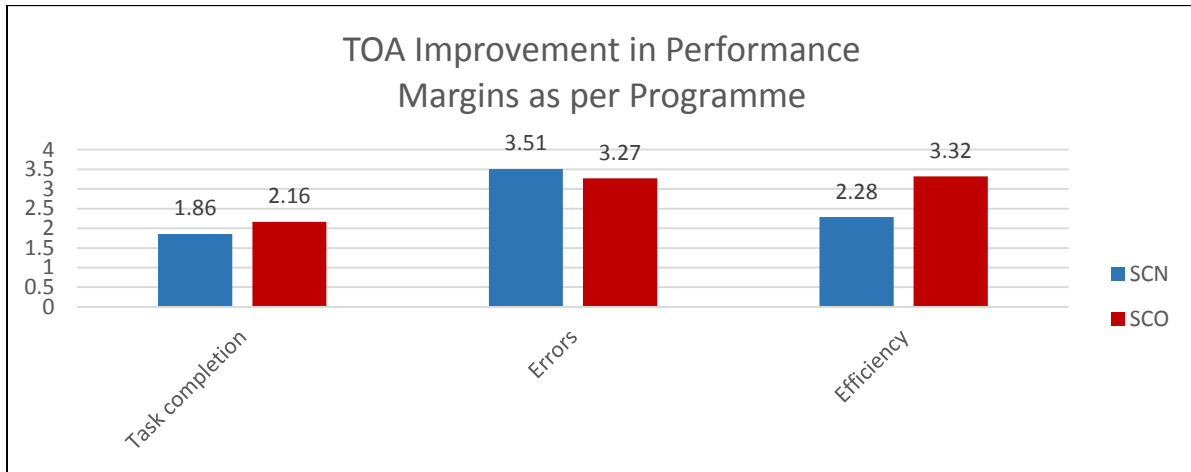
Figure 7-11: TOA; Comparison of Improvement in Performance functioning

The ES d-values of the differences between the improvements achieved by the two programmes in performance functioning are depicted in *Figure 7-12: TOA; Effect size of difference in Performance functioning.*
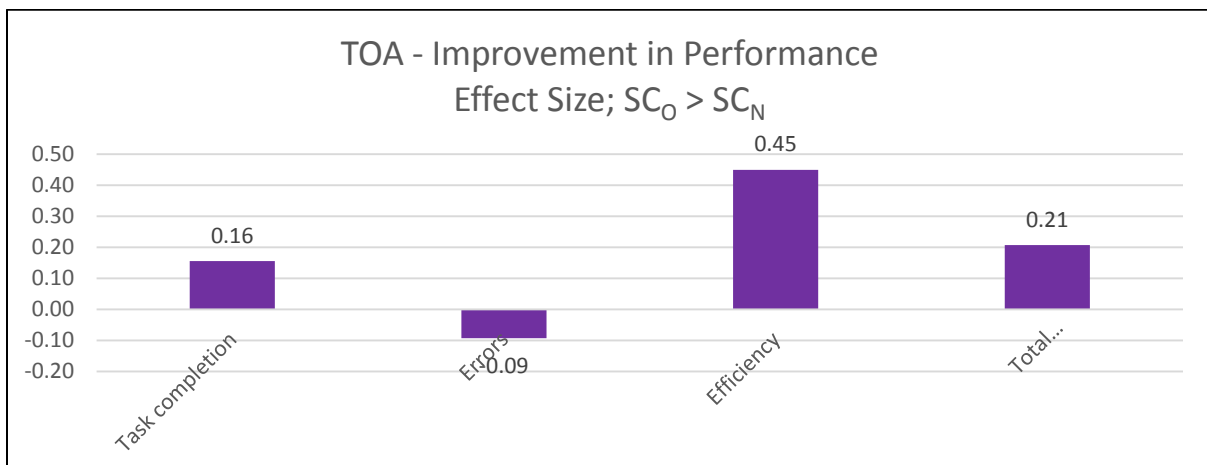
Figure 7-12: TOA; Effect size of difference in Performance functioning

The following observations can be made regarding the improvement in performance functioning because of the SC_N and SC_O interventions:

- Both the SC_N and SC_O as part of the overall treatment regime resulted in a significant improvement in all three of the performance variables

- In the task completion and errors variables there are apparently no clear advantages in using the SC_O over the SC_N as the p-values are much larger than 0.05 and effect size d-values indicate only small differences. Efficiency is the only variable where a p-value of less than 0.05 is found, concomitant with a medium effect size d-value of 0.45, denoting a statistically significant difference between the programmes.

7.3.2.3 Improvement in Affective Functioning attained with the SC_O and SC_N programmes.

A comparison of the ability of the SC_N programme to improve affective functioning, with the ability of the SC_O programme to do the same is shown in *Figure 7-13: TOA; Comparison of improvement in Affective functioning*
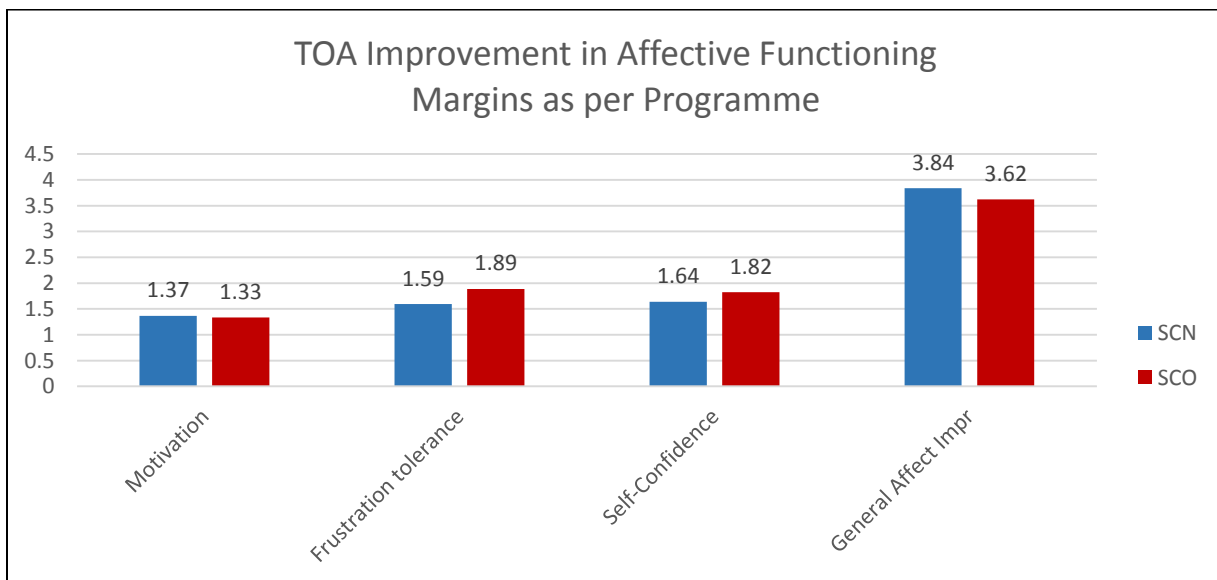
Figure 7-13: TOA; Comparison of improvement in Affective functioning

The ES d-values of the differences between the improvements achieved by the two programmes in affective functioning are depicted in *Figure 7-14: TOA; Effect size of difference in improvement in Affective functioning*.
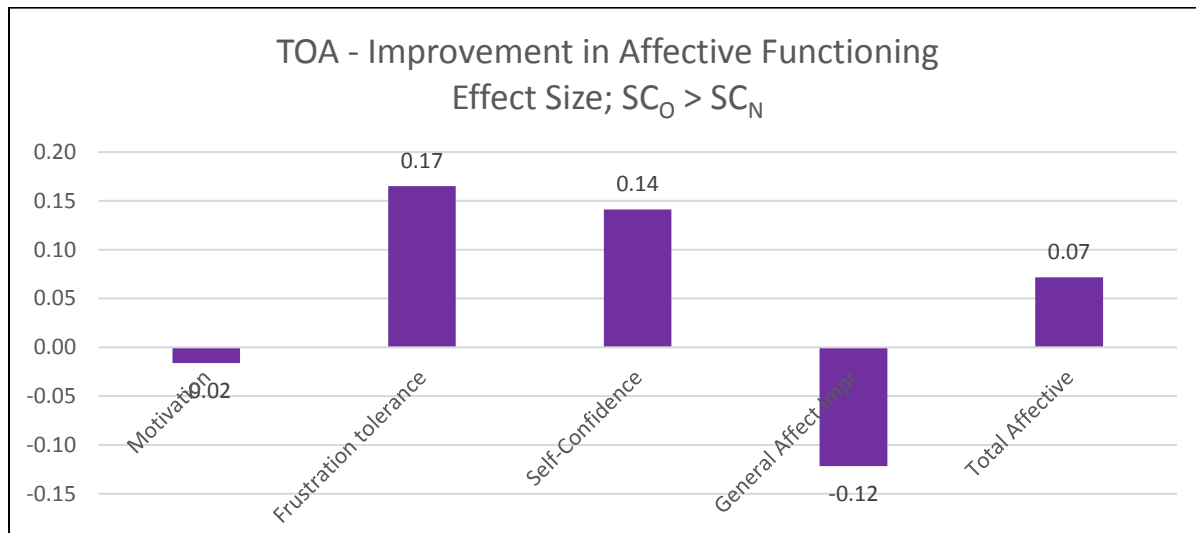
Figure 7-14: TOA; Effect size of difference in improvement in Affective functioning

The following observations can be made regarding the improvement in affective functioning as a result of the SC_N and SC_O interventions:

- Both the SC_N and SC_O when incorporated in the overall treatment regime generally resulted in significant improvements in all four of the affective variables with the exception of motivation for the SC_N programme.
- There are apparently no clear advantages to using SC_O over SC_N as the p-values are much larger than 0.05 and d-values indicate small differences in improvement between programmes.

7.3.2.4   Summary of the TOA test results

The improvement attained in the three component variables of the TOA are summarised in *Figure 7-15: TOA; Summary of results*
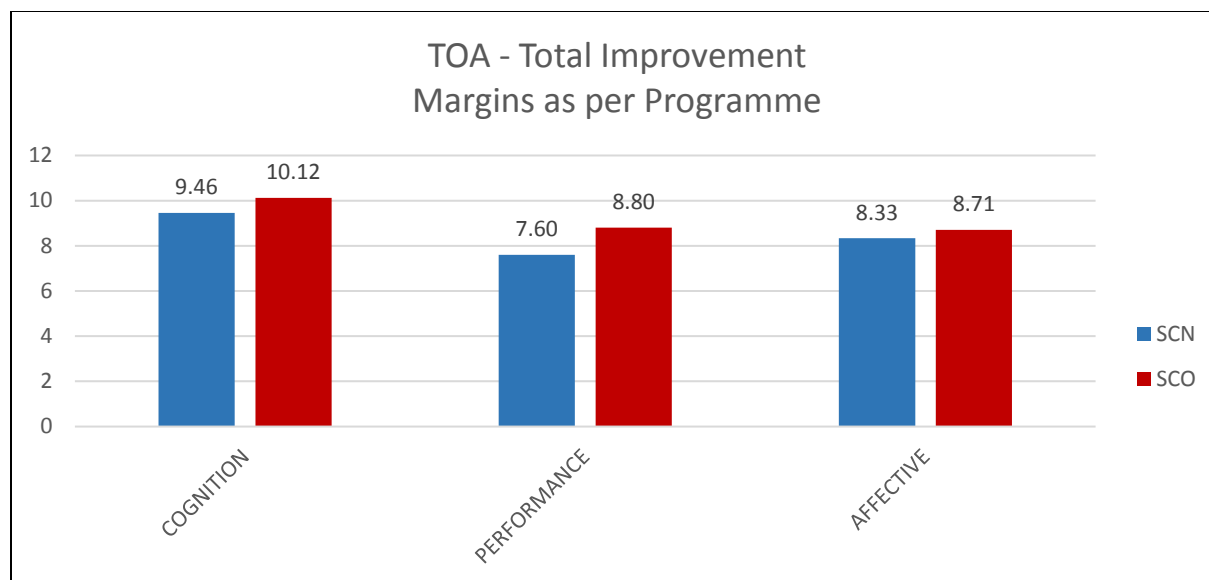
Figure 7-15: TOA; Summary of results

In summary, it would seem that the SC_N and SC_O programmes, though both certainly contributed meaningfully to the well-being of the MHCUs with MDD, showed only a small advantage in favour of the Standard Care Plus programme and little meaningful difference in their effectiveness as measured by the TOA.

7.3.3 Social Interaction Scale (SIS) Functioning

The Social Interaction Scale (SIS) measures a number of variables which can be divided into functional areas and the client's social responses by situation as shown in *Table 7-7: Data summary of SIS in BaFPE-R for the 2 programmes.*

Data ordering was similar to that described for the PHQ-9 test regime in that the aggregated means and standard deviations of the pre-, post and improvement Δ were reported. Predictive margins and 95% confidence limits for the programme factor, as adjusted, were then generated through mixed effect maximum likelihood (ML) regression.

Table 7-7: Data summary of SIS in BaFPE-R for the 2 programmes

Social Interaction Scale - Comparison of Improvement from SC_N and SC_O Programmes	Program	Overall						Linear Predicted programme margins adjusted for Clusters				Effect Size (Cohen)** ($SC_O > SC_N$)
		Pre-Interv. (n = 100)		Post-Interv. (n = 100)		Improvem Δ (Post - Pre)		P-value*	Margin	Conf.Interv.		d
		Mean	SD	Mean	SD	Mean	SD					
Functional Area:												
Verbal Communication	SC_N	3.12	0.88	4.67	0.46	1.54	0.83	0.001	1.71	1.61	1.82	0.68
	SC_O	2.72	0.66	4.86	0.35	2.14	0.66		1.97	1.87	2.08	
Psychomotor Behavior	SC_N	3.12	0.55	4.68	0.48	1.56	0.61	0.000	1.71	1.61	1.82	0.77
	SC_O	2.75	0.66	4.92	0.27	2.17	0.71		2.01	1.90	2.11	
Socially Appropriate Behavior	SC_N	3.57	0.53	4.75	0.42	1.18	0.56	0.264	1.22	1.10	1.33	0.22
	SC_O	3.47	0.73	4.82	0.39	1.35	0.70		1.31	1.20	1.43	
Response to Authority	SC_N	3.94	0.66	4.87	0.34	0.93	0.73	0.225	0.87	0.79	0.95	0.24
	SC_O	4.05	0.76	4.94	0.24	0.89	0.77		0.94	0.86	1.02	
Degree Independence / Dependence	SC_N	3.85	0.55	4.72	0.43	0.86	0.58	0.383	0.90	0.78	1.02	0.17
	SC_O	3.75	0.61	4.77	0.42	1.02	0.60		0.98	0.86	1.10	
Ability to work with others	SC_N	3.37	0.56	4.62	0.47	1.25	0.75	0.175	1.31	1.19	1.44	0.27
	SC_O	3.22	0.69	4.72	0.45	1.50	0.65		1.43	1.31	1.56	
Participation in Group Activities	SC_N	3.51	0.54	4.76	0.41	1.25	0.52	0.683	1.29	1.19	1.39	0.08
	SC_O	3.38	0.64	4.75	0.43	1.37	0.60		1.32	1.22	1.43	
Client's Social Responses by Situation:												
One-to One	SC_N	17.92	2.63	23.74	1.58	5.82	2.52	0.003	6.34	5.93	6.75	0.61
	SC_O	16.66	2.85	24.40	1.26	7.74	2.66		7.24	6.83	7.65	
Mealtime	SC_N	17.200	2.491	23.500	1.764	6.300	2.401	0.004	6.75	6.28	7.22	0.59
	SC_O	16.060	2.924	24.220	1.489	8.160	2.706		7.75	7.28	8.22	
Unstructured Group	SC_N	20.580	2.949	28.240	2.124	7.660	3.014	0.007	8.12	7.59	8.64	0.55
	SC_O	19.320	3.216	28.920	1.947	9.600	2.886		9.15	8.63	9.68	
Structured Task or Activity Group	SC_N	24.38	3.25	33.00	2.42	8.62	3.26	0.005	9.02	8.46	9.59	0.57
	SC_O	23.24	3.64	33.82	2.14	10.58	3.25		10.18	9.61	10.74	
Sructured Verbal Group	SC_N	24.38	3.34	33.00	2.29	8.62	3.34	0.008	9.01	8.44	9.58	0.53
	SC_O	23.32	3.66	33.80	2.15	10.48	3.27		10.10	9.53	10.66	
Total	SC_N	104.46	14.24	141.48	9.90	37.02	13.91	0.004	39.23	36.7	41.8	0.58
	SC_O	98.60	15.99	145.16	8.78	46.56	14.32		44.47	42.0	47.0	

Linear predictions from Mixed-Effects ML Regression

* P<0.05 denotes significant differences between Δ SC_N and Δ SC_O.

** Effect Size = Standardised group mean difference between SC_N and SC_O

7.3.3.1 Improvement in Functional Areas attained with the SC_O and SC_N programmes.

A comparison of the improvement in the different Functional Areas of SIS brought about by the SC_N programme with the improvements achieved by the SC_O programme is shown in *Figure 7-16: SIS; Improvement in Functional areas* below:
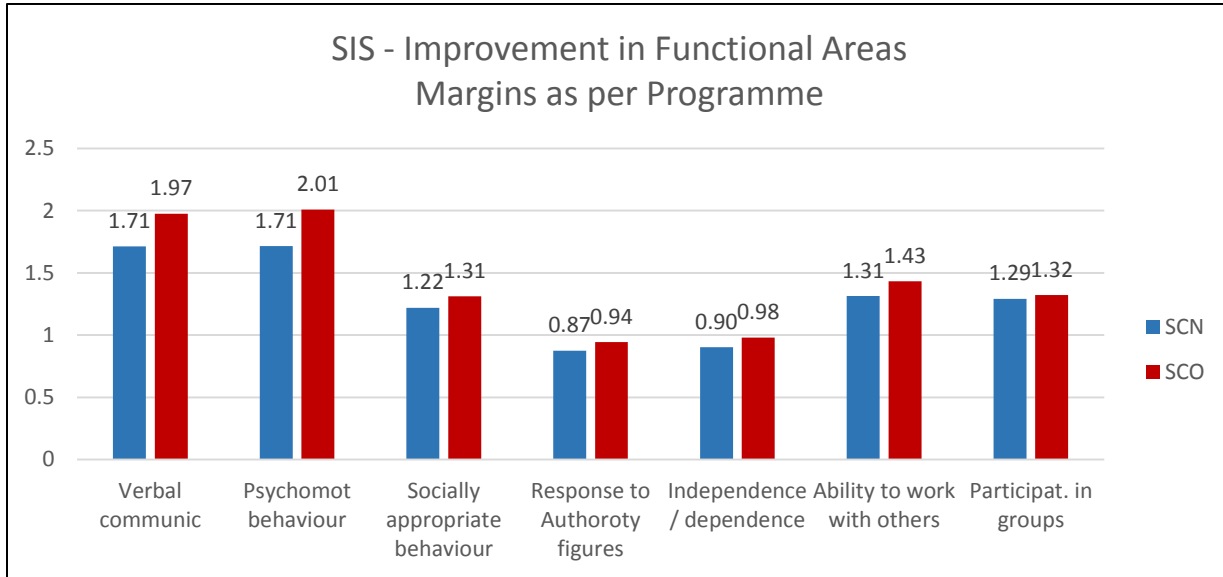
Figure 7-16: SIS; Improvement in Functional areas

The SC_N and SC_O treatment programmes as incorporated in the overall treatment regime have in all cases significantly improved ability in the functional areas as measured by SIS.

The ES d-values of the differences between the improvements achieved by the two programmes in the Functional Areas are depicted in *Figure 7-17: SIS; Effect sizes of difference between the programmes for the Functional areas of SIS.*

In all the Functional Areas of SIS the SC_O programme would seem to bring about a larger improvement than the SC_N programme. However, this difference is only statistically significant in the case of Verbal Communication and Psychomotor Behaviour as indicated by a P-value of less than 0.05 and medium to large ES d-values well in excess of 0.5.
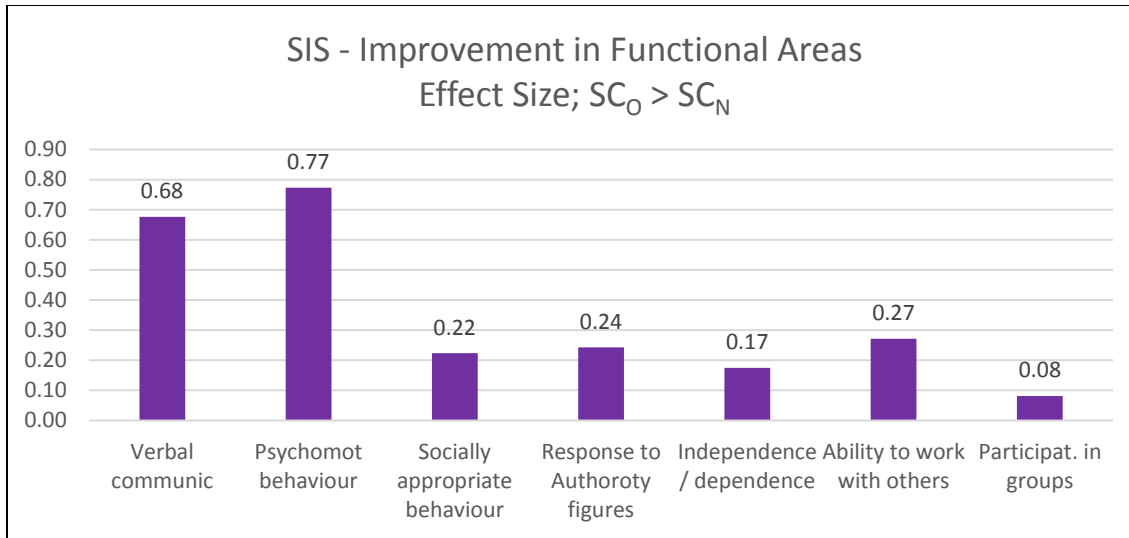
Figure 7-17: SIS; Effect sizes of difference between the programmes for the Functional areas of SIS

7.3.3.2 Improvement in Social Response by Situation attained with the SC_O and SC_N programmes.

A comparison of the improvement in the social response by situations brought about by the SC_N programme with the improvements achieved by the SC_O programme is shown in *Figure 7-18: SIS; Comparison of improvement in Social response effected by the 2 programmes.*
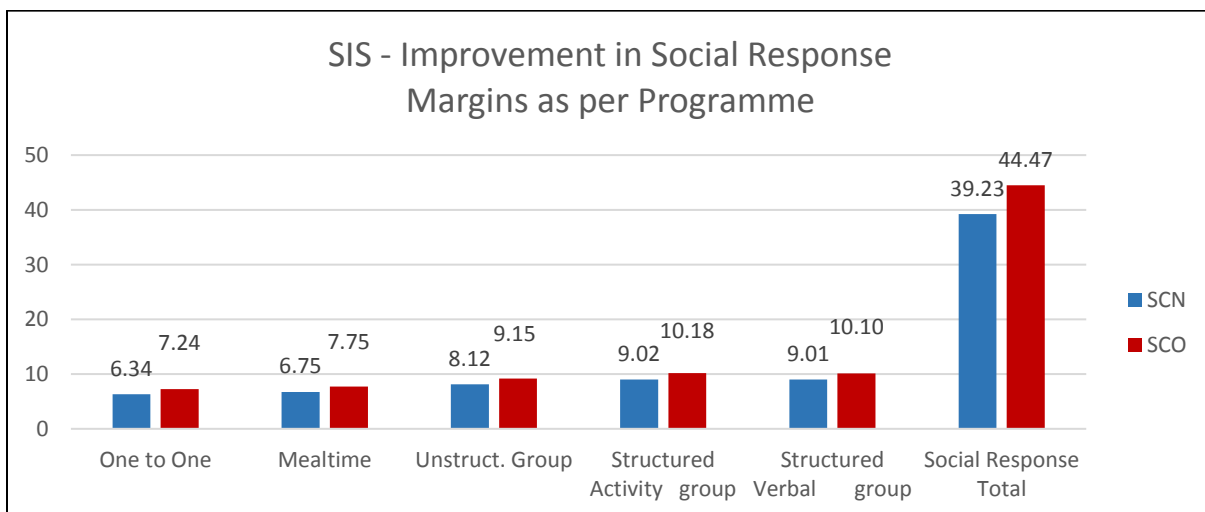
Figure 7-18: SIS; Comparison of improvement in Social response effected by the 2 programmes

The overall treatment regime, which included the SC_N and SC_O programmes, had, in all situations measured, brought about a meaningful improvement in the well-being of the participants.

The ES d-values of the differences between the improvements achieved by the two programmes in the Social Response by Situations are depicted in *Figure 7-19: SIS; Effect size of the difference in the improvement of Social response.*
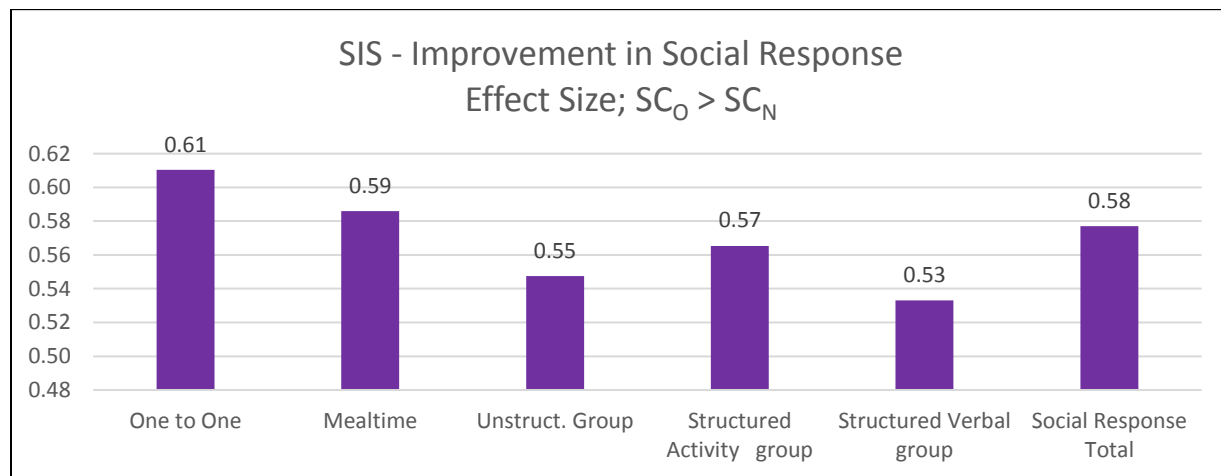
Figure 7-19: SIS; Effect size of the difference in the improvement of Social response by situation for the 2 programmes

The observations made regarding the improvement in the Social Response by Situation due to the SC_N and SC_O programme interventions, showed that the SC_O programme had in all cases brought about a statistically significant better improvement than the SC_N programme. This is borne out by the P-value in all situations being less than 0.05 and a medium to large effect size d-value of between 0.53 and 0.61.

7.4 Conclusion

The PHQ-9, TOA and SIS measuring instruments generally showed a statistically significant improvement in the health of MHCUs with MDD, irrespective of whether the SC_N and SC_O programmes were included in the overall treatment regime.

Five of the nine areas in the PHQ-9 and two of the seven functional areas as well as all of the five social responses by situation areas in the SIS showed a statistically significant difference in improvement where the SC_O programme was used rather than the SC_N programme.

The dependent variable (cognitive functioning, performance functioning and affective functioning), measured in the TOA is not necessarily influenced by the "plus" part of the Standard Care Plus programme. The TOA only showed a statistically significant improvement in the efficiency aspect of performance functioning on account of the SC_O being employed rather than the SC_N.

CHAPTER 8

8 QUALITATIVE FINDINGS

8.1 Introduction

Chapter 8 will report on the qualitative data generated from the self-report questionnaires and the focus group interviews. Content analysis with a top-down approach was followed to analyse the text of the self-report questionnaires.[232] In order to do so data generated from the self-report questionnaires were fitted into tailor-made categories that were derived from the PHQ-9,[236-239] BaFPE-R,[17,242,244,] and Yalom and Leszcz[78] therapeutic factors. For the focus group interviews thematic analysis[304] following a bottom-up approach[232] was used to extrapolate the underlying meanings participants attached to the two programmes [322] In this way themes were induced from the participants' inter-subjective experiences[323] of the SC$_O$ and SC$_N$ programmes. Both sets of data were compared and after much discussion and deliberation combined to arrive at the final themes.

For the purpose of this study the following terms were used:

Theme: A recurring regularity that emerged from an analysis of qualitative data.[216]

Category: A system used to sort and organise qualitative data.[216] It is items that share the same meaning and are grouped together to make a theme.

P: P refers to participants in the SC$_N$ group programme. In this study these participants' numbers ranged from P1-P50

PS: PS refers to participants in SC$_O$ group programme. In this study these participants' numbers ranged from PS51- PS100.

The final themes which were derived from the participants' inter-subjective experiences during the focus group interviews and self-report questionnaires, of either the SC$_O$ or the SC$_N$ programmes, will be reported on next.

8.2 Themes

Five themes emerged from the participants' views about the SC_O and five themes from the participants' views about the SC_N programmes. These themes are depicted in *Table 8-1: Identified themes* with their percentages (%).

Table 8-1: Identified themes

	SC_O	%		SC_N	%
Theme 1	Experienced happiness	92%	**Theme 1**	Experienced happiness	78%
Theme 2	Enhanced spontaneous social interaction	88%	**Theme 2**	Enhanced social interaction	78%
Theme 3	Improved coping skills	86%	**Theme 3**	Improved coping skills	78%
Theme 4	Regained self-esteem	82%	**Theme 4**	Regained self-esteem	82%
Theme 5	Becoming part of the solution	50%	**Theme 5**	Improved concentration	60%

Since Themes 1-4 and their categories were the same for both groups (although different in strength) they will be reported on first. The sequence in which it will be reported will be (1) theme, (2) participants' quotes, (3) categories, and (4) participants' quotes. The fifth theme that derived from the participants' intersubjective experiences of the SC_O or the SC_N group programme will be reported separately following the same sequence.

Theme 1: Experienced happiness

Table 8-2: Theme 1: Experienced happiness

Theme 1	Categories
Experienced happiness	1.1. Working together
	1.2. Flow while engaging in activities
	1.3. Task satisfaction

Ninety two percent (92%) of the MHCUs with MDD who participated in the SC_O reported that they experienced happiness. This was supported by what they said:

Theme 1: Experienced happiness
"... when you come back they [other MHCUs] *find you in a bubbly mood and then they ask themselves ... what happened and I tell them we attended* [occupational therapy groups] *and we did this and that ..."* (PS76)

Although fewer, 78% of the participants who participated in the SC$_N$ group programme, also reported that they experienced happiness while taking part in tangible activities one participant said:

> *"I did enjoy it* [beadwork; fingerboard]…, *it made me feel better* [creative drawing]…*"* (P8)

The **categories** of Theme 1**:** Experienced happiness included (1) working together, (2) flow while engaging in activities, and (3) task satisfaction. Each category will be reported on separately.

Category 1.1: Working together

The participants from the SC$_O$ group reported that they experienced happiness while working together during the occupational therapy group programme as indicated by the following statements:

> *" We were working together as a group and writing good messages to each other ... my spirit was lifted."* [card making and feedback] (PS52)

Participants of the SC$_N$ group also reported on happiness caused by working with others. One participant said:

> *"It* [working together] *made a lot of progress for us because when you are with friends* [group participants], *you laugh a lot ..."* (P11)

Category 1.2: Flow while engaging in activities

The participants in the SC$_O$ programme experienced flow while engaging in and doing a tangible activity. This was supported by what they said:

Theme 1: Experienced happiness

"...I was very down, very emotional that day, but being in the fingerboard ... it released my mind where I was and I ended up being happy and laughing..." (PS71)
 	
"... making cards for me was very interesting and I could focus and not think about my problems." (PS65)
 	
"...it [beadwork] *made me forget that I am in hospital, I was having fun."* (PS99)
 	
There were no comments about flow while engaging in activities from the participants in SC_N.
 	
Category 1.3: Task satisfaction
The participants who participated in the SC_O group programme, reported that they experienced task satisfaction after completing the task. This is supported by what some of the participants said:
 	
    "I am happy because I did beads which I never did before." (PS57)
 	
    "I made something [necklace] with my own hands." (PS60)
 	
    "...I felt complete after taking part in this group [beadwork] *that I can still*
    do something for myself." (PS62)
 	
Participants in the SC_N however, made less comments about task satisfaction. Instead, they commented about a need for more activities in the SC_N programme. Their comments were as follows:
 	
    "...I think if we can do more things with our hands, even [an] *outside game. I don't*
    know but maybe it will help more." (P24)
 	
    "We just need to add more doing..." (P43)
 	
    "We need a gym, because you sit here, you talk, you sleep, go to the TV room..."
    (P12)

Theme 2: Enhanced social interaction.

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Table 8-3: Theme 2: Enhanced social interaction

Themes 2	Category
Enhanced social interaction	2.1. Belonging
	2.2. Sharing while doing
	2.3. Opening up relieved the pain

Eighty eight percent (88%) of the MHCUs with MDD who participated in the SC_O group programme reported that they valued the social interaction that took place. This was supported by participants who said:

> *"……to work with others, I got a chance to talk freely and that brought healing.*
> (PS55)
>
> *"Being a member of a group is good. It allows interaction, openness and giving*
> *advice "* (PS60)

Seventy eighty percent (78%) of the MHCUs with MDD who participated in the SC_N group programme also reported that they valued the social interaction. This was supported by participants who said:

> *"When you go out of that* [therapy] *room … you go out happy. You still want to chat* [interact with others] *…"* (P23)
>
> *"It was great because you get to be around people and laugh…"* (P11)

The **categories** of Theme 2: Enhanced social interaction included (1) belonging, (2) sharing while doing and (3) opening up which relieved the pain. Each category will be reported on separately

Category 2.1: Belonging

The participants in the SC_O reported that belonging to the group encouraged them to work together. This is supported by the following statement:

Theme 2: Enhanced social interaction.

> *"I participated freely. There was a spirit of togetherness."* [fingerboard] (PS69)
>
> *"... after the wall* [between us] *was broken by the group, I was able to ... interact with other people."* (PS55)
>
> *"I was able to relate with other people* [group participants]*, felt accepted by everybody* [group participants]*, ideas of others were allowed and accepted..."* (PS89)

Participants in the SC$_N$ group programme reported that they worked together. This is supported by what they said:

> *"We're doing so much together you know. We* [group participants] *end up as friends at the end."* (P33)
>
> *"....physically mentally spiritually we bonded we are now like a family...."* (P23)
>
> *"...some people* [group participants] *appreciate me, they can give me love..."* (P18)

Category 2.2: Sharing while doing

The participants who participated in the SC$_O$ group programme reported that while they were doing, they started sharing their challenges with others. This is supported by the following statements :

> *"It makes you feel free through the activities itself. Talk about anything that you are exposed to while doing the activities."* (PS55)

Participants in the SC$_N$ group programme also reported on the healing effect of sharing. As one participant put it:

> *"...we have people that we can share the problems with and sharing is the time when we actually start healing..."* (P48)

Category 2.3: Opening-up relieved the pain

The participants in the SC$_O$ reported that sharing as they opened-up helped them to relieve their inner emotional pain. This is supported by their statements as follows:

Theme 2: Enhanced social interaction.

"...it [the group] *helped me to open up more ... the more I talk about it the better it* [the emotional pain] *is...."* (PS51)

"...I cried while talking about my baggage ...it was worthwhile as I felt better and relieved..." (PS96)

Participants in the SC$_N$ group programme also reported on the healing effect of opening up. As one participant said:

"......it did help me to open up... Yes it would take time to heal but eventually when you spoke about it now and people know." (P38)

"...they [group participants] *make you to open up..."* (P11)

Theme 3: Learned coping skills

Table 8-4: Theme 3: Learned coping skills

Theme 3	Categories
Learned coping skills	3.1 Empowered to handle situations
	3.2 Learned new activity skills
	3.3 Use of free time

Eighty six percent (86%) of those who participated in the SC$_O$ group programme reported that they learned coping skills as a result of their participation in the occupational therapy groups. They said:

"...it [occupational therapy groups] *teaches you on how to conduct yourself and control your emotions..."* (PS53)

Theme 3: Learned coping skills

Seventy eight percent (78%) of the participants in the SC$_N$ also reported that they learned coping skills as a result of their participation in the occupational therapy groups. One said:

> *"… learned to socialise with others … learned how to manage stress … learned to say no."* (P30)

The **categories** of Theme 3: learned coping skills took place in the following three ways: (1) empowered on how to handle situations, (2) learned new activity skills, and (3) the use of free time. In Table 8-4, the findings related to Theme 3 with their categories, are displayed.

Category 3.1: Empowered to handle situations

The participants in the SC$_O$ reported that they felt empowered to handle situations as supported by the following statements:

> *"…realized that I have been selling myself in a wrong way because I was never able to say No and if ever I said No – I felt guilty somehow and would try to make up for that. So – yah it really helped me…"* (PS69)
>
> *"…Creating the stress ball and using it because even in there in the ward when I was thinking and somehow something just came in which hurts me, I would just take it and squeeze it, concentrate on it and then it distract me…."* (PS70)
>
> *"…when we were busy – like doing different things…learning this and that… it was like a real empowering workshop…"* (PS95)
>
> *"… it [occupational therapy group] gave us guidelines on how to handle situations without … hurting others…"* (PS77)

The participants in the SC$_N$ also reported that they felt empowered to handle situations as supported by their statements:

> *"…after the sessions you feel more knowledgeable…"* (P48)
>
> *"Having to understand how other people dealt with different things. That assisted most…."* (P33)
>
> *"…It's very educational, actually. I learned a lot…"* (P48)

Theme 3: Learned coping skills

"Through assertiveness...I learnt now on how to say no..." (P35)

Category 3.2: Learning new activity skills

As the participants engaged in an activity group, they had the opportunity to learn a new activity skill. According to the participants in the SC_O group programme they benefited by participating in activities. Some participants said:

"I did not know my creativity until I did beads necklace." (PS96)

The participants in the SC_N also reported on the following:

"...it takes you out of the box in terms of whatever you want to create, you do whatever you want to do, something very nice, something that is lookable, something that is you...." (P43)

Category 3.3: Use of free time

Some of the participants in the SC_O reported that they started to realise the benefit of pursuing leisure time activities. They said:

"I learned that I can do something productive during my spare time..." (PS59)

Some of the participants in the SC_N also reported that they realised the benefit of pursuing leisure time activities. One participant said:

"Yes I've learnt that. So from now on I will make time for myself. I mean own free time to recharge." (P20)

Theme 4: Regained self-esteem

Table 8-5: Theme 4: Regained self-esteem

Theme 4	Categories
Regained self-esteem	4.1 Mastered skills to perform tangible activities
	4.2 Inspirational positive feedback

Eighty two percent (82%) of participants who participated in the SC_O group programme reported that their self-esteem, confidence and/or self-awareness improved.

They said the following:

> *"I could see that I am talented, have a skill, I can overcome a challenge and I can be happy".* [card making and feedback] (SP51)

Likewise, 82% participants in the SC_N reported that they regained their self-confidence or self-esteem. One participant said:

> *"After attending the groups I regained my self-esteem and my confidence, now I can talk freely with people".* (P43)

Participants said they regained self-esteem as a result of (1) mastering skills to do activities, and (2) receiving inspirational positive feedback from others. In Table 8-5, the findings related to Theme 4 with their categories are displayed.

The **categories** of Theme 4 will be reported on next.

Category 4.1: Mastered skills to perform tangible activities

The participants in the SC_O group programme reported that they experienced meaning when they realised that they were able to master an activity. This is supported by what some of them said:

Theme 4: Regained self-esteem
"…The beads, some of them had alphabets so you could actually create something that has a meaning…and you can master." (PS98)

"…you realize that you did something very nice and something very meaningful. I mean something that you eventually mastered for yourself…" (PS97)

Participants in the SC$_N$ group programme also said the following about the tangible activities that were included in the programme:

"I was proud to see that I can make a bracelet." [beadwork] (P18)

"I felt great because I created something I never thought I could…" [beadwork] (P22)

Category 4.2: Inspirational positive feedback

The participants in the SC$_O$ group programme felt inspired by the positive feedback they received from others. This is supported by what they mentioned:

"Being seen as a good person and it made me to feel good about myself. It was a mind opener about myself and it worked on my confidence …" [card making and feedback] (PS94)

"…gathered more of what was hidden inside and what I never knew was there…" (PS85)

"Things they said about me in the card. It was like they knew me for long. Their messages spoke to my heart." (PS100)

The participants in the SC$_N$ group programme also felt inspired by the positive feedback they received from others which is supported also by what they stated:

"I received credit on things I never gave myself credit for …." (P34)

"…people said very good and nice things that I never thought I have." (P16)

"So for me feedback was very close to my heart. … I was very surprised how

"….people are thinking positive of me… It was very, very touching, because people said very good and nice things that I never thought I have…" (P16)

The fifth theme that emerged from the subjective experiences of participants in the SC_O group programme was to *become part of the solution* in order to overcome their challenges. For those who participated in the SC_N group programme the fifth theme that emerged was *improved concentration*. Each will be described separately.

The SC_O occupational therapy group programme

Theme 5: Being part of the solution

Table 8-6: Theme 5: Being part of the solution

Themes 5	Categories
Being part of the solution	5.1. Gained insight
	5.2. Courage to face their problems

Twenty five participants (50%) who participated in the SC_O group programme indicated that in the course of the group programme they realised it was their responsibility to face their problems. .One participant said:

> *"I believe everything happens for a reason and that I should face reality. The past is there and we need to close that chapter by creating good new memories."* (PS79)

Theme 5 of being part of the solution consists of two **categories**; (1) gaining insight and (2) courage to face their problems. Table 8-6 shows the categories that supports Theme 5.

Category 5.1: Gaining insight

The participants in the SC_O group programme reported to have gained some insight into their problems. This was supported by a participant who said:

> *"You don't have to be weak, I have to stand up and face reality and deal with it. If you want to achieve goals in your life you must start with the old matters and deal with them, then focus on the new ones, then you will see progress."* (PS85)

Theme 5: Being part of the solution
Category 5.2: Courage to face problems
Participants in the SC_O group programme suggested that owing to the support they received from the other group members it gave them the courage to face their problems. This is supported by the participants who commented as follows:
"It [the group] *gave me hope and a sense of belief in myself that I can do it."* (PS64)
"It reminded me of the achievements in my life and gave me hope that I can do it again." (PS69)
Of the 50 participants in the SC_N group only 17 (34%) indicated that they should face reality and become part of the solution to improve their situation.

The SC_N occupational therapy group programme

Theme 5: Improved concentration
Sixty percent (60%) of the participants in the SC_N group programme reported that their concentration improved. It would seem that the fingerboard game and the beadwork group were regarded as the most demanding groups in respect of concentration. The participants reported the following:
"It needs some concentration as you are anxious to win." [fingerboard] (P13)
"It gives me a lot of pressure that forces me to focus." [fingerboard] (P38)
"It helped me to be more focused and strategic…" [fingerboard] (P50)
Only 38% of the participants in the SC_O group programme however, reported on better concentration.

8.3   Conclusion

Chapter 8 presented the qualitative findings of the study in respect of the SC_O and SC_N occupational therapy group programme. The first four themes for the two group programmes were the same. However, there was a difference in respect of Theme 5. The discussion on integration of the quantitative results, qualitative findings and relevant literature will all be discussed in Chapter 9.

CHAPTER 9

9 DISCUSSION OF THE INTEGRATED RESULTS AND FINDINGS

9.1 Introduction

This chapter will present the integration of as well as the discussion about the quantitative data presented in Chapter 7 and the qualitative data presented in Chapter 8. The integrated data will be shown in a joint display[200] organised according to the following objectives of the study:

To assess whether the SC_O occupational therapy group programme is superior to the SC_N occupational therapy group programme in respect of the following:

- improved *cognitive functioning* upon discharge of the MHCUs with MDD.
- improved *performance functioning* upon discharge of the MHCUs with MDD.
- improved *affective functioning* upon discharge of the MHCUs with MDD.
- improved *social interaction* upon discharge of the MHCUs with MDD.
- progress in respect of the *MDD* symptoms upon discharge.

The joint display and discussion for each objective will be followed by an evaluation on whether the SC_O occupational therapy group programme is generally superior to the SC_N in reducing the severity of MDD symptoms in MHCUs.

9.2 Cognitive functioning

9.2.1 Joint display of quantitative results and qualitative findings

Cognitive complaints are commonly reported by MHCUs with MDD during the symptomatic and remitted phases.[324] Cognitive dysfunction includes deficits in memory, learning, processing, decision-making, problem solving, planning and organisation, also impaired ability to abstract and reduced concentration, which are common to MHCUs with MDD.[72,76,325]

The BaFPE-R used in this study assessed the cognitive functioning that included memory of written or verbal instructions, organisation of time and materials, the concentration/attention span, evidence of thought disorder and ability to abstract.[2,17,65] The PHQ-9[36,43] in its turn assessed the MHCUs concentration ability. It is accepted that the occupational therapy group programmes did not take place in isolation but were part of an integrated treatment regime. For instance, Bortolato, Miskowiak, Kohler, Maes, Fernandes, Berk, Crvalho[326] suggested that an integrated approach, including pharmacological and non-pharmacological treatments, might lead to a better effect on cognitive dysfunction in MDD, whereas Lam, Kennedy, McIntyre and Khullar[72(p.651)] advised that "the effect of antidepressants on cognitive domains still remains an emerging area of investigation." However, for the purpose of this study, it was deemed reasonable to assume that there were no other treatment differences between the SC_N and SC_O patients, and that any differences in the outcome of the BaFPE-R and PHQ-9 tests, as measured in pre- and post-treatments, could thus be ascribed to the effect of the two programmes.

From the results of the PHQ-9 and BaFPE-R tests, it would appear that there was some improvement (as indicated by a small effect size d-value) on the cognitive functioning of the participants in the SC_O group programme compared to that of those who participated in the SC_N group programme. The results however, differed with the qualitative findings generated from the self-report questionnaires (SRQ) and focus group interviews of which only 38% of the participants in the SC_O group programme reported that the groups required cognitive skills such as concentration, planning, and strategising, whereas 60% of the participants in the SC_N group programme reported that the programme required them to concentrate, plan and to make decisions. These results are shown in *Table 9-1: Joint display of quantitative results and qualitative findings of participants' cognitive functioning*

Table 9-1: Joint display of quantitative results and qualitative findings of participants' cognitive functioning

Program.	Quantitative		Qualitative	
	PHQ-9; Improvement	BaFPE-R; TOA Improvement	SRQ; Freq. count	Focus Groups; Participants' experiences
SC$_N$	Concentrating: ↑ 1.61	Cognition: ↑ 9.46	60%	*"My thinking ability is better than before."* [beads] (P37) *"The group was about planning, strategizing, concentrating and tackle."* [fingerboard] (P23)
SC$_O$	Concentrating: ↑ 1.79	Cognition: ↑ 10.12	38%	*"It made me to have a lot of focus on the task at hand."* [beads] (PS77) *Different colours and sizes requires our mind to have choices…"* [beads] (PS51*)*
P-value:	0.261	0.518		
ES: SC$_O$>SC$_N$	0.23	0.13		

↑ means improvement from pre- to post-test

9.2.2 Discussion

Cognitive dysfunction in MDD is distinct from the affective symptoms, attention and executive functioning deficits as the trait markers for the first episode of MDD.[327] Cognitive remediation has been suggested as a means to demonstrate positive efficacy in improving performance in various cognitive domains[327] such as attention, verbal learning, memory, psychomotor speed and executive functioning[326] in MHCUs with MDD.

Activities in occupational therapy as part of cognitive remediation enable those with cognitive impairments to fulfil their occupational roles.[328] In a study by Lim, Morris and Craik,[51] three quarters of their participants suggested occupational therapy intervention to be helpful in improved

concentration and planning skills. Their findings seem to concur with the quantitative findings in this study where there was improvement in memory for written or verbal instructions, organisation of time and materials, in concentration/attention span and in ability to abstract. Concentration or focus occurs during the state of accomplishment.[329] As the participants were challenged by an activity, it would seem that they had to employ maximum concentration, which incidentally distracted them from irrelevant thoughts, leading to experiencing satisfaction and enjoyment.[149,330]

The activities which were experienced as the most demanding in respect of their cognitive functioning in this study, were the beadwork activity (presented to both groups during the third group session) and the finger board game (presented to the participants in the SC$_N$ group programme during the sixth group session. For the SCO group the finger board game was replaced by blokus in this session).

The participants in both the SC$_N$ and SC$_O$ group programmes reported that in order to create a successful beadwork end-product they had to *"concentrate and think"*. This activity required sorting and matching of the beads' in terms of colours and sizes, fine coordination and intense focus while handling the small beads, and the freedom of choice *"...while picking my own colours"* (P1). This is in line with Fane, Ramugundo, Leshoele and Coker[331] who also suggest that doing beadwork is challenging as it allows tackling of complicated patterns, which enhance creativity and enable flow. This is further supported by Fieldhouse[138] who comments that attention and flow contribute to better cognitive and affective changes.

During the *fingerboard game* sixty percent (60%) of the participants in the SC$_N$ group programme indicated in the SRQ that they experienced the fingerboard game as a cognitive demanding activity. According to them they felt that their cognitive performance contributed to the outcome of the game. So as not to let their team down, they had to be vigilant, very focused while aiming at the target, and to abide by the rules. As one participant commented: *"competition excites your mind"* (P6). In contrast to these experiences, only 19 (38%) of the 50 participants in the SC$_O$ group who played *blokus* as the main activity during the sixth group session, reported that they had to concentrate, make decisions and plan while playing. This game's outcome seemed to depend on the team's effort since all team members would caucus first before placing their pieces (blocks)

on the board. Hence, winning the blokus board game, appears to be a group effort in sharing the responsibility, thus putting less demands on the individual.

Cognitive impairment is seen as a mediator for prolonged functional disability in MHCUs with MDD as it places MHCUs at a greater risk of relapse.[76,326-327] Research on the effect of social pressure by Stav, Hallenen, Lane and Arbesman[114] indicate that engagement in social activities lead to better cognitive functioning. Another study on the effect of social pressure teamwork indicates that social pressure can affect an individual's recall performance.[332] Participants of this study executed most of the activities in the group. As cognitive deficits can still be detected during remission, they mostly affect an individuals' social and occupational functioning.[333] Therefore, the findings of this study suggest that activity participation in a group might be beneficial and actually crucial for MHCUs with MDD in order to improve their cognitive functioning.

On the other hand it might also be possible that because participants in the SC_O occupational therapy group had felt relaxed while participating in the blokus game they did not notice that they had to be vigilant, had to concentrate and had to follow the rules. Stav, Hallenen, Lane and Arbesman[114] suggest in this regard that engagement in leisure activities may result in a variety of health outcomes such as improvement in cognitive functioning and well-being. Furthermore, attention is important in activities of daily living, socialisation, learning and vocational functioning.[138] Therefore, activities could be seen as a means to promote development of cognitive skills such as concentration, organisation and problem solving[279] and supports the findings of this study which highlights possible benefits of activity groups on cognitive functioning.

9.3   Performance functioning

9.3.1 Joint display of quantitative results and qualitative findings

Functional impairment has been seen by various researchers as a major challenge for MHCUs with MDD.[76,326-327,333-335] The MHCUs with MDD often experience substantial functional impairment that includes physical, social and occupational functioning.[334-335]

Participants in this study experienced challenges in respect of their performance functioning that included task completion, errors and efficiency as shown in the BaFPE-R.[2,17,65] In the PHQ-9,[36,43] number 10 (refer to Appendix A): it focused on participants' difficulty in performing their work, taking care of things at home and getting along with other people (function). From the results of the PHQ-9[36,43] and BaFPE-R[2,17,65] tests, it would seem that there was some improvement (as indicated by a small effect size d-value) on the performance functioning of the participants in the SC_O group programme compared to that of those who participated in the SC_N group programme upon discharge. The results were statistically significant in the improvement of efficiency after intervention in the BaFPE-R with a small to moderate effect size.

These quantitative results were supported by qualitative findings that the participants' reported in Chapter 8 in Theme 3, in that they experienced occupational therapy groups to have assisted them with the acquisition of learned coping skills through doing as they were (1) empowered to handle situations, learned (2) new activity skill and (3) how to use their free time. The skills that empowered the participants to handle situations were stress management skills and assertiveness skills. Eighty six (86%) of participants in the SC_O group programme and 78% in the SC_N group programme had reported that they felt more empowered in dealing with their stress, in being assertive and in performing activities.

Table 9-2: Joint display of quantitative results and qualitative findings of participants' performance functioning skills

Program.	Quantitative		Qualitative	
	PHQ-9; Improvement	BaFPE-R; TOA Improvement	SRQ; Freq. count	Focus groups; Participants' experiences
SC_N	Function: ↑ 1.34	Performance; Efficiency ↑ 2.28	Learning 78%	*"I learned very well on how to relax."* (P14) *"I am very shy but I managed to talk in front of other people ... to stand up for myself and have freedom of speech."* [assertiveness training] (P23)

Program.	Quantitative		Qualitative	
	PHQ-9; Improvement	BaFPE-R; TOA Improvement	SRQ; Freq. count	Focus groups; Participants' experiences
				"I have benefitted creatively, mixing different colours to build a bracelet." [beadwork] (P5)
SC$_O$	Function: ↑ 1.57	Performance; Efficiency ↑ 3.32	Learning 86%	*"I learned to make a stress ball and that there are a lot of things you can do to deal with stress."* (PS70) *"I learned to say no, stop and be able to speak for yourself and speak about the issue openly."* [Assertiveness training] (PS71) *"I learned a new skill and was proud to make something for myself from scratch."* [beadwork] (PS95)
P-value:	0.22	0.026		
ES: SC$_O$>SC$_N$	0.25	0.45		

↑ means improvement from pre- to post-test

9.3.2 Discussion

Early improvement in MDD symptoms seems to predict improvement in functional outcomes.[334-335] During the reflection and discussion phase of each group session the participants shared ideas and ways of coping with different situations in their lives. This is in line with the suggestion of Sundsteigen, Eklund and Dahlin-Ivanoff[40] that MHCUs with MDD might find alternative ways to better health by learning in a group. Moreover, removal of occupations/activities could lead to increased stress which may impact on a person's well-being.[150] From the results and findings it

would seem that (1) the participants gained knowledge as they were given the opportunity to formulate guidelines on how to handle different situations, (2) felt empowered as they learned coping skills to master, tolerate, reduce or minimise stressful events.[18] and engaged in meaningful activities that could in addition assist in stress reduction.

9.3.2.1 Learned skills

Creek and Lougher[7], Finlay[131] and Reese[336] suggested that learning a skill becomes integral to that individual if such learning is through doing. Equipping MHCUs with effective and healthy coping skills might promote insight and assist them in dealing with challenging life situations.[18] Participation in the occupational therapy groups seems to have been of value to the participants of this study because they had the opportunity to learn coping skills through shared knowledge on stress management, on assertive behaviour and on practicing such skills by playing games, performing relaxation techniques and by acquiring activity skills in a supportive environment.

- **Stress management skills**

Problemfocused and emotionfocused coping were used as coping strategies to help participants learn new skills.[337] Participants in both group programmes reported that they learned skills on how to manage their stress during both the stress management and relaxation group sessions. The participants in the SC_O group pointed out that making a stress ball (which they could squeeze when they felt tense) was a useful aid to use in the ward when not involved in any intervention programmes.

The coping strategies in stress management, indicated by Edward and Burnard[338,] are social support and education.[338] As pointed out by them[338] it would seem that the participants in the SC_O group programme benefitted from the stress management group session as can be gleaned from the following feedback; *"I learned to make a stress ball and that there are a lot of things you can do to deal with stress…"* (PS70) and *"I learned that there is something concrete that one can do rather than hurting themselves when stressed"* (PS81). This meant engaging in activities could act as a catalyst for sharing and learning from each other.

- **Assertive behaviour skills**

Participants in both the SC$_O$ and SC$_N$ programmes reported that they benefitted from the assertiveness training group session. Furthermore, the participants in the SC$_O$ group programme said it was fun playing the assertiveness game while learning as it *"exercises your mind"* (PS52). As the majority of MHCUs with MDD might seem to have low self-esteem and confidence, this might impact on their ability to be"in control of their circumstances or a victim thereof."[79(p.92)] In the case of the latter, it is suggested that assertiveness training groups should be included in the occupational therapy intervention programmes of the MHCUs with MDD[198] in order to promote their insight and to equip them with basic self-regulation strategies.[39]

The participants in this study reported that the assertiveness skills group gave them the strength to stand up for themselves, and was therefore mostly related to self-empowerment. This agrees with Bonder's[339] statement in her book that social skills training is helpful for MHCUs with MDD, especially those who lack social skills because of the early onset of depression.

- **Activity skills**

It would seem from the participants' comments that they regarded the activity skills they acquired, such as beadwork, blokus and card making in the SC$_O$ group programme and beadwork and fingerboard in the SC$_N$ programme as valuable and for some even a possible leisure time activity upon discharge. Continuing with leisure activities after discharge can assist participants in experiencing a "healthier, balanced lifestyle"[18(p.430)] as part of their well-being. Referring to a study by Polimeni Walker, Wilson and Jewers,[340] it was suggested that activities in occupational therapy groups assisted in reducing boredom among MHCUs while in hospital. In a study by Lim, Morris and Craik,[51] most of their participants experienced occupational therapy intervention as helpful in relieving boredom through improving a new skill. Although such a comment was not made in this study even though the participants constantly reported having a feeling of "enjoyment and fun" while engaging in the programme. Leisure activities could satisfy individual needs that are not met by either self-care or work occupations.[7] It was interesting for the researcher to observe that some of the activities in the programmes aimed at promoting "constructive use of leisure time"[18 (p.120)] while teaching new activity skills to other participants. Although activities such as beadwork, the

blokus game, the finger board game and card making were used as a means to an end and not as an end in themselves, it is possible that they could promote long-term interest and become leisure pursuits.

Finlay[132] stated that activities aim at developing skills. This agrees with the findings of this study that some participants reported that they learned a new activity skill during their engagement in an activity in a group. The participants also realised that they had developed a new skill in performing tangible activities with their hands *"I did things that I don't know with my hands… it brought out the creativity in me…"*

The results suggest that occupational therapy group intervention programmes could improve the activity skill level of MHCUs with MDD, which in turn could enhance their competence and overall performance.[341]

9.4 Affective functioning

9.4.1 Joint display of quantitative results and qualitative findings

Affective functioning is defined as the emotional responsiveness inferred from facial expressions, including the number, appropriateness and range of expressive behaviours.[1] In this study, it included the assessment of motivation, frustration tolerance, self-confidence and general affective impression.[2]

From the PHQ-9[36,43] and the BaFPE-R[2,17,65] results, it would appear that there was some improvement (as indicated by a small to medium effect size d-value) on the affective functioning of the participants in the SC_O group programme compared to that of those who participated in the SC_N group programme. From the findings generated from the SRQ and focus group interviews, 92% of the participants in the SC_O group programme and 78% of the participants in the SC_N group programme reported that the groups encouraged happiness and laughter. The results and findings obtained are depicted below in *Table 9-3: Joint display of quantitative results and qualitative findings of participants' affective functioning skills.*

Table 9-3: Joint display of quantitative results and qualitative findings of participants' affective functioning skills

Program.	Quantitative		Qualitative	
	PHQ-9; Improvement	**BaFPE-R; TOA Improvement**	**SRQ; Freq. count**	**Focus Groups; Participants' experiences**
SC$_N$	Pleasure: ↑ 1.39 Depression:↑ 1.78	General Affective Impression ↑ 3.84	78%	**Experienced happiness** *"...when you go out of that room* [group therapy room] *you go out happy. You still want to chat."* (P23)
SCo	Pleasure: ↑ 1.83 Depression:↑ 2.04	General Affective Impression ↑ 3.62	92%	**Experienced happiness** *"… when you come back they* [other patients] *find you in a very bubbly mood and then they ask themselves ... what happened and I tell them that we attended and we did this and that."* (PS26)
SC$_N$	Self-concept ↑ 1.58	Self-confidence ↑ 1.64	82%	*"I regained myself and confidence, now I can talk freely with people. I feel happy…"* [feedback] (P43)
SCo	Self-concept ↑ 1.74	Self-confidence ↑ 1.82	82%	*"I felt complete after taking part in this groups that I can still do something for myself…"* (PS62)
P-value:	Pleasure 0.011 Depression 0.113 Self-concept 0.358	Affective func. 0.545 Self-conf. 0.484		
ES: SCo>SC$_N$	Pleasure 0.51 Depression 0.32 Self-concept 0.18	Affective funct. -0.12 Self-conf. 0.14		

↑ means improvement from pre- to post-test

9.4.2 Discussion

9.4.2.1 Experienced happiness

Major depressive disorder is associated not only with a depressed mood, but also a loss of interest or pleasure in activities previously enjoyed.[10] It is likely that the participation of MHCUs' with MDD in daily activities is restricted. For the participants their experience of happiness stemmed from (1) working together, (2) flow while doing activities (3) task satisfaction. Each will be discussed separately.

- **Working together**

Group interaction refers to the dynamics of the group and the way individuals in the group influence and interact with one another.[78] The participants entered the group being depressed and with low energy levels.

Working together as a team, the participants indicated that they experienced both happiness and laughter. Emerson, Cook, Polatajko and Segal[329] and Kielhofner[179] support this findings as they suggest that working together enhances an experience of happiness and enjoyment which was a broader construct than flow.

The findings of this study are in line with Sullivan's[81(p.290-291)] *Interpersonal Theory of Psychiatry* as he asserted that human beings have "a need for contact with the living … a fear of being excluded … and the need for consensual validation …." In the same vein Yalom and Leszcz[78] are of the opinion that group therapy should address interpersonal issues especially for MHCUs with MDD. Furthermore, the rewards of engagement in activities were identified as engagement created a sense of purpose and belonging, fulfilment, self-acceptance, empowerment, satisfaction, competence and health[59,342] and filled an occupational void.

From an African perspective, it is believed that people should work together. This is supported by the African philosophy of Ubuntu which translates as "a person is a person because of or through others."[343(p.243)-344(p.25-26)] As participants believed that they needed each other throughout their

process of healing, this encouraged them to work together. The Ubuntu philosophy believes in group solidarity as it encompasses mutual caring.[345-346] This discourse also highlights the importance of unity and mutual caring which was brought about by the cohesion that came during the continuation of working together in the group.

- **Flow while engaging in activities**

Occupational engagement during hospitalisation might also offer stimulation and feelings of happiness. From the research findings it would seem that the participants of this study experienced flow while engaging in tangible activities, which in turn resulted in happiness. Flow is a subjective psychological state that exists when the participant is totally engrossed in a tangible activity.[347]

Flow seems to come into play when all contents of consciousness are in harmony with each other, where mind and body are working together effortlessly and there is an experience of pleasure, happiness, satisfaction, and enjoyment as a central goal of the self.[348] The construct of enjoyment and flow has been used interchangeably to describe rewarding experiences and challenges during involvement in activity participation.[329] The findings of this study are in line with Polimeni-Walker, Wilson and Jewers[340] who believe that active engagement in activities which are meaningful, enjoyable and relaxing will divert MHCUs with MDD's preoccupation with negative thoughts and feelings for a period of time. Perruzza and Kinsella[59] refer to this immersion in activity as "a sense of flow" that transforms the illness experience. As the MHCUs' with MDD were immersed in activities it would seem that, their mood improved, they felt happier, relaxed and calmer and became rational when dealing with their problems.

Sundsteigen, Eklund and Dahlin-Ivanoff[40] in their study, suggest that when participants are involved with different tangible activities that are challenging, there might also be an improvement in their health. As the participants of this study reported that they had been involved, challenged, interested and totally absorbed in the "doing" of activities,[329] they could have experienced flow resulting in enjoyment and happiness. Flow according to Wilcock[349] has a close association with a state of being[7]. Being is viewed as involvement in an activity. The experience of relaxation while keenly involved in an activity was described as enjoyable.[329] It would furthermore seem that flow

is subjectively characterised by a positive affective state, high motivation, high cognitive efficiency, concentration on activity and high activation,[329] and what's more gives satisfaction, meaning and inner reward.[7,329]

In order to achieve flow, it is suggested that an individual be engaged in a 'just right challenge.'[7] A "just right challenge" in flow could reduce symptoms of depression and lead to a healthier state of mind[7] as participants' experience happiness, inner enjoyment, challenge and harmony. The participants in this study seemed to have experienced such happiness and inner enjoyment during activity groups perhaps as a result of flow. Flow experiences are inherently satisfying as there is a balance between a challenge and personal skill in a supportive non-threatening environment.[123] The experience of flow during occupational engagement could increase participants' sense of subjective well-being[330] as they experienced a feeling of satisfaction. Fieldhouse[138] shares the same view that flow could be associated with enhanced concentration, happiness, self-esteem, and work productivity.

It would therefore seem that understimulation of MHCUs with MDD during hospitalisation has a negative impact on the process of their recovery.[340] Therefore, engagement in the occupational therapy groups (i.e. SC_O and SC_N) seemed to have facilitated a sense of flow which could have resulted in improved mood.

- **Task satisfaction**

Task satisfaction is described by De Wit in Crouch and Alers[18(p.22)] "as the ability to gain a positive emotional response from engagement, which is pleasure that the task is achieved." The findings of this study suggest that participants experienced task satisfaction on successful task completion resulting in experiencing happiness. This finding seems to be is in line with Reid[330] who suggests that engagement in meaningful occupation could lead to feelings of satisfaction and pleasure and Creek and Lougher[7] who believe activity participation could be an important source of personal satisfaction as it is experienced through success of task completion by the MHCUs with MDD. Rebeiro and Cook[350] likewise are of the opinion that there is a significant association between involvement in activities and task satisfaction, and Sundsteigen, Eklund and Dahlin-Ivanoff[40] also

point out that activities might change the experiences of MHCUs with MDD from a fear of lacking performance to one of satisfaction and pride. Du Toit[262] suggests that for MHCUs who function at a level of passive participation, the occupational therapist should "encourage task satisfaction by stimulating approval from others for the product."[(p.70)] It would seem that the participants experienced task satisfaction as they approved their and each other's products, resulting in happiness all round. This was also experienced in SC_N when participants suggested a need for more activities in the programme as they experienced task satisfaction in group sessions with tangible activities. As the use of purposeful and meaningful activity is a core skill of the occupational therapy profession.[18,351] one could make the assumption from this perspective that an activity that has no meaning for the client does not have a therapeutic value.[7] The results of this study seem to be in agreement with the belief that participation in meaningful activities contributes to happiness, task satisfaction and generates positive energy.[58]

9.4.2.2 Self-esteem

Engagement in meaningful activity is suggested as essential for man's well-being.[109] Activities in occupational therapy affords the MHCUs an opportunity to improve self-esteem[339] since the desired goal of occupational therapy is to develop a sense of self-esteem and competency within an individual.[352]

From the results of the PHQ-9[36,43] and BaFPE-R[2,17,65] tests, it would appear that there was some improvement (as indicated by a small effect size d-value) on the self-esteem of the participants in the SC_O group programme as compared to that of those in the SC_N group programme. Eighty two percent (82%) of participants in both the SC_O and SC_N group programmes reported however, that their self-esteem or confidence improved as a result of the occupational therapy group intervention programme. Self-esteem and confidence seemed to have improved owing to (1) the mastering of skills to perform activities and (2) positive inspirational feedback from others. Each will be discussed next.

- **Mastered skills to perform activities**

As mentioned already, an activity that has no meaning for a client may not have therapeutic value and in addition might be difficult for the client to master.[7] In this study beadwork presented to both groups during session three, seemed to have been meaningful to the participants and could have had a positive effect on their self-esteem. One participant said: *"you realize that you did something very nice and something very meaningful. I mean something that you mastered for yourself"* (PS97). The card-making that was added to the SC$_O$ group programme in the feedback session (session nine) seemed to have had a similar effect on some of the participants, as one participant said *"I can do beautiful things if I put my mind to it"* (PS79). It would seem that craft activities such as beadwork and card making could be used to increase self-confidence and to gain a sense of achievement.[50,59]

- **Inspirational positive feedback**

Major Depressive Disorder is associated with dysfunctional interpersonal skills,[10,198] which could have an influence on the MHCU's sense of worth. In this study participants reported on the impact inspirational positive feedback had on their self-esteem and self-confidence in that positive feedback from other group members, during the group activities, could perhaps have changed their judgment about their personal worth from self-derogation to respect. In line with a suggestion from Moskowitz[353] that people show an increase in their self-evaluation as a result of participation in groups and also in positive feedback from others, all adding to their feelings of self-worth. Vorster[79(p.92)] added that positive feedback from the environment could have "important implications for the individual's self-worth and emotional well-being" and as one participant said about the creative drawing group *"other people were able to see my ability and my worth"* (PS97).

9.5 Social functioning

9.5.1 Joint display of quantitative results and qualitative findings

Mental health care users often seem to experience interpersonal difficulties.[7] This notion is supported by Yalom and Leszcz,[78(p.47)] who assert that "psychological symptomatology emanates

from disturbed interpersonal relationships" and Vorster[79] who believes that the degree of being mentally healthy correlates with a person's interpersonal relationships. The Social Interaction Scale (SIS) that was used as a pre- and post-assessment in this study, tested the participants' social interaction in functional areas and their Social Response by Situation as set out in Appendix B.[2,17]

From the results of the PHQ-9[36,43] and the BaFPE-R[2,17,65] tests, it would appear there was some improvement (as indicated by a small to moderate effect size d-value) on the social functioning of the participants in the SC_O group programme compared to that of those who participated in the SC_N group programme. Moreover, the qualitative findings which were generated from the SRQ and focus group interviews seem to be supportive of the quantitative results. Eighty eight percent (88%) of the participants in the SC_O compared to 78% participants in the SC_N reported improved social functioning. The results obtained from the SIS about the social functioning of participants in the SC_O group programme upon discharge, seem to be superior to those of the participants who participated in the SC_N group programme. The results and findings are depicted in Table 9-4: Joint display of quantitative results and qualitative findings of participants' social interaction

Table 9-4: Joint display of quantitative results and qualitative findings of participants' social interaction

Program.	Quantitative		Qualitative	
	PHQ-9; Improvement	BaFPE-R; SIS Functional area Improvement	SRQ; Freq. count	Focus groups; Participants' experiences
SC$_N$	Functioning ↑ 1.34	Verbal Comunic. ↑ 1.71 Soc.Appr Beha. ↑ 1.22 Indep./Depend ↑ 0.90 Work with other ↑ 1.31 Partic. in groups ↑ 1.29	78%	**Belonging** *"It really brings the sense of belonging."* [beadwork] (P1) **Sharing** *"We were able to express ourselves through the drawings."* [creative drawing] (P23) **Opening up** *"the group helped me to release what was in my heart."* [collage] (P19)
SCo	Functioning ↑ 1.57	Verbal Comunic. ↑ 1.97 Soc.Appr Beha. ↑ 1.31 Indepen./Depend ↑ 0.98 Work with other ↑ 1.43 Partic. in groups ↑ 1.32	88%	**Belonging** *"the group brought us together to be one."* (PS93) **Sharing** *"It makes you feel free through the activities itself. Talk about anything that you are exposed to while doing the activities…"* (PS55) **Opening up** *"I was able to talk about my problems in a safe space."* (PS58)
P-value:	0.22	Verbal Comunic. 0.001 Soc.Appr Beha. 0.264 Indepen./Depend 0.383 Work with other 0.27 Partic. in groups 0.683		
ES: SC$_O$>SC$_N$	0.25	Verbal Comunic. 0.68 Soc.Appr Beha. 0.22 Indepen./Depend 0.17 Work with other 0.27 Partic. in groups 0.08		

↑means improvement from pre- to post-test

9.5.2 Discussion

Gauthier, Dalziel and Gauthier[354] and Finlay[132] believe that occupational therapy groups provide a supportive environment that could facilitate social interaction amongst group members. The findings in a study by Schindler[355] also suggest that activity groups rather than verbal groups improve social interactional skills and according to Moll and Cook,[279] their participants reported on the benefit of social interaction as it promoted healthy and balanced routines.

In this study it would appear that the tangible activities presented to the participants in both the SC_O and SC_N group programmes, stimulated spontaneous social interaction. Noted activities were beadwork, playing a blokus game or fingerboard game, making a collage and creative drawing. Participants in the SC_O group programme, in addition, were exposed to tangible activities such as playing a getting acquainted game, making a stress ball, an assertiveness game, playing balloon volley ball before relaxation therapy and also card making coupled with feedback. The discussion groups presented to the participants in the SC_N group programme however, seemed to have been primarily facilitated through $OT1_P$ and $OT2_P$.

According to the participants, interacting while "doing" activities (1) gave them a feeling of belonging, (2) created a platform to share their feelings, and (3) gave them the courage to open up which in turn relieved their emotional pain. Each aspect will briefly be discussed.

- **Belonging**

The need to belong and to be accepted by others seem to be a fundamental need of human beings. As early as 1953, Sullivan[81(p.291)] stated in this respect that humans have a "need for acceptance" and a fear "of being excluded". Sullivan[81(p.261)] is further of the opinion that "loneliness in itself is more terrible than anxiety." The importance of unity and social interaction in society, from an African philosophical point of view, were extensively discussed by Gade,[265] Jolley,[267] and Tutu,[270] who also highlighted the important notion of "*a person is a person through other persons*".

Participants in this study reported that they felt they belonged to the group as they were accepted for who they are. One participant said in this respect *"the group brought us together to be one, I felt free to discuss my problems"* (PS93). The sense of belonging and trust seemed to have encouraged them to commit to the group as they felt valued, accepted and supported by other group members. This finding is also in line with findings of Falk-Kessler, Momich and Perel[42] and Yalom and Lesczc.[78] In addition Yalom and Lesczc[78] point out that the feeling of belonging (cohesion) is a prerequisite for other therapeutic factors to take effect. Sundsteigen, Eklund and Dahlin-Ivanoff[40] stated in this respect that groups conducted in a secure environment could contribute to the participants' strength [self-esteem], inspiration [hope] and joy [happiness]. It would therefore seem that in order to combat the feelings of loneliness activity groups might facilitate a sense of belonging.[350]

- **Sharing**

Group interaction is believed to be central to any therapeutic group.[78] Because MHCUs often experience interpersonal difficulties, occupational therapy groups might promote interaction by means of sharing[198] while engaging in meaningful activities. It was reported by the participants in this study that they started to share on different levels when engaged in tangible activities - alluding to both creative drawing and the collage activity.

Denton[325] in her workbook of practical skills suggests that activity groups are more effective than verbal groups for the development of interpersonal skills. Because the interpersonal demands were carefully graded for each group session in this study, it could perhaps lead to the participants' willingness to share their challenges with each other on a superficial level first followed by sharing of deeper feelings as they opened up.

Group reminiscence therapy at a nursing home also suggests that the group provided an opportunity for social interaction, cognitive stimulation and reaffirmation of the value of past experiences.[179] Reminiscence therapy is thought to be more effective in a group setting as it promotes unstructured reflection and discussion of personal life experiences and memories.[47]

- **Opening up relieved the emotional pain**

Creek and Lougher[7] believe that creative activities could be used as a means to express strong feelings during therapy. This seems to be in line with the qualitative findings of this study as participants reported that they felt relieved after opening up and sharing their emotional pain. Some participants said after the collage and creative drawing groups: "a*fter you told somebody about the problem you feel relieved"* (PS59) and *"It healed me as I was describing the picture"* (PS88).

Catharsis seems to have been therapeutic in this study, because, as participants developed trust and started to bond with each other, it would seem that they felt comfortable enough to freely express and share their feelings in a group

In summary, although all occupational therapy group sessions stimulated social interaction, the interpersonal demands varied in intensity so that group trust could gradually be established. It is assumed that once members developed feelings of warmth, trust and care (belonging) they might feel safe enough to share and open up[78] resulting in improved interpersonal relations. According to Yalom and Lesczc[78] learned interpersonal behaviour in groups might be carried over to the outside world which could have a positive effect on future relationships.

9.6 MDD symptoms

9.6.1 Joint display of quantitative results and qualitative findings

MHCUs with MDD seem to be focused on their situations, thoughts and feelings.[18] Occupation is suggested to enhances health and wellbeing.[58-59] As the clients' interpersonal relationships improved, it would seem that their ability to form and maintain rewarding relationships, enhanced and improved their self-esteem, and they opened up to face the world.[78]

From the results of the PHQ-9[36,43] and BaFPE-R[2,17,65] tests, it would appear that there was some improvement (as indicated by the small to moderate effect size d-value) on the depression or overall health of the participants in the SC_O group programme in comparison with that of those who participated in the SC_N group programme. The participants' results in the total outcome PHQ-

9 were statistically significant (p<0.005) with a medium effect size, and the SC_O group showed better improvement in symptoms reduction of MDD than the SC_N. This was supported by qualitative findings of focus group interviews and the SRQ where 92% of the participants in the SC_O group and 78% of participants in the SC_N group programme reported an improved mood owing to their participation in the occupational therapy group programme. For them their experience of an overall improvement in health and depression stemmed from the participants' (1) gained insight and (2) courage to face their problems. *Table 9-5* shows that participants of this study were positive and had improvement in their MDD symptoms.

Table 9-5: Joint display of quantitative results and qualitative findings of participants' MDD symptoms

Program.	Quantitative		Qualitative	
	PHQ-9; Improvement	BaFPE-R; Improvement	SRQ; Frequency count	Focus groups; Participants' experiences
SC_N	Total improvement of PHQ-9: ↑ 13.66	Cognitive total: ↑ 9.46 Performance total: ↑ 7.60 Affective total: ↑ 8.33	Overall total: 92%	**Gained insight** *"I realized that there are things about oneself and I did not know that other people know them."* [feedback group 9] (P5) **Courage to face problem** *"The group has completed my struggle."* (P23)
SC_O	Total improvement of PHQ-9: ↑ 16.32	Cognitive total: ↑ 10.12 Perfrmance total: ↑ 8.80 Affective total: ↑ 8.71	Overall total: 78%	**Gained insight** *"... if this person can also get through this then I will also be able to..."* (PS54) **Courage to face problem** *"Total change of me will impact on the outside world..."* (PS51)
P-value:	0.005	Cognitive 0.518 Performance 0.301 Affective 0.722		
ES: $SC_O>SC_N$	0.57	Cognitive 0.13 Performance 0.21 Affective 0.07		

↑ means improvement from pre- to post-test

9.6.2 Discussion

Friedland[356] also put forward the idea that engagement in activities has healing properties. This seems to have allowed the participants to achieve mental health to the extent that they became aware of their interpersonal relationships.[78] Occupational therapy studies agreed on the effectiveness of cohesiveness, hope and interpersonal learning in an occupational therapy group.[42,187] In this study, participants in both programmes appreciated the therapeutic value of existential factors, something that could not have been found in previous occupational therapy studies. They realised that change was in their hands and that they needed to take responsibility for some of their failure, which seems that they could feel empowered to manage and to take responsibility for their situations. As the power of hope seems to be paramount in groups it is recommended that it be facilitated by group therapists throughout.

In summary it would seem from the study of Falk-Kessler, Momich and Perel,[42] that group cohesiveness, interpersonal learning (output) and instilling hope were the therapeutic factors most valued by their participants, while in this study universality, group cohesiveness, catharsis, existential factors and instilling hope seemed to be of great value.

From the SRQ and focus group interviews of the participants in the SC$_O$ group programme one of the themes that emerged was *"facing their problems and being part of the solution."* Although not a primary objective of the study it needs some discussion here.

9.6.2.1 Being part of the solution
It would seem that it is easier for participants to share challenges in a therapeutic group than with an individual therapist.[158] From the participants' SRQ and focus group interviews the group programme gave them the opportunity to share, to support each other, to give and receive feedback, and to do activities which they felt empowered them to face their own challenges in life.

Increased engagement in occupation might decrease the degree of psychopathology if it corresponds with the internal needs of being of MHCUs' with MDD.[151] This was supported by

participants' comments that they became part of the solution whereby they (1) gained insight into their problems and (2) the supportive environment gave them the courage to face their problems.

- **Gained insight**

It would seem that expressing feelings and incorporating self-understanding could help participants to overcome their suicidal ideas and fears.[59] Furthermore, learning within a group could promote insight into self and others,[198] allowing participants to discover and accept the unknown parts of themselve.[42] In this study the participants reported that they gained insight into their situation mostly referring to the projective activities such as the collage and the creative drawing. The occupational therapy groups (SC$_O$ and SC$_N$) offered in this study seem to have improved the participants' evaluation of self and others.[198]

The findings of a study conducted by Moll and Cook,[279] seem to mirror the findings of this study in stressing that the value of doing is to facilitate learning. Activities could promote emotional resilience as they increase the MHCUs' ability to cope with stress and adversity.[7] The groups imparted knowledge through sharing information and working towards being part of the solutions, which they could apply in their everyday life experiences. Returning the MHCU with MDD back to the community is of primary concern in an acute setting.[198(p.301)] The participants in this study seemed to have gained insight and developed the courage to face their problems.

- **Courage to face problems**

Group treatment according to Yalom and Lesczc[78] has interpersonal focus and offers psychosocial support. The participants reported that they felt safe in the group and empowered to deal with different issues as they supported each other and gained insight. This gave them the strength to deal with their irrational thoughts, to be positive and to feel ready to face their problems.

It was interesting to note towards the end of this programme that participants developed hope and felt empowered to face their life challenges and to return to their own community. Activities in the occupational therapy group programmes seemed to have provided healing and wellness and improved the participants' confidence and well-being to face the world.

The therapeutic factors[78] that seem to have been prevalent in the SC_O and SC_N group programmes (reported by the participants in the SRQ and the focus group interviews) were included in the themes above. They were cohesiveness (*belonging*) in Theme 2, catharsis (*opening-up*) in Theme 2, socialising techniques (*assertiveness*), interpersonal learning (*social interaction*) in Theme 2, existential factors (*becoming part of the solution*) and instillation of hope (*courage to face the problem*) in Theme 5.

Different authors in occupational therapy research studies found group cohesiveness, interpersonal learning (output) and instilling hope as therapeutic factors that were most consistently valued by their subjects.[42,178] Other publications stated that occupational therapists need to be aware of the value of therapeutic factors and the role that they play in group dynamics because they allow change to occur to the patients in the group.[42] The group members needed hope and faith to be able to manage inner and outer obstacles in the process of their therapy and recovery.[40] This concurs with the findings of this study where the participants had faith and hope to face their obstacles as encapsulated in the comment, "…*even so life must still go on.*" This indicates that the participants of this study seem to have gained insight, courage and hope to continue with their life challenges as they reported that they felt well enough to live their lives again.

9.7 Conclusion

The results of this study were consistent with the hypothesis that the proposed alternative occupational therapy group programme, the SC_O, could lead to a better treatment outcome for MHCUs with MDD compared to that of those who participated in the existing SC_N occupational therapy group programme. These findings were supported by the participants' in the SC_O occupational therapy group programme.

CHAPTER 10

10 REFLECTION AND CONCLUSION

10.1 Introduction

In this chapter the researcher will reflect on the outcome of the study first. This will be followed by a reflection on the mixed methods research design underpinned by a pragmatic philosophical worldview and the measuring instruments. Next a reflection on the researcher's contribution to the scientific body of knowledge on occupational therapy group programmes for MHCUs with MDD in the private sector. The limitations of the study will be acknowledged and finally the chapter will draw to a close with recommendations for future research studies and a personal reflection by the researcher.

10.2 Reflection on the outcome of the study

From the quantitative results it would seem that the MHCUs with MDD who participated in both the SC_N and SC_O group programmes have benefitted from the occupational therapy intervention offered at the two private general hospitals where the study was conducted. It must nonetheless be kept in mind that the overall treatment regime included a multi-professional psychiatric team, and as such the occupational therapy group programmes cannot be seen as the sole source of this improvement. A compelling argument can however be made that the difference in the participants' improvement between the SC_N and SC_O programmes can be ascribed to the content of the two programmes as this was the only variable, whereas all other aspects of the treatment stayed the same.

In the majority of cases the quantitative results were supported by the participants' inter-subjective experiences, as reported in the SRQ and the focus group interviews. The researcher rejects the null hypothesis which stated that "the proposed alternative occupational therapy group programme, the

SC$_O$, will not lead to a better treatment outcome for MHCUs with MDD than the existing SC$_N$ occupational therapy group programme".

The SC$_O$ group programme, which included tangible activities in each group session, furthermore seems to have been superior to the SC$_N$ group programme in respect of the participants' cognitive, performance, affective and social functioning and severity of symptoms upon discharge. Each group programme will be reflected on next.

10.2.1 Reflection on the SC$_O$ occupational therapy group programme

The SC$_O$ occupational therapy group programme, in which six tangible activities were added (an adapted getting acquainted card game (session 1), making a stress ball (session 2), an assertiveness game (session 4), a balloon volleyball game (session 5), a game of blokus (session 6) and a card making activity (session 9) appears to have had a positive effect on its participants. Possible reasons for the improvement will be reflected on next.

Starting with the *adapted getting acquainted card game* it would seem that this activity was conducive in initiating rapid interpersonal communication among group members, because getting to know each other by playing a game, seems to have stimulated spontaneous social interaction. From the participants' inter-subjective experiences, they reported that they valued this group because they were able to work with others, had fun while doing so and could express themselves honestly without a feeling of being judged. It would seem that the external structure (the way the group procedure was executed) provided safety to the participants so that they felt confident enough to take the first step in self-disclosure. The norms of honest sharing and interaction were therefore shaped early in the life of the group, which were vital for the facilitation of trust among group members.

Making a *stress ball,* as part of the stress management group, seems to have added value as it taught the participants a different way of controlling their stress. Moreover, they reported working

as a team and sharing ideas on how to cope with stress made them realise they were not the only ones who experience stress and felt "welcome to the human race."[78(p.82)]

Reflecting on the participants' account of the *beadwork* group session, it would seem that they experienced task satisfaction from creating an article from scratch (*"with my own hands"*) and with a *"beautiful"* end-product which is meaningful. Since beadwork was unknown to the majority of participants it seems that they appreciated the fact that they had gained a new skill and were proud to show off their end-products. Confirmation from their environment such as other group members, staff and visitors seems to have had a positive effect on their self-esteem.

The *assertiveness game* required of group members to express their needs in a supportive environment while preparing them for the outside world once discharged. According to the group members they experienced fun while playing the assertiveness game and at the same time learned how to conduct themselves, respond to people, to respect others and standing their own ground while controlling their emotions. They also mentioned they had gained confidence as they believed they could now make decisions by themselves and did not need others to decide on their behalf. As conflict seems to be unavoidable in life and impacts on one's interpersonal relationships, learning on how to manage it in an assertive way could have more benefits than disadvantages.

It would seem that the *balloon volley ball* game which was played before the adapted relaxation therapy was executed, contributed to the participants' experience of a relaxed state of "*mind body and soul*." The contrast between the physical efforts followed by active relaxation may have had a positive effect on the participants' experience of their level of stress at the time.

The *blokus board game* was offered in addition to the fingerboard game in the SC$_O$ group programme. Participants reported that as a result of playing the game *"there was a spirit of togetherness"*, they *"experienced love for each other"* and it was more fun when they were doing things as a team. What's more they were of the opinion that it taught them to strategise, plan and think about the consequences before making a decision. Playing blokus as a team appears to have been appropriate in this context because the starting point for an account of personhood "in African thinking … is social relations."[357(p.145)]

10.2.2 Reflection on the SC_N occupational therapy group programme

The participants attending the SC$_N$ group programme however, expressed the need for more "practical" or "doing" activities. As one participant expressed it: "*we need more visual* [activities]*, if you see something it is easier to remember it*" and "*we need more doing and exercises because we just talk, talk, talk*"(P29).

Tangible activities included in the SC$_N$ group programme were only beadwork, fingerboard, creative drawing and collage making. The remainder of the groups consisted of discussion groups and one relaxation session. The possible advantages of each of the added group activities will be reflected on next.

The getting acquainted activity seems to have been relevant to start with as it helped the group members to know each other. The group norms of honest sharing and interaction was encouraged by the therapist as it was crucial to encourage trust among group members from the outset. In the SRQs this notion was supported by the participants who said "*It was interesting as it gives the opportunity of knowing each other better*" (P13). Since the interaction amongst members had to be facilitated by the therapists, who conducted the SC$_N$ group programme's first group session, in retrospect it would have been valuable to interview them to determine how they experienced this task compared to the SC$_O$ group programme where interaction was facilitated by means of a group game as well.

During the stress management group, which was a discussion, the participants stated that they benefitted from sharing ideas on how to cope with stress which made them realise they were not the only ones experiencing stress. One of the participants said "*it taught me different coping mechanisms on how to deal or cope with stress.*" (P49)

Response received from the participants who participated in the beadwork activity were similar to those of the participants in the SC$_O$ group programme. It would therefore seem that the beadwork craft activity was meaningful to the participants in this context.

The assertiveness discussion group seems to have empowered the participants on how to conduct themselves, respond to people, respect others and stand their own ground while controlling their emotions. This was supported by the participants who said "*I learned to say no and mean it*". (P30) "*It taught me not to always think only about others but to think about myself too*" (P36). Once more the assertiveness game presented in the SCO group programme could have been more beneficial as it covered a variety of situations in the form of a game which was experienced as fun. It would seem that the relaxation therapy had a relaxing effect on the participants' body, mind and soul. This was supported by participants' who stated "*I was able to let my body loose and not think about my problems*" (P35) and "*It should be done more often*" (P29). A number of participants requested that relaxation be offered more often and even suggested that it be presented on a daily basis.

The participants reported that the fingerboard game helped them to concentrate, strategise, work as a team and to have fun. It seems that finger board might be a valuable activity to include in an occupational therapy programme owing to the number of needs that could be addressed at the same time.

During the last group session the participants were required to write feedback messages for each other on a piece of paper and put it in a circulated envelope. They reported feelings of happiness, hope and it boosted their self-esteem as they received feedback from each other. This was supported by a participant's comment that "*…it was good to know what other people think about me*" (P43). The additional element of creativity and task satisfaction however, was omitted from this group session.

It would seem from the SRQ and focus group interviews that the participants in the SC_N group programme benefitted from the occupational therapy intervention as they gained information about a number of life skills, learned how to do beadwork, learned how to apply a relaxation technique and gained information and knowledge about themselves. They reported that they experienced the programme as valuable as they felt they had grown as individuals and had felt empowered.

10.3 Reflection on the mixed methods research design

This study employed a concurrent, embedded, mixed-methods intervention, advanced design. A qualitative enquiry was embedded in a comparative group pre-test, post-test study. This research method, underpinned by a pragmatic world-view, seems to have been appropriate for this study, because mixing methods could draw from the strengths of both the quantitative and qualitative enquiries and each seems to have added value to the study. Triangulation was applied through different data collection methods. Quantitative data were collected by means of two standardised tests (BaFPE-R and PHQ-9) and the qualitative data by means of an SRQ and focus group interviews. Different coders analysed the qualitative data in order to obtain themes from both an African and a Western perspective. By doing so the researcher strove to obtain authentic themes. Results and findings were jointly displayed to indicate how the qualitative findings supported the quantitative results.

10.4 Reflection on the research instruments

Different data collection instruments were used to collect the data as part of triangulation. The research instruments used in the study had several advantages and disadvantages as discussed below.

10.4.1 Patient Health Questionnaire

The PHQ-9 assisted in monitoring progress made on symptom reduction and functional improvement as highlighted in the study. The relevance and usefulness of the accuracy of the PHQ-9 in the occupational therapy profession was also observed as it proved to be a responsive and reliable measure of depression treatment outcome for use in occupational therapy practices. It also highlighted the participants' responsiveness to occupational therapy group programmes.

10.4.2 Bay Area Functional Performance Evaluation

Evaluation using a standardised test (BaFPE-R) seems to have been useful for assessing progress made during the intervention as the BaFPE-R can be used at the beginning (pre-testing) and at the end of treatment (post-testing).

In this study, the Task Orientated Assessment (TOA) part of the BaFPE-R suggested a difference in pre- and post-testing for both the SC_O and SC_N groups but little difference between these two groups were observed. According to Klyczek and Stanton,[17] there is a difference between inpatient and outpatient TOA scores, which might be related to diagnosis and chronicity since most of the inpatients suffered from mood disorders and the outpatient's from schizophrenia. In this study, which focused only on inpatient MHCUs with MDD, even though there was some difference between matching variables, there were not statistically significant differences between the SC_O and SC_N groups despite a larger sample size. A similar challenge is reflected in a study by Klyczek and Stanton,[17] which indicated no statistically significant difference.

Klyczek and Stanton[17(p.233)] cited Staron (1992) who in his thesis compared a verbally oriented (18 patients) and an activities oriented group (17 patients) with each other. Their results indicated that there was no significant difference between the two treatment programmes based on the TOA scores, although patients in both programmes showed significant improvement in the SIS scores, which was the same finding in this study.

10.4.3 Self-report questionnaire

The self-report questionnaire allowed the participants to freely write down their experience of the programmes at the end of each occupational therapy group session. This seems to have added value to the study by underpinning the experiences of participants with a strong dataset.

Even though it was time consuming for the researcher to analyse these data into themes and compare the themes with those obtained from the focus group, the data obtained was thought to be

beneficial in answering the research question and objectives. Furthermore, the same data from the self-report questionnaire had to be converted into numerical data, which was challenging and time consuming. The other challenge with the self-report data, was the participants' different writing skills and writing effort which was pointed out by Patton[246] during the development of the self-report questionnaire.

10.4.4 Focus group interviews

It looks as if the focus group interviews encouraged participants to give rich data. It appears verbal communication gave them a platform to express their inter-subjective experiences of the programmes (SC_O and SC_N). The researcher is of the opinion that focus group interviews were beneficial as he interviewed the participants together and received multiple viewpoints from them in a shorter period of time. The information provided matched with the data in the SRQ and the finding seems to be of value to this study.

10.5 Theoretical contribution of the study

10.5.1 Therapeutic use of activities

From the results and findings of this study it would seem that the use of an occupational therapy group programme with tangible meaningful activities could be of benefit to MHCUs with MDD in short-term care. It would seem that the participants deemed the presented tangible activities therapeutic as they felt it (1) improved their mood, (2) facilitated spontaneous social interaction, (3) improved coping skills, (4) enhanced self-esteem, (5) assisted them to face their problems and become part of the solution, and to a lesser degree (6) improved their cognitive functioning. The activity was further seen as a catalyst that could assist the recovery of the MHCUs with MDD and promoted interaction with those MHCUs who experienced challenges with communication or difficulty in voicing their opinions.

The use of activities also suggest that the experience of "flow"[358] while engaged in tangible, meaningful and purposeful activities, the "doing and becoming", might have had an effect on the participants' feelings of satisfaction, autonomy and personal growth thus enhancing their mental health. The findings of this study is in line with the notion of Wilcocks[127] of doing, being, becoming and belonging.

In a world of social media with technology such as phones and tablets it is perhaps possible that people no longer participate in activities where they could experience themselves as the "creator" of a pleasing and visible end-product.[262] The value of creating a tangible product from scratch should perhaps be explored in depth in the field of occupational therapy.

Therefore, this study was found to be relevant in the occupational therapy profession as it supported our historical beliefs, assumptions and the foundation of our jurisdictional claim about the therapeutic use of tangible activities and should encourage their usage.

10.5.2 Social interaction

Reflecting on the social interaction that crystallised as one of the themes in this study it would seem that the "doing and being" in group context, was much appreciated by the participants, as one participant put it: *"The* [activity] *activates you to speak out freely."* Tangible activities it would seem gave participants the opportunity to voice their feelings if they found it difficult to do so. Therefore findings suggest that "doing" activities, such as crafts and games, could be a catalyst for spontaneous social interaction that encourages self-expression of both the problems they encountered and of their personal problems.[40,59,331]

In the South African context where the study was executed the philosophy of Ubuntu viz. that "*a person is person through other persons*".[265-272] was considered throughout. Engaging in activities seems to have encouraged the participants to work together because they felt that they belonged. Group cohesion seems to have given them a sense of acceptance, of being valued, and of trust[78] which are needed for the healing process to take effect.[78,183,283]

Moreover engaging in occupational therapy groups with an activity may be referred to as a "collective occupation".[359] Engaging in a "collective occupation" seems to have allowed the participants' to change for the better as universality, instilling hope and catharsis facilitated enhancement of their mental health and in improving their own situation.[360]

10.5.3 Self-esteem

The mastering of an activity and coping skills, as well as the positive inspirational feedback from others, seems to have had a positive effect on the participants' self-esteem. Learning and mastering a new skill such as beadwork, could be a tangible reminder of one's success as was verbalised by one participant who said: *"it was two days, or some days that we have done beadwork but we are still carrying that message* [necklace]" (PS62).

As regards the feedback from others it would seem that the inclusion of a structured positive feedback session before the formal closing of the group programme had a positive effect on the participants' self-esteem, and since they had participated in eight group sessions previously they apparently developed some trust in the group, and experienced the feedback as authentic.

10.5.4 Being part of the solution

Major depressive disorder affects the problem solving skills of MHCUs. Ranjibar, Bayani and Bayani[361] reported that lack of problem solving has an impact on depression. They further reported that there is a significant correlation between problem solving skills and mental health.[361] Although the participants in this study were not specifically taught problem solving techniques, through sharing, opening up, universality and support, they managed to gain insight about their situation.

By using client-centredness an occupational therapist, can give MHCUs the necessary control to learn how to solve their own problems.[362] This was observed in this study as it appeared that the participants learned to solve their own problems. Marx and Schulze,[363] as early as 1991 mentioned

that depressed patients may be aware of their problem, but they lack action-oriented strategies. Problem solving therapy could help to develop coping skills and to manage life experiences.[364]

The findings of this study suggest that when MHCUs with MDD could gain insight in and develop strategies to solve their problems, they became empowered to face their problems. These findings support the problem solving theory on managing major depressive disorders.[365] Furthermore, the findings of this study are supported by Gellis and Bruce[366] who indicated that patients who received problem solving therapy reported a significantly greater decrease in depressive symptoms.

10.5.5 Improved mental health

The findings of this study are also supported by Adams and Casteleijn[360] who showed that engaging in meaningful collective occupations could improve the MHCUs' situations, enhance their interpersonal relationships, well-being and mental health. The key components of well-being are autonomy, personal growth, and environmental mastery.[149] In this study, when participants reported that whenever they belonged and engaged in occupations/activities, apparently their mental health improved as observed by a reduction in symptoms, and improvement in their cognitive, performance and affective functioning.

Improvement in mental health and well-being by means of activities is also supported by the findings of Hasselkus[32] who suggested that using occupations/activities might promote health and well-being. The SC$_O$ participants emphasised the benefits of collective engagement, which was supported by the concepts that "*people need people*"[81] and a "*a person is a person through other persons.*"[265-272] Also when participants managed to see themselves through the eyes of others, they were apparently encouraged to solve their own problems. The findings were further supported by the theories proposed by Yalom and Leszcz[78] and Vorster[79] on the benefits and importance of interpersonal relationships.

Occupational therapists use a client-centred approach in order to have a working partnership with their clients. Working in partnership with MHCUs with MDD might have helped to develop a mental health care service that could transform the lives of the participants as they were empowered during occupational therapy groups. Working in partnership with the clients[154] could assist in establishing an interpersonal relationship of rapport and in a working alliance.[161] This upheld the occupational therapy philosophy of respect and partnership.[161]

10.5.6 Practical implication of the study in occupational therapy and mental health care practices

10.5.6.1 The group therapist

Although not formally researched, from the participants' feedback in the SRQ and in the focus group interviews, it would seem that the group therapists (OT1$_P$ and OT2$_P$) were technical experts and model setting participants during the group sessions.[8,42,78,367] Both seemed to have read the participants' needs, were able to follow the group process and to intervene when appropriate. The importance and therapeutic value of a competent group therapist can therefore not be underestimated.

10.5.6.2 The SC$_O$ group programme

Although the research study proposed a specific occupational therapy group programme, the SC$_O$, it should not be seen as a prescriptive procedure or a "blue print" but rather as a guideline that could perhaps assist occupational therapists in the planning of a group programme for the treatment of MHCUs with MDD. Furthermore, each activity in this group programme was planned as a means to an end and not necessarily as an end in itself.

Of utmost importance however, was the grading of activities in respect of their interpersonal demands, because moving too deep too quickly is harmful and should be avoided at all times.[259] It is therefore suggested that sound clinical reasoning be employed in the development of an occupational therapy programmes of this nature.

10.6 Limitations of the study

The following limitations were identified in the study:

10.6.1 Data collection

The study focused on the data that was collected for two weeks during the acute phase of the MHCUs with MDD. Follow up data to investigate maintenance of gains was therefore not collected as it was not part of this study.

10.6.2 Therapists' contribution

The therapist' effect was not part of the objectives in the research study. From the participants' comments in the SRQ and focus group interviews, it would seem that the therapeutic relationship played a vital role in the healing process. Unfortunately, the relationship with the therapist was not discussed in the results of this study even though most of the participants held the therapists in high regard.

10.6.3 Generalisation of findings

The study took place in only two private general hospitals, each with one psychiatric ward in Gauteng, South Africa. Although the sample size (100 participants), as suggested by the statistician was adhered to, the results of this study cannot be generalised.

10.6.4 Other diagnoses in Psychiatry and Mental Health

This study focused on MHCUs with MDD only. It would be interesting to consider inclusion of other diagnoses in a similar group programme and to measure the influence of the intervention on them.

10.6.5 Randomisation

Randomisation only occurred when a decision was made about which site would start with which intervention.

10.7 Researcher's personal reflection

The researcher's personal reflection for embarking on the study will be discussed next.

10.7.1 Benefits of embarking on this research journey

As a researcher, I gained more knowledge about group therapy and occupational therapy paradigms and approaches. The study has broadened my knowledge in terms of different methodologies and their applications in the profession of occupational therapy. The qualitative data helped me to have a clearer understanding of participants' narratives regarding the programme and their experiences.

As I was also expected to be the author of a few articles related to this study, I learned how to structure my thinking while writing an article. The research topic on occupational therapy groups is one of my areas of interest since I practice in the field of psychiatry and teach occupational therapy groups to undergraduate and post-graduate students.

10.7.2 Challenges of this research journey

Registering for a PhD study was one of the most challenging and interesting journeys that I bravely undertook in my life. It needed a lot of perseverance and resilience. It was a challenging endeavour as well as time consuming as I was expected to run my private practice and cope with the resignation of staff as they completed their contracts. As a result time management was crucial while doing a study of this nature.

Furthermore, as some MHCUs with MDD were discharged before they completed the occupational therapy group programme, it took maximum effort to complete the data collection process

10.8 Recommendations for future research

It is recommended that the following studies be undertaken:

10.8.1 Comparative studies

It is recommended that the same study with a bigger sample size, and at different sites be repeated in order to generalise the findings.

A six month follow-up study to compare the relapse rate of participants who received either of the two occupational therapy group programmes is suggested. This could contribute to the evidence based practice in occupational therapy.

10.8.2 Longitudinal studies

It is further suggested that longitudinal studies be undertaken with out-patient MHCUs with MDD after discharge from hospitals in order to compare the outcomes of the SC_N and SC_O as employed in this study.

10.8.3 Econometric studies

Econometric studies will be helpful in comparing the cost involved while offering group therapy and individual therapy and the effectiveness of the interventions.

10.8.4 Occupational therapy groups for MHCUs with MDD

As proposed by Bullock and Bannigan [55] the researcher is also of the opinion that more intervention studies on the management of MHCUs are needed. Further studies on the effectiveness of occupational therapy groups with a control group could provide evidence to support the use of occupational therapy group programmes in acute and chronic settings.

10.8.5 Occupational therapy groups for MHCUs

A comparison of the same two group programmes, the SC_O and SC_N, for MHCUs with psychiatric conditions, such as bipolar mood disorders and anxiety disorders may also be considered.

10.8.6 Occupational therapy individual treatment

There is a need to investigate the feasibility of cognitive remediation in the acute state of MDD during hospitalisation in comparison to SC_O or to add cognitive remediation as part of the individual programme during the SC_O and the SC_N and to compare the results.

10.8.7 Quality of life of MHCUs with MDD

Another study may be to compare the same intervention programme used in this study (SC_O and SC_N) to evaluate its effects on participants' quality of life.

10.8.8 Cluster randomised controlled trail

Cluster randomised control trial studies could be considered in similar investigations.

10.9 Final conclusion

This chapter reflected on the outcome of the study, the research method employed, its contribution to the scientific body of knowledge on occupational therapy group programmes for MHCUs with MDD, as well as a personal reflection, and concluded with recommendations for further research. From the results it would seem that the SC_O occupational therapy group programme, which included tangible activities in each group session, was superior to that of the SC_N which had either activity-based and or discussion-based groups as part of the intervention. It is therefore suggested that a two week occupational therapy group programme, which includes meaningful tangible activities in each group session, be considered for the inpatient treatment of MHCUs with MDD. Although the study had its limitations, it could contribute to the knowledge regarding occupational

therapy intervention of a multidisciplinary psychiatric team on short-term care. The participants seemed to have valued activity groups which they reported had led to their speedy recovery.

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APPENDIX A: Patient Health Qustionnaire (PHQ-9)

Copyright PHQ-9

The researcher did not attach the PHQ-9 scoring sheet. The PHQ-9 scoring sheet is available on google and it may be seen when google reference: PHQ-9,[28,36,42,236-239]

APPENDIX B: Bay Area Functional Performance Evaluation-Revised scoring sheet

Copyright BaFPE-R scoring sheet for TOA and SIS.

The researcher did not attach the BaFPE-R scoring sheet for TOA and SIS. The BaFPE-R scoring sheet for TOA and SIS is available in google and it may be seen when google reference: BaFPE-R,[2,17,65,242-244]

APPENDIX C: Self-Report Questionnaire

Demographic information

0.1   Participant name:

0.2   Gender:

Male		Female	

0.3   Marital status:

Married		Single		Widow		Divorced	

0.4   Age: _____ years

0.5   Are you currently employed:

Yes		No	

0.6   Place of work:

Self employed		Correctional Service		Management	
Education		Health		Administrative	
Police Service		Labourer		Other (specify)	

0.7   Highest Qualification:

Grade 1-7		Diploma	
Grade 8-12		Degree	
Certificate		Other (specify)	

0.8   Any previous treatment for depression?

Yes		No	

If yes, years treated _____

Place of hospitalization _____

Number of hospitalisation _____

0.12   Health   team   members   that   were   involved   in   your   previous   treatment:
_____

0.13   Any benefits from team treatment: _____

0.14   Other illnesses: _____

0.15   Prescribed medications: _____

Name of group:_____

Questions on the occupational therapy group session

1. What is your comment about the occupational therapy group session that you have attended?

2. What do you think has benefitted you most in this group therapy session and why?

3. How do you feel about this occupational therapy group session and why?

4. What was your experience while taking part in the occupational therapy group session?

5. Is the occupational therapy group against your personal beliefs of groups? Give your reason.

6. If you could change anything in the group therapy session, what would it be and why?

7. Do you have any other comments or suggestions with regard to this group therapy session?

APPENDIX D: Informed Consent Focus Group Interview

Dear Patient   **Date**:…………. /………/……….

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

THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to compare if the proposed alternative occupational therapy group programme, the Standard Care Plus (SC_O), is superior to the occupational therapy group programme that is already in use, the existing Standard Care (SC_N), when it comes to enhancing the task-oriented functioning of MHCUs with MDD.

By doing so I wish to get a better understanding of how you think and feel about occupational therapy groups.

WHAT IS THE DURATION OF THIS STUDY?

If you decide to take part you will be one of approximately 50 patients. The study will last for up to six months. You will be asked to visit the investigator for two weeks of your hospitalization.

DESCRIPTION OF PROCEDURES

This study involves answering some questions with regard to your Major Depressive Disorder, progress during your participation in occupational therapy groups and continues testing of your progress.

EXPLANATION OF PROCEDURES TO BE FOLLOWED

If you are willing to participate, you will be expected to complete questions at the end of each occupational therapy group session. The data will be used in such a way that you will not be recognised.

RISK, INCONVENIENCE AND DISCOMFORT INVOLVED

There are no known risks for participating in the study.

POSSIBLE BENEFITS OF THIS STUDY

The benefits to you in participating in the study could be:

- To help us to modify and improve occupational therapy groups.
- To ensure that the intervention you are receiving is of a high quality.

If you do not want to participate in this study, you will still be expected to continue with your regular treatment as prescribed by your treating psychiatrist and other team members.

You may at any time withdraw from this study without giving any reasons.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, telephone number 012 354 1677/012 354 1330 and written approval was granted by that committee. The ethics clearance number is 226/2015. The study has been structured in accordance with the Declaration of Helsinki (last update, October 2008), which deals with the recommendations guiding doctors in biomedical research involving human/subjects. A copy of the Declaration may be obtained from the investigator should you wish to review it.

11.   WHAT ARE YOUR RIGHTS AS A PARTICIPANT IN THIS STUDY?

Your participation in this study is entirely voluntary and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect your access to other medical care. The researcher retains the right to withdraw you from the study if it is considered to be in your best interest. If it is detected that you did not give an accurate history or did not follow the

guidelines of the study and the regulations of the study facility, you may be withdrawn from the study at any time.

12. IS ALTERNATIVE TREATMENT AVAILABLE?

Alternative treatment in the form of group therapy is often used to treat major depressive disorder. If you decide not to take part in this study it is possible that you may participate group therapy sessions.

13. INFORMATION

If you have any questions concerning this study, you are welcome to contact: Mr Enos Ramano, Tel: 011-4217300 or cell 0825742720 or e-mail: eramano@telkomsa.net.

14. CONFIDENTIALITY

All information obtained during the course of this study is strictly confidential. Data that may be reported in scientific journals will not include any information which identifies you as a patient in this study. Results will be published or presented in such a manner that participants and institutions will remain unidentifiable.

15. INFORMED CONSENT TO PARTICIPATE IN THIS STUDY.

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

I give consent to participate in this research study:

            Yes   No

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

I hereby confirm that I have been informed by the investigator, Mr Enos Ramano about the nature, conduct, benefits and risks of this study. I have also received, read and understood the above written information (Patient Information Leaflet and Informed Consent) regarding the study.

I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.

I may, at any stage, without prejudice, withdraw my consent and participation in the study. I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

Patient's name   _____

          (Please print)

Patient's signature   _____   Date _____

I, Mr Enos Ramano herewith confirm that the above patient has been informed fully about the nature, conduct and risks of the above trial.

Investigator's name   _____

          (Please print)

Investigator's signature _____   Date _____

Witness's name* _____Witness's signature _____ Date _____

          (Please print)

We sincerely appreciate your help and participation in the study.

Yours truly

Enos Ramano

APPENDIX E: Focus Group Interview Guide

Demographic information

0.1   Participant name:

0.2   Gender | Male | | Female | |

0.3   Age: _____

Questions on occupational therapy group programme

1. What are your comments about the occupational theapy groups you attended?

2. What helped you the most during the occupational therapy groups?

3. Which occupational therapy group came out the strongest for you and why?

4. Which group touched where it had to touch and why?

5. In your opinion which occupational therapy group is rated the lowest and should be removed from the programme?

6. What do you think should be added to the occupational therapy group programme?

7. Any other information you feel is important to comment about?

APPENDIX F: Biographical Information

Name and Surname:_____ Date of birth (Age):_____

Gender: Male /Female

Marital status: _____

Ethnic group:

Black	White	Indian	Coloured

Home language:_____ Religion:_____

Ordinal position of patient:_____ Number of children:_____

Date of admission:_____ Date of discharge:_____

Level of education:

_____

_____

_____

Work history:

Date	Place	Type of job	Reason for leaving

Stressors (Axis IV):

_____

_____

_____

_____

Diagnosis: Axis I _____

Axis II_____

Axis III_____

GAF score (Axis V)_____

_____

Occupational therapy   Page 1

Previous medical history:

_____

_____

_____

Medication:

Name	Dosage	Times per day

Other treatment (s):

_____

_____

_____

_____

_____

_____

Any other important information:

_____

_____

_____

_____

Occupational therapy

APPENDIX G: Permissions to Conduct Research at Hospitals

To:	The Hospital Management
From:	Enos Morankoana Ramano (PhD Student)
Student number:	04190327
Ethical Clearance:	
Date:	23rd March 2015
Subject:	Requesting a permission to conduct a study at your hospital premises

Dear Sir/Madam

I would like to obtain a permission to conduct my PhD (Occupational Therapy) research study at your hospital in the psychiatric ward. The title of my study is "Comparison of two occupational therapy group programmes on the task-oriented functioning of mental health care users with Major Depressive Disorder".

This study will not affect the treatment that is offered to the patients in section A. It intends to compare the existing treatment (Standard Care) with the proposed alternative new added treatment to the existing one which is Standard Care Plus. The participants will be blind to the type of group intervention (treatment) that they are receiving while in hospital as the study intends to add value and assist in offering the best care and practice to our patients.

Thank you very much for allowing me to complete my PhD research study at the University of Pretoria and assisting me to ensure that we offer best improved evidence-based patient care at your hospital.

Yours Truly

Enos Ramano (Cell: 082 574 2720)

ENOS M. RAMANO
OCCUPATIONAL THERAPIST
PR. No. 6613551
P.O. BOX 751738
GARDENVIEW 2047
TEL: (011) 421-7300

85

Permission to access Patients' Files and Patients at the Sunshine Private Hospital

To: Chief Executive Officer/Information Officer
Sunshine Private Hospital

Dr K. FoRD

From: The investigator
Sunshine Hospital

Mr. Enos Ramano

Re: Permission to do research at Sunshine Private Hospital

Mr Enos Ramano is the researcher working at the Department of Occupational Therapy at Sunshine Private Hospital. I am requesting permission on my behalf to conduct a study on the Sunshine Private Hospital grounds that involves access to patient and patient records.

The request is lodged with you in terms of the requirements of the Promotion of Access to Information Act. No. 2 of 2000.

The title of the study is: Comparison of two occupational therapy group programmes on the task-oriented functioning of mental health care users with Major Depressive Disorder.

The researchers request access to the following information:

Access to the clinical files and patients.

We intend to publish the findings of the study in a professional journal and/ or at professional meeting like symposia, congresses, or other meetings of such a nature.

We intend to protect the personal identity of the patients by assigning each patient a random code number.

We undertake not to proceed with the study until we have received approval from the Faculty of Health Sciences Research Ethics Committee, University of Pretoria.

Yours sincerely

Enos Ramano

ENOS M. RAMANO
OCCUPATIONAL THERAPIST
PR. No. 6613551
P.O. BOX 751738
GARDENVIEW 2047
TEL: (011) 421-7300

Permission to do the research study at this hospital and to access the information as requested, is hereby approved.

Chief Executive Officer

Sunshine Private Hospital
Dr K. FoRD
MR

Signature of the CEO

SUNSHINE HOSPITAL
P.O.BOX 18663
ACTONVILLE, 1506
TEL: 011 420 3300
FAX: 011 420 3207

SUNSHINE HOSPITAL
Hospital Official
ACTONVILLE, 1506
TEL: 011 420 3300
FAX: 011 420 3207

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Permission to access Patients' Files and Patients at the Clinix Tshepo Themba Private Hospital

To: Chief Executive Officer/Information Officer
Clinix Tshepo Themba Hospital

From: The investigator
Clinix Tshepo Themba Hospital

Br Zubair Coovadia

Mr. Enos Ramano

Re: **Permission to do research at Clinix Tshepo Themba Hospital**

Mr Enos Ramano is the researcher working at the Department of Occupational Therapy at Clinix Tshepo Themba Hospital. I am requesting permission on my behalf to conduct a study on the Clinix Tshepo Themba Private Hospital grounds that involves access to patient records.

The request is lodged with you in terms of the requirements of the Promotion of Access to Information Act. No. 2 of 2000.

The title of the study is: Comparison of two occupational therapy group programmes on the task-oriented functioning of mental health care users with Major Depressive Disorder.

The researchers request access to the following information:

Access to the clinical files and patients.

We intend to publish the findings of the study in a professional journal and/ or at professional meeting like symposia, congresses, or other meetings of such a nature.

We intend to protect the personal identity of the patients by assigning each patient a random code number.

We undertake not to proceed with the study until we have received approval from the Faculty of Health Sciences Research Ethics Committee, University of Pretoria.

Yours sincerely

Enos Ramano

Permission to do the research study at this hospital and to access the information as requested, is hereby approved. *on condition consent*

Chief Executive Officer *is obtained by Mr. E Ramano from every patient.*

Clinix Tshepo Themba Private Hospital
Br Zubair Coovadia

Signature of the CEO

CLINIX TSHEPO-THEMBA SOWETO
REG. No: 94/07666/07
PRACTICE No: 5808782
P.O. BOX 2635
FLORIDA 1710
TEL: 983-0300 FAX: 988-1671

CLINIX TSHEPO-THEMBA SOWETO
REG. No: 94/07666/07
PRACTICE No: 5808782
P.O. BOX 2635
FLORIDA 1710
TEL: 983-0300 FAX: 988-1671

APPENDIX H: Ethics Approval

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences Research Ethics Committee

25/06/2015

Approval Certificate
New Application

Ethics Reference No.: 226/2015

Title: A comparison of two occupational therapy group programmes on the task-oriented functioning of mental health care users with major depressive disorders.

Dear Mr Enos Ramano

The **New Application** as supported by documents specified in your cover letter dated 13/05/2015 for your research received on the 14/05/2015, was approved by the Faculty of Health Sciences Research Ethics Committee on its quorate meeting of 24/06/2015.

Please note the following about your ethics approval:
- Ethics Approval is valid for 2 years
- Please remember to use your protocol number (**226/2015**) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, or monitor the conduct of your research.

Ethics approval is subject to the following:
- The ethics approval is conditional on the receipt of 6 monthly written Progress Reports, and
- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

** Kindly collect your original signed approval certificate from our offices, Faculty of Health Sciences, Research Ethics Committee, H W Snyman South Building, Room 2.33 / 2.34.

Dr R Sommers; MBChB; MMed (Int); MPharMed.
Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 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).

APPENDIX I: Informed Consent

Dear Patient   **Date:**…………. /………/……….

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

THE NATURE AND PURPOSE OF THIS STUDY

The aim of this study is to compare if the proposed alternative occupational therapy group programme, the Standard Care Plus (SC_O), is superior to the occupational therapy group programme that is already in use, the existing Standard Care (SC_N), when it comes to enhancing the task-oriented functioning of MHCUs with MDD.

By doing so, I wish to get a better understanding of how you think and feel about occupational therapy groups.

WHAT IS THE DURATION OF THIS STUDY?

If you decide to take part you will be one of approximately 50 patients. The study will last for up to six months. You will be asked to visit the investigator for two weeks of your hospitalization.

DESCRIPTION OF PROCEDURES

This study involves answering some questions with regard to your Major Depressive Disorder, progress during your participation in occupational therapy groups and continues testing of your progress.

EXPLANATION OF PROCEDURES TO BE FOLLOWED

If you are willing to participate, you will be expected to complete questions at the end of each occupational therapy group session. The data will be used in such a way that you will not be recognised.

RISK, INCONVENIENCE AND DISCOMFORT INVOLVED

There are no known risks for participating in the study.

POSSIBLE BENEFITS OF THIS STUDY

The benefits to you in participating in the study could be:

- To help us to modify and improve occupational therapy groups.
- To ensure that the intervention you are receiving is of a high quality.

If you do not want to participate in this study, you will still be expected to continue with your regular treatment as prescribed by your treating psychiatrist and other team members.

You may at any time withdraw from this study without giving any reasons.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This protocol was submitted to the Faculty of Health Sciences Research Ethics Committee, University of Pretoria, telephone number 012 354 1677/012 354 1330 and written approval was granted by that Committee. The ethics clearance number is 226/2015. The study has been structured in accordance with the Declaration of Helsinki (last update, October 2008), which deals with the recommendations guiding doctors in biomedical research involving human/subjects. A copy of the Declaration may be obtained from the investigator should you wish to review it.

WHAT ARE YOUR RIGHTS AS A PARTICIPANT IN THIS STUDY?

Your participation in this study is entirely voluntary and you can refuse to participate or stop at any time without stating any reason. Your withdrawal will not affect your access to other medical care. The researcher retains the right to withdraw you from the study if it is considered to be in your best interest. If it is detected that you did not give an accurate history or did not follow the guidelines of the study and the regulations of the study facility, you may be withdrawn from the study at any time.

IS ALTERNATIVE TREATMENT AVAILABLE?

An additional alternative treatment in the form of group therapy is often used to treat major depressive disorder. If you decide not to take part in this study, it is possible that you may participate in other group therapy sessions.

INFORMATION

If you have any questions concerning this study, you are welcome to contact: Mr Enos Ramano, Tel: 011-4217300 or cell 0825742720 or e-mail: eramano@telkomsa.net.

CONFIDENTIALITY

All information obtained during the course of this study is strictly confidential. Data that may be reported in scientific journals will not include any information which identifies you as a patient in this study. Results will be published or presented in such a manner that participants and institutions will remain unidentifiable.

INFORMED CONSENT TO PARTICIPATE IN THIS STUDY.

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

I give consent to participate in this research study:

                 Yes   No

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

I hereby confirm that I have been informed by the investigator, Mr Enos Ramano about the nature, conduct, benefits and risks of this study. I have also received, read and understood the above written information (Patient Information Leaflet and Informed Consent) regarding the study.

I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.

I may, at any stage, without prejudice, withdraw my consent and participation in the study. I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

Patient's name   _____

                    (Please print)

Patient's signature   _____   Date _____

I, Mr Enos Ramano herewith confirm that the above patient has been informed fully about the nature, conduct and risks of the above trial.

Investigator's name   _____

                      (Please print)

Investigator's signature _____   Date _____

Witness's name* _____Witness's signature _____ Date _____

                     (Please print)

We sincerely appreciate your help and participation in the study.

Yours truly

Enos Ramano

APPENDIX J: Feasibility Study

```
                                                    STATA (R)
                                                    Statistics/Data Analysis

  STATA (R)  11.2   Copyright 1985-2009 StataCorp LP
  Statistics/Data Analysis    StataCorp
                              4905 Lakeway Drive
                              College Station, Texas 77845 USA
                              800-STATA-PC
                              979-696-4600        http://www.stata.com
                              979-696-4601 (fax) stata@stata.com
```

```
25-user Stata network perpetual license:
        Serial number:  30110529808
        Licensed to:  Piet Becker
                      Medical Research Council

Notes:
     1.   (/m# option or -set memory-) 500.00 MB allocated to data
Checking http://www.stata.com for update... proxy host not found
unable to check for update; verify Internet settings are correct.
```

1 . *(7 variables, 25 observations pasted into data editor)

2 . save "C:\Backup_2014\Ramano_Enos\enos_041114.dta"
    file C:\Backup_2014\Ramano_Enos\enos_041114.dta saved

3 . for var cog_pre perf_pre aff_pre \ var cog_pst perf_pst aff_pst: ttest X = Y

-> ttest cog_pre = cog_pst

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
cog_pre	25	77.88	1.297844	6.489222	75.20138	80.55862
cog_pst	25	87.76	1.358038	6.790189	84.95715	90.56285
diff	25	-9.88	1.180847	5.904236	-12.31715	-7.442851

mean(diff) = mean(cog_pre - cog_pst)
Ho: mean(diff) = 0

t = -8.3669
degrees of freedom = 24

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

-> ttest perf_pre = perf_pst

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
perf_pre	25	32.2	.9814955	4.907477	30.17429	34.22571
perf_pst	25	40.08	1.348975	6.744875	37.29585	42.86415
diff	25	-7.88	1.010478	5.052392	-9.965525	-5.794475

mean(diff) = mean(perf_pre - perf_pst)
Ho: mean(diff) = 0

t = -7.7983
degrees of freedom = 24

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

-> ttest aff_pre = aff_pst

```
5 T 5 T 5 (R)
Statistics/Data Analysis
```

```
5 T 5 T 5 (R)
Statistics/Data Analysis    11.2    Copyright 1985-2009 StataCorp LP
                                    StataCorp
                                    4905 Lakeway Drive
                                    College Station, Texas 77845 USA
                                    800-STATA-PC          http://www.stata.com
                                    979-696-4600          stata@stata.com
                                    979-696-4601 (fax)
```

Notes:
    1. (/m# option or -set memory-) 500.00 MB allocated to data
Checking http://www.stata.com for update... proxy host not found
unable to check for update; verify Internet settings are correct.

1 . *(7 variables, 25 observations pasted into data editor)

2 . save "C:\Backup_2014\Ramano_Enos\enos_041114.dta"
   file C:\Backup_2014\Ramano_Enos\enos_041114.dta saved

3 . for var cog_pre perf_pre aff_pre \ var cog_pst perf_pst aff_pst: ttest X = Y

-> ttest cog_pre = cog_pst

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
cog_pre	25	77.88	1.297844	6.489222	75.20138	80.55862
cog_pst	25	87.76	1.358038	6.790189	84.95715	90.56285
diff	25	-9.88	1.180847	5.904236	-12.31715	-7.442851

    mean(diff) = mean(cog_pre - cog_pst)   t = -8.3669
Ho: mean(diff) = 0   degrees of freedom =   24

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

-> ttest perf_pre = perf_pst

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
perf_pre	25	32.2	.9814955	4.907477	30.17429	34.22571
perf_pst	25	40.08	1.348975	6.744875	37.29585	42.86415
diff	25	-7.88	1.010478	5.052392	-9.965525	-5.794475

    mean(diff) = mean(perf_pre - perf_pst)   t = -7.7983
Ho: mean(diff) = 0   degrees of freedom =   24

Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

-> ttest aff_pre = aff_pst

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
aff_pre	25	71.64	.7591223	3.795612	70.07325	73.20675
aff_pst	25	78.08	.4543127	2.271563	77.14234	79.01766
diff	25	-6.44	.7350283	3.675142	-7.957024	-4.922976

    mean(diff) = mean(aff_pre - aff_pst)   t = -8.7616
 Ho: mean(diff) = 0   degrees of freedom =   24

 Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
 Pr(T < t) = 0.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 1.0000

4 . for var cog_pre perf_pre aff_pre \ var cog_pst perf_pst aff_pst: ttest Y = X

-> ttest cog_pst = cog_pre

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
cog_pst	25	87.76	1.358038	6.790189	84.95715	90.56285
cog_pre	25	77.88	1.297844	6.489222	75.20138	80.55862
diff	25	9.88	1.180847	5.904236	7.442851	12.31715

    mean(diff) = mean(cog_pst - cog_pre)   t =   8.3669
 Ho: mean(diff) = 0   degrees of freedom =   24

 Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
 Pr(T < t) = 1.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 0.0000

-> ttest perf_pst = perf_pre $p < 0.001$

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
perf_pst	25	40.08	1.348975	6.744875	37.29585	42.86415
perf_pre	25	32.2	.9814955	4.907477	30.17429	34.22571
diff	25	7.88	1.010478	5.052392	5.794475	9.965525

    mean(diff) = mean(perf_pst - perf_pre)   t =   7.7983
 Ho: mean(diff) = 0   degrees of freedom =   24

 Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
 Pr(T < t) = 1.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 0.0000

-> ttest aff_pst = aff_pre

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
aff_pst	25	78.08	.4543127	2.271563	77.14234	79.01766
aff_pre	25	71.64	.7591223	3.795612	70.07325	73.20675
diff	25	6.44	.7350283	3.675142	4.922976	7.957024

    mean(diff) = mean(aff_pst - aff_pre)   t =   8.7616
 Ho: mean(diff) = 0   degrees of freedom =   24

 Ha: mean(diff) < 0   Ha: mean(diff) != 0   Ha: mean(diff) > 0
 Pr(T < t) = 1.0000   Pr(|T| > |t|) = 0.0000   Pr(T > t) = 0.0000

5 .

Two group t-test of equal means (equal n's)

Column	1	2	3	4	5
Test significance level, α	0.050	0.050	0.050	0.050	0.050
1 or 2 sided test?	2	2	2	2	2
Group 1 mean, μ_1	9.880	10.000	10.000	8.000	6.500
Group 2 mean, μ_2	13.800	14.000	12.200	11.200	9.100
Difference in means, $\mu_1 - \mu_2$	-3.920	-4.000	-2.200	-3.200	-2.600
Common standard deviation, σ	5.900	5.900	5.900	5.050	3.670
Effect size, $\delta = |\mu_1 - \mu_2| / \sigma$	0.664	0.678	0.373	0.634	0.708
Power (%)	90	90	90	90	90
n per group	49	47	153	54	43

STORED STATEMENTS for MTT0-tmpECE4:

A sample size of 43 in each group will have 90% power to detect a difference in means of -2.600 (the difference between a Group 1 mean, μ_1, of 6.500 and a Group 2 mean, μ_2, of 9.100) assuming that the common standard deviation is 3.670 using a two group t-test with a 0.050 two-sided significance level.

REFERENCES for MTT0-tmpECE4:

Dixon, W.J., Massey, F.J. Introduction to Statistical Analysis. 4th Edition McGraw-Hill (1983)

O'Brien, R.G., Muller, K.E. Applied Analysis of Variance in Behavioral Science Marcel Dekker, New York (1983) pp. 297-344

APPENDIX K: Clearance from Biostatistician

Date: 4 / 11 /2014

LETTER OF CLEARANCE FROM THE BIOSTATISTICIAN

This letter is to confirm that the student(s),

with the Name(s) _MR ENOS RAMANO_

Studying at the University of _PRETORIA_ .

discussed the Project with the title

_____ with me.

I hereby confirm that I am aware of the project and also undertake to assist with the Statistical analysis of the data generated from the project.

The analytical tool that will be used will be _ANCOVA and data summary by treatment group. Also refer attached section from protocol for sample size_ to achieve the objective(s) of the study.

Name _PJ BECKER_   Date _4/11/14_

Signature _____   Tel: _012-319-2203_

Department or Unit _RESEARCH OFFICE, FAC HEALTH SCI, UP_

BIOSTATISTICS
Faculty of Health Sciences
Research Office
2014 -11- 0 4
UNIVERSITY OF PRETORIA

Official Stamp of
Biostatistician
4/11/14

Date: 12 / 2 /2015

LETTER OF CLEARANCE FROM THE BIOSTATISTICIAN

This letter is to confirm that the researcher(s)/student(s),

with the name(s) MR ENOS RAMANO

Studying at the University of PRETORIA

discussed the Project with the title

_____

_____

_____ with me.

I hereby confirm that I am aware of the project and also undertake to assist with the

Statistical analysis of the data generated from the project.

The analytical tool that will be used will be ANCOVA / ANCOVA for ranks /
ANCOVA to include clustering, and data summary by
treatment group. Also refer to attached section
to achieve the objective(s) of the study. from the protocol.

Name PJ BECKER   Date 12/2/15

Signature _____   Tel: 012 - 319 - 2205/2191

Department of Unit RESEARCH OFFICE, FAC HEALTH Sci, UP

```
BIOSTATISTICS
Faculty of Health Sciences
Research Office

2015 -02- 1 2

UNIVERSITY OF PRETORIA
```

Official Stamp of
Biostatistician
12/2/15

APPENDIX L: Mixed-Effects ML Regression with cluster as group variable

						PHQ9:					
AREA	Pleasure	Depres-sion	Sleep	Energy	Apetite	Self-Concept	Concen-tration	Conation	Suicide	Total	Function
Prog.	0.24	0.513	0.64	0.794	0.856	0.778	0.502	0.179	0.29	0.403	0.782
Hosp	0.283	0.875	0.041	0.137	0.157	0.426	0.428	0.471	0.714	0.625	0.256
prog#hosp	0.366	0.512	0.039	0.01	0.081	0.605	0.862	0.448	0.266	0.097	0.098

Mixed-Effects ML Regression, Cluster as Group variable: P>|z|

Mixed-Effects ML Regression, Cluster as Group variable: P>|z|
TOA:

	COGNITION						PERFORMANCE				AFFECTIVE				
AREA	Memory	Organi-sation	Attention span	Thought disorder	Ability to abstract	Total Cognition	Task comple-tion	Errors	Efficiency	Total Perfor-mance	Motiva-tion	Frustra-tion tolerance	Self-Confiden ce	General Affect Impr	Total Affective
Prog.	0.794	0.769	0.87	0.153	0.241	0.656	0.62	0.774	0.145	0.511	0.333	0.666	0.898	0.661	0.767
Hosp	0.366	0.534	0.595	0.981	0.002	0.294	0.289	0.768	0.842	0.768	0.015	0.786	0.431	0.919	0.248
prog#hosp	0.634	0.401	0.327	0.312	0.083	0.204	0.938	0.953	0.838	0.913	0.193	0.827	0.372	0.988	0.433

Mixed-Effects ML Regression, Cluster as Group variable: P>|z|
SocInt:

	Functional Areas							Client's Social Response by Situation					
AREAS	Verbal communi	Psycho-mot	Socially approp.	Resp. to Authorot	Independ /depen-	Ability to work	Participat . in	One to One	Mealtime	Unstruct. Group	Struct'd Activity	Struct'd Verbal	Social Response
Prog.	0.025	0.004	0.372	0.187	0.994	0.792	0.971	0.115	0.36	0.48	0.298	0.335	0.291
Hosp	0.357	0.125	0.562	0.636	0.146	0.136	0.277	0.996	0.551	0.548	0.836	0.863	0.779
prog#hosp	0.832	0.932	0.888	0.517	0.379	0.328	0.646	0.398	0.099	0.081	0.172	0.19	0.159