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The therapeutic impact of occupational therapy groups on the activity participation of persons with major depressive disorder in an acute mental health setting

ABSTRACT

Introduction: Participation in meaningful activities is compromised in mental health care users living with major depressive disorder. In acute mental health settings, occupational therapy groups are the main treatment modality used to address occupational dysfunction or activity participation in these mental health care users. However, the evidence for the therapeutic impact of occupational therapy groups on activity participation is limited.

This study aimed to determine change in the activity participation of mental healthcare users with major depression attending occupational therapy groups based on the Occupational Therapy Interactive Group Model during their admission to an acute private mental health setting.

Method: A quasi-experimental, longitudinal, pre-post group study design was employed to collect data from a sample of 70 participants diagnosed with major depressive disorder. The Activity Participation Outcome Measure (APOM) was used to measure change in activity participation in this study.

Results: A significant improvement in activity participation was evident from admission to discharge across all the domains of the APOM. Correlations between the independent variables and improvement in APOM scores indicated stronger correlations for the number of groups attended by participants than their length of stay. Additionally, closed groups yielded a stronger correlation with improvement in APOM scores in comparison to open groups.

Discussion: Occupational therapy groups play an integral role in the road to healing for mental health care users diagnosed with major depression admitted to acute private mental health settings.

Implications for Practice:

- Incorporating the Occupational Therapy Interactive Groupwork Model (OTIGM) in the treatment of patients with major depressive disorder, especially with closed groups, enables members to experience a sense of security and continuity, which can enhance therapeutic outcomes.
- Integrating tools such as the APOM in clinical settings to measure the efficacy of interventions and identify areas needing further attention, will build evidence-based practice.
- Incorporating stress management techniques, such as mindfulness, relaxation therapy, Tension Release Exercises (TRE) and sensory activities, into the therapeutic regimen can be highly beneficial in the treatment of the acute symptoms of major depressive disorder.

BACKGROUND AND LITERATURE REVIEW

Major Depressive Disorder (MDD) is a debilitating mental disorder which was declared a leading cause of disability by the World Health Organization (WHO) as of 2018¹. In South Africa, MDD is one of the top three contributors of the overall burden of disease². In the wake of COVID-19, an increase in symptoms of depression and inconvenience in everyday living, should also be accounted for when considering the current prevalence of MDD^{3,4,5}. Major

Depressive Disorder is characterised by acute symptoms such as persistent sadness, loneliness, loss of interest in activities, anhedonia, avolition, lack of energy, self-harm, suicidal thoughts, and feelings of worthlessness^{6,7}. When left untreated, it often results in suicide, increased medical morbidity and mortality, workplace absenteeism, as well as occupational and social dysfunction⁶.

When an individual is diagnosed with MDD, participation in meaningful activities of choice is often compromised by lack of energy and decreased motivation to participate in these activities^{5,6,7}. Occupational therapy intervention for individuals with MDD aims to address occupational dysfunction and occupational imbalance by encouraging engagement in a variety of occupations^{8,9}. Social dysfunction, or social withdrawal caused by MDD, is often addressed by providing opportunities for mental healthcare users (MHCUs) to engage in occupations with others. Participation in occupations is necessary to prepare individuals with MDD to cope with the demands of their immediate environment and to re-integrate into their everyday lives^{9,10,11}.

In an acute mental health setting, occupational therapy intervention consists of individual assessments, individual treatment, groupwork/therapeutic groups, discharge planning, and community re-integration¹². Group therapy is the primary treatment modality employed by occupational therapists in inpatient psychiatric settings¹³. Occupational therapists make use of the therapeutic factors inherent in groups such as universality, instillation of hope, altruism, and interpersonal learning, to facilitate increased awareness and behaviour change in each MHCU¹⁴. By making use of therapeutic factors and purposeful activities, occupational therapists address client factors (e.g., mood, motivation, self-esteem) and occupational performance areas (e.g., social participation) during group sessions^{14,15,16}. This aims to improve MHCUs' engagement in their daily occupations and roles, such as work and social participation^{11,16}.

The Occupational Therapy Interactive Group Model (OTIGM) is an approach used by South-African occupational therapists in both public and private mental healthcare settings. The OTIGM is an occupation focused, psychosocial approach and was developed in the 1980's by an occupational therapist, in conjunction with a psychologist, as reported in Fouche¹⁴. One of the core concepts underpinning this psychosocial approach is that mental illness and behavioural problems are rooted in poor relationships. Therefore, interactive experiences in the group can change the way individuals interact with others in their own social circle, and contribute to the healing process. One of the critical constructs of the OTIGM approach is that the therapist should lead from behind, emphasising the therapist's role as that of a group facilitator and not the group leader¹⁴. The group should therefore not be forced in a certain direction by the group therapist, but the group members will determine the course of the group. The therapist facilitates this process by providing opportunities for members to express their needs, interact with one another and share their experiences. Since the OTIGM is an occupation-based approach, an activity must be presented by the occupational therapist. The therapists base their activity choices on the needs of the group, as well as the curative factors they plan to facilitate during the group. A specific procedure is followed with nine consecutive steps, starting with an introduction, and ending with a post-activity discussion and closure¹⁴.

In 2018, Davidson¹⁷ conducted the first study on the use of the OTIGM approach in South Africa. This qualitative study focused on seven MHCUs' perceptions of the model during their admission to a public mental healthcare unit. Themes that emerged from her study were associated with the benefits of interpersonal learning and coping with mental illness. Davidson¹⁷ also found that the OTIGM is an effective change modality as it encourages self-learning, and allows for interpersonal problems to be addressed during the acute phase of intervention.

In a South African study conducted by Ramano et al.¹⁸, two group programmes were compared to investigate the impact of occupation-based groups as intervention method for MHCUs diagnosed with MDD. The one programme was entirely activity-based for nine out of nine group sessions, and the other programme was discussion-based with tangible activities in only five out of nine group sessions. Participants in the entirely activity-based group showed significantly more improvement than participants in the discussion-based group on all components of the Bay Area Functional Performance Evaluation Revised (BaPFE-R) Social Interaction Scale (SIS)¹⁹. However, the BaPFE-R (SIS), in conjunction with the Patient Health Questionnaire-9 (PHQ-9)²⁰ which was used to determine the presence and severity of depression²¹ by Ramano et al.,¹⁸ provided limited outcomes against which improvement in activity participation could be assessed. Babalul²² mentioned that relationship between mental illness and poor participation has not received much attention. Meyer²³ however, demonstrated a non-significant, negligible correlation between activity participation as measured by the Activity Participation Outcome Measure (APOM)²⁴ and perceived depression as measured by the PHQ-9.

One of the main reasons occupational therapists use symptom and functional performance scales as outcome measures with MHCUs, is the lack of context appropriate, occupation-based outcome measures in mental health²⁵. To bridge this gap, the Activity Participation Outcome Measure (APOM) was developed by Casteleijn²⁴ in the South African context. The APOM is aligned with the Vona du Toit Model of Creative Ability (VdTMoCA), a model used by many South African occupational therapists, to guide clinical reasoning governing treatment in mental health^{26,27}. The model comprises of three inter-related concepts of volition, motivation, and action. Volition and motivation are believed to govern action, while action is the manifestation of volition and motivation^{26,27}. The VdTMoCA model is concerned with the way in which humans relate to their world through participation in daily activities, with volition, motivation, and corresponding action developing in sequential stages known as the 'levels of creative ability'^{26,27}. There are nine levels of creative ability, with defined levels of motivation and corresponding action, but the APOM comprises of the first six levels since those are the levels which may require a degree of therapeutic input^{24,25}. Each item on the APOM has six descriptors, where each descriptor represents one of the six levels of creative ability (Table 1, below). When using the APOM, therapists use their clinical reasoning, observations made during assessment, and knowledge of the VdTMoCA to determine which descriptor best fits the involved MHCU and scores them accordingly.

Table 1: An excerpt of the APOM for the domain Balanced lifestyle with the item habits and relating descriptors on each level of activity participation.

Balanced lifestyle	Level 1 Tone	Level 2 Self-differentiation	Level 3 Self-presentation	Level 4 Passive participation	Level 5 Imitative participation	Level 6 Active participation
Habits	Is unaware of undesirable or good habits.	Inappropriate and destructive habits may be present. Is unaware of good habits.	Inappropriate habits still present but beginning to be aware of negative effects of destructive habits. Useful habits emerging.	Habits not well established and easily disrupted by illness. Finds it difficult to replace undesirable habits with good habits but realizes the importance of it.	Is aware of undesirable habits and able to change to good habits.	Avoids undesirable habits, assists others to change habits. Constantly striving for quality of life and will adapt habits to have a better lifestyle.

Once the level of creative ability has been determined, the occupational therapists use their clinical reasoning and observations to determine the phase within the level, i.e. therapist-directed, patient-directed or transitional phase^{24,25}. Occupational

therapists familiar with the VdTMoCA, who attend a one-day training workshop are eligible to administer the APOM and use the online scoring.

Many studies have shown that the APOM is able to track changes in activity participation with occupational therapy intervention^{23,28,29,30,31}. However, limited evidence is available on the effectiveness and impact of the OTIGM approach on the activity participation of MHCHs with a diagnosis of MDD. The aim of this study was to determine changes in activity participation from admission to discharge in MHCUs diagnosed with MDD, who attended occupational therapy groups. The majority of groups attended by participants in the study was based on the OTIGM. Factors impacting on the change in activity participation, such as length of stay and number and types of groups attended during admission to the private psychiatric clinic, were accounted for. The association between activity participation and severity of symptoms were also considered.

METHODS

Study design

The design of the study was a quasi-experimental, pre-post-test group design with longitudinal features. Data were collected before intervention and then again after the intervention. No control group was used. The study took place in a 170-bed acute psychiatric clinic in a major city in South Africa.

Sample

A non-probabilistic, convenience sample was used. Inclusion criteria were first admission to the clinic with a diagnosis of MDD, age between 18 and 65 years and provision of consent to be included in the study. The exclusion criterion was admission shorter than 6 days as this short period would not allow for a baseline and a final assessment. The sample size was determined based on results from a previous study by Carter³⁰. The planned sample size was 69 participants.

Research Instrument

The Activity Participation Outcome Measure

Activity participation in the APOM consists of 53 items, represented by eight domains: *Process skills, Communication and Interaction skills, Life skills, Balanced lifestyle, Role performance, Self-esteem* as well as *Motivation and Affect*^{24,25,32,33}. Scoring of the APOM usually follows assessment of the client in different situations including an interview, participation in various activities or observations made in a social context. After choosing the appropriate level for the item being assessed, a therapist needs to determine the phase within the level. Each level consists of three phases: therapist-directed, patient-directed, and transitional phase (to the next level).

Construct and content validity of the APOM has been established with good inter-rater reliability. Internal consistency and validity of the APOM was confirmed on various South-African populations³² and the APOM was found to be responsive in describing trends and changes in activity participation as a result of intervention^{23,25,29,30,31,33,34}. Previous studies conducted in South African mental health settings using the APOM focused on adolescent MHCUs^{31,35}, forensic MHCUs^{28,33}, and MHCUs in a rural context³⁴. Another study using the APOM was conducted in the United Kingdom and focused on activity participation of MHCUs with various conditions³⁰. The results indicated statistically significant positive changes in activity participation for participants in all these studies who attended occupational therapy group programmes. Using results from the above studies to create a benchmark for improvement in activity participation for MHCUs diagnosed with MDD is however complicated by the grouping of MDD with other psychiatric conditions in these studies.

Research Procedure

Data collection commenced only after ethical clearance was obtained from the Human Research Ethics Committee at the University of the Witwatersrand (M170913). All participants received an information sheet outlining the research aims and procedures and signed informed consent.

Occupational therapy Intervention

Attendance of occupational therapy groups at the research site is voluntary. Mental health care users attend an introduction session in the beginning of their admission where the programme is explained by an occupational therapist. Participants choose the groups they are motivated to attend during their admission. A screening activity during the introduction group assists the occupational therapist to provide guidance to MHCUs who struggle to choose the appropriate groups or to identify those who are not yet suited for certain groups. An average of two to three sessions are covered by the medical aid each day. Participants choose from three categories of groups: stress management groups, craft groups and interpersonal groups. The programme consists of various types of groups with open and closed group membership options. A closed group is a group where the same members are present for a few consecutive sessions without new members joining. With open groups, members are free to join the group regardless of attendance of a previous group with the same theme. The researcher kept track of the number and types of groups participants attended during their admission.

Groups in the interpersonal category at the research site follow the group process and principles of the OTIGM. Therapists facilitating these groups undergo additional training to enhance their understanding and facilitation skills when using the OTIGM. Groups in the stress management category make use of elements of the OTIGM but do not strictly follow the group process of the OTIGM. Occupational therapists at the research site make use of occupation as a means and an end to facilitate participation in activities presented in the groups and, through engagement in activities, assist members in becoming aware of meaningful roles they fulfil in the group or in their lives. The open groups in the craft group category are self-directed. Clients participate in craft activities of their choice at their own pace. While working on their individual products, aspects such as decision making, task initiation and completion and time management are facilitated, depending on each MHCUs' process and needs. Closed groups in the craft group category follow elements of the OTIGM. Although each member works on their own product, they usually follow the same process e.g., emotional check-in at the start of the group, sharing experiences of creating the products and its significance.

Data collection

An initial baseline assessment was completed by the first author (who is trained in the administration of the APOM) before intervention commenced. Table II (page 21) reflects the content of the baseline assessments.

Table II: Assessments and activities used for baseline APOM assessments

Activities used to assess level of Creative Ability:	Administered by:
2.1. Tree metaphor (Draw yourself as a tree activity) * This is a standard activity used by the occupational therapy practice when new MHCUs are orientated to the programme.	Occupational therapists treating the participants at the research site (including the first author)
APOM assessment 2.2. Initial interview and collection of demographic information 2.3. Pie chart of daily routine (how time is spent in a 24-hour cycle) 2.4. Making an envelope by following written instructions with pictures (used to assess process skills) 2.5. Decorating the envelope in a way that represents the MHCU. This could be abstract (e.g. character/personality), or more concrete (e.g. likes/dislikes). Different media were offered to choose from (paint, stickers, pieces of material, stencils, tools).	First author

*During the APOM assessment, participants gave feedback to the researcher on the 'draw-yourself-as-a-tree' activity that was completed during the introduction session and the information was used to aid with the scoring of initial APOM assessments.

Final APOM assessments

Final APOM assessments were administered one or two days before discharge. Participants reflected on personal growth, group participation, and discharge plans. The draw-yourself-as-tree activity was repeated to conclude which areas they felt improved the most during their admission. Similar to the envelope, participants had to follow instructions to fold a box to aid in the scoring of process skills, motivation, and self-esteem domains. The decorated envelope as created during the initial assessment was shown to participants to add any attributes or qualities they discovered or rediscovered about themselves during admission.

Above mentioned assessment activities along with feedback from therapists regarding participants' activity participation in group sessions, were used to complete final APOM scoring sheets. Feedback, in the form of a spider graph, was discussed with participants upon discharge.

Data Management and Analysis

All data were captured by the first author and Statistica v 13.2 software was used for analysis. Demographic data and the scores on the APOM assessments were analysed by using descriptive statistics³⁶. The standardised response mean (SRM) was used to calculate effect size of change in APOM scores³⁷. Cohen's criteria³⁸, used to interpret effect size, was used, where 0.2 is considered small, 0.5 is considered medium, and an effect size greater than 0.8 is considered large. The Wilcoxon test, a non-parametric statistical method, was used to assess whether there existed a statistically significant distinction between the baseline and discharge APOM scores. The null hypothesis formulated for this specific inquiry was as follows: There is no significant positive change in activity participation scores for each domain of the APOM between admission and discharge. The rejection of this hypothesis relied on the p-value obtained from the Wilcoxon test, which needed to fall below 0.536. Spearman's Rank Order Correlations were used to indicate if the change in APOM domain scores were associated with the length of stay and number of groups attended³⁷.

RESULTS

A total of 75 baseline APOM assessments were conducted, five participants were excluded from the study due to change in diagnosis during admission resulting in a sample size of 70. Nine of the MHCUs were discharged before the final APOM could be conducted. A total of 61 final APOM assessments were administered and used for analysis.

Demographics of the sample

Male participants made up 31,15% (n=19) of the sample while 68,85% were female (n=42) with the majority of participants between the ages of 18-29 years (Table III, below). The demographic information of the nine participants whose data were omitted from analysis due to discharge were not included in the demographic information below.

Table III: Demographics of the sample (n=61)

Variables		n	%	Variables		n	%
Age in years	19-29	22	36.07	Gender	Male	19	31.15
	30-39	17	27.87		Female	42	68.85
	40-49	12	19.67	Employment status	Employed full time	40	65.57
	50-59	9	14.75		Employed part time	4	6.56
	60-62	1	1.64		Student	11	18.03
Level of education	High school	20	32.79		Learner (Gr12)	1	1.64
	Post-matric Degree	16	26.23	Other*	5	8.20	
		25	40.98				

*'Other' includes volunteer workers, homemakers and participants who are unemployed.

In Table IV (below), the length of stay, total number of groups attended, and the types of groups attended by each participant are indicated. The majority of participants stayed between six and 15 days and interpersonal and stress management groups were attended most often.

Table IV: Length of stay and total number of groups attended during admission (n=61)

Length of stay (in days)	n	%	Type of group	n	Number of groups attended	%
0 - 5	2	4.29	Stress management groups (Open groups)	49	186	26.64
6 - 10	18	34.29				
11 - 15	20	30.00				
16 - 20	17	25.71				
21 - 25	4	5.71				
Number of groups attended	n	%	Interpersonal groups (Open and closed groups)	31	169	24.21
Low: 0 - 5	11	18.03	Craft groups (Two open groups and one closed group. Included three different mediums)			
Medium: 6 - 15	34	55.73				
High: 16 - 30	16	26.23				

Change in Activity Participation scores

In Figure 1 (page 5), the change in activity participation for all the domains of the APOM from baseline to discharge is indicated. The change was positive for all the domains of the APOM and indicated a mean baseline APOM score of 9.8 (Self-presentation level, transitional phase) to an average final APOM score on discharge of 11.8 (Passive participation, transitional phase). Balanced lifestyle had

the greatest change from baseline to discharge followed by the Affect domain. The lowest positive change from baseline to discharge was Role performance.

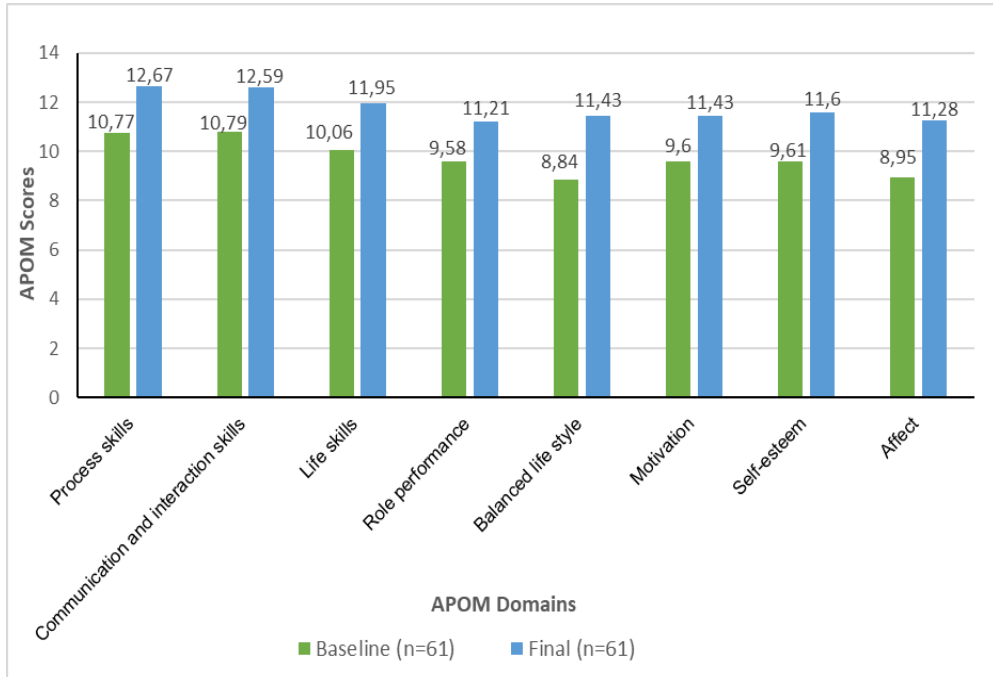


Figure 1: Baseline and final APOM mean scores (n=61)

In Table V (below) the SRM for each domain of the APOM as well as the significance in change of APOM scores according to the Wilcoxon sign ranked tests from baseline to discharge is depicted. The changes in all activity participation scores from baseline to discharge were highly significant with $p = 0.00$ for all the domains of the APOM.

Table V: Effect sizes per APOM domain calculated by standardised response mean (SRM) (n=61).

APOM Domains	n	Effect size (SRM)	p value
Process skills	60	1.80	0.000*
Communication and interaction skills	58	1.46	0.000*
Life skills	61	1.93	0.000*
Role performance	61	1.41	0.000*
Balanced lifestyle	61	1.81	0.000*
Motivation	60	1.69	0.000*
Self-esteem	61	1.53	0.000*
Affect	60	2.04	0.000*
Total of all domains		1.49	0.000*

*significant at $p < .050$

In Table VI (adjacent), shows correlations between changes in APOM scores and the number of groups attended, as well as the length of stay. Marked correlations indicate a p-value below 0.05, thus indicating a statistically significant correlation. Non-significant, negligible correlations ($r_s = 0 - 0.2$) were found between length of stay and six domains of the APOM and change in APOM scores. Statistically significant, low correlations ($r_s = 0.2 - 0.4$) were indicated between length of stay and change in two APOM domains for Process skills and Role performance.

Correlations between total number of groups and change in APOM scores were higher than those of length of stay and indicated statistically significant correlations across all the domains of the APOM. Moderate correlation ($r_s = 0.4 - 0.6$) were indicated between number of groups attended and the change in APOM scores, with Role performance, Motivation, and Balanced lifestyle indicating the highest correlations. The lowest correlation was indicated by the Affect domain.

Table VI: Correlations between the change in APOM scores and total number of groups attended and length of stay (n=61)

APOM Domains	Length of stay	Total number of groups attended
	rho	rho
Process skills	0.29*	0.42*
Communication and interaction skills	0.09	0.44*
Life skills	0.15	0.44*
Role performance	0.25*	0.48*
Balanced lifestyle	0.17	0.47*
Motivation	0.2	0.47*
Self - esteem	0.11	0.45*
Affect	0.03	0.39*

* significant at $p < .050$

Results of the correlations indicated the relationship between the different types of groups attended by participants during their admission and change in activity participation represented by APOM domain scores are presented in Table VII (below). Marked correlations are statistically significant.

Table VII: Correlations between change in APOM scores and types of groups (n=61).

APOM Domains	Group Categories			Open and closed groups	
	Craft groups	Stress management groups	Interpersonal groups	Open groups total	Closed groups total
	rho				
Process skills	0.17	0.36*	0.41*	0.35*	0.41*
Communication and interaction skills	0.10	0.40*	0.48*	0.33*	0.46*
Life skills	0.21	0.37*	0.37*	0.36*	0.41*
Role performance	0.06	0.38*	0.48*	0.34*	0.41*
Balanced lifestyle	0.17	0.31*	0.43*	0.35*	0.4*
Motivation	0.03	0.41*	0.54*	0.34*	0.49*
Self - esteem	0.09	0.41*	0.42*	0.35*	0.40*
Affect	0.07	0.44*	0.30*	0.32*	0.32*

Statistically significant correlations were found between the domains of the APOM and stress management groups, Interpersonal groups, open groups, and closed groups, while the correlation between craft groups and APOM scores indicated negligible non-significant correlations. The strongest low to moderate correlations were indicated by the interpersonal group category and closed groups.

DISCUSSION

Demographics of the study

Most participants were under the age of 29 years which was in line with the South African Stress and Health (SASH) study conducted in 2009³⁹. The study found the mean age of onset of MDD in South Africa was 25 years. Since only first admission MHCUs were included in the study, it makes sense that most of the participants were in the younger age group of 19-29 years.

The level of education for the sample of this study was significantly higher than that of the general population in South Africa. According to the Organisation for Economic Co-operation

and Development (OECD) indicators of 2019⁴⁰, only 7% of the South African population had attained a tertiary degree in comparison to 40.98% of this sample, which is significantly more than the general population. The research site is located in a well-developed suburb and admission to the hospital is dependent on medical aid membership or private funding. It can therefore be concluded that participants in this study belong to a higher socio-economic group. The mean length of stay for this study was 13.07 days, which is in keeping with the average length of stay in private in-patient psychiatric settings in South Africa (12 days⁴¹).

Change in levels of activity participation

A statistically significant positive change in mean APOM scores from baseline to discharge for all the domains of the APOM indicate a change from the average baseline APOM score of 9.8 which represents the Self-presentation level, transitional phase to an average APOM score on discharge of 11.8, representing the transitional phase of Passive Participation. These findings differ from those in previous studies where APOM scores for populations with various other psychiatric conditions, represented lower levels of creative ability at baseline and discharge.

In a study conducted in an inpatient mental health setting in a rural context, more than 80% of the sample had diagnoses of substance abuse or schizophrenia and the mean baseline APOM score was 6.43 (Self-differentiation, transitional phase) and the final mean APOM score post-rehabilitation was 8.18 (Self-presentation, patient directed)³⁴. The baseline and post-therapy APOM scores were also found to be lower at 7.71 (self-presentation, patient directed) and 10.2 (passive participation, therapist directed) respectively in a study conducted in the United Kingdom. The United Kingdom study sample had more varied diagnoses of schizophrenia, schizotypal and delusional disorders; followed by mood disorders with only 5% having a diagnosis of MDD³⁰. Baseline and final APOM scores for the participants diagnosed with MDD were however higher than baseline and post therapy APOM scores for the rest of the United Kingdom sample, with average scores of 8.54 (self-presentation, transitional phase) and 11.1 (passive participation, patient directed) respectively³⁰. When considering higher baseline and final APOM scores for the United Kingdom sample and the results of this study, it was hypothesised that the level of creative ability of MHCUs diagnosed with MDD admitted for treatment, may be slightly higher than that of other psychiatric diagnoses. When interpreting these results, it is important to consider the higher levels of education found in the current study, which could also indicate higher levels of creative ability.

Change in APOM scores

An overall improvement in activity participation from admission to discharge was indicated by the change in APOM scores from the baseline to final APOM assessments. Additionally, all effect sizes were statistically significant ($p < 0.05$) across all the domains of the APOM. It can therefore be concluded that positive changes in APOM scores from baseline to discharge were related to the interventions participants received. However, the sample size may have impacted the statistical significance in the change of scores thus SRMs and effect sizes were used to determine clinically significant change. Since the criteria for interpreting effect sizes used to indicate improvements in this study may be quite relative, Cohen suggested that practitioners determine their own effect sizes for their populations³⁸. When considering previous studies using the APOM, an effect size of 0.8 seems to indicate moderate change, while effect sizes between 1.3 and 2.0 pointed to large clinical effects. The overall SRM for all the domains of the APOM for this study was 1.69 which clinically indicated a large effect with improvement from one creative ability level to the next for both Balanced lifestyle and Affect domains, since participants improved from Self-presentation level (transitional phase) to Passive participation (patient-directed phase).

The importance of considering effect size on clinical improvement was seen when considering the improvement in change in mean APOM domain scores. The greatest improvement in APOM scores from baseline to discharge for participants were Balanced lifestyle, where a mix between physical, mental, social, spiritual and rest activities; and use of time, habits and routines are considered. This was followed by the Affect domain which includes repertoire of emotions, emotional control and mood. The largest effect size was found for the Affect domain at 2.04 with the SRM for Balanced lifestyle at 1.81 indicating greater clinical change in the Affect domain. It should be noted however, that the Affect domain is not exclusively addressed by occupational therapy. Psychopharmacology and psychotherapy provided by psychiatrists and psychologists at the research site also play an integral part in the treatment of mood-related symptoms.

The findings for Balanced lifestyle and the Affect domain are in keeping with results found by Carter³⁰ and Silaule³⁴. Both studies used the APOM with inpatient samples and also found the greatest improvement in Affect and the Balanced lifestyle domains.

Role performance showed the lowest effect size of 1.41 from baseline to discharge which differs from other studies where treatment effects were measured over 11-14 weeks³⁴. Role performance or the ability to meet the demands of roles that form social identity may have been affected by the acute inpatient context of the study, where the primary role being fulfilled by MHCUs during admission is often the patient role. These factors prevent them from actively engaging in their everyday roles (for example as an employee or parent) and related expectations⁴².

Relationship between dependent and independent variables

Length of stay and total number of groups attended

In the current study, the length of stay was not significantly associated to the change in APOM scores with only Process skills and Role performance found to show a low significant correlation ($r_s = 0.2 - 0.4$). This may be accounted for by the small differences in days in the length of stay in an acute mental health setting since the study by Silaule³⁴ indicated statistically significant, low correlations between length of stay and change in APOM scores for six domains when participants with lower levels of creative ability received intervention for 11-14 weeks. Participants in Silaule's study were at the creative ability level of self-differentiation, often seen among MHCUs with acute psychiatric symptoms³⁴, requiring constant supervision and assistance for optimal functioning. It could be argued that length of stay plays a more prominent part in stabilisation of severe symptoms and improvement to the next level of creative ability for these participants with lower levels of creative ability.

The relationship between the total number of occupational therapy groups attended by each participant and mean difference in APOM scores was indicated by statistically significant, moderate correlations ($r_s = 0.4 - 0.6$) across all the domains of the APOM. This is in line with findings from Carter³⁰ who also found the total number of occupational therapy groups attended by participants tested superior to length of stay when correlated with change in APOM scores. Although this differed from findings by Silaule³⁴, where length of stay tested superior to occupational therapy group attendance (as indicated above), this confirmed the importance of length of stay for participants with lower levels of creative ability. It could be argued that participants with higher levels of creative ability on admission are likely to gain the necessary skills to prepare them to reintegrate earlier into their communities and therefore, length of stay for these individuals may not be associated with the change in the APOM scores.

Open and closed groups

A stronger correlation existed between closed groups and change in APOM scores when compared to the correlations for open groups. In occupational therapy, there is limited evidence about the

difference in group therapy outcomes for open and closed groups. Tourigny and Hébert⁴⁴ investigated the efficacy of open and closed group therapy for adolescents who were sexually abused and found both group formats were associated with the same significant benefits. Stevenson et. al.⁴⁵ investigated the impact of closed versus open groups on programme completion and recidivism for men with a history of sexual offences. No significant differences were observed between open and closed group programmes for treatment completion or for sexual recidivism. In the current study however, a greater association between improved activity participation and closed groups in MHCUs diagnosed with MDD were found. This discrepancy among above mentioned studies indicates the need for future studies exploring the benefits of open and closed groups in occupational therapy with different populations.

Interpersonal groups

Correlations indicated by the interpersonal group category were statistically significant across all the domains of the APOM and showed moderate correlations ($r_s = 0.4 - 0.6$) for most domains of the APOM. The Motivation domain had the highest correlation with change in APOM scores, followed by Role performance and Communication and interaction skills. In comparison to the other types of groups, the interpersonal group category had the strongest correlation with change in APOM scores across all the domains of the APOM except for the Affect domain, which also showed the lowest correlation for interpersonal groups. With the use of the OTIGM, members become aware of what they are feeling towards each other, themselves and the activities presented in the group space. Once members have identified their emotions, a cognitive process usually follows during which members make sense of the possible causes or meaning of these emotions¹⁴. Davidson¹⁷ found that MHCUs identified 'personal shifts' as a key advantage of the OTIGM in their road to recovery, but noted that it was often accompanied by difficult emotions and discomfort¹⁷, which could explain lower correlations observed in the affect domain of the APOM in this study.

Interpersonal groups at the research site consisted of both open and closed groups with various themes related to interpersonal relationships, addictive behaviour, and self-esteem. All groups in this category strictly followed the process of the OTIGM which made use of Yalom's curative factors to facilitate the group process and to ensure a safe environment conducive to growth¹⁴. Approval, acceptance, belonging, and connection is encouraged by facilitation of the curative factors such as universality, cohesion, and the instillation of hope⁴⁶. Positive emotions associated with connecting with others therefore enhances motivation of MHCUs on the level of Passive Participation. The findings for the Motivation domain were therefore not unexpected since most participants were functioning at this level of creative ability during their admission. Members functioning on the level of passive participation were provided with opportunities to participate in activities with others but needed facilitation to initiate participation. Although participation was often passive, gaining approval and acceptance from others in the group was a key external motivator providing the courage required to participate.

Direct communication between group members is an essential principle of the OTIGM¹⁴. During interpersonal groups, direct communication is facilitated regardless of the theme of the group. Group members are encouraged to speak directly to one another instead of communicating with the occupational therapist only. Therefore, communication and interaction skills are addressed in most groups. These groups also created opportunities for participants to explore new roles, refine current roles, or become aware of the roles they fulfil in society. With closed groups especially, participants were able to identify or adapt their roles within the group, fulfilling a core concept of the OTIGM that groups

should be seen as a micro sample of society¹⁴. When describing this phenomenon, Fouche^{14:33} stated that "the way people interact with others in the world outside the group will be the same way in which they interact with others in the group."

Craft groups

The relationship between the attendance of craft groups and change in APOM scores was found to have negligible correlations across all the domains of the APOM, except for Life skills, where a low non-significant correlation was seen.

There was a lack of attendance at craft groups in the current study. Only 11 participants attended more than five craft groups during their admission. From a VdTMoCA perspective, a possible interpretation for these participants who did not join the craft groups, could be that they prioritised the interpersonal groups to achieve their goals in therapy. Most participants were at the level of Passive participation and on this level, there is awareness of norms and a need to develop skills to cope with the demands of their occupations²⁷. The themes covered in the interpersonal group category could therefore better cater for their therapeutic needs. Another characteristic of Passive participation is that an individual has an increased need to belong to a group and get reassurance of their participation²⁷ which are facilitated in interpersonal groups, while the craft groups are usually more self-directed.

Previous studies on the effectiveness of craft groups as a treatment modality for MHCUs suffering from MDD have yielded positive results. Reported changes include improved social interaction, improved confidence, enhanced self-expression, improved quality of admission in psychiatric inpatient settings and improved daily functioning^{47,48,49}. In this study, however, these benefits of improved confidence and improved social interaction were more evident in the interpersonal group category than the craft groups.

Stress management groups

The relationship between attendance of stress management groups and change in APOM scores indicated statistically significant, low to moderate correlations across all the domains of the APOM. Communication and Interactions skills, Motivation, Self-esteem, and Affect showed the highest correlations for this type of group while the Affect domain had the highest correlation with the number of stress management groups attended. In the current study, the stress management group category appeared to be effective in addressing the acute symptoms of MDD, that are categorised as client factors under mental functioning by the Occupational Therapy Practice Framework (OTPF-III)¹⁰. These client factors may have been addressed directly by the stress management groups that facilitate the experience of mindfulness. The approach followed in these groups facilitated elements of the OTIGM with a focus on sensory activities (such as drumming, or finger painting), psychomotor activation, relaxation therapy, tension release exercises, all of which follow a 'here and now' approach.

CONCLUSION

The positive change in all the domains of the APOM after attending occupational therapy group intervention provides evidence of the effectiveness of occupational therapy groups in the treatment of MHCUs diagnosed with MDD. Although it was not a randomised study, the outcome shows a statistically significant positive change in activity participation from baseline to discharge across all the domains of the APOM for MHCUs diagnosed with MDD attending an occupational therapy group programme.

The number of groups attended during admission had moderate correlations with change in activity participation and highlight the importance of attendance of the occupational therapy group programme for MHCUs diagnosed with MDD. The association between improvement in activity participation that favoured closed

groups over open groups is of clinical significance since there is little evidence in literature to support this finding. This may serve as a stepping stone for future experimental studies with a randomised sample, investigating the difference in outcomes between open and closed groups in occupational therapy.

Attendance of the stress management groups were found to have a better correlation with changes in the APOM domains such as affect, motivation and self-esteem. In the acute phase of MDD these domains of the APOM align with typical symptoms of depression such as low mood, poor motivation and low self-esteem. Attendance of the interpersonal groups had moderate correlations with most of the domains of the APOM except for Affect and Life skills which indicated low correlations. In comparison to the other types of groups, the Interpersonal groups had the strongest correlations with changes in APOM scores and indicated the benefits of using the OTIGM approach in acute psychiatric settings. It can be concluded that occupational therapy groups play a valuable and integral role in the road to recovery for MHCUs diagnosed with MDD during a short admission to a private psychiatric setting.

Limitations

This study was a pre-post-test design with a convenience sample and without a control group. Causality of results were therefore limited as there was no randomisation of participants. Generalisation of the results were further limited by the fact that data collection occurred at only one psychiatric facility. Correlations discussed in the study represented identified relationships between dependent and independent variables, but there was no description of the causal effects of independent variables on one another. The findings in this study should therefore be followed-up with an experimental study with a control group.

Author Contributions:

Annalie Meyer conceptualised the study, collected and analysed the data, prepared the draft manuscript. Daleen Casteleijn assisted with conceptualisation of the study, statistical analysis and discussion. Olindah Silaule assisted with conceptualisation of the study, methodology and discussion. All listed authors contributed to finalising and editing the manuscript.

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