

Outcomes of occupational therapies

**Evaluating outcomes of therapies offered by occupational therapists in adult mental health**

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## **Evaluating outcomes of therapies offered by occupational therapists in adult mental health**

### **Abstract**

**Background:** Attitudes towards the use of outcome measures by professionals working in mental health have been shown to be variable. Occupational therapists appear to have difficulty specifying goals and measuring the outcomes of interventions.

**Aims:** To measure the outcomes of therapies offered by occupational therapists and to assess concurrent validity of the Van du Toit Model of Creative Ability (VdT MoCA) assessment.

**Method:** The Global Assessment of Functioning (GAF), Van du Toit Model of Creative Ability (VdT MoCA) assessment and Canadian Occupational Performance Measure (COPM) were used. Changes in mean scores on the measures were assessed using appropriate tests. Correlations between measures were assessed using Spearman's non-parametric test.

**Results:** Mean post-therapy scores were significantly higher than pre-therapy scores on all three measures. VdT MoCA assessment scores pre- and post- therapy were highly correlated with GAF scores. The COPM outcome scores were uncorrelated with VdT MoCA assessment and GAF scores.

**Conclusions:** The results offer a promising indication that occupational therapy interventions may increase functioning and thus aid clients' recovery. The VdT MoCA assessment is promising as a measure of improvement in functioning. Further research is needed to confirm these results and to further explore issues around occupational therapists' use of outcome measures.

**Declaration of interest:** None

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## **Evaluating outcomes of therapies offered by occupational therapists in adult mental health**

### **Background**

Outlining the need to improve healthcare outcomes, the UK government in a recent White Paper states that healthcare services will need to focus on outcomes and quality standards that deliver them. It promises that the National Health Service in the UK will be held to account against clinically credible and evidence-based outcome measures (Department of Health, 2010).

There is a tension between the push to provide evidence for current practice and the long term need for high a quality research base for the allied health professions (Bannigan & Birleson, 2007). The importance of routine outcome measurement in mental healthcare is being increasingly recognized in several countries, most comprehensively in Australia and New Zealand (Eager *et al.*, 2005). For clinicians to be guided by a sound foundation, current healthcare systems require theoretical models link to occupational therapy practice by demanding quality assurance and accountability (Donnelly & Carswell, 2002). The uptake of and compliance with outcome measures, though mandated by mental health services, have been found to be variable (Traueret al., 2009). There has also been reported a variation in opinion in the attitude towards use of outcome measures amongst different professional groups within mental health (Hawley et al., 2010).

The benefits of using outcome measures are improvement through monitoring individual patients' progress and structuring debate between clinician, patient and carer about

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perspectives, goals and progress thus demonstrating the value of therapy. Routine outcome measurement is central to the drive towards improved quality and accountability of services. It offers a means of providing data on health outcomes enabling clinicians to understand their own work better and consider measures that reflect clinical success (NIMHE, 2005)..

Occupational therapy aims to improve a client's ability to perform activities, occupations and roles of importance (Turner *et al.*, 2002). It has been recognised that occupational therapists do not work with quality assurance methods to a great extent. Studies point out that occupational therapists need to improve practice as well as research concerning quality assurance in order to ensure that they offer the patient a high quality service (Haglund *et al.*, 2004).

Occupational therapists appear to have difficulty in specifying goals and measuring the effect of interventions. It has been suggested that few occupational therapists measure clinical outcomes because they struggle to articulate clearly their goals and interventions (Bowman and Llewellyn, 2002). The future of health services in the UK will be one where providers of services will be paid according to the quality of performance which reflects outcomes and not simply activity (Department of Health, 2010).

Reviewing the use of outcome measure, Donnelly and Carswell (2002) argue that outcome measures must have published evidence of reliability and validity, must demonstrate responsiveness and demonstrate clinical utility - allowing ease in administration, be easily accessed by clinicians and provide direction in determining appropriate occupational therapy interventions. There has been a growing literature on instrument selection

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(Andrews *et al.*, 1994), development (Blankertz & Cook, 1998) and testing (Evans *et al.*, 2002).

A significant part of the problem relates to lack of familiarity with standardised measures (Walker *et al.*, 2000). In a study carried out by Bowman (2006), occupational therapists recognized the need for using outcome measurement in their practice, but described their lack of knowledge and skills in this area. However, as the author points out, this may not reflect the perspectives of experienced clinicians.

### **Aims**

The primary aim of this study was to measure the outcomes of therapies offered by occupational therapists in the adult mental health services of one NHS Trust using three measures: Global Assessment of Functioning (GAF), Van du Toit Model of Creative Ability (VdT MoCA) assessment and Canadian Occupational Performance Measure (COPM). The study also afforded an opportunity to assess the concurrent validity of the VdT MoCA assessment by comparing results with those for the GAF.

### **Methods**

Occupational therapists in the adult mental health units of the South Essex Partnership University NHS Foundation Trust (SEPT) used the three outcome measures to assess clients' functioning at the beginning and finish of an occupational therapy treatment period. The assessments were not a supplement to or substitute for any existing assessment procedure but a standardised way of obtaining objective data as opposed to subjective feedback or observations. Convenient sampling was used for client and therapist selection. Client details including age, gender, type of unit and type of therapy offered were obtained

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pre- and post-therapy. The units within SEPT that participated in the service evaluation are shown in Table 1.

*Table 1 about here*

### *Measures and data collection*

Measures for assessing the functionality of mental health clients can be complex, clumsy to use and impossible to compare to each other (Hodayah *et al.*, 2006). The three measures used in the study were therefore selected for ease of use and comparability on the basis of a review of the relevant literature.

*Global assessment of functioning (GAF):* The GAF is the standard method for representing a clinician's judgment of a patient's overall level of psychosocial functioning. As such, it is the single most widely used method for assessing impairment among patients with psychiatric or substance abuse disorders or both (Moos *et al* 2002). It was therefore appropriate for use as a 'gold standard' against which to compare results on the VdT MoCA assessment. The GAF requires the clinician to make an overall judgment about a patient's current psychological, social, and occupational functioning. In DSM-IV, the rating is made on a scale from 1 to 100. Both clinicians and researchers consider the GAF to be a key part of any outcomes assessment programme (Hilsenroth *et al* 2000). Clinical raters can use the GAF in a sufficiently reliable way to enable use of the ratings at an aggregated level. Raters' motivation levels seem to be the primary factor in reliability of ratings (Söderberg 2005). A drawback of the GAF is that, there is a bias of taking the clinicians rather than the client's judgements.

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*The COPM:* The COPM is an individualised outcome measure that is 'client-centred and incorporates role and role expectations within the clients own environment' (Law et al., 1990, p.84). There is evidence in the literature that the COPM is a valid, reliable, clinically useful and responsive outcome measure acceptable for OT practitioners and researchers (Carswell et al., 2004). The COPM has been used with in a variety of settings and enables client centred practice, facilitates evidence based practice and supports outcomes research. Test-retest reliability of the COPM is high at 0.842 (Pan *et al.*, 2003). The COPM measures clients' self-perception of occupational performance by evaluating areas of self-care, productivity and leisure before interventions, at intervals agreed by both client and therapists and after interventions (Chesworth *et al.*, 2002). The method of administration is a semi-structured interview.

*Van du Toit Model of Creative Ability Assessment (VdT MoCA):* The VdT MoCA model, which is also known as the theory of motivation and action and the model of creative participation, was developed by Du Toit (Du Toit V, 1991). Creative participation is Du Toit's term for the expression of motivation. Motivation has been acknowledged as an essential concept in occupational therapy practice.

The fundamental concepts of the VdT MoCA model are postulated as follows (Van der Reyden, 1998):

- The levels of motivation indicate what motivates a person, the strength of motivation and the stages of development
- The level of action indicates exertion of motivation into physical or mental effort, the creation of a tangible or intangible product and the level of skill

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- There are nine sequential and interdependent levels of volition with corresponding steps of action
- These levels represent stages of development, recovery, regression or progression
- The levels develop on a continuum from unconstructive action to norm transcendence and egocentrism to contribute to society
- It is possible to have a forward and backward flow between the levels
- Growth takes place through exploration, participation and mastery
- A person progresses through each stage from therapist-directed to patient directed and the transition to the next stage.

The Vdt MoCA assessment rates the level of creative ability considering the clients motivation, performance and action. There are very few studies using the VdT MoCA assessment. The results of the study to assess the psychometric properties of this tool indicate that the properties of the VdT MoCA assessment are acceptable but need further investigation (Castleleijn *et al*, 2002). The authors conclude that Du Toit's VdT MoCA is a unique contribution to occupational therapy but urgently needs further development as an outcome measure.

Three training days were provided to all therapists participating within the Trust to familiarise them with the use of the tools. They were asked to use the measures with all clients receiving a new intervention over a period of one year.

### *Data analysis*

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Data were analysed using SPSS version 13 for Windows. Both the GAF and VdT MoCA assessment scores differed significantly from normal distribution (One- Sample Kolmogorov-Smirnov Test:  $p < 0.05$ ). Wilcoxon's Signed Rank nonparametric test was therefore used to compare pre- and post-therapy scores on these measures. COPM scores were normally distributed and paired t-tests were therefore used in this case. Correlations between scores on the three measures were assessed using Spearman's non-parametric test. Univariate analysis of variance was used to assess interactions between scores and client characteristics.

## Results

### *Response*

A total of 50 therapists attended training on the use of the outcome measures. This included Head Occupational Therapists, Occupational Therapy Clinical Leads, Senior Occupational Therapists and Basic Grade Occupational Therapists in rotation. Of the 50 therapists, 20 returned completed outcome measures.

The GAF and VdT MoCA assessment measures returned related to 109 clients, (56 men and 53 women), 48 of whom were on a standard level of the Care Programme Approach (CPA) and 61 on enhanced level CPA. The service areas represented included inpatients (21%), community (46%), rehabilitation (10%), home treatment (4%), assessment unit (12%) and forensic services (7%). The COPM proved more difficult to use in some service areas, particularly inpatient areas, and was completed for 53 clients (30 male and 23 female) of whom 34 were on standard CPA and 23 on enhanced CPA.

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### *Client variables*

Clients on enhanced CPA levels had lower pre-therapy (Mann-Whitney:  $Z = 5.593$ ,  $p < 0.001$ ) and post-therapy (Mann-Whitney:  $Z = 5.319$ ,  $p < 0.001$ ) mean rank VdT MoCA assessment scores than clients on standard CPA. On the GAF, clients on enhanced CPA also had lower pre-therapy scores (Mann-Whitney:  $Z = 5.723$ ,  $p < 0.001$ ) and lower post-therapy score (Mann-Whitney:  $Z = 5.613$ ,  $p < 0.001$ ). There were no significant differences in pre- or post-therapy scores between genders.

### *Pre- and post-therapy scores*

Descriptive statistics for the GAF and VdT MoCA assessment are shown in table 2. There was a significant improvement between pre- and post- therapy scores for the GAF (Wilcoxon Signed Ranks Test:  $Z = 6.875$ ,  $p < 0.001$ ) and VdT MoCA assessment (Wilcoxon Signed Ranks Test:  $Z = 7.169$ ,  $p < 0.001$ ). There were also significant increases between COPM pre- and post-therapy mean performance scores (Paired t-test:  $t = -7.277$ , d.f. = 52,  $p < 0.001$ ) and pre- and post-therapy mean satisfaction scores (Paired t-test:  $t = -6.248$ , d.f. = 52,  $p < 0.001$ ).

### *Table 2 about here*

### *Correlations between scores on the three measures*

Both pre-therapy GAF and VdT MoCA assessment scores and post-therapy GAF and VdT MoCA assessment scores (Table 3) were significantly correlated (pretherapy  $r_s = 0.719$ ,  $n = 111$ ,  $p < 0.001$ ; post-therapy  $r_s = 0.767$ ,  $n = 100$ ,  $p < 0.001$ ). There was also a significant

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correlation between the difference in pre and post-therapy GAF and VdT MoCA assessment scores ( $r_s = 0.610$ ,  $n = 100$ ,  $p < 0.001$ ). There was no significant correlation between scores on the COPM performance and satisfaction scores (Table 4) on either the GAF pre-therapy ( $r_s = 0.218$ ,  $n = 56$ ,  $p > 0.05$ ,  $r_s = 0.085$ ,  $n = 56$ ,  $p > 0.05$  respectively) or the pre-therapy VdT MoCA assessment ( $r_s = 0.230$ ,  $n = 56$ ,  $p > 0.05$ ,  $r_s = -0.93$ ,  $n = 56$ ,  $p > 0.05$ ). However, post-therapy scores were significantly correlated with post-therapy GAF ( $r_s = 0.46$ ,  $n = 53$ ,  $p = 0.001$ ,  $r_s = 0.487$ ,  $n = 53$ ,  $p < 0.001$  respectively) and post-therapy VdT MoCA assessment scores ( $r_s = 0.489$ ,  $n = 53$ ,  $p < 0.001$ ,  $r_s = 0.444$ ,  $n = 56$ ,  $p = 0.001$  respectively).

*Tables 3 and 4 about here*

## Discussion

The lower mean scores on the VdT MoCA assessment and GAF for clients on enhanced CPA compared to clients on standard CPA suggest, as would be expected, that functioning levels of clients on standard CPA were better than for clients on the enhanced level of CPA. However, with the changing of the classification of clients on CPA, this clinical distinction no longer exists.

The improved post-therapy scores on all three measures provide promising evidence that the occupational therapies offered helped towards clients' recovery. This finding goes some way towards supporting the value of occupational therapy within mental health settings, and the value of using outcome measures to evidence improvements. However, a controlled research design beyond the scope of routine service evaluation would be required to

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confidently attribute improvements to the therapies offered. Also, the sample would need to be a representative of the total population to produce generalizable results.

The results also provide promising evidence for the VdT MoCA assessment as an outcome measure within mental health. Although scores were highly correlated with scores on the GAF, studies using larger sample sizes are needed to confirm this result.

That data on the COPM was returned for only 53 clients compared with 109 returns for the other measures seems surprising given that the COPM is seen as an effective outcome measure for mental health occupational therapy (Chesworth *et al.*, 2002). The highest proportion of COPM returns (40%) came from Community Mental Health Teams, with the lowest return (10%) from inpatient services. Several therapists who returned incomplete COPM forms gave a written explanation for this. Reasons included unplanned discharges, clients lacking insight, clients lacking motivation, clients refusing to participate in the evaluation and the time consuming nature of COPM. This suggests that although the COPM has the advantage of focusing on service user involvement in the assessment process, it may be less useful than other measures as a routine evaluation tool for use across mental health services. Previous studies have also identified problems with use of the tool related to the degree of insight needed for clients to participate in its completion (Tryssenaar *et al.*, 1999; Walters 1995). However, COPM was the only measure that was individualised to reflect clients' chosen goals and the only measure that was self-rated rather than clinician rated. A further difference is that it measures the construct of occupational performance rather than function or ability. A correlation between COPM and the other measures may therefore be less expected. Research to explore the use of the

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measure with different client populations within mental health settings would be useful to illuminate the issues involved.

Despite a one year period of data collection, only 20 of the 50 therapists who were trained in using the outcome measures returned data. This appears to reflect previous findings that some occupational therapists have difficulty measuring clinical outcomes (Bowman & Llewellyn, 2002). With the UK government promising that care in the NHS will focus on continuously improving those things that really matter to patients, particularly the outcome of their healthcare (Department of Health, 2010), it is important for occupational therapists to increase their use of outcome measures. Translational research is needed to better implement changes in practice in order both to meet NHS requirements, and more fundamentally to improve the quality of care offered by mental health occupational therapists.

## Conclusions

The results offer a promising indication that occupational therapy interventions may increase functioning and thus aid clients' recovery. Correlations between scores on the VdT MoCA assessment and GAF suggest that the VdT MoCA assessment has concurrent validity for use as an occupational therapy outcome measure. Further research is, however, needed to confirm these results. The COPM did not prove to be a practical measure for use within all areas of mental health provision and this study supports previous evidence that some occupational therapists appear to have difficulty using any routine outcome measures and mental health professionals have variable attitudes towards the use of outcome measures. Research exploring the use of outcome measures in general and the COPM in

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particular, could make a valuable contribution to further development of routine assessment of occupational therapy outcomes in mental health.

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**Table 1. Mental Health Units involved in the study**

<b>Type of Unit</b>	<b>Number of Units</b>
Community Mental Health Team	6
In-Patient Unit	2
Recovery Unit	1
Psychiatric Intensive Care Unit	1
Rehabilitation Unit	1
Forensic Unit	1

**Table 2. Summary statistics for GAF and VdT MoCA pre- and post-therapy scores**

	<b>n</b>	<b>Range</b>	<b>Min</b>	<b>Max</b>	<b>mean</b>	<b>Std. dev</b>
<b>Pre GAF</b>	111	70	5	75	44.6	14.46
<b>Post GAF</b>	101	70	15	85	53.2	15.79
<b>Pre VdT MoCA</b>	111	16	0	16	8.5	3.01
<b>Post VdT MoCA</b>	100	13	4	17	10.2	3.25

**Table 3. Summary statistics for difference between pre- and post-therapy GAF and VdT MoCA mean scores. Negative scores indicate a lower post- than pre-therapy score.**

	n	Range	Min.	Max.	Mean	Std. dev
GAF	101	85	-30	55	8.85	11.07
VdT MoCA	100	14	-3	11	1.72	2.02

**Table 4. Summary statistics for COPM pre- and post-therapy performance and satisfaction scores**

	<b>n</b>	<b>Range</b>	<b>Min</b>	<b>Max</b>	<b>mean</b>	<b>Std. dev</b>
COPM Performance Pre	56	8.2	1.0	9.2	3.2	1.88
COPM Satisfaction Pre	56	7.0	1.0	8.0	3.1	1.87
COPM Performance Post	53	9.6	1.4	11.0	5.4	2.54
COPM Satisfaction Post	53	9.6	1.4	11.0	5.3	2.51