

An audit of attendance at occupational therapy by long-term psychiatric in-patients at Weskoppies Hospital

Christa Krüger MBBCh, MMed(Psych), FCPsych(SA), MD

Associate Professor, Department of Psychiatry, University of Pretoria and Weskoppies Hospital, Pretoria

Ronél van der Westhuizen BOT

Senior Occupational Therapist, Department of Psychiatry, University of Pretoria and Weskoppies Hospital, Pretoria

ABSTRACT

Objectives: Although the value of occupational therapy (OT) in psychiatric rehabilitation is indisputable, little is known about the range of OT interventions attended by long-term in-patient populations. The aim of this study was to gather baseline information on which of the various OT interventions were attended the most frequently.

Methods: This study presents an audit of OT offered to 264 long-term in-patients at Weskoppies Hospital over eight months. The in-patients' attendance at various OT interventions was used to identify their patterns and frequency of participation.

Results: The most frequently attended OT interventions were (descending): Group OT in the OT department (high-functioning women); industrial therapy (men); woodwork-and-upholstery (men); group OT in the wards (low-functioning men); and clerical therapy (high-functioning patients). On the whole, attendance at OT was low.

Conclusions: The current OT profile favours high-functioning and male patients. Low-functioning-female patients are neglected. Future OT efforts should focus on low-functioning long-term in-patients, particularly low-functioning-female patients.

Key words: Occupational therapy, attendance at -, rehabilitation, long-term psychiatric in-patients

Introduction

Occupational Therapy (OT) is undoubtedly valuable in the rehabilitation of certain psychiatric patients¹⁻⁵. Unfortunately, though, most of the research on OT in psychiatry has focussed either on a single type of therapy, or on homogeneous study populations⁶⁻⁹.

In large South African state psychiatric hospitals the patient population is not homogeneous: besides different genders, patients have a variety of diagnoses, different lengths of hospital stay, different levels of functioning, and are admitted under different sections of the Mental Health Care Act¹⁰. Moreover, despite the national drive towards de-institutionalisation, tertiary psychiatric hospitals across South Africa continue to work with long-term psychiatric in-patients, especially in regions where community based services are scarce¹¹.

There is a paucity of insight into the optimal combination of OT interventions that should be offered at large psychiatric institutions for the heterogeneous sub-populations. In particular, little is known about the ideal types of OT for long-term psychiatric in-patients (often with low levels of functioning). Furthermore, from a quality assurance perspective, even the status quo about which OT services long-term psychiatric in-patients are receiving, and what kinds of patient records are being kept, is largely unknown¹².

A review of the relevant OT literature shows that patients with traumatic brain injury and post-traumatic amnesia have been studied with respect to their cognitive assessment, learning of functional skills and the management of behavioural problems such as agitation¹³⁻¹⁷. However, these patients with traumatic brain injury were usually not in-patients in psychiatric hospitals. Similarly, stroke patients with cognitive impairment have also been studied, e.g., with regard to OT for cognitive retraining¹⁸. In addition, some recent research has focussed on the cognitive assessment of people with intellectual or psychiatric disability and on the supported education programmes offered to them, but again, these participants were mostly not long-term psychiatric in-patients^{19,20}.

With regard to psychiatric disorders, OT interventions for psychotic illness, dementia and autism have been studied in out-patients^{1,3,6,7,21-25}. For example, in their pilot randomised controlled trial, Cook et al. concluded that individualised OT for patients with psychotic conditions in community settings should focus more on the patients' cognitive abilities and employment²¹. Closer to the focus of the present article, Ishikawa and Okamura conducted

semi-structured interviews with long-term schizophrenic in-patients and with schizophrenic patients who had been discharged after a long-term hospital admission²⁶. Their findings demonstrated that long-term in-patients with schizophrenia might benefit from OT interventions that help them to have a realistic image of their daily life after discharge and that encourage an updating of self-assessment of their competence relating to daily life skills²⁶.

This study addresses the need to identify what services long-term psychiatric in-patients are receiving: it presents an audit of the various types of OT offered to long-term in-patients at a large state psychiatric hospital in Pretoria, Gauteng. The aim of this study was to gather baseline information on which of the various OT interventions were attended the most frequently. The findings of this clinical audit might inform further intervention planning, management of OT services and adaptation of the profile of therapies offered to long-term psychiatric in-patients at different levels of functioning.

Method

Design

This was a quantitative, descriptive study of routine OT statistics of the various OT interventions offered to the long-term patients in Weskoppies Hospital over a study period of eight months (February to September 2007). This study formed a part of a larger multi-phased programme-evaluation project aimed at improving clinical service delivery and quality of care to long-term psychiatric in-patients^{11,27,28}.

In order to meet the primary aim of this study, the following questions were asked:

- ❖ Which OT interventions were attended the most frequently?
- ❖ Which subgroups of long-term in-patients attended which types of OT interventions the most frequently?

Setting and subjects

Weskoppies Hospital in Pretoria, Gauteng is a 1067-bed specialist psychiatric hospital that renders general adult psychiatric services to a large geographical catchment area, and also offers child and forensic psychiatric services. Both in-patient and out-patient services are offered. In addition to the acute adult in-patients, there are long-term in-patients who are either undergoing extended



psychiatric rehabilitation or their problems are of such a nature that previous attempts at community placement have failed. In accordance with the new South African Mental Health Care Act and the international trend towards de-institutionalisation, the proportion of long-term patients in Weskoppies Hospital has also been decreasing progressively, as more and more long-term patients have been placed in community care^{10,11}.

At the time of this study, there were 264 long-term in-patients in Weskoppies Hospital (64.5% male and 35.5% female). Whereas around two-thirds of the long-term patients suffered from psychotic disorders – including schizophrenia, schizoaffective disorder and psychotic disorders due to general medical conditions – the rest suffered from intellectual disability, dementia, or other disorders (such as mood, anxiety and personality disorders)^{11,27}.

The long-term in-patients were accommodated in ten wards according to their level of functioning (*Tables I and II*), as determined by extensive OT evaluation. Although the exact number of patients in each ward varied slightly on a monthly basis due to inter-ward patient transfers, on average the low-functioning patients made up 68.1% of the total population of long-term in-patients and the high-functioning patients made up 31.9%. The classification according to functional levels facilitated the patients' nursing and therapy²⁹. For the purpose of this study, the ward of a group of patients – as determined by previous OT evaluation – was taken as an indicator of those patients' level of functioning. Thus, as the wards containing the OT-attending patients were recorded, their level of functioning was implied.

Table I: Functional classification of long term wards

Functional classification of ward:	Gender of patients:	Ward identification number:	Open / closed ward:
High-functioning	Female	35	Open
High-functioning	Male	8-and-9	Open
High-functioning (including medium-functioning)	Male	47	Open
Low-functioning	Female	25	Open
Low-functioning	Female	51	Open (geriatric)
Low-functioning	Female	42	Closed
Low-functioning	Male	13	Open
Low-functioning	Male	48	Open (geriatric)
Low-functioning	Male	57	Semi-closed
Low-functioning (including medium-functioning)	Male	15	Closed

Table II: Life skills and performance components considered in functional classification¹³

Generic skill:	Sub-skills:	Generic skill:	Sub-skills:
Activities of daily living	Self-care	Cognitive skills	Concentration
	Taking care of others (e.g., children)		Memory
Social and interaction skills	Washing	Psychomotor skills	Judgement
	Cooking		Thought processes
	Cleaning	Psychomotor activity	Emotional responses
	Budgeting		Craft related skills
	Home management	Constructive use of leisure time	
	Time management	Handling of materials	
		Stress management	
	Communication skills		
	Appropriate social behaviour		
	Problem solving skills		
	Decision making skills		

In its most severe form, a low level of functioning generally means that the patients function on a level of self-differentiation, meaning that it is difficult for them to differentiate themselves from other people. They are often disoriented, have only a fleeting awareness of other people and are unaware of norms. They are egocentric, yet have no awareness of their own ability to handle situations. Their actions are only incidentally constructive or destructive, and sometimes bizarre. They have no task concept and can only form basic and elementary concepts. For example, they can only use simple everyday tools like a spoon. Even under constant supervision only one-to-two-step tasks can be completed. They can produce no end product for tasks. Their self-care is poor³⁰.

At a medium level of functioning, patients start functioning on a level of therapist directed self-presentation, meaning that they become able to present themselves to other people. Here patients might try to make contact with others, although the contact might remain superficial, and they start becoming aware of norms. Their actions are explorative and they still show stereotypical handling of situations and strange behaviour at times. They can associate and integrate knowledge and skills to an extent, and can complete three-to-four-step tasks under supervision. They can handle basic tools to participate in an activity, but the quality of the end product is poor³⁰. Patients from the two categories of low and medium levels of functioning were usually accommodated in the same wards owing to the extensive overlap between the categories.

A high level of functioning generally means that the patients function on a level of user directed self-presentation. They have much better social and cognitive skills, as well as proper self-care. They also have a better ability to decide for themselves how to go about a task, and can complete more complex tasks³⁰.

Occupational therapy services offered and monitored

The various types of routine OT services offered to the long-term in-patients include assessment and therapeutic interventions. Assessment services include initial assessments, preparation for multi-disciplinary ward conferences (ward rounds) and OT reports. Therapeutic interventions include task oriented group OT sessions at the wards, group OT sessions at the OT department, woodwork-and-upholstery, industrial therapy, clerical therapy and individual OT sessions. The timing and general description of the different types of therapeutic interventions (only) are summarised briefly in *Table III*.

Three different balanced OT programmes consisting of various combinations of specific therapeutic OT activities are compiled to suit the weekly needs of the three groups of long-term in-patients – the low-, medium- and high-functioning patients respectively. The programmes



Table III: Characteristics of therapeutic OT interventions

OT intervention:	Timing:	Description:
Group OT in the wards	Afternoons	Offered at the low-functioning closed wards. Includes sports-based activities, physical games, self-care, etc.
Group OT in the OT department	Three sessions Early morning (09:00-10:00), mid-morning (10:30-11:30), and afternoon (13:30-14:30)	Involves a number of different crafts, games and cognitive activities that fulfill various OT aims such orientation, self-care, concentration, memory
Woodwork-and-upholstery	Two sessions daily: 09:00-11:30 and 13:30-15:30	Creative work and repairs for which income is generated
Industrial therapy	Two sessions daily: 09:00-11:30 and 13:30-15:30	Paid production of products, e.g., plastic flowers for wreaths for an outside company
Clerical therapy	Four days of the week, in the mornings	Administrative tasks including copying and binding of documents
Individual OT	Arranged with individual patient	Programme tailored to the OT needs of the patient

are varied on a weekly basis. Activity analyses and the individual patients' needs are considered when the occupational therapists choose specific activities³¹. Each programme contains various examples of activities of daily living, social and interaction activities, as well as cognitive, psychomotor and craft activities. As such, these programmes are in line with international OT practice³.

Referral of patients to OT is usually initiated by other members of the multi-disciplinary team and occurs via a formal referral by the treating doctor. The nursing staff in the ward of the patient usually coordinates the process and assist the patient in attending.

OT attendance by the long-term in-patients was monitored routinely on OT work sheets by the 12 occupational therapists, two community service occupational therapists and 13 OT assistants at Weskoppies Hospital during the eight months study period. At the time of each OT intervention offered by a therapist, the type of OT intervention, the number of attendees at that specific OT intervention and the ward/s in which the attendees were accommodated, were recorded.

For the purpose of this study, the attendance data was transferred onto study-specific data sheets. These routine OT statistics were recorded per OT intervention offered – not per patient. No patient-specific data was used in this study.

Data management and statistical analyses

OT service statistics were analysed in terms of which types of OT interventions were attended most frequently and by which subgroups of long-term in-patients. Four subgroups of long-term in-patients were identified according to gender and level of functioning, as indicated by the attendees' ward: high-functioning female, high-functioning male, low-functioning female and low-functioning male patients.

Friedman two-way analysis of variance was used to test for differences in OT attendance between the subgroups of patients. The statistical analyses were conducted by the Department of Statistics, University of Pretoria.

Ethical considerations

This study received ethics approval from the Research Ethics Committee of the Faculty of Health Sciences, University of Pretoria. Written consent was obtained from the Chief Executive Officer of Weskoppies Hospital to access hospital statistics.

Results

In this group of 264 long-term in-patients, very few OT attendances for assessment were recorded during the study period. There were only nine instances of attendance for OT assessment: six initial assessments and three instances of preparation of reports

for multi-disciplinary ward conferences. There were no instances of formal written OT reports during the study period. These low figures reflect the long-term nature of these patients' hospital stay.

The overwhelming majority of OT attendances were therapeutic in nature: a total of 15 169 attendances at therapeutic OT interventions were recorded during the eight months study period. This number of attendances translates to a mean monthly attendance of 6.36 therapeutic OT interventions per long-term in-patient. In other words, a long-term in-patient typically attended 6.36 OT sessions per 20-working-day month: i.e., roughly one session every third day.

Figure 1 illustrates the typical monthly OT attendance per long-term in-patient by type of therapeutic OT intervention (calculated from the 15 169 attendances by 264 patients and displayed as a mean per patient for each type of OT intervention). Group OT in the OT department and industrial therapy were the two most frequently attended types of therapeutic OT intervention. When the frequency distribution displayed in Figure 1 was analysed statistically using Friedman two-way analyses of variance, both Group OT in the OT department and industrial therapy were attended significantly more frequently than clerical therapy; and Group OT in the OT department was attended significantly more frequently than Group OT in the wards ($p < 0.001$).

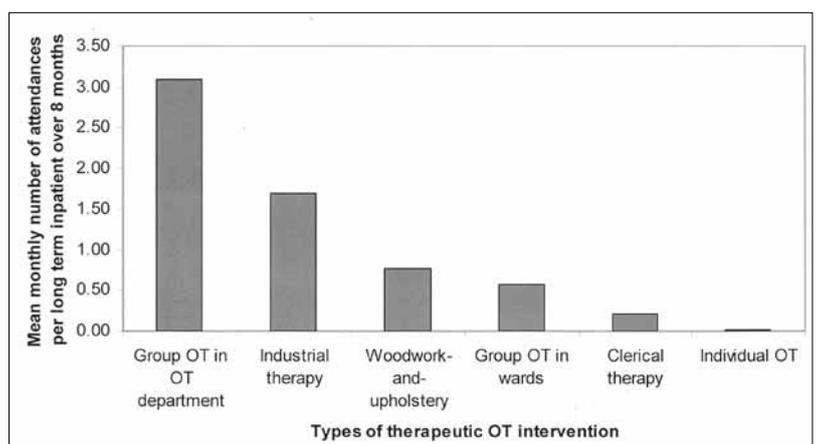


Figure 1: Typical monthly attendance per long term inpatient at different types of therapeutic OT intervention

Attendance of the three sessions of Group OT occurring at different times in the OT department showed a bias towards morning attendance. The mean monthly number of attendances of early morning sessions per patient was 1.72; the mean monthly number of mid-morning OT attendances per patient was 1.32; and the mean monthly number of afternoon OT attendances per patient was 0.09. When compared using Friedman two-way analyses of variance, early morning attendance of group OT at the OT depart-



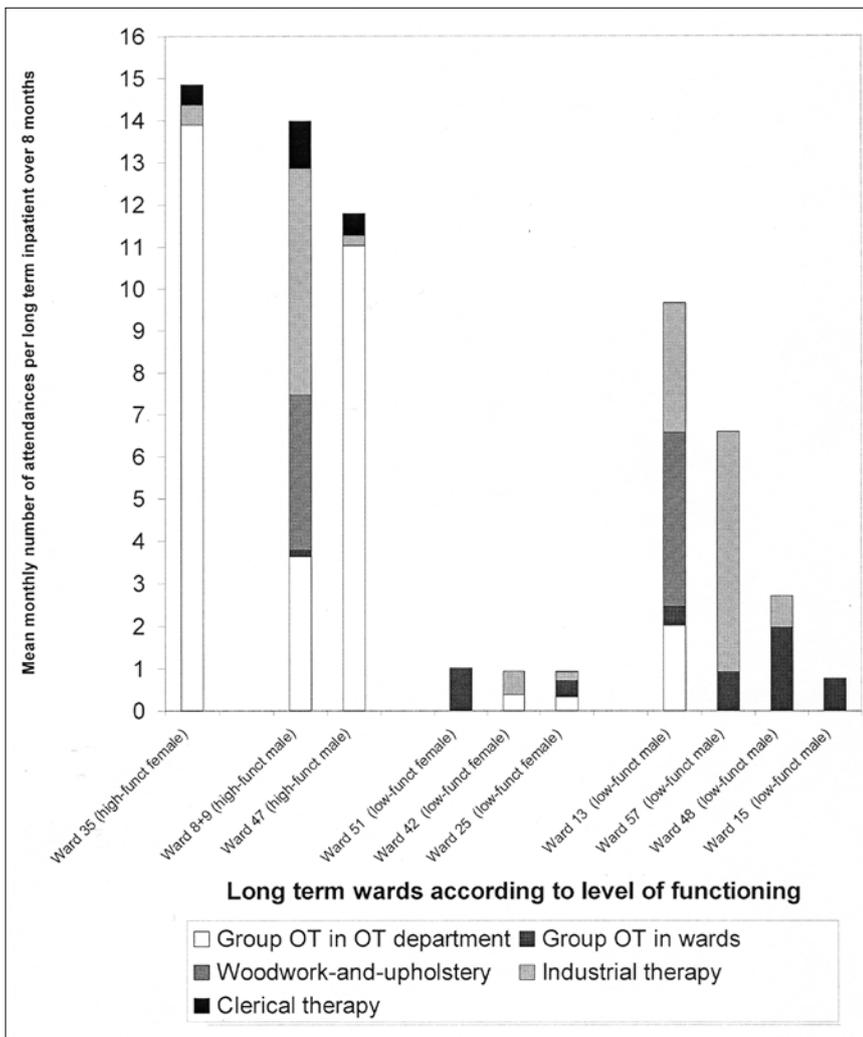


Figure 2: Typical monthly attendance per long term inpatient at therapeutic OT interventions, categorised by functional levels of wards

ment was 19 times more frequent than afternoon attendance, for all wards considered together ($p < 0.001$).

Figure 2 shows the typical (mean) monthly attendance of therapeutic OT interventions per long-term in-patient, categorised by ward and accounting for the variable number of patients per ward. The wards are grouped together according to functional level, from left to right: high-functioning-female, high-functioning-male, low-functioning-female and then low-functioning-male wards. Individual OT was not included in Figure 2 because its low proportion in the bars made it invisible. It was mainly the high-functioning-male wards that accounted for what little attendance there was at individual OT.

For the statistical comparison of the attendance distribution from the different wards, the median attendance was used in Friedman two-way analyses of variance. In the high-functioning-female ward, a patient typically attended a median of 15.26 OT sessions per 20-working-day month: i.e., nearly four sessions per week. Similarly, in the high-functioning-male wards, a patient typically attended a median of 14.42 OT sessions per month. In the low-functioning-male wards, a patient typically attended a median of 4.85 OT sessions per month (slightly more than one session per week). In the low-functioning-female wards, a patient typically attended a median of 0.65 OT sessions per month (less than one session per month) – the lowest of all four groups. The high-functioning patients (male and female) attended all therapeutic OT interventions significantly more frequently than the low-functioning-female patients ($p < 0.001$).

With regard to Group OT in the OT department – the most frequently attended therapeutic OT intervention – it was mainly the high-functioning wards that accounted for the high attendance. In the analysis by gender, striking gender differences

emerged in that, on the whole, high-functioning-female patients attended the group OT sessions in the OT department more frequently than high-functioning-male patients (around double the frequency, and for both early morning and mid-morning sessions). Specifically, the high-functioning-female patients attended early morning group OT in the department significantly more frequently than the high-functioning-male patients ($p < 0.005$) – more than twice as frequently. Similarly, the high-functioning-female patients attended mid-morning group OT in the department significantly more frequently than the high-functioning-male patients ($p < 0.005$) – nearly twice as frequently.

Industrial therapy – the second most frequently attended therapeutic OT intervention – was attended mostly by male patients. The high-functioning-male patients attended industrial therapy more frequently than the low-functioning-male patients, but not significantly so ($p = 0.157$).

Interestingly, patients from only two of the male wards (one a high-functioning-male ward and one a low-functioning-male ward) attended woodwork-and-upholstery. No patients from the other high-functioning-male ward attended woodwork-and-upholstery at all. However, when applying Friedman two-way analyses of variance, the high-functioning-male patients attended woodwork-and-upholstery significantly more frequently than the low-functioning-male patients ($p = 0.034$).

Group OT in the wards was mainly attended by low-functioning patients. Among these, the low-functioning-male patients attended the group OT in the wards significantly more frequently than the low-functioning-female patients ($p < 0.005$).

As anticipated, only patients from the high-functioning wards attended the clerical OT sessions. The numbers were unfortunately too small for statistical analyses.

In summary, the main findings of this study were:

- ❖ A long-term in-patient typically attended 6.36 therapeutic OT sessions per 20-working-day month: i.e., roughly one session every third day;
- ❖ The high-functioning patients attended all therapeutic OT interventions far more frequently than the low-functioning patients;

The most frequently attended type of OT intervention was group OT in the OT department:

- ❖ It was attended mainly by high-functioning patients (female patients significantly more so than male patients);
- ❖ Early morning attendance was significantly more frequent than afternoon attendance;

The second most frequently attended type of OT intervention was industrial therapy:

- ❖ It was attended mainly by male patients (high-functioning-male patients slightly more so than low-functioning-male patients);

The third most frequently attended type of OT intervention was woodwork-and-upholstery:

- ❖ It was attended only by male patients (high-functioning-male patients significantly more so than low-functioning-male patients);
- ❖ Group OT in the wards was attended mainly by low-functioning patients (male patients significantly more so than female patients);
- ❖ Clerical therapy was only attended by high-functioning patients; and
- ❖ Low-functioning-female patients had the lowest overall OT attendance.



Discussion

The long-term in-patients' level of functioning may have influenced their attendance at therapeutic OT interventions. Although the overall OT attendance was very low at a mean of 6.36 therapeutic OT sessions per month per long-term in-patient (roughly one session on every third day), when differentiated according to level of functioning the high-functioning patients' attendance was much better than that of the low-functioning patients: high-functioning patients attended OT on most days, nearly four sessions per week.

It is worth noting that two-thirds of the long-term in-patients have a low level of functioning, hence the low overall OT attendance may merely be a reflection of the low level of functioning of the majority of the long-term in-patients in Weskoppies Hospital. In this regard, it is recognised that the long-term patient population in Weskoppies Hospital is similar to patient populations described elsewhere^{32,33}.

Interesting gender related differences in OT attendance were demonstrated. Whereas female patients favoured mostly group OT in the OT department, male patients showed a more even spread, extending to industrial therapy and woodwork-and-upholstery. The latter may have been considered a more physically demanding and hence more masculine activity. Furthermore, the predominantly male attendance of group OT in the wards makes sense, since group OT in the wards was mainly offered in the low-functioning-closed wards, in which there were nearly twice as many male patients as female patients. The inequality in the presentation of group OT in the wards might be justifiable though, in the sense that OT programmes are compiled taking into account individual patients' needs.

Patients' attendance at group OT in the OT department depended on the time of day: Generally, after breakfast patients may have been encouraged by nursing staff to leave the wards to attend OT in the OT department. Moreover, at that time of day, patients would have been more rested and motivated than after lunch. A further encouragement might have been the tea served at the OT department between 10:00 and 10:30. A lack of similar encouragement by nursing staff after lunch or similar afternoon tea at the OT department may have had something to do with the dramatically lower attendance at the afternoon sessions in the OT department. In addition, different ward routines and nursing programmes, including different times for nursing ward groups may have influenced patients' availability to attend afternoon OT in the OT department. Notwithstanding these possibilities, the potential reasons for the poor afternoon attendance at group OT in the OT department should be investigated further. If the poor afternoon attendance cannot be improved, the morning OT in the OT department might be revised and optimised to fulfil most of the patients' rehabilitation needs.

Judging by their attendance, on the whole the long-term in-patients preferred group OT in the OT department, industrial therapy and woodwork-and-upholstery. Whereas the high-functioning patients appeared to prefer group OT in the OT department (possibly because of the more sophisticated, differentiated and stimulating programmes), the low-functioning patients appeared to prefer especially industrial therapy. However, the payment offered at industrial therapy and woodwork-and-upholstery may also have boosted the attendance at those therapies³.

The poorest attendees (and possibly the most under-served subgroup) were the low-functioning-female in-patients. Possibly their low level of functioning did not allow them to walk to the OT department for group OT, and possibly they did not fit in well (gender-wise) at woodwork-and-upholstery. However, one wonders why low-functioning-female in-patients' attendance was so low at industrial therapy, if the low-functioning patients on the whole (represented mostly by low-functioning-male patients) appeared to attend industrial therapy regularly, along with high-functioning patients. Might it be possible, that the female patients were better supported financially by their relatives, obviating the need for some additional income? Future studies could explore the reasons for the low female attendance at industrial therapy, possibly with a view to introducing more low-functioning-female in-patients to industrial therapy.

Whereas this study focussed only on long-term psychiatric in-patients, slightly different results might be expected in the acute psychiatric in-patient population. The findings of this study may be generalisable to other long-term psychiatric in-patient populations in South Africa where clients are classified similarly and where similar interventions are offered.

It is a limitation that this study focussed on describing the kinds of interventions attended without investigating the therapeutic value or client progress associated with this. Analysing attendance provides an indication of patterns of participation and does not give an indication of the value of OT. In this study, the lack of patient-specific OT attendance data makes it impossible to evaluate the value of OT. Future research on patient-specific OT attendance data might yield important findings about the value of certain types of OT interventions for different diagnostic subgroups.

The low attendance at OT by long-term psychiatric in-patients should also be interpreted in the light of local staff shortages. At Weskoppies Hospital there are 12 occupational therapists, two community service occupational therapists and 13 OT assistants. These numbers imply a work load of 40 in-patients per OT staff member (acute and long-term). In addition, these OT staff members also provide out-patient OT services. Hence, the finding by Duurkoop & Van Dyck⁵ that the improvement of severely disabled long-stay, care-dependent psychiatric patients depended on the intensity of care given and might represent an ideal to be pursued, rather than a realistic possibility in our context⁵.

The main strength of this study lies in its uniquely broad exploration of all OT interventions offered to a heterogeneous long-term psychiatric in-patient population. The resultant broad profile of OT attendance highlights certain gaps that suggest the following: The OT services offered at Weskoppies Hospital should be advertised more to the referring mental health care professionals at the hospital with a view to increasing the attendance of the long-term in-patients. Moreover, if at all possible, the intensity of the OT interventions for the long-term in-patients – particularly for the low-functioning long-term in-patients – should be stepped up. If changes were to be made to the OT services offered to long-term in-patients at Weskoppies Hospital after this study, a similar future audit might fruitfully assess the effectivity or usefulness of such changes in OT services.

Conclusions

On the whole, this study confirmed the low level of functioning of the majority of long-term in-patients in Weskoppies Hospital and demonstrated their low levels of OT attendance. The most popular types of OT intervention for long-term psychiatric in-patients are, in descending order:

- ❖ Group OT in the OT department (especially for high-functioning-female patients);
- ❖ Industrial therapy (especially for male patients);
- ❖ Woodwork-and-upholstery (for male patients);
- ❖ Group OT in the wards (especially for low-functioning-male patients); and
- ❖ Clerical therapy (for high-functioning patients).

From the comparisons of subgroups and different therapies, the current profile of OT interventions offered at Weskoppies Hospital appears to favour the high-functioning long-term in-patients, and to a certain extent the male long-term in-patients. It appears as if low-functioning-female in-patients, and possibly all the low-functioning long-term in-patients (who make up the majority of long-term in-patients) might be relatively neglected. Ideally, one would have wanted them to have the opportunity to reach a higher level of functioning. It is recommended, as far as OT staffing allows, that a future emphasis might be to focus OT efforts on the low-functioning long-term in-patients, and in particular on the low-functioning-female in-patients, in order to optimise their rehabilitation and their chances of successful de-institutionalisation. In the meantime, increased attendance by the low-functioning long-term in-patients (especially female) at the existing OT services should be encouraged.



Acknowledgements

The authors are grateful to the following people: Mr F.N. van Zyl and Ms C.R. Collins-McKinnell (research assistants in the Department of Psychiatry, University of Pretoria respectively in 2007 and 2008-2010) for their assistance with data collection and data management; Ms J. Sommerville and Ms R. Ehlers of the Department of Statistics, University of Pretoria for their assistance with electronic data management, statistical analyses and interpretation of the data; Ms B. English for editorial advice; Mrs M. Mabena, CEO of Weskoppies Hospital and the Gauteng Health Department for enabling the research at Weskoppies Hospital.

Funding

Apart from the funding for the research assistant posts by the Research Committee of the Faculty of Health Sciences, University of Pretoria, no other funding was received for this research project.

References

1. Gahnstrom-Strandqvist K, Liukko A, Tham K. The meaning of the working cooperative for persons with long-term mental illness: a phenomenological study. *American Journal of Occupational Therapy*, 2003; 57(3): 262-72.
2. Le Granse M, Kinebanian A, Josephsson S. Promoting autonomy of the client with persistent mental illness: a challenge for occupational therapists from The Netherlands, Germany and Belgium. *Occupational Therapy International*, 2006; 13(3):142-59.
3. Kirsh B, Cockburn L, Gewurtz R. Best practice in occupational therapy: program characteristics that influence vocational outcomes for people with serious mental illnesses. *Canadian Journal of Occupational Therapy - Revue Canadienne d'Ergotherapie*, 2005; 72(5): 265-79.
4. Van Wel T, Felling A, Persoon J. The effect of psychiatric rehabilitation on the activity and participation level of clients with long-term psychiatric disabilities. *Community Mental Health Journal*, 2003; 39(6): 535-46.
5. Duurkoop P, Van Dyck R. From a 'state mental hospital' to new homes in the city: longitudinal research into the use of intramural facilities by long-stay care-dependent psychiatric clients in Amsterdam. *Community Mental Health Journal*, 2003; 39(1): 77-92.
6. Cardoso Buchain P, Vizzotto AD, Henna Neto J, Elkis H. Randomized controlled trial of occupational therapy in patients with treatment-resistant schizophrenia. *Revista Brasileira de Psiquiatria*, 2003; 25(1): 26-30.
7. Oka M, Otsuka K, Yokoyama N, Mintz J, Hoshino K, Niwa S, Liberman RP. An evaluation of a hybrid occupational therapy and supported employment program in Japan for persons with schizophrenia. *American Journal of Occupational Therapy*, 2004; 58(4): 466-75.
8. Wade DT. Challenging assumptions about rehabilitation. *Clinical Rehabilitation*, 2007; 21(12): 1059-62.
9. Ivarsson AB, Söderback I, Ternstedt BM. The meaning and form of occupational therapy as experienced by women with psychoses. A phenomenological study. *Scandinavian Journal of Caring Sciences*, 2002; 16(1): 103-10.
10. South African Mental Health Care Act, No. 17 of 2002. *Government Gazette*, 6 November 2002; vol. 449, no. G24024.
11. Krüger C, Lewis C. Patient and social work factors related to successful placement of long term psychiatry inpatients from Weskoppies Hospital. *African Journal of Psychiatry* (in press, accepted 8 March 2010).
12. Haglund L, Hallberg IR, Pettersson M. Psychiatric occupational therapy service – quality assurance. *Nordic Journal of Psychiatry*, 2004; 58(5): 403-7.
13. Holmqvist K, Kamwendo K, Ivarsson AB. Occupational therapists' descriptions of their work with persons suffering from cognitive impairment following acquired brain injury. *Scandinavian Journal of Occupational Therapy*, 2009; 16(1): 13-24.
14. Giuffrida CG, Demery JA, Reyes LR, Lebowitz BK, Hanlon RE. Functional skill learning in men with traumatic brain injury. *American Journal of Occupational Therapy*, 2009; 63(4): 398-407.
15. Nott MT, Chapparo C, Heard R. Effective occupational therapy intervention with adults demonstrating agitation during post-traumatic amnesia. *Brain Injury*, 2008; 22(9): 669-83.
16. Dawson DR, Gaya A, Hunt A, Levine B, Lemsky C, Polatajko HJ. Using the cognitive orientation to occupational performance (CO-OP) with adults with executive dysfunction following traumatic brain injury. *Canadian Journal of Occupational Therapy - Revue Canadienne d'Ergotherapie*, 2009; 76(2): 115-27.
17. Lee SS, Powell NJ, Esdaile S. A functional model of cognitive rehabilitation in occupational therapy. *Canadian Journal of Occupational Therapy - Revue Canadienne d'Ergotherapie*, 2001; 68(1): 41-50.
18. Hoffmann T, Bennett S, Koh CL, McKenna KT. Occupational therapy for cognitive impairment in stroke patients. *Cochrane Database of Systematic Reviews*, 2010; 9: CD006430.
19. Jang Y, Chern JS, Lin KC. Validity of the Loewenstein occupational therapy cognitive assessment in people with intellectual disabilities. *American Journal of Occupational Therapy*, 2009; 63(4): 414-22.
20. Gutman SA, Kerner R, Zombek I, Dulek J, Ramsey CA. Supported education for adults with psychiatric disabilities: effectiveness of an occupational therapy program. *American Journal of Occupational Therapy*, 2009; 63(3): 245-54.
21. Cook S, Chambers E, Coleman JH. Occupational therapy for people with psychotic conditions in community settings: a pilot randomized controlled trial. *Clinical Rehabilitation*, 2009; 23(1): 40-52.
22. Gitlin LN, Winter L, Vause Earland T, Adel Herge E, Chernett NL, Piersol CV, Burke JP. The Tailored Activity Program to reduce behavioral symptoms in individuals with dementia: feasibility, acceptability, and replication potential. *Gerontologist*, 2009; 49(3): 428-39.
23. Case-Smith J, Arbesman M. Evidence-based review of interventions for autism used in or of relevance to occupational therapy. *American Journal of Occupational Therapy*, 2008; 62(4): 416-29.
24. Robert A, Gelinas I, Mazer B. Occupational therapists use of cognitive interventions for clients with Alzheimer's disease. *Occupational Therapy International*, 2010; 17(1): 10-9.
25. Krupa T, Fossey E, Anthony WA, Brown C, Pitts DB. Doing daily life: how occupational therapy can inform psychiatric rehabilitation practice. *Psychiatric Rehabilitation Journal*, 2009; 32(3): 155-61.
26. Ishikawa Y, Okamura H. Factors that impede the discharge of long-term schizophrenic inpatients. *Scandinavian Journal of Occupational Therapy*, 2008; 15(4): 230-5.
27. Krüger C, Rosema D. Risk factors for violence among long-term psychiatric in-patients: A comparison between violent and non-violent patients. *African Journal of Psychiatry*, 2010; 13(5):366-375.
28. Krüger C. Physical health issues in long term psychiatry inpatients: an audit of nursing statistics and clinical files at Weskoppies Hospital. Oral presentation. 16th Biennial National Congress of the South African Society of Psychiatrists (SASOP), East London, 16 – 20 October 2010.
29. Pretorius J. A model of ontogenesis and the dynamics of occupational function and dysfunction. In: Crouch RB, Alers VM, editors. *Occupational Therapy in Psychiatry and Mental Health*, 3rd edn. Cape Town: Maskew Miller Longman, 1997: 46-75.
30. De Wit PA. Creative ability – a model for psychiatric occupational therapy. In: Crouch RB, Alers VM, editors. *Occupational Therapy in Psychiatry and Mental Health*, 3rd edn. Cape Town: Maskew Miller Longman, 1997: 3-45.
31. Crepeau EB. Activity analysis: A way of thinking about occupational performance. In: Neistadt ME, Crepeau EB, editors. *Willard & Spackman's Occupational Therapy*, 9th edn. Philadelphia: Lippincott-Raven Publishers, 1998: 135-147.
32. Dartnall E, Modiba P, Porteus K, Lee T. Is deinstitutionalisation appropriate? Discharge potential and service needs of psychiatric inpatients in KwaZulu-Natal and the Eastern Cape, South Africa. Durban, South Africa: Health Systems Trust, 1999.
33. Taiwo H, Ladapo O, Aina OF, Lawal RA, Adebisi OP, Olomu SO, et al. Long stay patients in a psychiatric hospital in Lagos, Nigeria. *African Journal of Psychiatry*, 2008; 11(2): 128-32.

Corresponding author

Christa Kruger

Christa.kruger@up.ac.za

