

OCCUPATIONAL THERAPY

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INTRODUCTION

The World Health Organisation defines occupational therapy as "the treatment of physical and psychiatric conditions through specific, selected activities in order to help people to reach their maximum level of function in all aspects of daily life"⁽¹⁾. Though of necessity concise, this definition does convey the key aim of occupational therapy: enabling functional independence through activity. Occupational therapists (OTs) have, as their core skills, occupational and activity analysis and a knowledge of the therapeutic value and application of activity. They are trained to break down activities into their component parts and to identify not only the physical skills, but also the cognitive, perceptual and social skills needed to carry out each part of the activity. Occupational therapists are thus well equipped to provide assessment of a patient's personal independence skills and to provide treatment, training and practice of their component parts. They can enhance the performance of patients in hospital and help to prepare them for a return home.

In terms of rehabilitation following cerebrovascular accident or stroke, the OT, in conjunction with the other members on the multi-disciplinary team, has an important and distinct role to play in maximising patients' abilities in all areas of their lives.

Following a stroke, the patient may present with a wide range of dysfunctions, the nature and degree of which are dependent upon the area and extent of the brain lesion. Motor dysfunctions include disturbances of muscle tone, balance and equilibrium reactions, abnormal patterns of movement or loss of movement. They may also experience loss or disturbance of sensation and proprioception on the affected side, visual problems, problems with speech, communication difficulties and perceptual and/or cognitive problems. The range of a patient's problems is varied and unique and it is vital that a thorough assessment of each patient is undertaken by the OT in order to plan a specific treatment programme.

INITIAL ASSESSMENT

The OT will carry out an assessment of each patient which starts with an initial interview. This enables her to gain information about the patient's home circumstances and pre-morbid lifestyle, and also informally to assess a patient's cognitive skills in terms of attention, concentration, memory, judgement and insight. Obviously, it may not always be possible or appropriate to gain all the information required in this initial contact with the patient, particularly in patients with communication difficulties, emotional lability or limited attention span, and the OT must use her skill in judging each situation. In some cases it may only be appropriate to introduce oneself to the patient, to explain the basic role that

occupational therapy plays in recovery, and to begin to establish a rapport with the patient in order to gain the patient's trust and cooperation which will be important in subsequent treatment. Involvement of a patient's relatives, close family and/or carers at an early stage is beneficial and interviews with patients' relations can provide the OT with useful supplementary information. It is important to involve patients' relatives in treatment, as far as possible, so that they are aware of correct positioning and assistive techniques in, for example, activities of daily living, and to enable them to gain an understanding of the patient's abilities. The OT works closely and jointly with other members of the treatment team, notably nursing staff, physiotherapists, speech therapists and social workers, and relevant information gained by one member of the team will be shared with other members to enhance the patient's treatment and recovery.

Occupational therapy, of essence, is fundamentally holistic in its approach to rehabilitation. The OT recognises that each patient has a unique combination of problems, home circumstances, personality traits and family/support networks. An accurate, detailed and individual assessment of the patient is needed (Figure 1). The OT is able to recognise abnormalities in muscle tone, posture, balance, reflexes and movement patterns and will then formally assess how these abnormalities affect the patient's ability to function in terms of everyday living activities such as dressing, self-care, transferring, toileting, bathing and domestic activities.

CVA assessment form consists of:

General information: name, DoB, diagnosis, hand dominance, assessment date

Physical function: muscle tone of face, neck, scapula, shoulder, elbow, wrist and fingers and lower limbs

active range of movement of upper and lower limb. Both affected and non affected side assessed.

reflexes: assessed

Perception: visuo-spatial, apraxia, agnosia, body scheme disorder

Sensation: vision, light and deep touch, proprioception

Communication: including expressive, receptive and articulation (not assessed in detail)

Cognitive: emotional state, memory, orientation, judgement, attention span, affect, ability to follow instruction and motivation

Functional ability: bed mobility, dressing, washing and grooming, feeding, transfers and mobility

Also includes summary and short term treatment plan

Figure 1 – Outline of CVA assessment form as used at Westmorland General Hospital

PERCEPTUAL AND COGNITIVE PROBLEMS

The OT recognises that a patient may experience difficulties in putting on a jumper due to lack of function and disturbed muscle tone in, for example, his right arm and hand, but that other factors such as concentration, memory, judgement and perception are all component parts of this activity. The patient may be unable to recognise the item as being a jumper (agnosia) and may try to put on the jumper over his feet, perceiving it to be his trousers. He may be unable to distinguish the jumper from the chair on which it has been placed (figure/ground dysfunction), he may consistently omit to put the jumper onto his affected arm (disorder of "body scheme" or "neglect") or may be unaware that his jumper has been placed on the bed to his affected side ("visual neglect" or a hemianopia). The patient may have put on all other garments successfully but due to limited attention span may be unable to concentrate throughout the entire process of getting dressed. He may continually pull the sleeves of the jumper up his arms, unaware of the need to progress to the next stage of the activity, which may be due to the problem of "perseveration" or to impaired judgement. The inability of a patient to carry out a functional activity can thus be seen to be not merely a problem of physical functional inability, but may be due to cognitive or perceptual problems affecting the patient's ability to attend to and interpret his own body or the surrounding environment.

Perceptual problems may become apparent initially through direct observation and the OT may then carry out a preliminary assessment of the patient's cognitive and perceptual skills. It may then be appropriate to assess more fully using the standardised perceptual and cognitive assessment tests such as the "Rivermead Perceptual Assessment Battery"⁽²⁾ and "Chessington Occupational Therapy Neurological Assessment Battery" (COTNAB)⁽³⁾ (Figure 2). These tests will give a standardised test score and will indicate precise areas of difficulty in terms of perception and cognition. The patient's treatment programme will then be directed to these areas which will be tested at a later date to assess progress. For example, a patient who on assessment with Rivermead Perceptual Assessment Battery demonstrates a body scheme disorder may then be treated using various activities to promote the awareness of his own body parts and how they fit together, along with proprioceptive and sensory activities to enhance awareness of the affected side of the body.

Rivermead Perceptual Assessment Battery

This is a standardised and validated assessment battery which consists of 16 tests designed to assess visual perception. It can be used to highlight specific areas of difficulty through visual perceptual tests and enables reassessment in order to monitor and assess improvement⁽³⁾

Chessington Occupational Therapy Neurological Assessment Battery (COTNAB)

This test was developed by staff on the Joint Services Medical Rehabilitation Unit (RAF Chessington) in association with the Wolfson Medical Rehabilitation Centre Atkinson Morley's Hospital, London.

It consists of 12 standardised and validated tests which are divided into four assessment areas – visual perception, constructional ability, sensory motor ability and ability to follow instructions. It is used to assess cognitive and perceptual problems in patients from 16-65 years with acquired neurological damage⁽⁴⁾

TREATMENT

From the initial assessment and interview the OT is able to plan a comprehensive set of aims and objectives which are agreed where possible with the patient. These may be classified into short, intermediate and longterm aims, which helps to avoid over-ambition on the part of both the patient and the therapist.

OTs are trained in the therapeutic application of activities and these may be daily living activities or structured remedial activities. In the treatment of stroke patients in this department the widely accepted developmental model (Figure 3) is followed in the initial and intermediate stages of treatment. This model is based on the assumption that neurological development progresses through a sequence of stages, each stage demanding an increasingly greater degree of skill and control. Through the use of correct posture and positioning, the promotion of correct patterns of movement and inhibition of abnormal patterns of movement during activity, the OT will assist the patient to progress through these developmental stages to reach his maximum performance. When a patient has achieved his full neurological potential, and not before then, the OT may

then adopt a more "rehabilitative" model, aiming to enable the patient to achieve his maximum level of physical, social and emotional independence. This is achieved by the use of carefully selected compensatory techniques, provision of equipment and adaptations to the surroundings. The overall aims of occupational therapy following a stroke include the prevention of deformity, the promotion of correct posture, positioning and normal movement patterns, the normalisation of muscle tone, the treatment and retraining of perception and the maximisation of function, work and leisure activities⁽⁴⁾.

The development model is based on the assumption that human development occurs in a defined sequence of developmental stages that is influenced by environmental factors and individual experience.

This model includes techniques used by occupational therapists in the treatment of patients following CVA. These include:

Bobath: a neurological approach involving the use of reflex inhibition, weight bearing and positioning

Proprioceptive Neuromuscular Facilitation (PNF) stresses the importance of sensory input in facilitating motor function

Sensory integration: developed by Ayres in 1972 and focussing on the integration and interpretation of information from all the senses

Rood: developed by Margaret Rood, a physiotherapist and occupational therapist. This technique involves tactile stimulation and is based on principles similar to PNF

Also included in this model is the enhancing of development through adaption of the environment

Figure 3 – The developmental model as used in the treatment of CVA (Hagedorn⁽¹⁾)

The OT also has an important role to play in assisting the patient and his family to make the necessary psychological adjustments to changes in abilities, lifestyle and mood which may often follow a stroke.

As it is beyond the scope of this article to examine each treatment medium used by the OT, an explanation of the value and purpose of home visiting, an important aspect of an OT's work, will follow and, by way of illustration of the nature and scope of occupational therapy, a short hypothetical case study.

Figure 2 – Standardised perceptual assessment tests (Rivermead⁽²⁾ and COTNAB⁽³⁾).

HOME VISITS

Home visits with stroke patients prior to discharge are generally undertaken when the patient has achieved the basic skills needed to function at home, albeit with additional care services in many instances. The home visit is generally organised and coordinated by the OT. Other members of the treatment team may also attend the visit.

Home visits are a valuable part of the patient's treatment and are carried out for a number of reasons:

- 1 To assess the patient's ability to live at home, particularly where there is residual physical or perceptual difficulty.
- 2 To allow the patient to practice the new techniques or adaptive skills learned in the hospital setting within his own home, and to increase his confidence in his abilities.
- 3 To assess the suitability of the patient's home environment in relation to his abilities and in conjunction with the patient's relatives and appropriate agencies to recommend equipment or adaptations to promote safety and/or independence – for example, additional bannister rails, grab rails or bathing equipment.
- 4 To provide a forum for discussion of appropriate services usually with a social worker present, and to also provide the opportunity to teach relatives and carers handling, transfer and assistive techniques as appropriate.

CASE STUDY

Mrs X is a 74-year-old woman who suffered a right CVA resulting in left sided hemiparesis. She is widowed and lives alone in a bungalow and was previously independent, preparing her own meals and doing her own shopping. She received private domestic help once a week for heavy housework and employed a gardener for one hour every fortnight.

On assessment she was found to have some difficulties in balance when standing and walking. The physiotherapist was working on these problems. Although she had minimal lowered tone and power of her left shoulder and elbow, she had good arm function. Significantly lowered tone and power in her left hand and wrist, limited the use of her hand, during activities requiring fine-finger coordination and control. It became apparent from observation and subsequent formal testing using the Rivermead Perceptual Assessment Battery that Mrs X had some left side neglect, body scheme disorder and spatial difficulties which affected dressing, self care, transfers, mobility and feeding. For example, she consistently neglected to wash the left side of her body unless prompted, displayed an inability to locate the commode if positioned on her left hand side and would leave food that was on the left side of her plate.

Mrs X received treatment on the rehabilitation ward from all appropriate members of the multi-disciplinary team. Her occupational therapy treatment programme was based on the developmental model (Figure 3) and involved specific remedial activities integrated with practice and training in activities of daily living. It aimed to promote normalisation of muscle tone and movement patterns, to maximise sensory input, to enhance awareness and function and to promote and develop perceptual function. She was treated individually on the ward and in the Occupational Therapy Department and

through attendance at the bi-weekly "stroke group" held in the Occupational Therapy Department.

Before discharge, a home visit was carried out. Bath equipment was assessed for and requested from the Social Services Occupational Therapy Department, grab rails supplied to be fitted at her front door step and several small items of equipment for use in meal preparation were advised and subsequently purchased by the patient. The social worker was able to assist Mrs X in arranging for a private care agency to provide help twice a week for bathing with her newly provided bath aids and for shopping, and following discharge Mrs X attended the Dunmail Day Unit in Westmorland General Hospital to continue with her occupational therapy and physiotherapy and to monitor her progress.

PATIENT SELECTION AND USE OF AND ACCESS TO THE SERVICE

The service to stroke patients provided by Westmorland General Hospital is by a blanket referral system from the wards. The OT uses her professional clinical judgement in deciding when a patient can begin assessment and treatment. This may be re-assessed daily, particularly in the very early stages after stroke, in consultation with other members of the team. Patients who would benefit from continued treatment after discharge may with agreement from the consultant and other team members continue therapy as out-patients, or for the over 65s, through attendance at the elderly care Day Unit. People over 65 years of age who have suffered mild strokes with minimal residual disability who are not initially admitted to hospital may be referred to the elderly care Day Unit for assessment and treatment via their GP and if under 65 years of age may be referred by their consultant from the outpatient department. The Occupational Therapy Department is also able to provide a continuing service for independent advice on equipment for disability.

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