Community-based neuropsychological rehabilitation for complex needs following traumatic brain injury

According to Headway (2011), the national brain injury association, an estimated 1,000,000 people attend hospital A&E departments each year in the UK following head injury. Of this number more than ten per cent are admitted into a bed due to the seriousness of their injury. Headway also estimates that approximately 500,000 adults (between the ages of 16 and 74) are living with long-term disabilities as a result of a traumatic brain injury (TBI).

In terms of acute care, this is provided by specialist units within hospitals across the UK. The problems really begin to emerge in what is called the post-acute period. It is widely acknowledged (see www.headway.org.uk) that there is a ‘window of recovery’ following TBI that then winds down two to three years post-injury (many patients do continue to make improvements after this time but this is typically due to behavioural changes and adjustment to injury). During the recovery period, the brain is undergoing a process of spontaneous and natural recovery in as far as it is able.

Many patients with long-term (or post-acute) difficulties as a result of their TBI can present with complex or challenging behaviours, or neurobehavioural disorders. Whilst many such syndromes present difficulties both to the head-injured individual and their families, those clinical presentations that appear to pose the greatest management problem are those that are mediated by the prefrontal cortex of the frontal lobes, particularly disorders of self-control and disorders of emotional recognition and expression, both of which exert significant influence on an individual’s social awareness, self-regulation and interaction with others.
Neurobehavioural approaches, on the other hand, focus on the acquisition of functional and social skills as well as the need to adapt such skills within a social context. In other words, learning new (and more adaptive) skills in the place where you will need to use them most. The focus is on controlling or shaping the environment around the individual and then modifying or extinguishing behaviours within that environment using behavioural management plans that are implemented consistently and systematically across the board, by families, carers and all professionals involved.

The neurorehabilitation team in the community is typically led clinically by a consultant clinical neuropsychologist (who is entered onto the specialist register of the Division of Neuropsychology of the British Psychological Society) and can consist of:

- Brain injury case manager;
- Neuro-occupational therapist;
- Neuro-speech and language therapist;
- Neuro-physiotherapist;
- Support workers/enablers;
- Assistant psychologists.

The role of clinical neuropsychologists in community-based neurorehabilitation

The clinical neuropsychologist will fulfil many and varied roles in their clinical work with the brain injured adult and their significant others. For example, one would expect to see:

- One-to-one sessions with the brain injured adult focusing on acceptance of, and adjustment to, long-term disability post brain injury, which may encompass issues such as memory problems, living with epilepsy or self-regulation and awareness work. Such approaches would incorporate the use of assistive technologies wherever appropriate (for example, the use of an exercise watch to monitor arousal through increased pulse rate or the use of Google calendars to assist with prospective memory. Prospective memory is the ability to remember to do things in the future).

- Sessions to assist in the rehabilitation of the individual back into work/college (Nightingale, Soo & Tate, 2007) and, possibly, driving (Hawley, 2001).

- Working with the brain injured individual to deal with psychological difficulties post brain injury, such as low mood or social anxiety (Rao & Lyketsos, 2000; Lewis, 2001; Hodgson et al, 2005; Gould et al, 2011).

- Negotiating therapeutic and rehabilitation goals with the brain injured individual and their significant others (Bergquist & Jacket, 1993; Webb & Glueckauf, 1994; Gauggel & Hoop, 2004).

- Holding joint or family sessions to work with partners, parents, siblings, children and others significant to the brain injured adult. There are several foci for this type of work: to listen to and normalise their experiences, to signpost to other sources of support (for example, Headway UK) and to suggest potential solutions to day-to-day difficulties (Wood & Yurdakul, 1997; Milders, Fuchs & Crawford, 2003).
Devising neurorehabilitation programmes to be implemented in the community, including staff training (Redhead, 2010), monitoring and recording arrangements to measure the effectiveness of interventions, and holding regular clinical meetings with the other specialists involved in the programme to ensure that all is on track and working as it should be or to revise existing plans. All such work plays to the strengths of the brain injured adult (Dunn & Dougherty, 2005).

**Case example:**

**Sebastian James (fictitious name)**

**Biography:** Sebastian was 18 when he was involved in a car accident. Not wearing his seatbelt at the time, he was thrown clear of the vehicle and suffered significant orthopaedic injuries as well as a severe brain injury. The nature of the brain injury has left Sebastian with a range of cognitive, emotional, physical and behavioural effects. Most notable from a clinical management point of view is Sebastian’s inability to see matters from the perspectives of others, to regulate his behaviours and to consider consequences before engaging on a (usually impulsive) course of action. He experiences marked aggressive outbursts, usually targeted towards others, and has a rigid or concrete thinking style. His presentation also includes the presence of marked paranoia and suspicion of others.

**Involvement:** Initial clinical involvement with the neuropsychologist focussed on trying to engage Sebastian in the process of neurorehabilitation, primarily using a cognitive behavioural therapy framework. However, poor insight and motivation meant that Sebastian did not engage well. He could not see the point in attending sessions and only attended sporadically. An assistant psychologist was employed to work with Sebastian in his home and local community in an attempt to increase his motivation. However, only limited success was achieved. After a three month period of trying different means to engage Sebastian, the clinical neuropsychologist changed the focus of the intervention to one of neurobehavioural rehabilitation. Despite the increasing level and frequency of risk-taking behaviour, expert neuropsychiatric opinion suggested that Sebastian would not agree to residential rehabilitation and was unlikely to meet the requirements for formal admission under the Mental Health Act (2005).

Following several clinical team discussions, led by the clinical neuropsychologist, the following approach was adopted:

- **Close liaison with treating neuropsychiatrist to ensure an appropriate regime of medication and maintaining medical overview.**
- **Staff training session for support workers, the occupational therapist and family members to identify Sebastian’s strengths and weaknesses, those behaviours which caused the most difficulties, and to formulate a positive behavioural management plan for staff and family to consistently follow in order to effect change, including recording and monitoring arrangements.** Key areas for positive behavioural management included: motivation, resistance and spontaneous (verbal) aggression. Time was also spent discussing and planning risk management for working in the community given Sebastian’s recent history of being cautioned by the police for alleged assault on more than one occasion (Redhead, 2010).
- **Timetabling – to facilitate structure for Sebastian’s week, increase his motivation by giving him a reason to get up and get going in the mornings, provide assistance with prospective memory and a gradual increase in independent responsibilities such as shopping, cooking and self-care.**
- **Communication book to be kept in Sebastian’s home for all who are working with him, and his family members, to communicate with each other about key day-to-day issues. The communication book is brought to all appointments with the neuropsychologist.**
- **Appointment of a team of support workers to engage Sebastian with his timetable and also to increase his access to community facilities and augment social opportunities. This also serves to reduce the pressure on the family members who struggle with Sebastian’s mood swings and often unreasonable behaviour towards them.**
- **Regular one-to-one sessions with Sebastian to keep him informed and involved in the overall programme and also to carry out more targeted, evidence-based work, for example with self-awareness and problem-solving (Kennedy & Coelho, 2005).**
- **Regular clinical team meetings to allow for monitoring of the effectiveness of the intervention, troubleshooting problems using a whole-team approach and drawing in new goals as they emerge.**
- **Liaison with college/potential work placements to increase Sebastian’s purposeful activities during the week.**

**References**


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**Community-based neuropsychological rehabilitation**

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