Mood and affective problems after traumatic brain injury

Introduction
Survivors of traumatic brain injury (TBI) are vulnerable to a range of psychosocial difficulties. The impact of unrecongnised and untreated emotional sequelae of TBI upon psychosocial outcome has been highlighted. Psychosocial problems present the greatest challenge to rehabilitation services. Despite some shifts towards recognition of such problems, increased understanding of the emotional and psychosocial aspects of brain injury and the provision of services for treatment is required to meet the high level of unmet need within this client group.

What are the common difficulties?
High rates of psychiatric disorder have been identified amongst survivors of traumatic brain injury using established diagnostic criteria. Depression, anxiety disorders (such as Post Traumatic Stress Disorder, Obsessive Compulsive Disorder and Panic Disorder) and irritability or anger problems would appear to be the most common diagnoses, and premorbid psychopathology may predict substance abuse disorders post-trauma. Typically, studies show that about a third of TBI survivors experience emotional problems between 6 months and a year post-injury, others place levels even higher. The presence of emotional or behavioural problems post injury which impact on the individual’s family have been reported at 84%.

Clinically significant levels of hopelessness (35%) suicidal ideation (23%), and suicide attempts (18%) post-injury have been identified. Approximately 50-80% of TBI survivors admitted to hospital following closed head injury report symptoms of post concussive syndrome (PCS). PCS symptoms include headache, fatigue, sensory sensitivity (to noise or light), memory and attentional problems, low mood, anxiety and irritability. Whilst symptoms generally improve within 3-6 months, for about 15% of survivors such symptoms may persist beyond three years. Disorders of motivation are another commonly occurring neurobehavioural consequence, characterised by apathy, indifference or lack of concern, and lowered initiation, verbal output and literacy.

Identification of disorders
Clarity of diagnosis and aetiology may be compromised by complexity of the problem; the limitations of measures which may reflect a different set of aetiological assumptions to those used within a purely psychiatric setting; and the use of terminology for experienced and expressed emotional states which poorly represents the subjective experiences of clients.

Neurologically based apathy has been shown to share negative, but not somatic or affective, symptom features of depression. The affective and cognitive symptoms of post concussive syndrome, depression, anxiety, irritability, and post traumatic stress disorder share features, but may have differing aetiology. Symptoms consistent with dysexecutive syndrome such as perseveration, impulsivity, and irritability can be misstated for behavioural indicators of OCD, although affective and cognitive indicators (in terms of beliefs about obsessive-compulsive thoughts and behaviours) differ.

How can mood and affective problems be understood?
Biopsychosocial Frameworks
Frameworks for considering sources of emotional sequelae and for identifying areas for assessment and intervention in neuropsychological rehabilitation have been proposed. These models argue for parallel consideration and application of a range of factors and models.

Gainotti proposed three categories of factors in considering emotional consequences of brain injury: neurological, psychological, and psychosocial.

Neurological factors
Neurological factors are fundamental to the experience and processing of emotions. Fronto-temporal-limbic circuitry appears to be particularly implicated in a range of emotional disturbances. Ventro-medial frontal areas are thought to play an important role in motivation and anticipation. Right hemisphere and subcortical lesions have been associated with disorders of motivation. Impairments of emotion recognition create difficulties responding appropriately in interpersonal situations. Sensory changes such as intolerance of light or noise, in addition to the secondary psychological impact of physical changes, are also relevant. Distinctions between neurological impairment of self-awareness, and psychological denial of disability have been made.

Psychological factors
Gainotti draws on psychodynamic theories of denial in issues of emotional adjustment following brain injury. Other papers have highlighted the important roles of pre and post-morbid coping style, personality, client’s own causal explanations for their difficulties, and pre-injury psychopathology as factors influencing emotional outcome.

Work focusing on the TBI survivor’s adjustment to their injury in terms of their subjective experience of themselves has demonstrated how survivors may experience distressing threats to their sense of identity. These are summarised below:

- repeated failure and associated frustration
- others not believing reports of cognitive difficulties
- loss of memories
- comparison of self pre and post injury
- loss of identity through labelling and fear of stigma
- discrepant information from medical services (i.e. being told that there’s nothing wrong, or being given a very poor prognosis)
- discrepancy between being ‘normal’ (but not receiving services) and being diagnosed (but being labelled or stigmatised by society)

<table>
<thead>
<tr>
<th>Table 1: subjective complaints of survivors of TBI.</th>
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<tbody>
<tr>
<td>The important aspect of the individual’s readiness or motivation to change socially problematic behaviour, and the application of behavioural models focusing on environmental contingencies influencing behaviour have been discussed.</td>
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Psychosocial Factors
Gainotti recognises the twofold impact of the consequences of the TBI upon both the individual’s system of social activities and relationships, and upon others within their social system. Reduction in size of social system, nature of relationships (e.g. changes in intimacy and sexual relationships), changes in roles, and increased financial burden are highlighted as imposing a significant burden on both the individual and their family. Gainotti notes that family members cope with the physical consequences better than the emotional or behavioural difficulties. Caregivers do not shift towards more adaptive, problem-focused styles of coping over time post injury, and use of an emotion focused (rather than

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How should mood and affective problems be approached? Gainsotti refers to Prigatano’s arguments for the principles of holistic rehabilitation, targeting affective problems, self-awareness and acceptance, and return to a productive lifestyle through integrated group-based rehabilitation. However, such services are not widely available, so what can be done within existing services?

Featureless cognitive-behavioural therapy (CBT) is being increasingly applied. Recent articles describe some of the alterations to traditional cognitive therapy techniques when working with those who have cognitive impairments^6^,^24^,^30^, and PTSD^24^, are promising, although important caveats for certain techniques have been identified. For example, ‘perseveration of emotional response’ during exposure work (an evidence-based CBT intervention for PTSD) has been noted as a consequence of emotional activation in the context of executive functioning problems^31^,^32^,^33^,^34^.

Conclusion The importance of careful psychological and neuropsychiatric assessment for identifying causal, contributory, or maintaining factors of affective problems following TBI has been highlighted. The need to consider the subjective understanding and experience of the TBI survivor and their family or caregiver has also been emphasised. Increasingly, the need for a biopsychosocial approach to understanding the consequences of brain injury, and in particular emotional consequences, is being highlighted. The amelioration of mood and affective problems may require reference to a broad range of models. These should consider physical and cognitive impairments, functional difficulties, and social and cultural factors. Sharing of the clinical conceptualisation, in an appropriate form, with the client and their family is advised to maximise collaboration and engagement. Functional rehabilitative efforts are likely to have a positive impact on emotional well-being through improved quality of life. Modified cognitive-behavioural therapy may provide both a system and a set of interventions that are particularly appropriate for mood and affective problems.

### Table 2: Hypothetical scenarios demonstrating links between neurological, cognitive, environmental, behavioural and interpersonal factors.

<table>
<thead>
<tr>
<th>Locus of damage, system impacted</th>
<th>Cognitive impairment</th>
<th>Environmental trigger</th>
<th>Hypothetical subjective experience or meaning</th>
<th>Behavioural expression of emotion</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontal</td>
<td>Impaired memory</td>
<td>Memories secondary to attentional impairment, and anxiety</td>
<td>Forgetting things, feeling lost, feeling intense</td>
<td>Memory impairment</td>
<td>Less of job, more irritability, lower productivity</td>
</tr>
<tr>
<td>Temporal</td>
<td>Mood/concentration</td>
<td>Emotional activation in the context of executive functioning</td>
<td>An emotional response during exposure work (an evidence-based CBT intervention for PTSD)</td>
<td>Emotional response</td>
<td>Loss of job, more irritability, lower productivity</td>
</tr>
<tr>
<td>Parietal</td>
<td>Speech/language</td>
<td>Difficulty with emotional expression</td>
<td>Difficulty with emotional expression</td>
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<tr>
<td>Occipital</td>
<td>Visual impairment</td>
<td>Visual impairment</td>
<td>Visual impairment</td>
<td>Visual impairment</td>
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### Table 3: Features of CBT in relation to areas of difficulty post brain injury.

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<tr>
<th>Core feature of CBT</th>
<th>Area of cognitive impairment or difficulty which may be compensated for</th>
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<tr>
<td>Collaboration</td>
<td>Confusion, acceptance, stigma</td>
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<tr>
<td>Emphasis on monitoring problems and successes</td>
<td>Awareness, confidence, improved encoding and specificity of autobiographical recall</td>
</tr>
<tr>
<td>Emphasis on ‘stop, think, reflect’ approaches and development of ‘internal dialogue’</td>
<td>Awareness, impulsivity</td>
</tr>
<tr>
<td>Use of practical tasks as points of learning (behavioural experiments)</td>
<td>Abstract thinking, comprehension, new learning</td>
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<tr>
<td>Use of audiotapes of sessions or techniques for the client to refer to between sessions</td>
<td>Memory</td>
</tr>
<tr>
<td>Ongoing summarising by the therapist the development of a visual conceptualisation or formulation with the client</td>
<td>Memory, attention</td>
</tr>
<tr>
<td>Executive impairments of problem solving</td>
<td>Attention, abstract thinking, comprehension</td>
</tr>
</tbody>
</table>

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This course aims to integrate theory with clinical management of functional memory difficulties together with the application of compensatory strategies. An opportunity to consider the applicability of CBT to the emotional consequences of TBI using specific cases or clinical problems in the discussions.

References


Annual Course & Workshop Programme

Cognitive Behavioural Therapy & Neuropsychological Rehabilitation - 22 August 2002

An opportunity to consider the applicability of CBT to the emotional consequences of TBI using specific cases or clinical problems in the discussions.

Understanding Brain Injury - 3 October 2002

A workshop for health and social services support workers new to working brain injury and for family carers.

Practical Management of Memory Problems following Acquired Brain Injury - 17/18 October 2002

This course aims to integrate theory with clinical management of functional memory difficulties together with the application of compensatory strategies.

Attention & Executive Skills - 5/6 December 2002

This two day course will increase understanding of theory assessment and treatment of attention and executive deficits.

Goal Planning in Acute and Community Settings - 7 March 2003

For professionals working in neuro-rehabilitation outlining potential benefits of multidisciplinary goal planning.

For further details and an application form for any of the above courses, contact: Alison Gamble, Princess of Wales Hospital, Lynn Road, Ely, Cambridge CB6 1DN. Tel. 01353 652173. E-Mail: alison.gamble@POW@lifespan-tr.angloxs.nhs.uk

Speakers include Professor Barbara Wilson, Dr Jon Evans and Members of the Interdisciplinary Team.