# Self-awareness of deficits following brain injury: implications for mental capacity and recovery

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## Introduction

Impaired self-awareness of the executive, emotional and physical consequences of moderate to severe brain injuries are reported during the recovery phase. It plays a crucial role in patients' engagement and utilisation of rehabilitation and adversely affects functional outcomes following a brain injury.

*We are a charity that works alongside people with an acquired brain injury, autism, and learning or physical disabilities to help them live as independently as possible. For over 40 years, our high-quality services across the UK have supported people to move forward with their lives. These include: brain injury assessment and rehabilitation centres, hospitals, care homes, supported living accommodation, care in people's homes and a school.*

## Aim

We aim to describe disorders of self-awareness after acquired brain injury, including prevalence within a post-acute rehabilitation setting, clinical presentation, association with different types of brain injury, neuropsychological impairments, and functional ability.

We then consider its potential impact within the legislative frameworks and summarise possible interventions integrated within a holistic neurobehavioural approach to rehabilitation.

## Method

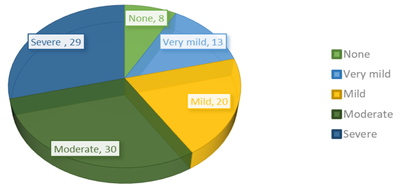
Then study was conducted In a large sample (N=1120), the prevalence and severity of self-awareness impairments were captured using Mayo-Portland Adaptability Inventory-4 (MPAI-4) at admission and discharge from our neurobehavioral rehabilitation services. Presence and severity of impaired self-awareness were estimated from scores on the self-awareness item of the MPAI-4 within one month of admission. The MPAI-4 is part of the standardised set of outcome measures used in our services. Clinicians use information from comprehensive clinical assessments, daily observations, and behaviour monitoring to determine the most appropriate rating for individuals.

These scores are analysed against a range of neuropsychological parameters and functional outcomes.

## Results

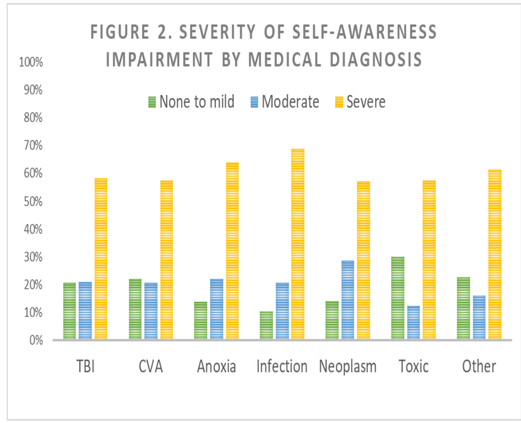
The median severity score across all 1,120 individuals in our sample was **three**. This denotes "moderate problems which interfere with activities 25% to 75% of the time". Figure 1 shows the distribution across the full range of scores. The majority (79%) of the sample presented with self-awareness problems to a degree that affected function, and in almost two in three, the problems were of a level of severity that interfered with significantly with daily activities.

FIGURE 1. PREVALENCE OF IMPAIRED SELF-AWARENESS BY SEVERITY



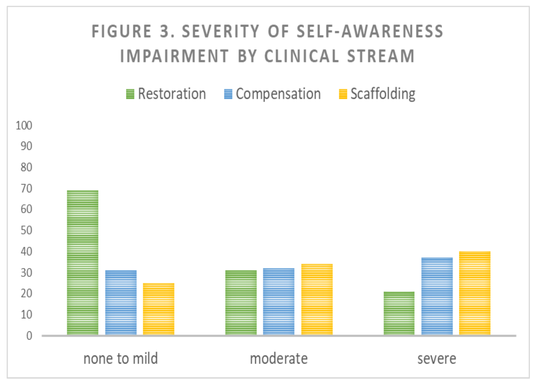

## Results continued

FIGURE 2. SEVERITY OF SELF-AWARENESS IMPAIRMENT BY MEDICAL DIAGNOSIS




The **severity of self-awareness impairments across different causes of brain injuries was comparable** with no notable differences (Figure 2). Most individuals with **mild or no self-awareness deficits were able to engage in restorative rehabilitation, whilst those with severe impairment in self-awareness mainly required scaffolding** of their functioning, including some **restrictions** (Figure 3).

FIGURE 3. SEVERITY OF SELF-AWARENESS IMPAIRMENT BY CLINICAL STREAM




## Results continued

The group that required more scaffolding in daily functioning, were likely to be under the restrictive legal frameworks such as MCA-DoLS or the Mental Health Act.

Self-awareness impairment **on admission** was found to be **strongly related** with the level of self-awareness on **discharge** (rs = .53, N = 841 ).

Self-awareness was also moderately associated with **impairments in problem solving** (rs = .37, N = 841), memory (rs = .30, N = 841), **attention** (rs = .31, N = 841) and **money management** (rs = .35, N = 841).

## Conclusion

Disorders of self-awareness are prevalent in people with brain injury and can be persistent. Our data suggest that impaired self-awareness is not exclusively related to the cause/nature of the brain injury, but it is associated with impaired problem solving, memory and attention.

The level of self-awareness on admission was also related to **social participation and psychological adjustment on discharge**. Outcomes on discharge will always depend on a multiplicity of factors, but these data suggest that self-awareness may be an important precursor to psychological adjustment and the ability to engage in social roles at discharge from rehabilitation

Further studies are required to assess the outcomes of targeted interventions (pharmacological and neurobehavioral) on the executive and emotional deficits that underpins self-awareness.

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