Factors associated with response completion of the Hospital Anxiety and Depression Scale (HADS) in people with severe acquired brain injury (ABI)

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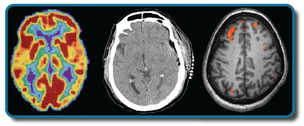
Introduction

- Anxiety and depression are common after acquired brain injury (ABI) of any cause (e. g. traumatic brain injury, stroke, etc.). [1,2]
- The Hospital Anxiety and Depression Scale (HADS [3]) is widely used to identify and quantify depression and anxiety. [4]
- But there is limited support for using it in the assessment people with ABI, especially those with severe impairments. [5]
- Some studies have found that a range of demographic and clinical factors are associated with ability to complete the HADS. [6]



Aim

To **identify characteristics** associated with the ability to complete the HADS by people with severe impairments following acquired brain injury at different time points (admission and discharge).

Benefits

To **aid decision making** around the best approach to the assessment of anxiety and depression in this population.

Method

Participants

916 people with ABI

Setting

Post-acute brain injury rehabilitation in Brainkind

Materials

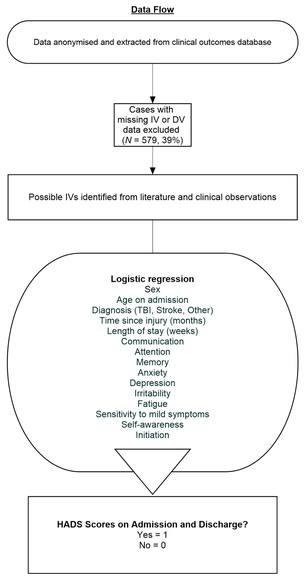
- Hospital Anxiety and Depression (HADS) [3]
- Mayo-Portland Adaptability Inventory – 4 (MPAI-4) [7]

Procedure

Data extracted from routine clinical outcomes database:

- **Independent variables (IVs):** sex, age, diagnosis, time since injury (months), length of stay, MPAI-4 scores on communication, attention, memory, anxiety, depression, irritability, fatigue, sensitivity to mild symptoms, self-awareness, and initiation
- **Dependent variable (DV):** completion of the HADS (admission + discharge) - complete data = 1, incomplete data = 0

Figure 1. *Data processing flow*



Results

The characteristics of the sample, including injury diagnosis, acute severity (GCS) and weeks in rehabilitation, are summarised on **Table 1**.

Table 1. *Demographic and clinical characteristics of the sample*

Characteristic	*N* (%), *M* (*SD*)
Sex	
F	313 (34%)
M	603 (66%)
Age	54 (16)
Diagnosis	
TBI	338 (37%)
Stroke	386 (42%)
Other	192 (21%)
Glasgow Coma Scale (GCS)	149 (16%), 9 (4)
Mild (13-15)	42 (28%)
Moderate (9-12)	44 (30%)
Severe (3-8)	63 (42%)
Time Since Injury (months)	13 (50)
Over 12 months	101 (11%)
Length of Stay (weeks)	32 (64)
Shorter than 25 weeks	632 (69%)

Figure 2 shows the general distribution of brain injury associated impairments typically observed in people admitted to Brainkind services. While a severe acute injury was evidenced in less than half of the sample, the vast majority (80%) have severe or very severe functional impairments.

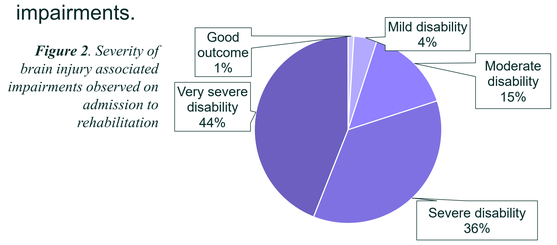


Figure 2. *Severity of brain injury associated impairments observed on admission to rehabilitation*

Figure 3 illustrates the predictors of response completion on the HADS. Significance (*) was set at $p < .001$. Model accuracy was 70% for incomplete responses and 58% for complete, and it explained 15% of the variance (*Nagelkerke* R^2, $\chi^2 = 107.27$, $p < .001$).

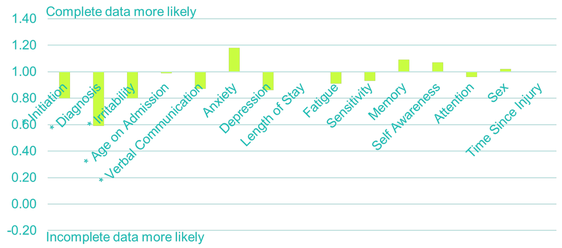


Figure 3. *Predictors of HADS response completion*

Conclusion

- **Limitations** of this study include focus on data from a single service provider, and exclusion of a considerable proportion of the sample due to missing data.
- But data from a large sample did identify cognitive and psychological adjustment characteristics which may be a barriers to engagement with the HADS.
- People with ABI with these characteristics are less likely to complete the HADS at multiple time points.

Recommendation

Use alternative measures combined with other sources of information to assess mood in these patients. [5]

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