Is there a measure to assess changes in challenging behaviours in persons with Acquired Brain Injury?

Experience with the Overt Behaviour Scale

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ABI Behaviour Services

- Inpatient Behavioural Rehabilitation

- Day Program (including clients with challenging behaviours)
Overt Behaviour Scale

- 9 areas:
  - verbal aggression
  - physical aggression against: objects; self; other people
  - inappropriate sexual behaviour
  - perseveration / repetitive behaviour
  - wandering / exit seeking
  - inappropriate social behaviour
  - lack of initiation

- Rating done using clear definitions:
  - Severity level of behaviours
  - Frequency
  - Impact

- Clinical Weighted Severity score is calculated


The findings

Clinically Weighted Severity Score (max 84)

Day program findings
- Community Integration increased; Family Burden decreased, good progress toward Goal Achievement

Inpatient findings
- Disability rating decreased; reductions in confusion, non-compliance and wandering

Percentage showing reduction in behaviour severity
- Inpatient: 66%
- Day Program: 75%
Implications

- Overt Behaviour Scale (OBS) reflects clinically important behaviour changes in common challenging behaviours

- OBS correlates with other measures

- OBS can be used in both community and inpatient settings

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Persons who have sustained a brain injury often experience behavioural challenges that require behavioural intervention. West Park Healthcare Centre provides an inpatient behavioural rehabilitation program and a day program for persons who have sustained either traumatic (TBI) or non-traumatic brain injury (nTBI) who may have challenging behaviours.

Behavioural change is often slow and incremental so it is important to use measurement techniques that will be sensitive to small changes over a long period of time. As part of the clinical intervention observational behavioural data was collected but we wanted to see if there was a scale that could represent the behaviour change in a clear and comparable way. The Overt Behaviour Scale* (OBS) was identified as a potential measure to serve this purpose.

### Program Descriptions

#### Inpatient Program
- Provides behavioural rehabilitation for clients with complex or severe behavioural dysfunction using a blend of skill training and behaviour approaches to develop and implement individualised behavioural rehabilitation plans.
- Clients live in individual bachelor-style apartments clustered around a common kitchen and lounge areas with features to ensure safety for clients and staff.

#### Day Program
- Participants attend the day program two to three days per week for six months.
- Program provides social and educational activities, skill training and frequent community outings.
- Program also provides case management services and educational resources to participants and family members, psychiatry consultation, and referrals to other programs and services.
- Overnight respite is available to participants.

### Data Collection

**Pre-post data collection:**
- At admission and at discharge (at least 6 months after admission).

**Completion:**
- Inpatient: Behaviour Therapist
- Day Programme: Family members and/or case manager (i.e., a person who has a relationship with the client over a period of time)
  - Rater consistent from pre to post assessment

**Sample:**
- Inpatient: Overt Behaviour Scale (OBS); Functional Improvement Measure (FIM); Disability Rating Scale (DRS); Interval behavioural data
- Day Program: Overt Behaviour Scale (OBS), Community Integration Questionnaire (CIQ); Caregiver Burden Assessment Scale (BAS); Goal Attainment Scaling (GAS)

### Findings

#### Average Percentage of Improvement across measures

**Initial and follow up raw data per measure**

**OBS change x CIQ change**

**OBS change x BAS change**

**OBS change x FIM change**

**OBS improvement coincides with CIQ and BAS improvement**

**OBS improvement coincides with FIM improvement**

### Conclusions

The Overt Behaviour Scale (OBS) appears to be a sensitive tool to measure and track changes in common challenging behaviours observed in persons with TBI and nTBI in both outpatient and inpatient rehabilitation settings. OBS scores reflect clinically important changes in common challenging behaviours.

OBS relates with other measures reflecting concurrent improvements in other impairments. OBS can be used in both community and inpatient settings. It provides a standardized tool for quantifying increases or decreases in challenging behaviours. The Clinical Weighted Severity score provides a single numeric value to measure the overall intensity of the common challenging behaviours seen in persons with ABI.

**Limitations:**
- The sample size is quite small in both these settings so further data should be collected and these findings should be interpreted as clinically important trends.

**Implication for ABI population:**
- Common challenging behaviours can be quantified using the OBS, across community and inpatient settings. Improvement in behaviour occurs along with changes in disability, functional independence, community integration and family burden.

**Contribution to rehabilitation practice:**
- The OBS might be useful to monitor changes in challenging behaviours over time, and might be used to quantify challenging behaviours across settings, similar to the way that the FIM is used as a measure of physical functioning.