

# **NeuroRehab Evidence Database**

Target Area: Challenging Behaviour

Neurological Group: Traumatic Brain Injury

Stewart and Alderman (2010). Active versus passive management of post-acquired brain injury challenging behaviour: A case study analysis of multiple operant procedures in the treatment of challenging behaviour maintained by negative reinforcement. *Brain Inj.* 24(13-14): 1616-1627.

RoBiNT score - 11/30

#### Method / Results

## Design

- Study Type: SCD. ABCAC design. A = differential reinforcement of incompatible behaviour (DRI); B = differential reinforcement of low rates of responding (DRL); C = situational time out and sustained verbal prompting (STO+SP).
- **Population:** n=1. Male, age 39, very severe TBI as consequence of assault 8 years prior.
- **Setting:** Specialised neurobehavioural rehabilitation service.

## Target behaviour measure/s:

- Aggressive behaviour was operationally defined using verbal descriptors in the Overt Aggression Scale – Modified for Neurorehabilitation (OAS-MNR).
- Non-compliance was operationally defined to occur if attempts to comply were not present after two consecutive verbal prompts or reminder by staff.

## Primary outcome measure/s:

 Reduction in frequency of aggressive behaviours measured by descriptors in the OAS-MNR.

Results: Passive behavioural interventions (high cognitive load) implemented by means of differential reinforcement procedures did not result in statistically significant reduction of aggressive episodes as behaviour was seen to be maintained by negative reinforcement. However, active procedures (low cognitive load) implemented through situational time out and prompting resulted in significant reduction and subsequent elimination of target behaviour.

### Rehabilitation Program

**Aim:** To reduce aggressive behaviour and non-compliance maintained by negative reinforcement through operant conditioning procedures and evaluating effectiveness of interventions.

Materials: Not specified.

#### Treatment Plan:

- **Duration**: Approximately 180 days.
- Procedure: Behavioural analysis was conducted. DRI introduced for 26 sessions. Frequency counts were made of aggressive behaviour during hygiene routine and DRL was introduced (29 sessions). STO+SP was introduced for 44 sessions. Subsequently, DRI and STO+SP were reintroduced for 14 and 57 sessions, respectively. Length and frequency of sessions not specified.
- **Content**: Three types of intervention used:
- 1. <u>Differential reinforcement of incompatible behaviour (DRI):</u> Reinforcements (social praise and token for tangible reinforcers) provided at 15-minute fixed intervals throughout the day during which patient was required to have engaged in behaviour incompatible with aggression and non-compliance.
- 2. <u>Differential reinforcement of low rates of responding (DRL):</u> Patient provided with target number of aggressive episodes not to exceed during personal hygiene routine. Patient given freedom to choose reinforcement from options if behaviour was below target number. Feedback given at every 5-minute interval.
- 3. Situational time-out and sustained verbal prompting (STO+SP): Patient guided to separate area for 2 minutes, away from hygiene routine if aggression observed. Discriminatory learning provided by using cue words reflecting nature of aggression that occurred (e.g., shouting, hitting). Verbal prompts repeated as many times to complete task before moving to next one.