The “SNAP” 1 and 2: post-acute Systematic Neuropsychological Assessment Profiles for paediatric and adult severe acquired brain injury

Dr Heather Liddiard & Dr Jenny Jim

Objectives
- It is very difficult but imperative to gain a person’s neuropsychological profile in the post-acute stage of severe acquired brain injury (ABI) (Newby et al., 2013).
- Due complex physical and psychological deficits, an individual may be unable to engage in/score on standardised tests.
- The primary objective was to develop a procedure to gain a systematic profile of an individual’s cognitive functioning in the post-acute stage.
- Relevant information would be gained through MDT observations and standardised tasks mapping onto the deficits of neuropsychological functioning.
- The “SNAP” 1 and 2 aimed to bridge the gap between brief bedside assessments (oftenadministered on a one-off basis that are rarely used to guide on-going rehabilitation) and formal assessment. The profiles were developed to allow systematic assessment of an individual over time and contribute to biopsychosocial formulation and interventions.
- An additional aim for “SNAP” 1 and 2 was to aid in providing meaningful information regarding an individual’s cognitive functioning at transition points between services.
- Furthermore, the profiles were to be pragmatic and low cost as to satisfy the demands of everyday clinical practice.

Methods
- The “SNAP” 1 is a descriptive "snapshot" profile devised by adapting the work of Adlam (2012). A profile composed of experienced clinical opinion regarding all neuropsychological domains was produced intended for use in multidisciplinary forums that gave rise to rehabilitation goals.
- The “SNAP” 2 is a more detailed profile based of more systematic clinical observation of everyday functioning and standardised tasks to tap into all neuropsychological domains. It was developed using experience from the authors’ clinical backgrounds and knowledge of informal assessments (such as the “NAID”, Croyton et al,1998)
- For both profiles, knowledge regarding how cognitive functioning maps onto everyday functioning and tasks was given considerable thought.
- The profiles were developed in specialist residential rehabilitation settings that naturally gave opportunities of observing an individual’s cognitive skills in a novel environment, thereby allowing profiles of unconfused skills in action.

Results
- SNAP 1 and 2 were developed to help empower and guide clinicians when an individual cannot engage in formal neuropsychological assessment.
- They are used cumulatively to build understanding of an individual, line with the individual’s increased recovery.
- They are low cost, pragmatic tools that provide a helpful accessible model to systematically profile neuropsychological

Illustrative Case Study
The SNAP 1 and 2 are cumulative tools that help build a neuropsychological profile for neurorehabilitative use for people that cannot be fairly tested with standardised tools – to illustrate this, a case study is presented that focused on the domain of memory (this was not collected in isolation from the other domains in the clinical practice). Below we described how observations and subsequent unstandardised testing of the memory domain of a person with ABI allowed for specific recommendations that were integrated into their care plan.

Memory (working, long-term, prospective)
(i) Memory Clinical Observation
- Recognition/people places i.e. bedroom
- Finding their own belongings
- Telling whereabouts
- Orientated around a particular environment
(ii) Memory and learning for verbal information
- Remember/ therapist name over half an hour
- Repetition of common words
- Memory over 10 minutes
- Repetition/ sentence comprehension complexity
- Repetition of strings of numbers in increasing complexity
- Free recall, household and recognition of earlier items in the day e.g. meals
- Recall of TV programmes, events in the media

Memory and learning for visual information
- Recall of hidden object with increasing number of distractors
- Recall of hidden pictures of everyday items with increasing number of distractors
- Recognition of previously unseen pictures

How SNAP 1+2 guides clinical enquiry and data collection within the domain of Memory
The clinician used the checklists below as a pragmatic tool to gather unstandardised data that gave a picture of the person’s abilities.

Recommendations and conclusions on the basis of using SNAP 1+2
- The results of SNAP 1+2 indicated that the person has a profile of neuropsychological strengths and weaknesses: they was able to read, repeat sentences of increasing complexity, follow commands to perform actions on request, yet had significant difficulties with visual memory, which was a likely significant contributory factor to observed disorientation around the unit (i.e. failing to identify their own room and wandering into other resident’s bedrooms).
- Therefore the recommendations from clinical psychology intervention used the identified cognitive strengths to try to improve orientation to time and place. This conversely scaffolded the identified weaknesses. Specifically, strategies included the use of written timetables and written instructions/maps to help the person find the main areas within the unit. This resulted in less observed episodes of physical disorientation and hypothesized in turn to improve the person’s internal sense of security and safety.
- SNAP 1 and 2 provided significant contribution to the care of a person who suffered a significant hypoxic brain injury following a cardiac arrest.

Conclusions
- The post-acute Systematic Neuropsychological Assessment Profiles 1 and 2 (SNAP 1 and 2) can be used in early post-acute stages of severe ABI producing meaningful information regarding an individual’s cognitive functioning when they are unable to engage in formal assessments.
- The profiles empower clinicians to assess individuals early in rehabilitation thus avoiding unnecessary delays in gathering information to inform understanding and intervention to increase quality of life of those affected by severe acquired brain injury.
- Additionally these profiles can be used across the lifespan in paediatric and adult brain injury settings.

References

Contact:
- Dr Heather Liddiard BSc Hons (Counselling Psychol) BSc Hons (Counselling Psychol)  
  Consultant Clinical Psychologist, Blackheath Brain Injury Rehabilitation Centre, The Huntercombe Group  
  Heather.liddiard@huntercombe.com
- Dr Jenny Jim BSc Hons (CounsPsychol) BSc Hons (CounsPsychol)  
  Consultant Clinical Psychologist, Psychosocial Rehabilitation Team, The Children’s Trust  
  Jenny.Jim@childrenstrust.org.uk

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