Turning Point Statewide Neuropsychology Service

The Role of Clinical Neuropsychology in AOD Settings

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Overview

1. What is neuropsychology
2. Cognitive impairment and acquired brain injury
3. Key strategies and new / old ideas to support your client
    1. Compensatory Strategies
    2. Lifestyle Strategies

Old problems

- Sound familiar?
  - Can’t reliably attend appointments
  - Can’t keep track of conversations and therapy progress
  - Inconsistent history, missed information
  - Can’t complete forms or ignores written documents
  - Easily overwhelmed, distractible & disorganised
  - Loses everything
- New information can shed light on these common complaints and what to do about them.

What is a Clinical Neuropsychologist?

- Psychologists with masters or doctorate in clinical neuropsychology
- Our specialty is brain dysfunction

Neuropsychology

- Practice of investigating the impact of brain injury on behaviour
  - Cognition; Emotion; Behaviour; Everyday Function
- Provide interpretation of cognitive, medical, behavioural and psychological information to explain the person's functioning
- Help with individualised treatment planning recommendations & strategies

Who do we see?

- Neurodegenerative disorders e.g. Alzheimer's
- Developmental disorders e.g. ADHD
- Acquired brain injury e.g. traumatic brain injury, encephalitis, meningitis
- Psychiatric disorders e.g. cognitive deficits in early onset psychosis, schizophrenia, mood disorders etc
- Neurological conditions e.g. brain tumours, stroke
- Substance abuse

Cognitive Impairment

- Damage/disruption to neural structures or networks within the brain can lead to a variety of impairments

Persistent Causes	Variable Causes
Acquired Brain Injury	Psychological conditions
Traumatic Brain Injury	Acute substance use
Degenerative conditions	Medical conditions
Medical conditions	Sleep deprivation
Developmental conditions	Stress

Acquired Brain Injury

Damage to the brain that occurs after birth

- Traumatic brain injury (TBI)
  - E.g. Motor vehicle accident, fall, assault
  - Head trauma ≠ TBI
- Non-traumatic brain injury
  - E.g. Chronic alcohol and substance abuse
  - Hypoxic event (brain deprived of oxygen)
  - Tumour / stroke / neurological disorders

Wondering about TBI?

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Ensure a genuine potential cause for impaired brain function

- Generally, there is:
- Loss of consciousness (> several mins);
- Hospital admission;
- *Significant change in thinking and memory skills after event*.
- This change is affecting your client's current day-to-day functioning.

Why is it important?

- ABI prevalence in some settings is high
  - General population: 2 – 3 %
  - Criminal justice setting: 30 – 40% in prison (Jackson, 2011)
  - More common in younger adults, males and those from lower socioeconomic backgrounds (Ponsford et al., 2013)

Substance use and ABI

- Alcohol and many substances can cause long term cognitive deficits
- Impact of substance use on cognition is dependant on many factors including:
  - Amount, frequency and duration of substance use
  - Age they commenced regular use
  - Complications from the substance use

Assessing cognition in AOD is complex

Mental health

Ongoing AOD use

Limited timeframe

Motivation to change

Other disability / illness

Cognitive impairment

Common Cognitive Difficulties

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Compensatory Strategies

General rules

- Strategies to be individually tailored
  - No one size fits all
  - Relevant to the individual
  - Play to the person's strengths. Use strengths to compensate for any weaknesses
    - E.g. Are they a hands-on person?
  - Build on previous strategy use
- Normalise use of strategies
- Don't overwhelm with too many strategies

Compensatory Strategies

Memory

General rules

- The more you work with information the more likely you are to remember it
  - Action, feelings, sensation, context etc.
- Recognition is easier than recall
  - Prompts and cues aid memory
- Forgetting is adaptive
  - We cannot and are not meant to remember everything.
  - Salient or important information gets priority

Compensatory Strategies

Memory

Internal strategies

- Repetition
- Association
- Staggered rehearsal
- Self-prompting & use of context
- Mnemonics and visualisation

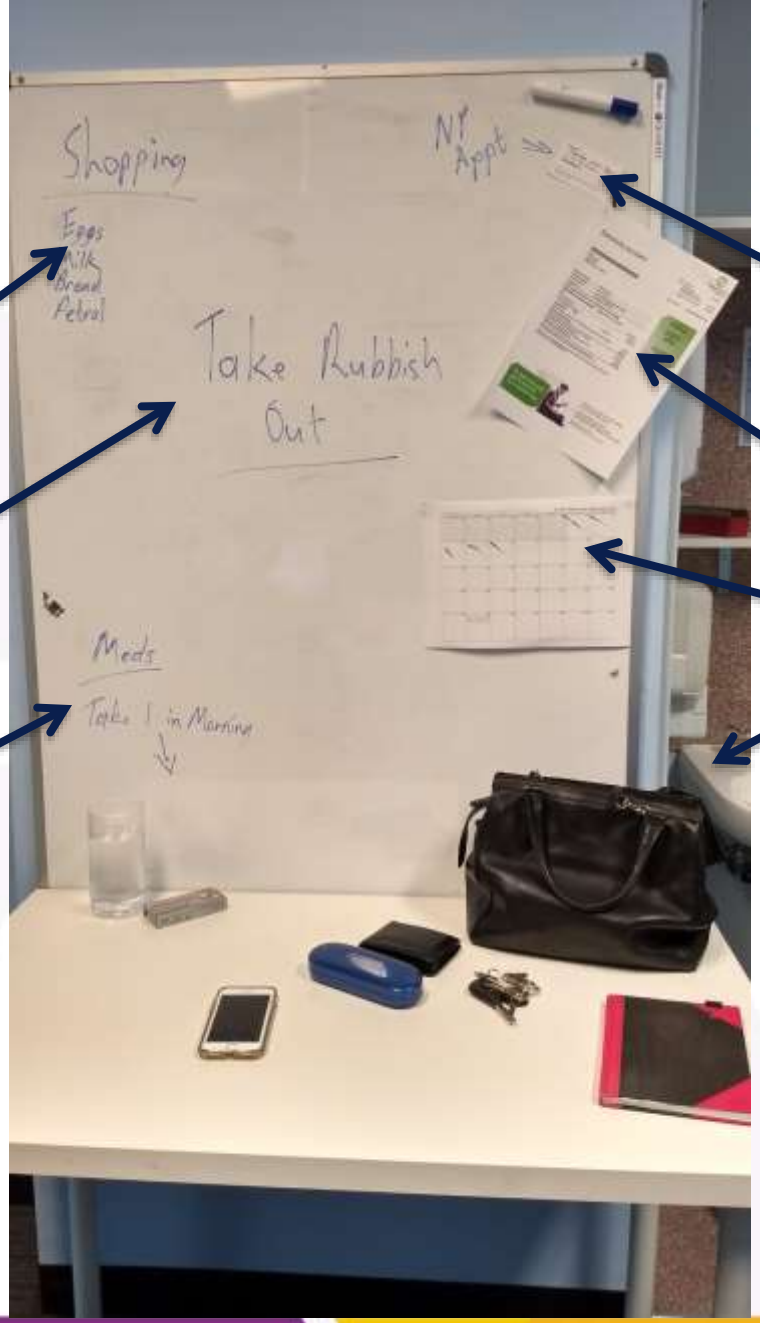
Compensatory Strategies

Memory

External strategies

- External cues
  - E.g. alarm clocks, calendars, pinboards, visual/physical reminders
  - Helps to stay organised
  - Reduces load on working memory
  - Layout of diary is important – Tailor to individual (Ponsford et al., 2013)
- Make physical changes to the environment
- Whiteboards

Memory Station



Shopping List

Reminder from family

Medication + dose reminder and water

Appointment Reminder

Bill to pay

Calendar

Important items to remember

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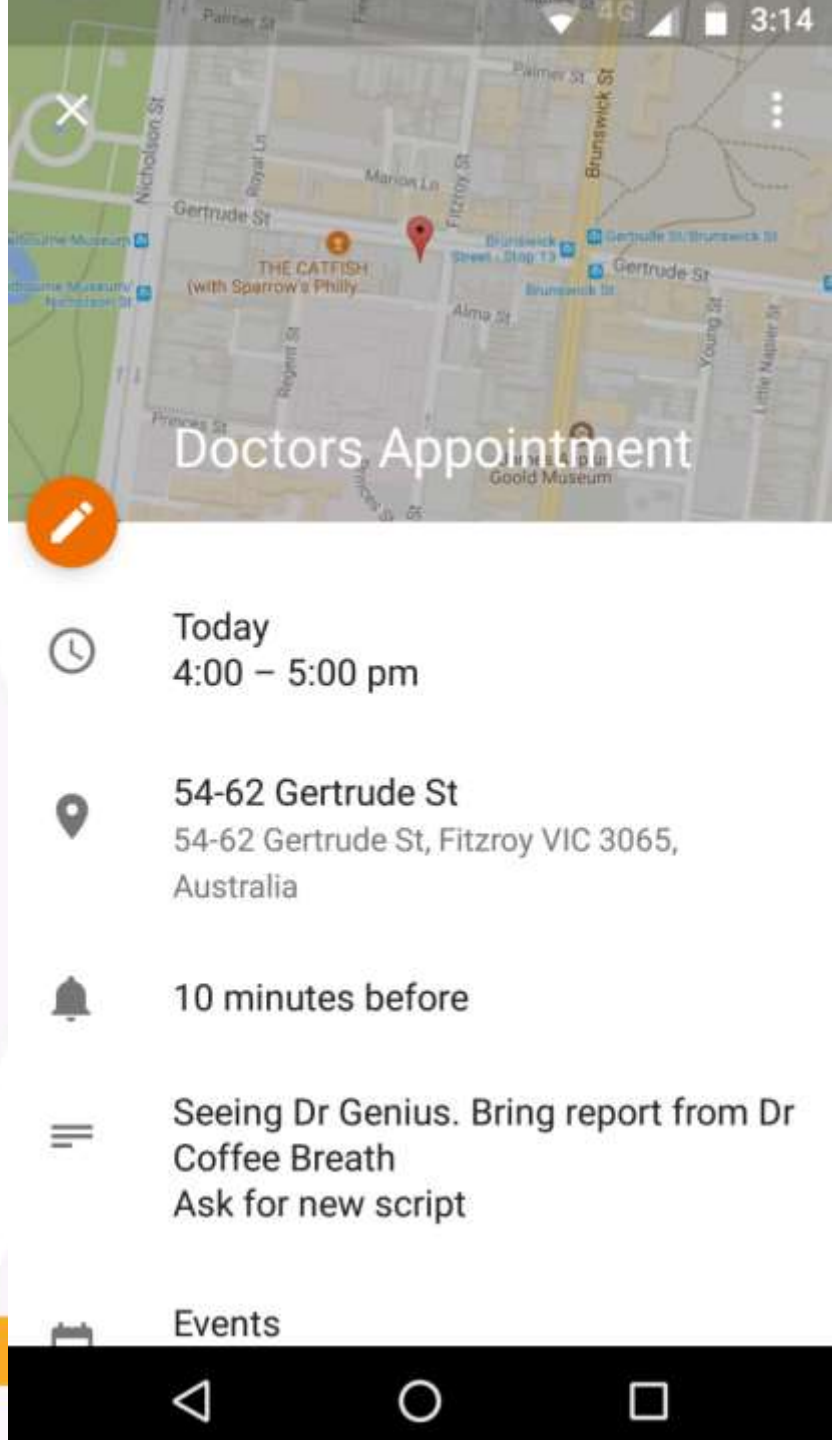
Google Calendar

- Set timed reminders with written and sound prompts
- Reminder list
- Goals
- Syncs between devices and you can add others' calendars
- Set up daily agenda
- Have included a tip sheet in the handout



Google Calendar

- McDonald et al., 2011
  - Study of ABI patients comparing diary use with Google calendar
  - Showed to be more effective in improving prospective memory performance than a diary with a 24% increase in performance observed
  - Highlighted the key difference between the strategies where one provides active reminders and the other passive
  - Timed text messages were most beneficial. Supported the triggering and retrieval of intentions within the response window, reduced pressure and stress and the need for monitoring
  - Example for meaningful tasks: One participant had limited motivation for certain reminders

Compensatory Strategies

- External strategies quicker and easier to adopt
- What does the evidence say?
  - Review of 20 years worth of studies (Ehlhardt et al., 2008 as cited in Ponsford 2013)
  - There is no one solution
  - A variety of techniques can be effective
  - No single approach was always effective
  - Level of self-awareness a critical factor re. success / failure

Healthy Lifestyle

- Sleep
  - We sleep for restoration, memory consolidation and pruning, emotional processing, creative insight (Walker et al, 2009).
  - Substance use, sleep disorders, altered day/night patterns & mood can impact the *quality* of sleep and the above sleep processes.
  - Sleep disruption can result in fatigue; poor mood; reduced cognition; and reduced work performance. Also impacts health such as blood pressure, heart disease. (Waters et al, 2011)

Sleep - Strategies

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Mental Health

- Why is it important?
  - Mental health impacts cognitive, physical and overall wellbeing
- What does the evidence say?
  - Anxiety → impairs concentration and working memory efficiency (Robison et al., 2013)
  - Depression → significant to moderate deficits in executive function, memory and attention (Rock et al., 2014)
  - Post-traumatic stress → associated with poorer processing speed, idea generation, verbal learning and recognition (Cohen et al., 2013)
- Mental health is a targetable, modifiable risk factor to cognitive impairment

Healthy Lifestyle (3)

- Exercise
  - Significant benefits to physical health, mental health, abstinence and cognitive functioning (Brown et al. 2010; Brown et al. 2014; Killingsworth, 2010; Puetz, 2006; Zheng et al 2016).
  - For example: increased fitness is associated with increased brain volume in particular areas (Leckie, 2012).
  - Exercising outdoors is better for mood (Coon et al, 2011).
- Nutrition
  - Malnutrition in alcohol misuse is associated with increased severity of cognitive impairments (Ritz et al., 2016)
  - Mediterranean diet is associated with reduced incidence of neurodegenerative disease (Sofi et al., 2010; Singh et al., 2010 Psaltopoulou et al., 2013)
  - Brainstorm easy recipes, meal ideas and ways to improve eating habits.

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