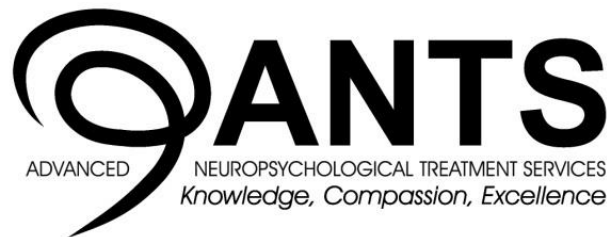


Cognitive Remediation: Improving Clients' Capacity to Successfully Engage in AOD Treatment



Dr Jamie Berry

Clinical Neuropsychologist

Advanced Neuropsychological Treatment Services

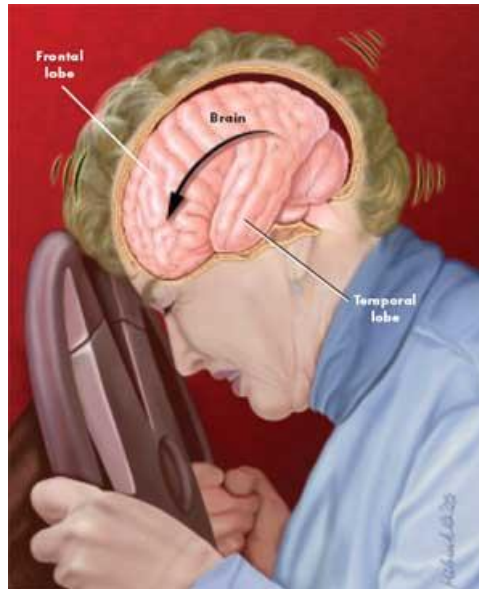
What is Cognitive Impairment?

- Deficits in information processing, including:
 - memory,
 - attention/concentration,
 - visuo-spatial skills,
 - language skills, and/or
 - executive functioning

...relative to population norms or a person's baseline.

- Multiple causes

Major Causes of Cognitive Impairment



CI Prevalence and Implications in AOD

- The prevalence of cognitive impairment among clients accessing AOD treatment has been estimated to be between **30% and 80%**
 - (Copersino, et al., 2009)
- Marceau et al (2016). Using a Brief Screening Tool to assess Cognitive Impairment in residents of an Alcohol and other drug Therapeutic Community. *Journal of Substance Abuse Treatment*
 - **43.8%** of clients attending WHOS services scored in the CI range

Impact of CI in AOD Treatment

- Cognitive impairment one of the **strongest predictors of relapse or failure to benefit from AOD treatment** (Miller, 1991)
 - Executive skills
 - Frontal lobe functions
- Brorson et al (2013). Drop-out from addiction treatment: A systematic review of risk factors. *Clinical Psychology Review*
 1. **Cognitive Impairment**
 2. Younger Age
 3. Personality Disorder

Types of Neuropsychological Intervention

- Cognitive Rehabilitation
 - Mostly in ABI intervention
 - Primarily makes use of ‘top-down’ approaches, including training in compensatory strategy use
- Cognitive Remediation
 - Mostly used in mental health intervention
 - Primarily involves ‘bottom-up’ approaches including drill and practice on cognitive tasks

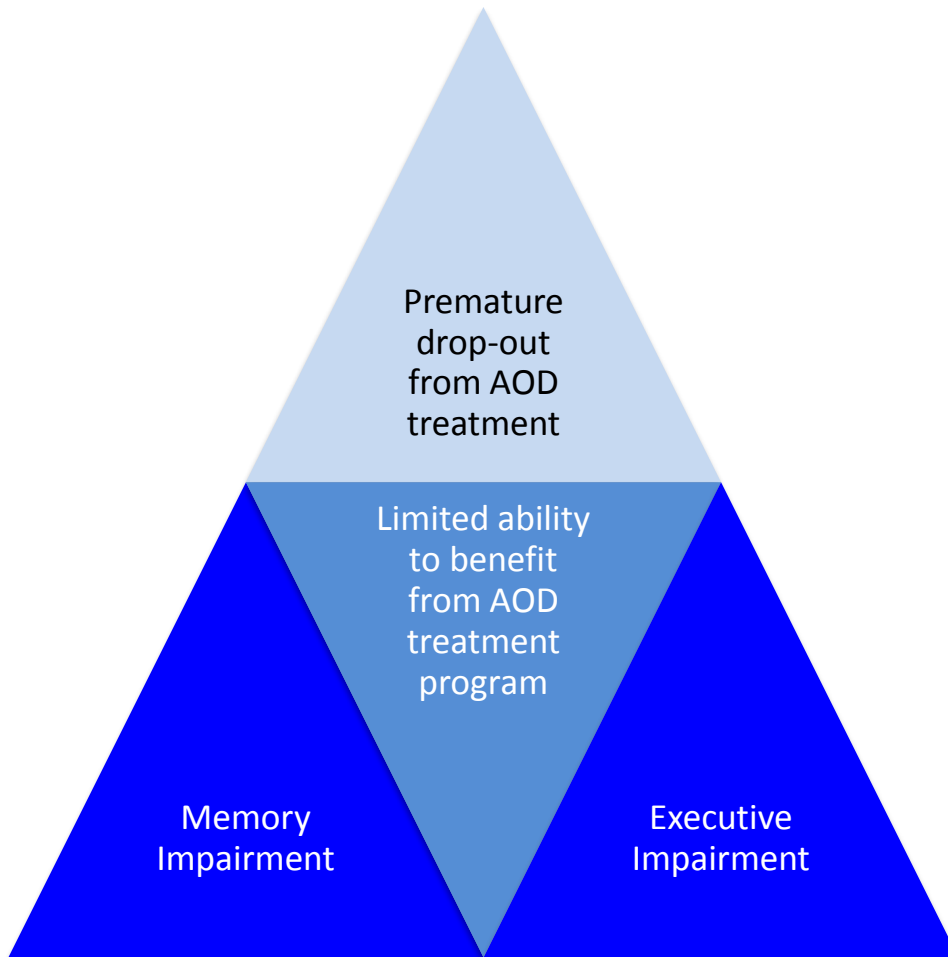
Neuropsychological Intervention in AOD

- Across 64 databases, a search for:
- "cognitive remediation" and *alcohol* or *drug* or *substance*
 - 1 result
- “cognitive rehabilitation” and *alcohol* or *drug* or *substance*
 - 2 results

Our Goal

- To develop a frontline user-friendly cognitive remediation program that impacts AOD treatment outcomes
 - Focus on executive functioning
 - Combines bottom-up and top-down approaches to CR
 - Duration and intensity suitable for implementation in residential AOD treatment
 - Targets and results in real-world functional outcomes

Levels of Impact



WHO ICF Level

**PARTICIPATION
RESTRICTION**

**ACTIVITY
LIMITATION**

IMPAIRMENT

Our Pilot - Design

- Nonrandomised controlled trial
 - Cohort allocation to CR and TAU groups
 - CR (Intervention) Group
 - 12 x 2 hour sessions, run 3 times per week over 4 weeks
 - Intervention compromised of:
 - 1 hr of group work-**Top down** (strategies to address memory, attention and executive function weaknesses)
 - 1 hr Lumosity training - **Bottom up** (completed on iPads)
 - Control Group
 - Treatment as usual after washout of CR participants (i.e. once all clients who had completed the intervention had left the service)

Design

- Pre- post- intervention measures
 - Cognitive tests
 - Self-report inventories
 - Everyday goal attainment
 - AOD treatment indicators (treatment completion)
- Maintenance measured by questionnaires/inventories at 3 months following completion of the intervention.

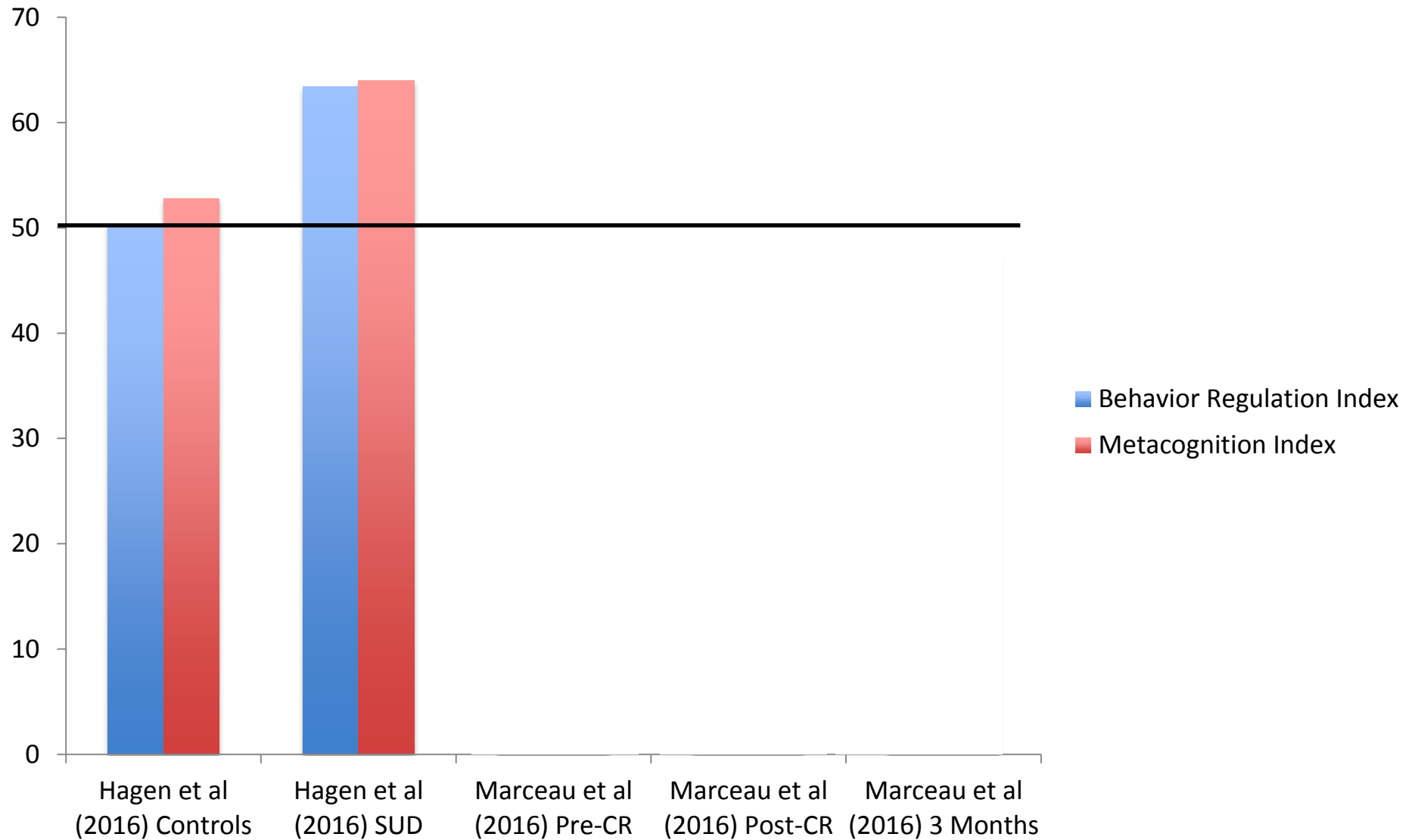
Hagen et al (2016). Assessment of Executive Function in Patients With Substance Use Disorder: A Comparison of Inventory- and Performance-Based Assessment. *J SAT*

- n=126
 - SUD group recruited from outpatient and residential treatment facilities
- n=32
 - convenience sample control group
- Compared sensitivity of performance-based and inventory-based measures of EF
 - Performance based measures
 - IGT, Stroop, TMT
 - Inventory-based measure
 - Behavior Rating Inventory of Executive Functioning (BRIEF-A)

Hagen et al (2016). Assessment of Executive Function in Patients With Substance Use Disorder: A Comparison of Inventory- and Performance-Based Assessment. *J SAT*

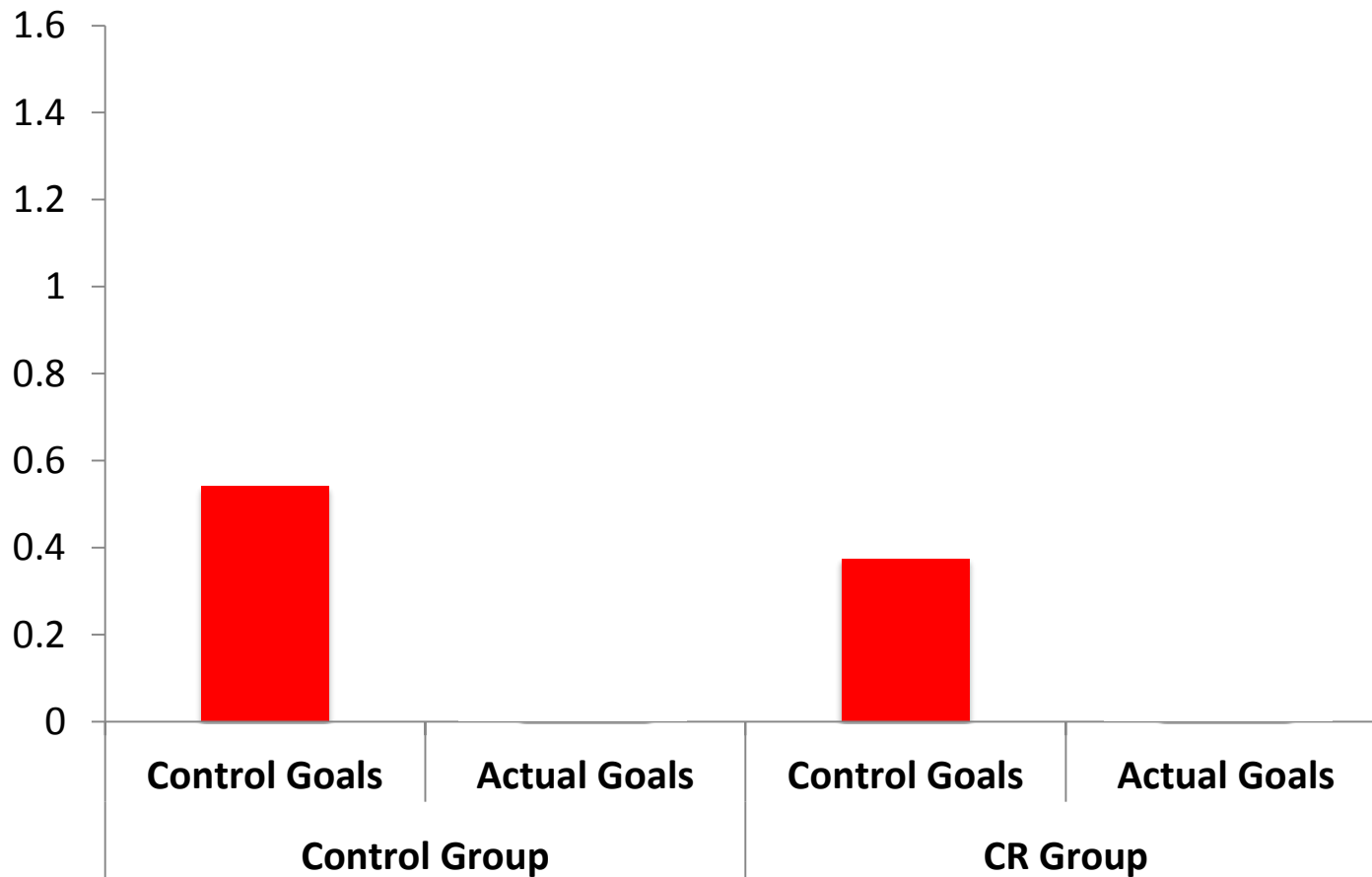
- The BRIEF-A was **more sensitive** at differentiating between the groups compared with performance-based measures
- The BRIEF-A was **associated with social adjustment indicators**
 - criminal lifestyle
 - conflict with caregiver
 - stable housing
- Recommended BRIEF-A to be considered as an integral measure of EF in patients with SUD

Overall BRIEF-A Results



Everyday Goals

Final Outcome (3 months)



Treatment Completion Gains

- CR participants were **165%** more likely to complete the program than the control group