

NSW Ministry Health

Evaluation Intervention Innovation Fund

Summary of key findings and implications for policy and practice

Project title: An evaluation of Cognitive Remediation Therapy for people in residential treatment for substance dependence

Lead investigator and organisation: Dr Anna Thompson, Lives Lived Well (LLW)

Other investigators and organisations: Dr Julaine Allan, University of Wollongong; Dr Molly Carlyle, University of Queensland (UQ); Prof Leanne Hides, UQ; Dr Alice Medalia, Columbia University; Mr Nick Meumann, LLW; Mr Adam Roberts, LLW; Dr Matt Thomas, Western NSW Local Health District

Background and Rationale – what problem were you solving?

Approximately 50% of people seeking treatment for problematic substance use have some degree of cognitive impairment, such as poor executive functioning, inhibitory control, and cognitive flexibility. In this population, cognitive impairments have been linked with reduced AOD treatment engagement and response. Currently, cognitive functioning is not routinely addressed in AOD rehabilitation programs, however there is growing evidence for the benefits of improving cognitive functioning through treatment. A novel therapeutic approach, cognitive remediation (CR), has been shown to improve cognition and functional outcomes in a range of other psychiatric conditions. Considering the cognitive impairments found in those with problematic substance use, CR may also be therapeutically beneficial in this population.

The aim of this pilot study was to implement and evaluate the feasibility, acceptability and outcomes of a CR program in AOD residential rehabilitation. Clients attending residential AOD treatment were allocated to either receive the cognitive remediation program given alongside treatment as usual (CR+TAU; n= 34), or TAU alone (n=31) in a non-randomised fashion. The CR intervention involved attending 18 sessions of CR via group sessions held each week over a period of 2 months. Clients completed a series of measures of cognitive functioning, substance use, and psychological (distress, self-esteem) and functional (quality of life) outcomes at baseline, and again upon completing treatment (2 months), and again 6 months later. To evaluate feasibility, we assessed acceptability to residents (qualitative client feedback and clinical observations), acceptability to staff (interviews pre- and post-intervention), treatment fidelity, treatment engagement, and cost.

Summary of Key Research Findings

Please summarise findings from the research below in abstract format (maximum 300 words)

This study demonstrated that it is feasible to incorporate a NEAR CR program in an AOD residential rehabilitation program with a high degree of acceptability to clients and staff. Retention in the CR group at 2 months was high (71%) and not significantly different than TAU, indicating CR was as well tolerated by clients. Clients attended an average of 13 sessions of CR over the duration of their treatment, however only 38% (n=13) of clients completed the full 18 sessions which may have been due to reduced average treatment admission through unforeseen organizational changes and competing appointments. Qualitative client feedback reported improvements in memory, confidence, and emotion regulation after CR. Statistical analyses of outcomes around cognitive, substance use, psychological and functional outcomes demonstrated overall improvements in both the CR+TAU and TAU groups by 2 months, which was maintained at 6 months for outcomes specifically related to executive functioning, quality of life and

reduced substance use. There were no significant differences between the CR+TAU and TAU groups on any of these outcomes, however this is not the primary purpose of a feasibility trial and clinical outcomes should be evaluated in a larger randomised controlled trial with greater statistical power. Qualitative staff feedback indicated positive responses to the CR intervention, however there was limited active involvement by staff. The current trial illustrates some of the contextual challenges of implementing CR in this setting. The costs involved in establishing and maintaining a NEAR CR program reflect the fact that NEAR requires a suitably qualified and trained therapist. Our findings allow a cost-benefit analysis of incorporating NEAR CR into routine AOD treatment.

Implications for policy and practice

Wider implications for policy

The participants in this study accepted the rationale that cognitive health is an important part of health, and reported wide-ranging benefits of improving their cognitive health through CR. Cognitive remediation could be considered as part of a holistic approach to AOD rehabilitation, however the efficacy of this treatment on cognitive, substance use and mental health outcomes would need to be evaluated in a larger randomised controlled trial. Future CR implementation needs to consider the organisational context to ensure consistent delivery and an adequate treatment dose.

Wider implications for practice i.e. services and programs

Our cost analysis and feasibility findings allow a cost-benefit analysis of incorporating CR into routine AOD residential rehabilitation, and a comparison with other models of CR, such as the Agency for Clinical Innovation’s ACE program.

Our study also illustrates some of the challenges of implementing CR in an AOD treatment setting. These challenges and potential solutions are summarized in the following table:

Implementation challenge	Potential solutions
Achieving an adequate ‘dose’ of cognitive remediation (minimum 18 sessions for the NEAR model)	<ul style="list-style-type: none"> • Timetable coordination to ensure that CR groups do not clash with other appointments and activities for residents • Having one stable ‘champion’ of the CR program, to ensure consistent delivery despite competing time demands in the program • Ensuring enough staff are trained to deliver the CR intervention to cover periods of staff absence • Increase CR delivery to four or five times per week • Select a less intensive model of CR (e.g. the 12 session ACE program)
Achieving active staff involvement	<ul style="list-style-type: none"> • Planning implementation in the context of the organisation’s broader change management process to avoid change fatigue • Clear and consistent management support for new intervention
Creating a therapeutic milieu within the complex and sometimes chaotic AOD rehabilitation environment	<ul style="list-style-type: none"> • Careful change management to ensure the treatment environment is as stable as possible

- An educational model of CR may be a better match for this setting (eg ACE program), rather than a therapeutic model (NEAR model).

Please comment on the particular significance of this project to NSW including customer focus

With an increasing focus on value-based health care in NSW (Koff & Lyons, 2020), health services aim to deliver value across four domains:

1. improved health outcomes;
2. improved experiences of receiving care;
3. improved experiences of providing care; and
4. better effectiveness and efficiency of care.

This study demonstrates that the addition of cognitive remediation to AOD rehabilitation delivers value in relation to (2) improved patient experiences of receiving care, and (3) improved staff experiences of providing care. Larger randomised controlled trials comparing CR to TAU and comparing different models of CR are needed to further demonstrate (1) improved health outcomes and (4) better effectiveness of care.

Koff, E., & Lyons, N. (2020). Implementing value-based health care at scale: The NSW experience. *Medical Journal of Australia*, 212(3), 104–106.e1. <https://doi.org/10.5694/mja2.50470>

Research Impact

Has this research study led to further investigations or collaborations that led to other funding applications?

No

Dissemination Activities completed and planned

Completed

1. Project newsletters published October 2018, May 2019, January 2020 & June 2020.

2. Poster presented at APSAD Conference November 2019:

Thompson, A., Allan, J., Hides, L., & Medalia, A. (2019). 'BrainGym': Evaluating the feasibility and efficacy of a NEAR cognitive remediation program in residential substance use rehabilitation. *Drug and Alcohol Review*, 38 (Suppl. 1), S98. <https://onlinelibrary.wiley.com/toc/14653362/2019/38/S1>

Planned

1. Two papers planned for submission for publication (to be submitted to NSW MoH for approval):

- a. 'A pilot of NEAR cognitive remediation in a substance use treatment setting: Outcomes and feasibility.'
- b. 'Implementing cognitive remediation in substance use treatment: The impact of staff perceptions.'