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Inaugural Australasian Cognitive Remediation in Mental Health Conference

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2025

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Keynote speakers:



Professor Cathy Mihalopoulos Head of Monash University Health

Economics Group School of Public Health and Preventive Medicine Monash University, VIC, Australia



Regina Nagy

Alcohol and Other Drugs Network Manager NSW Agency for Clinical Innovation, NSW, Australia

Abbreviations used in this review:





Cognitive Rehabilitation Therapy (CRT) combines cognitive training exercises with other techniques to improve neural networks and cognitive functions. The Inaugural Australasian Cognitive Remediation in Mental Health Conference took place on 02 August 2024 at the Princess Alexandra Hospital in Brisbane, Australia. The conference brought together healthcare professionals and researchers from Australia and New Zealand, as well as people with lived experience, to discuss the future of cognitive rehabilitation and its implementation. This publication provides a top-line summary of the presentations delivered on the day.

Is cognitive remediation value for money?

The first keynote presenter, **Prof Cathy Mihalopoulos**, discussed the economic evaluation of CRT for mental health conditions. She emphasised the importance of economic evaluation in healthcare decision-making, explaining that rather than a pure focus on saving money, the goal is to achieve the best value for limited resources.

The presentation covered several types of economic evaluations, including cost-effectiveness, cost-utility, and cost-benefit analyses. Prof Mihalopoulos highlighted that cost-utility analysis, which combines quantity and quality of life, is particularly useful in healthcare decision-making. She noted that Australia does not have a designated cost-effectiveness threshold, but a figure of around AUD 50,000 per quality-adjusted life year is often referenced.

Regarding CRT specifically, Prof Mihalopoulos presented findings from a scoping review of economic evaluations, which will be formally completed for publication soon. Overall, none of the studies indicated that CRT is not cost-effective.¹⁻³ Further, some studies have shown CRT is likely to be less costly and more effective than alternatives.⁴⁻⁷

However, Prof Mihalopoulos noted several limitations in the current evidence base. There are no Australian studies, which is challenging as healthcare costs vary significantly between countries. Additionally, most studies are trial-based rather than modelled economic evaluations, thus, longer term impacts beyond the usual short time horizon of trials may be missed. Further, sample sizes are often small, leading to statistically insignificant results despite favourable trends.

Prof Mihalopoulos emphasised the need for high-quality, linked service and outcome data across all mental health services to evaluate interventions like CRT properly. She also highlighted the importance of a trained workforce to deliver evidence-based interventions and called for a more comprehensive national health technology assessment process that includes mental health interventions.

In conclusion, while the economic evidence for CRT appears promising, more research, particularly in the Australian context, is needed to inform funding decisions and ensure equitable access to effective mental health interventions.

Current and future evidence for the implementation of cognitive remediation

In her presentation, **Prof Susan Rossell** highlighted the current state and challenges of implementing CRT in clinical practice. Despite being endorsed in the Australian schizophrenia treatment guidelines,⁸ CRT is not as widely used as desired. Prof Rossell identified three main implementation issues: variability in response to CRT from rigorous randomised controlled trials, the importance of identifying patient-specific factors, and understanding access and engagement in CRT.

Given the considerable variability in individual response to CRT, a systematic review of 40 papers aimed to identify and evaluate predictors of cognitive outcome.⁹ The study revealed 81 distinct predictors of CRT success, with baseline reasoning, problem-solving, and working memory being strong predictors of improvement in executive abilities.⁹ However, the most crucial factor identified was learning potential.⁹ Prof Rossell emphasised the importance of assessing a patient's ability to learn before recommending CRT, as those who cannot learn are unlikely to benefit from the intervention. Interestingly, only about 50% of patients show improvement with CRT, underscoring the need for careful resource allocation.⁹ A cluster analysis revealed that patients with moderate cognitive deficits, about one-half to one standard deviation below normal controls, are the most suitable candidates for CRT, as such patients are likely to have retained some ability to learn.¹⁰

Intrinsic motivation has also emerged as a significant factor influencing CRT outcomes.¹¹ Patients with higher intrinsic motivation showed better session attendance and were more likely to experience reliable cognitive change.¹¹ Prof Rossell suggested considering intrinsic motivation training before initiating CRT for patients with low motivation.

A systematic review of access and engagement revealed that CRT availability is often limited to middle- and high-income countries, primarily in outpatient settings.¹² Dropout rates can reach up to 50%, with negative symptoms, low intrinsic motivation, and poor self-advocacy being common reasons for discontinuation.¹²

From a patient perspective, a survey of patients with schizophrenia found that while 70% reported cognitive challenges, less than half were aware of CRT as a potential intervention.¹³ However, most expressed willingness to try CRT if offered.¹³ Clinicians identified various barriers to CRT implementation, including lack of staff training, funding issues, and limited awareness at the policy level.¹⁴

To address these challenges, Prof Rossell proposed several solutions, including creating a national registry to improve understanding of CRT predictors, developing Al models to assist in patient selection, and implementing national education programs for both patients and clinicians. These initiatives aim to increase awareness of cognitive issues, available interventions, and the benefits of CRT, ultimately improving access to and engagement in CRT.

Implementing CRT in mental health services – an implementation research project

Prof Julaine Allan presented an overview of a research project led by a team of experts that is currently underway to implement CRT across four sites in Australia. The project aims to address the gap between clinical guidelines and real-world implementation of evidence-based practices. The research team, comprising clinician-researchers, peer workers, academic researchers, and an advisory group of people with lived experience, clinicians, and policymakers, focuses on implementing <u>CIRCuiTS</u>^{™,15} a computerised CRT program with a growing evidence base.

The study spans four distinct mental health service settings: Western New South Wales Local Health District, the Tertiary Referral Service for Psychosis in Southeast Sydney, Illawarra Shoalhaven Local Health District, and a community mental health centre in Brisbane. This diverse selection of sites will provide valuable insights into implementing CRT across various healthcare contexts.

The researchers have identified key implementation factors, including the need for trained therapists, supportive teams, necessary resources such as computers and headsets, and organisational backing. The project uses the <u>RE-AIM framework</u> to monitor implementation, assessing factors such as reach, effectiveness, adoption, implementation fidelity, and maintenance.¹⁶

Currently in its first year, the project is establishing advisory groups, securing funding, and developing implementation plans for each site. The following two years will focus on implementation, with a follow-up period to assess longterm outcomes. The study will collect quantitative and qualitative data, including interviews with clinicians and managers, and conduct cost-benefit analyses.

The ultimate goal is to create a comprehensive guide for other health services to implement CRT effectively, based on the experiences and outcomes across the different sites. This project represents a significant step towards bridging the gap between research evidence and clinical practice in mental health services, potentially improving outcomes for individuals with cognitive impairments associated with mental illness.

Those interested in getting involved or joining the project mailing list for updates and information should email Nicole Snowdon at <u>nsnowdon@csu.edu.au</u>.

Adapting the Alcohol and Drug Cognitive Enhancement (ACE) program for Aboriginal populations

The second keynote speaker, **Regina Nagy**, presented an overview of the <u>Alcohol and Drug Cognitive</u> <u>Enhancement (ACE) Program.</u>¹⁷ Developed by the NSW Agency for Clinical Innovation (ACI), ACE is a comprehensive suite of tools and resources designed to screen, identify, and respond to cognitive impairment in clients accessing alcohol and drug services. The program includes a screening tool, an assessment tool, a cognitive remediation program, and brief interventions with fact sheets and strategies for both clinicians and clients.

A pilot study involving over 500 participants in residential treatment facilities revealed that a considerable proportion of clients accessing alcohol and drug treatment services experience some degree of cognitive impairment. The study used the Behavior Rating Inventory of Executive Function - Adult Version (BRIEF-A) to assess impairment levels, finding that 53% of participants showed some deficit level.

The program outcomes demonstrated notable improvements in cognitive function, even for those who only participated in one session. Participants who completed the 12-session cognitive remediation program showed the most significant reduction in executive dysfunction, from 53% to 27%. Notably, treatment completion rates increased from 34% to over 50%, indicating improved engagement and potential for better long-term outcomes.

A culturally adapted version of the program was piloted in partnership with The Glen, an Aboriginal-run residential rehabilitation service. The adaptation, renamed "Yellow Gum Healing," incorporated cultural elements such as smoking ceremonies, yarning circles, and references to Mother Earth. This pilot emphasised the importance of developing programs in partnership with Aboriginal communities to ensure cultural appropriateness and effectiveness.

"Look at your environment, learn about cultural practices and see what will inspire your people. To bring the ACE program into the local population, look, listen, and learn."

Aboriginal worker, The Glen

The ACE Program represents a significant advancement in addressing cognitive impairment in alcohol and drug treatment settings. Its success in improving cognitive function and treatment retention, coupled with its cultural adaptability, makes it a valuable resource for healthcare professionals working in this field. All resources, including manuals, guides, and training videos, are freely available on the <u>ACI website</u>, enabling widespread implementation and potential for improved outcomes in alcohol and drug treatment services.¹⁸

Rapid fire orals

CRT and Individual Placement and Support (IPS) for people with severe mental illness

Prof Anthony Harris presented compelling evidence on the effectiveness of combining CRT with supported employment programs for individuals with severe mental illness. CRT has been shown to enhance cognitive and social abilities, serving as a fundamental building block for improving overall functioning. A meta-analysis revealed that CRT leads to increased employment rates, working hours, and wages for participants.¹⁸ Complementing this, individual placement, and support programs have consistently outperformed other vocational interventions across various economic conditions and geographical locations.¹⁹ Thus, the innovative combination of CRT and supported employment yielded promising results.

Prof Harris and his team also conducted a systematic review and meta-analysis as part of a grant proposal. The studies sessions that were typically conducted twice weekly, totalling about 40 hours of therapy. The CRT was combined with supported employment programs and this combined approach demonstrated a statistically significant effect on employment outcomes, with an effect size of approximately 0.3 above the impact of CRT alone.

Notably, in Prof Harris's own study, 11 out of 60 participants all treated with both CRT and supported employment surpassed the \$AUD 4,000 earnings threshold, potentially affecting their disability support payments but indicating substantial financial gains. This suggests that the integrated approach not only increases the likelihood of employment but also enhances earning potential.

Prof Harris emphasised that CRT serves as a crucial foundation for various psychosocial interventions, including education and other social programs. By improving cognitive function and combining it with targeted vocational support, this approach offers a promising pathway for individuals with severe mental illness to achieve meaningful employment and improved quality of life.

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Implementing cognitive remediation in Cairns

Dr Mridula Kayal shared her clinical experience with implementing CRT, namely CIRCuiTS[™],¹⁵ which had to be adapted for Australian users, in Cairns. She highlighted that Cairns has a significant First Nations population, constituting almost 12% of the community. The Cairns Community Care Unit (CCU) has a substantial number of residents, about 30–50%, with First Nations heritage, making it an ideal setting for this program. Since 2017, CRT has been implemented in the Cairns CCU with an initial cost of less than \$AUD 5000. Despite some challenges, such as clinician availability and the impact of COVID-19, the program has continued for seven years. SSTICS and RBANS are used for pre- and post-CRT cognitive assessment. She highlighted that RBANS has been particularly effective due to its lack of recall bias, enhancing data collection.

Cognitive remediation within a Māori health view

A/Prof Katie Douglas discussed efforts to develop a culturally responsive CRT program for Māori people in New Zealand. She highlighted the significant mental health inequities faced by Māori people, including higher rates of bipolar disorder and reduced access to psychological services.^{20,21} To address these disparities, A/Prof Douglas stressed the importance of promoting Māori voices in research, increasing Māori participation in research, and developing relevant assessment methods and CRT interventions.^{22–24}

A/Prof Douglas and her team are employing qualitative methods to understand the impact of racism and colonisation on Māori mental health experiences. They are also building partnerships with Māori health providers and working to increase Māori research capacity to avoid overburdening existing Māori researchers.

Incorporating Māori health models, like Te Whare Tapa Wha, into CRT interventions was also emphasised. This holistic approach considers physical, family/social, spiritual, and mental/emotional aspects of health. The team is currently conducting a randomised controlled trial of a group-based CRT intervention adapted from a Canadian program, incorporating Māori language, metaphors, and culturally relevant activities.

Finally, A/Prof Douglas stressed the importance of careful reporting of Māori data, moving away from framing ethnicity as a risk factor and instead considering privilege and social advantage. The CONSIDER statement was mentioned as a framework for reporting health research involving Indigenous peoples.²⁵

Supporting parents and caregivers to foster executive function skills

Dr Lauren Libeson discussed an online workshop designed to support parents and carers in fostering executive function skills in young people with mental health challenges. The workshop, developed in response to caregivers' need for practical strategies, combines psychoeducation, lived experiences, and hands-on techniques. Dr Libeson emphasised how executive function skills play a crucial role in goal-directed behaviour and independence, which can be significantly impacted by mental health issues.

A key component of the workshop is the Goal, Plan, Predict, Do, Review (GPPDR) method, which teaches young people to plan and take ownership of their goals.^{26,27} Dr Libeson stressed the importance of ensuring that goals are meaningful to the young person to gain their buy-in and increase the likelihood of success.

The workshop offers personalised support, allowing parents and carers to share specific organisational challenges they face with their young people. The multidisciplinary team addresses these challenges using the GPPDR method, drawing on their expertise to provide holistic solutions.

Another valuable aspect of the workshop is the inclusion of vocational opportunities specifically tailored for neurodivergent young people. A vocational specialist presents this information and discusses alternative pathways to mainstream education and employment.

While formal evaluation of the workshop is pending, initial feedback from participants has been positive. The program's strengths include the interactive nature of the sessions, personalised support, and multidisciplinary approach. Additionally, the workshop helps normalise the challenges parents and carers face, providing a sense of community and shared experience.

Case presentation: Implementation of Employ Your Mind

Anne Miles presented a case discussing the implementation of Employ Your Mind (EYM), a cognitive remediation and vocational rehabilitation program developed in Scotland and adapted for use in Australia by WISE IDEA, an initiative of WISE Employment. WISE IDEA aims to transform the lives of individuals with mental health issues by focusing on employment, volunteering, and study opportunities. WISE IDEA works with people experiencing mental health challenges, their supporters, and employers.

EYM is designed to address the underemployment of people with mental illness by embedding cognitive remediation in a vocational rehabilitation program, which has been shown to provide significant improvement in cognitive function, social and work-related function, and subjective thinking ability.^{28,29} Moreover, EYM also helps improve work readiness in people with severe mental illness.²⁹ The program is delivered across four phases, combining individual and group sessions over six months. It incorporates cognitive remediation, personal skills development, social cognition training, and a personal project component.

A 12-month demonstration project was conducted to train mental health workers from partner organisations to deliver EYM to their client groups. The project included a comprehensive training program, ongoing support, and the development of a facilitator competency framework and fidelity tool. Three organisations took part in the EYM Learning Coach training including Mind, Each and Kindred Clubhouse. Six Learning Coaches from Each and Mind Australia went on to deliver the EYM program to their client group.

Laura Pierson and **Gene Heraud**, trained EYM Learning Coaches from Mind Australia, also shared their experiences implementing EYM in their Early Intervention Psychosocial Support Service. They reported positive outcomes for EYM participants, including increased confidence and the ability to explore new vocational opportunities.

Laura and Gene highlighted enablers for successful implementation, including strong organisational support, comprehensive training, and community partnerships. They stressed the importance of having champions and buddies to support the program's integration into existing services. The presenters also noted the program's flexibility and positive impact on participants' confidence and life direction. They also highlighted challenges such as finding suitable locations, managing increased workloads, and ensuring program accessibility.

While formal analysis of implementation outcomes is pending, initial feedback from EYM participants and learning coaches has been positive. The presenters emphasised that EYM may not suit every service due to its length and intensity, but it shows promise for implementation in various community-based mental health programs.

Lived experience panel discussion

Coen, David, and **Divine** shared their lived experience with CRT, highlighting several aspects of the therapy's impact and areas for improvement. Following the three-month CRT program, the panellists noted improvement in various skills, including multitasking, memory, problem-solving, communication, concentration, and economic management. This led to one panellist completing a Level 3 Certificate in Community Services, highlighting the practical benefits of CRT.

There were suggestions for improvement, such as updating the technology used in the program and providing opportunities for ongoing brain training. Participants sometimes struggled with motivation, but incorporating fitness and exercise was found to keep the mind active and improve mood. One panellist noted that his prior interest in brain training helped him persevere through monotonous tasks, and one-on-one sessions made the experience more engaging. The panellists also shared that group settings provided a supportive environment that fostered social interaction and encouraged continued participation. The abrupt transition after completing CRT was also noted. Panellists suggested implementing a smoother transition focusing on applying learned skills to real-life scenarios, such as managing finances or using public transport.

The qualities of an effective therapist were discussed, emphasising the importance of understanding the program, bridging activities beyond computer games, and motivating participants. Therapists should also explain tasks clearly, tailor CRT to client goals, and facilitate metacognition discussions to help clients reflect and learn about themselves.

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Cognitive remediation: Where to from here?

In the final session of the day, **Prof Kelly Allott** polled participants to gain insight on how the sector should move forward. Most participants (95%) were interested in forming an Australasian Cognitive Remediation in Mental Health Network. Key priorities were also discussed, including clinician psychoeducation resources, accessibility to CRT, and the development of consistent assessment tools. Finally, 97% of participants were interested in continuing to meet at an annual conference, so keep an eye out for future opportunities!

Follow the Cognitive Remediation in Mental Health Group on X for updates: <u>https://x.com/CogRemedMH</u>

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