Using CIRCuiTS cognitive remediation therapy to improve the functioning of adults with schizophrenia

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Cognitive and functional problems associated with schizophrenia

There is consensus on the cognitive deficits associated with schizophrenia (Green et al. 2004)

The MATRICS cognitive domains are:
- Processing Speed
- Attention/Vigilance
- Auditory and Visual Memory
- Working memory
- Problem solving
- Social Cognition

The severity of cognitive and functional deficits related to Schizophrenia impairs:
- Ability to complete activities of daily living (ADLs)
- Psychosocial functioning: Work, Relationships, Leisure activities
- Self esteem
- Quality of life

These problems contribute to increased numbers of readmissions, increased lengths of stay in hospital and greater care needs in the community.

Summary of evidence for cognitive remediation therapy (CRT) in schizophrenia

- Systematic reviews have shown CRT to be effective in sustainably improving relevant aspects of cognitive and adaptive functioning (e.g. Kurtz et al., 2001; Krabbendam and Aleman, 2003; Twamley et al., 2003; McGurk et al., 2007; Wykes et al., 2011).
- For example, Wykes et al. (2011) reported results of a meta-analysis of 109 reports of 40 studies with 2104 participants and showed improvement in cognitive functioning with a moderate mean effect size of 0.45.
- Cognitive improvement generalises to moderate effects on functioning.
- CRT has also been shown to be a cost effective treatment (e.g. Reeder et al., 2014; Patel et al., 2010).

Cognitive remediation therapy is recommended in treatment guidelines

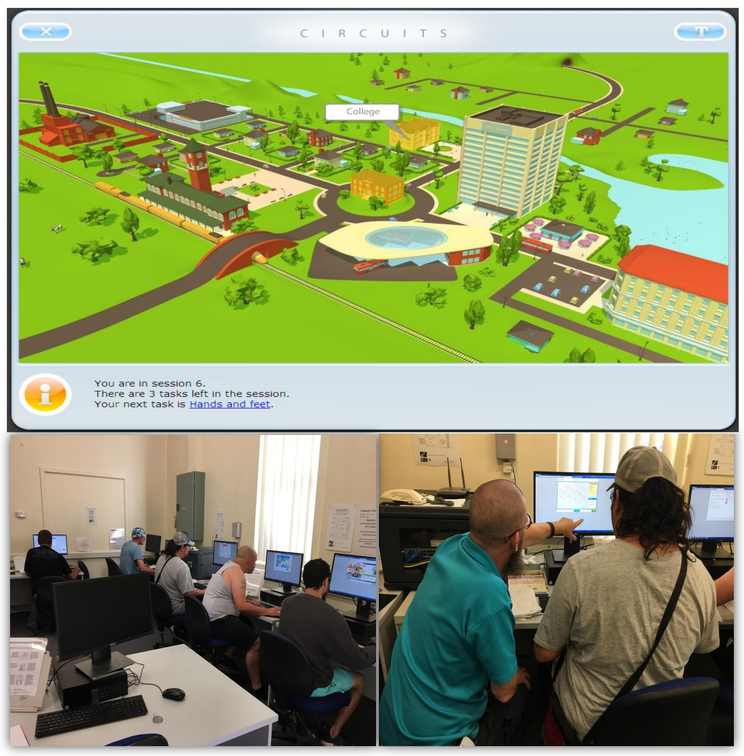
- Several international treatment guidelines include CRT for schizophrenia.
- Royal Australian and New Zealand College of Psychiatrists (RANZCP) practice guidelines recommend CRT (Galletly et al., 2016)

Implementation trial of CIRCuiTS in Orange NSW

Computer Integrated Remediation of Cognition – Treatment for Schizophrenia (CIRCuiTS)

CIRCuiTS is an evidence-based CRT program developed specifically for people with schizophrenia.

It is an engaging, animated web-based program developed by Dame Professor Til Wykes and the team at Kings College London.



Prior to this implementation trial, CIRCuiTS had not been offered in NSW, nor in inpatient contexts.

The aim of the Orange-based implementation trial was to examine the feasibility and acceptability of the CIRCuiTS program in Orange inpatient and Community Mental Health settings.

Ten Orange-based clinicians completed training to become CIRCuiTS therapists during the trial.

53 participants were recruited to the study. Data was collected at commencement of CIRCUiTS, after completing the Standard journey, the Advanced journey and at 3 months follow up.

A mixed quantitative and qualitative design was used to measure outcomes and understand participants' and therapists' experiences. The assessment battery included:
- Repeatable Battery for the Assessment of Neuropsychological Status (RBANS)
- Adaptability Assessment Scales (ABAS3)
- Goal Attainment Scaling (GAS)

Results of the trial

CIRCuiTS was an acceptable and feasible therapy that contributed to very good gains in functioning

- There was very good engagement with CIRCuiTS. Most participants liked the program (48/53, 91%) with good completion rate of the Standard journey.
- The average number of sessions completed was 27.35 (SD=19.53, Min=1 to Max=71).
- Excellent goal attainment. At Time 2, mean GAS scores were >+0.50 (where 0.00=goal achievement as expected) and at Time 3 mean GAS scores were >0.99 (where +1.00=goal achievement better than expected).
- Many participants reported gains in functioning and participation (eg. moving out of hospital, gaining work, enjoying social activities, travel, reading).
- Therapists reported increased job satisfaction and that CIRCuiTS had made an important contribution to their practice in mental health rehabilitation.

Interested in implementing CIRCuiTS CRT?

Discuss the feasibility of CIRCuiTS for your service and contact Kings College London

- Discuss details of the program with local CIRCuiTS users:
  - **QLD - Dr Frances Dark -** Frances.Dark@health.qld.gov.au
  - **NSW - Dr Matt Thomas -** mathomas@csu.edu.au
  - **NZ - Katrina Wallis -** Katrina.Wallis@waitematadhb.govt.nz
- Contact Kings College London
  - **Dr Matteo Cella -** circuits@kcl.ac.uk

Acknowledgements

Thanks to participants, therapists, project partners and funders

The CIRCuiTS therapy team in Orange, NSW included Jessica Apps (OT), Gill Leonard (SW), Jane Lumley (Psych), Carla Morgan (Clin Psych), Pieter Van Rensburg (Clin Psych) and Kathleen Vigors (OT).

Special thanks to service managers Natalie Clarke, Timothy Hewitt, Lacey Healey, Helen McFarlane and Jason Crisp.

Project partners included Prof. Kimberley Dean (NSW Forensic Mental Health Network), Robyn Murray (Pathways to Community Living Initiative) and Sue Bonar (Orange Community Mental Health).

Kings College partnered with the multi-disciplinary team in Orange, to provide access to CIRCuiTS during the trial and comprehensive training to new therapists.

This project was supported by Round 1 funding from the NSW Ministry of Health's Translational Research Grants Scheme.

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