Early Psychosis Initiative
Cognitive Remediation

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Cognitive skills

- Attention/Concentration
- Processing Speed
- Working Memory
- Memory
- Spatial functions
- Executive functions (planning, organising, abstract reasoning, regulating behaviour and emotions)
Complete this chart

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Why improve cognitive skills?

• Who is likely to benefit? (what client groups have cognitive deficits?)
• Secondary (family) and tertiary gains (government and community)?
Cognitive deficits

Functional Outcome

occupational

social

psychosocial rehabilitation

Wykes, 1998; Green 1996; Velligan et al 2000
BRAINSTORM

• What strategies do you use for yourselves to make things easier on a daily basis
• What strategies do you recommend to clients to help with cognitive deficits?
USE OF COMPUTER GAMES TO IMPROVE COGNITIVE SKILLS: NEAR

* Neuropsychological Educational Approach to Remediation
* computerised educational software/arcade games
* individualised program - target cognitive deficits
* group format
* 20 sessions (1 hour each)

~ (Medalia & Revheim, 1998)
SOFTWARE AND COGNITIVE SKILLS

WHICH COGNITIVE SKILLS ARE INVOLVED IN THE TASK?
Neuropsychological Test Results

- Strengths
- Weaknesses

Which software programs to choose?
PRINCIPLES UNDERLYING NEAR

BEHAVIOUR/LEARNING THEORY

EDUCATIONAL PSYCHOLOGY

How people learn best

SELF-DETERMINATION THEORY

NEUROPSYCHOLOGY

Which cognitive skills to target

How to promote self determination (motivation)
Self Determination Theory

• Theory of human motivation: higher quality learning, flourishes in contexts that satisfy human needs for:
  – competence (challenged and given prompt feedback)
  – autonomy (supported to explore, take initiative and develop and implement solutions)
  – relatedness (perceive others listening and responding to them)

Ryan & Deci (2000)
Learning and Educational Theory

• Create environment in which people learn best
• People learn best when:
  – they are enjoying a task (variety)
  – they are given immediate and frequent reinforcement
  – they have a sense of control over the learning process (independent, have choices)
  – their learning experience personalised
Neuropsychological Theory

- Schizophrenia - cognitive impairment in attention, memory, executive function
- Rate limiting factors to rehabilitation/recovery - self-care, social, occupation, vocation
- Promote cognitive skills
  - Practice cognitive weaknesses - restoring function
  - Use strengths to compensate for weaknesses
  - Learning to use prosthetic devices
COMPUTER GAMES (NEAR) IMPROVE COGNITIVE SKILLS: EVIDENCE

Psychosis

- Completed NEAR program
- Received Treatment as Usual

Greater improvements in attention and problem solving

COMPUTER GAMES (NEAR) IMPROVE COGNITIVE SKILLS: EVIDENCE

Effects in domains of:

* cognitive skills (attention & problem solving)
* psychosocial functioning
* attitude/motivation to participate in other programs
* increase in knowledge of compensatory strategies
Small Group Activity

• Play software

1. What theoretical principles of NEAR are supported by the software program?
2. What cognitive skills does it target?
Setting up your program

- Sound knowledge of neuropsychological and educational principles
- A room “learning center”
- At least 2 good PCs (with soundcards, not win NT)
- Software - at least 12 programs
- Task analyses
- Mental “software flowchart”
Identifying appropriate clients

• Inclusions
  – cognitive deficits confirmed on screening
  – interfering with personal & rehabilitation/recovery goals
  – stable medication
  – willing to come (for any reason)

• Exclusions
  – no neurological disorder, recent HI, epilepsy, learning disorder
Individual Activity

• Task analysis
Thinking Things 2: Frippletration
Logical Journey of Zoombinis
Neuropsychological Assessment

Treatment plan

Treatment

Evaluation
Cognitive Social Occupational Quality of Life

ASSESSMENT

Cognitive

Memory

Attention/Speed

Executive

Social

Occupational

Quality of Life
Developing treatment plan

Things to consider:
- Identify cognitive deficits
- Need for external structure
- Tasks to engage client
- Learning style
- Difficulty level
- Ability to stay on task
- Computer literacy
- Frequency/duration of sessions
- Software
- Number in group
Assessment helps you choose software

- ATTENTION/SPEED
  - Leap to Complete: Spell It Deluxe
  - Tetris
Assessment helps you choose software

PROBLEM SOLVING DEFICIT

Logical Journey of the Zoombinis

Where in the World is Carmen San Diego?
Assessment helps you choose software

- PLANNING/ORGANISATION DEFICIT
  - Factory Deluxe
  - Stocktopus: Thinking Things 3
Neuropsychological Assessment

Treatment plan

Treatment

Evaluation
Guiding principles for therapist

- People learn best when:
  - the activity is intrinsically motivating (competence, autonomy, relatedness)
  - highly engaged in the task (contextualised, interesting, personalised)
  - Effect of negative symptoms
  - aim to promote positive attitude towards learning, confidence, & competence
  - use behavioural principles (shaping, reinforcement, modelling, generalisation)
Creating a Learning Environment

- Goal is to increase clients sense of competence, autonomy and relatedness
  - create environment of errorless learning
  - allow client to be in charge of their learning environment (independent control of computer)
  - guide client rather than demonstrate
  - allow client to have choice in activities or goals
  - assist client to relate their computer activity to other areas of their life
Session Log Sheets

NOTE: Refer to handout

Allow **client** to document
- Program
- Interest in program
- Self-rating of performance

- Allow **facilitator** to document
  - Observations of behaviour
  - Strategies used
  - Plan for next session
PRE AND POST ASSESSMENT

Cognitive  Social  Occupational  Quality of Life
ASSESSMENT - information from client and significant others

Cognitive
  - Memory
  - Attention / Speed
  - Executive

Social

Occupational

Quality of Life
Post NEAR assessment results

- NOTE: Refer to handout
- Summary sheet records:
  - number of sessions
  - Pre and post remediation assessment results
  - Comments on progress
  - Suggestions for further work
SPECIFIC AND NONSPECIFIC EFFECTS OF NEAR: our experience

SPECIFIC

- Concentration/ability to ignore distraction/speed and problem solving

NONSPECIFIC

- use programs as tools to teach problem solving skills e.g. breaking down a complex problem into mini goals/steps
- self-confidence (experience success)
- motivation
- learn about learning style of student to feedback to school
Client and Carer Feedback

“Helps me think logically”
“get to use my brain”
“It’s my favourite part of the day”
“it’s good to think again and feel organised”
“Cognitive Remediation has made a huge difference in his ability to cope with learning new things, and that’s considering he was a very reluctant participator.”