Abstract

Background

• Deficits in the ability to perform everyday living tasks are common among people with severe mental illness or cognitive impairments.
• Normative age-related changes in cognition can also result in challenges in performing everyday tasks especially tasks that require new learning.
• At present, there are cognitive remediation interventions that can be delivered remotely via technology and there is a need to develop remote assessment techniques that reflect the demands and complexities of everyday tasks.
• Cognitive remediation strategies have clearly failed to improve functional outcomes without concurrent skills training.
• The same could easily be expected from medications that enhance cognition.
• Skills training is generally available only at academic medical centers.

Current Study

• We developed training versions of realistic functional tasks.
• The two tasks included a telephone voice menu for prescription refill and an Automatic Teller Machine.
• There were several features of these simulations.
• All had a realistic appearance with graphics that directly followed from real world tasks.
• The training used CRT principles, with increasing levels of detail following errors and maintenance of gains across training sessions.
• We trained both healthy and schizophrenia participants who reported lack of facility with performing these tasks.
• The tasks used “walk-up” strategies and no human trainer was involved in the training of the tasks.
• All instructions and feedback came directly from the task.

Task Demands

• ATM
  • Enter PIN
  • Check Balance
  • Transfer Money
  • Withdraw Cash
  • Deposit Checks
• Refill Task
  • Dial Pharmacy
  • Enter Script Number
  • Select Pick-up time
  • Select Pick-up date
  • Repeat for second

Methods

Participants

• The sample include 20 patients with schizophrenia and 12 non-impaired older adults recruited from the community.
• Age ranged from 28-71.
• 63% of participants aged 55+.
• 63% male.
• Education – 67% with a high school degree or less.
• Race – 59% Black/African American.
• 22% White Hispanic/Latino.
• 4% Non-Hispanic/Latino.
• All participants reported yearly household income of less than $40,000.
• Majority of participants (30%) indicated they were unemployed due to disability.

Training Strategy

Instructions were provided directly by the program, as was error feedback.

Feedback and instructions were provided incrementally.

For example, this is the training stream for errors entering a PIN:

PIN entry error(s)

• Your PIN is 1234. Please enter your PIN and press enter.
• Your PIN is 1234. Please press the numbers in your PIN on the keypad and press enter.
• Your PIN is 1234. Please press 1, followed by 2, then 3, and then 4 on the keypad and then press enter.
• Your PIN is 1234. Watch the keypad for the correct sequence of presses. Then repeat the four presses and press enter.
• Your PIN is 1234. (Key lights) Press the 1 key. (Key lights) Now press the 2 key. (Key lights) Now press the 3 key. (Key lights) Now press the 4 key.

Error Free performance:

No participants completed the task without errors at baseline.

Endpoint:

ATM (2 successive administrations)

HC
2/12 no errors
3/12 One error

Refill (2 successive administrations)

8/12 no error

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