Intensive Cognitive Communication Rehabilitation (ICCR) Program for Young Adults With Acquired Brain Injury

Natalie Gilmore, Katrina Ross, and Swathi Kiran
Boston University, College of Health and Rehabilitation Sciences: Sargent College, Boston, MA

BACKGROUND

- Acquired Brain Injury (ABI) due to stroke or TBI typically results in chronic cognitive-communication impairments.
- Young adults (YAs) commonly experience ABI, which often negatively impacts their academic success.
- Cognitive Rehabilitation (CR) is the gold standard treatment.
- Optimal CR includes: impairment-based and functional approaches; principles of neural plasticity: (a) intensity, (b) age, (c) repetition, and (d) salience; metacognitive training and counseling.
- None of the existing CR programs is yet for YAs with ABI currently incorporates elements of optimal CR in the academic setting or with the primary goal of enrolling in higher education.

CURRENT STUDY

 Aim: To test the efficacy of a novel intensive cognitive-communication rehabilitation (ICCR) program, which simulates a college semester, for YAs with ABI older in their higher education.

Research Questions:

- Do participants...
  - RQ1: show changes in cognitive-linguistic skills as a result of this novel intervention program?
  - RQ2: demonstrate the ability to acquire novel skills necessary for success in a functional environment?
  - RQ3: progress toward personal and therapeutic goals over the course of treatment?
  - RQ4: exhibit changes at the activity and participation levels, as well as changes to their quality of life, as a result of this program?

METHODS

Participants

- Gender: M = 71.8% (n = 49), F = 28.2% (n = 20)
- Age: Mean = 22.9 years, SD = 4.2 years
- Education: 12 years (n = 15), 14 years (n = 14), 16 years (n = 11)
- Months Post Onset: Mean = 70 months, range = 17-128 months
- WAB-R Q: Mean = 32.5, SD = 11.0
- AQ: Mean = 45.0, SD = 19.9
- RBANS Total: Mean = 64.0, SD = 14.7

Pre- and Post-assessment

- Western Aphasia Battery (WAB-R)
- Repeatable Battery for the Assessment of Neuropsychological Status Update (RBANS Update)
- Scales of Cognitive and Communicative Ability for Neuropsychological Assessment (SCCAN)
- Discourse Comprehension Test

RESULTS

- RQ1: Did experimental participants show significant improvements in cognitive-linguistic function for experimental participants

- RQ2: Did experimental participants acquire novel skills necessary for success in the classroom?

- RQ3: Participants were more positively engaged in the classroom at the end of Semester 3?

- RQ4: The frequency of positive behaviors (e.g., answering questions), accurately increased at a greater rate overall than the frequency of negative behaviors (e.g., arrerusting questions inaccurately) (Time-by-behavior interaction effect: n = 1.93, p = 0.051; negative: behaviors: n = 0.885, SE = 1.74, 95% CI: -3.34, p = 0.001)

- All experimental participants transitioned from a score of 0 (“unable to participate”) in the School domain to a score of 65 or greater.
- P1, P2, and P4 all exhibited increases in their total GSPQ scores, as did C1, though P3 exhibited a decrease.
- All three experimental participants showed gains in at least one domain and decreases in at least one domain.
- Decreases may have been due to increased insight or deficits or response with.

DISCUSSION

- Experimental participants in ICCR improved significantly in ≥1 cognitive-linguistic skills. Controls did not.

- All experimental participants increased the complexity of their SLP goals.

- All Semester 3 participants (n=3) exhibited more positive classroom behaviors over time.

- The classroom provided context for learning and generalization of skills and strategies.

- ICCR encouraged use of adaptations and accommodations.

- P2 has returned to college to finish his associate's degree.

- All participants reported some increased participation and quality of life.

- All reported increased participation in the School domain.

- P1, P2, and P4 increased total Life Participation scores.

- P1, P2, and P3 increased in ≥1 QoL domain.

CONCLUSIONS

- There is a gap for YAs with ABI who want to return to higher education, and ICCR is a first step to closing that gap.

- The majority of participants demonstrated significant gains in standardized tests, classroom performance, SLP goals, life participation, and QoL.

- This study provides initial support for the effectiveness of ICCR as a form of CR for YAs with ABI.

- An intensive program based on principles of experience-dependent plasticity that incorporated classroom lectures, metacognitive strategy instruction, individual therapy and technology-based training resulted in gains for YAs with chronic ABI.

SELECTED REFERENCES


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