Preliminary Effects of the Arrowsmith Intensive Program on Student Cognitive Functioning

Negin Motamed-Yeganeh1, Lara Boyd2, Rachel C. Weber3

1. Djavad Mowafaghian Centre for Brain Health, University of British Columbia, Vancouver, Canada
2. Department of Physical Therapy, University of British Columbia, Vancouver, Canada
3. Department of Educational and Counselling Psychology, and Special Education, University of British Columbia, Vancouver, Canada

Background.

• Children with neurodevelopmental disorders often experience learning challenges, with underlying weaknesses in cognitive processes (Spratt et al., 2012)
• Designing effective interventions to enhance cognition has proven one of the most promising yet difficult challenges for neuropsychologists (Cioni et al., 2016)

Arrowsmith Program.

• Novel training program that targets multiple cognitive domains
• Students receive an intervention on a single task which is involved in understanding the relationships among two or more ideas or concepts and designed to strengthen the integration of information

Objective.

• To examine the cognitive outcomes associated with the participation on Arrowsmith cognitive intensive program (CIP)

Participants and Intervention.

• 13 students ranging in age from 9-16 (M = 12.91 years; SD = 2.06), Mean IQ = 93.53 (SD = 21.68)
• Pre-intervention data was gathered within one week of the beginning of the training and post-intervention data was obtained immediately after the training was completed
• The intervention consisted of a 6-week period of intensive practice of the Arrowsmith Symbol Relations Task which is a computer-based exercise requires the student to use relational reasoning to conceptually and automatically process increasingly complex relationships using an analog clock

Measures.

• Woodcock-Johnson IV Test of Cognitive Abilities (WJ-IV-COG)
• A repeated-measures MANOVA analysis conducted to evaluate the improvements in several cognitive domains
• W scores were used to track participants’ growth over time

Conclusions.

• This exploratory study considered the potential benefits of a novel approach to cognitive interventions
• This suggests that, overall, students improved after 6 weeks of Cognitive Intensive Program relative to their own baselines
• Further research is warranted to more specifically examine mechanisms of this training program and its clinical utility

Limitations.

• Lack of control group
• Relatively small sample size

References