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Critical Appraisal Form Quantitative Study

Article Citation:

Barker-Collo, S., Feigin, V., Lawes, C., Parag, V., Senior, H., & Rodgers, A. (2009). Reducing attention deficits after stroke using attention process training: a randomized controlled trial. Stroke 00392499, 40(10), 32933298. doi:10.1161/STROKEAHA.109.558239

Study Level of Evidence, What Type of Study?
Level I: X RCT
Level II: ___Cohort trial ___Case control trial ___Nonrandomized control trial
Level III: ___Case control ___no prepost test
Level IV: ___Single case study ___Case series ___No comparison group
Level V: ___Descriptive study ___Narrative review ___Expert opinion

Purpose of Study: Is purpose clear? X yes ___no
Describe researchers question/purpose:
The purpose of this study is to examine the results of the use of APT on patients who have suffered a stroke, and to assess for improvement 6 months post-stroke.

METHODS
Were there any biases or ethical concerns in the study design?
May reflect self-selection bias since those experiencing attention deficits being more likely to participate. Study approved by regional ethics committee and registered with Australian Clinical Trials Register.

POPULATION
Who was the sample, how many subjects?
- 78 participants randomized to 2 groups
- APT group N=38, Standard Care N=40, drop-outs n=12
- Recruited from 2 Auckland New Zealand hospitals, 2 weeks s/p stroke

Inclusion Criteria:
- Stroke survivors
- Experienced attention deficit behaviors consequence of stroke

Exclusion Criteria:
- Unable to give consent
- Experienced severe cognitive deficits
- Medically unstable
- Not fluent in English

What was the intervention? Frequency, setting?
- Assessments administered pre-post intervention (testing APT 4 aspects of attention, visual and auditory modalities of attention
- Bells Test, IVACPT, Trail Making Test A and B, 2 slowest Paced Auditory Serial Addition Test trials
- Participants randomly assigned after baseline assessment
- Assessments were repeated at 5 weeks and 6 month
- APT group received up to 30 hours of individual APT 1 hour on weekdays for 4 weeks Intervention took place at 2 Auckland New Zealand hospitals

Relevant outcomes to OT? How measured?
- Improved attention 5 weeks post intervention measured using Integrated Visual Auditory Continuous Performance Test (IVACPT)
- Improved attention 6 months post-stroke measure using IVACPT
- Impact on disability, everyday cognition, quality of life 56 weeks post stroke measured by the Medical Outcomes Study, Modified Rankin Scale, Mental Component Score, and the Cognitive Failures questionnaire

Were the tests valid?
Yes, the tests are standardized and measured what they proposed to assess.
Were the tests reliable?
The reliability of the study tests were not reported in this paper

RESULTS, CONCLUSIONS, CLINICAL IMPLICATIONS:
What were the findings? Was there:
Statistically significant change?
Differences in change on the IVACPT suggest APT was related to statistical significance in attention and improvement across other measures, but not significantly so.

Clinically significant change? Explain.
APT had a significant positive effect on attention, which is clinically important to one's attention function. However the researchers did indicate they didn't know how this improvement carried over into wider cognitive function or daily living (including burden of care on caregiver). In terms of clinical practice, APT provides the OT practitioner an additional option for early stroke interventions.

What did the author conclude?
Early identification and rehabilitation of attention should be part of post stroke rehab. Encouraging results, but require further studies with larger sample size and a longer follow-up. Study findings show APT is a valuable intervention for patients with attention deficit after a stroke.

My Brief Summary:
What I see as study strengths:
The study had a relatively large sample size statistically powered to address the primary

hypothesis on effectiveness of intervention on attention; it had a very low attrition rate; the number of patients with missing data was very low.

What I see as limitations: The study had a relatively strict inclusion criteria, which limits generalizability to a wider sample; the neuropsychologist or participants were not blinded for the experiment, and this may have influenced outcomes.

How is the study's findings relevant to OT? The positive findings for attention in this trial demonstrate that APT is a valuable intervention for patients with attention deficit after stroke. This practice could be valuable for occupational therapists working with this patient population.

How do I intend to use these results?
By incorporating early identification and rehabilitation of attention as part of post-stroke rehabilitation.