NSW Speech Pathology
Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE:
Computer-based therapy using the ORLA program can result in clinically significant improvements in language and may be equivalent to use of the same program with a Speech Pathologist. Further investigation of factors influencing suitability for the program and treatment success is required as not all participants made significant improvements.

Clinical Question [patient/problem, intervention, (comparison), outcome]:
Is computer-only therapy for people with chronic aphasia efficacious?

Citation:
Cherney, l. R. (2010) Oral Reading for Language in Aphasia (ORLA): Evaluating Efficacy of Computer-Delivered Therapy in Chronic Nonfluent Aphasia. *Topics in Stroke Rehabilitation;* 17(6), p423-431

Design/Method:
Delayed treatment, randomised control trial. AABA.

Participants:
25 people (16 males, 9 females) with chronic non-fluent aphasia (greater than 12 months post onset). Eligibility criteria: single left stroke, non-fluent aphasia, premorbid right handedness, at least grade 12 education, visual and auditory acuity benchmarks. No statistically significant demographic differences once random allocation occurred. Random allocation to: 1) Computer therapy group, 2) Face to face intervention group. No other concurrent intervention.

Experimental Group:
Both groups received 24 one-hour treatment sessions, 2-3 times per week. Length of treatment period varied (range 1-4 sessions per week) with a no treatment phase for each group. Mean length of treatment period = 12.62 weeks. Nil significance with length of treatment between groups. The computer-therapy group (n=11) received assistance with set-up and technical difficulties only.
Outcome measures: WAB-AQ, WAB reading and writing scores, 2 x discourse measures of words per minute and CIUs per minute.

Control Group - face- to-face treatment group

Results:

1. Does low intensity ORLA treatment delivered by a computer result in language improvements? p. 425
   The authors suggest that there is language improvement as measured by the WAB. The mean change in WAB-AQ was not clinically significant but 4/11 participants in the computer-treatment group did improve to clinically significant levels.
2. Are language improvements greater than what occurs without treatment? p. 425
   Medium effect size was noted for WAB-AQ, large effect size for words per minute, medium effect size for CIUs per minute (ie greater changes were noted during the treatment phase for these scores). Reading scores improved more following the no-treatment phase than therapy phase-the authors relate this to the nature of the aphasia within the computer treatment group.
3. Are language improvements obtained with low intensity computer ORLA equivalent to those obtained when ORLA is delivered by an SLP? p. 425 No statistically significant differences were noted between computer therapy and therapy delivered by SLP.

No trend for greater improvements with greater intensity but the authors hypothesise that 1-4 weeks is not intensive enough to affect significant change.

Comments – Strengths/weaknesses of paper
Great considerations of limitation and future directions. No assessment for maintenance of effects. No measures of participant perception of improvement.
Unclear as to the exact level of intervention by the SLP in establishing the computer-only program.
4 times per week could not be considered to be “low intensity”.

Level of Evidence (NH&MRC): Level II, RCT

Appraised By: Hunter Acquired Communication Impairment EBP Group

Date: December 2011

Form based on Worrall & Bennett, Evidence based Practice: Barriers & Facilitators for Speech-Language Pathologists, *Journal of Medical Speech-Language Pathology* 2:9, xi – xvi
Updated February 2006