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The evidence base for Speech and Language Therapy for people with functional disorders of communication

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Mary Smith
Clinical Support Librarian mary.smith30@nhs.net

Summary
Systematic Reviews: (4), (20), (32), (41), (46), (53)
RCTs: (3), (8), (14), (22), (25), (29), (30), (31), (34), (39)
RCSLT documents: (9), (13), (54)

• Speech pathologists have a key role in the multidisciplinary team caring for the person in Post Traumatic Amnesia, especially with family education and facilitating interactions with the rehabilitation team and family. Decision-making around timing and means of assessment of cognitive-communication during PTA appeared primarily reliant on speech pathologists' professional experience and the culture of their workplace (26)
• Therapy guidelines recommend speech and language therapy (SLT) as the "gold standard" for aphasia treatment (14)
• there is limited evidence demonstrating improvement in functional communication as a consequence of group participation(20)
• There is evidence that script training intervention can improve accuracy, grammatical productivity, speaking rate, and articulatory fluency in script production tasks as well as in more functional conversational tasks. Videoconferencing is a viable method of conducting script training intervention when it is supported by face-to-face intervention sessions, slight
modifications to the procedure, and an emphasis on self-cuing skills (40). Script training has also been found to be successful with apraxia of speech (51).

- Discourse analysis methods are useful for studying functional and linguistic aspects of recovery in subjects with non-fluent aphasia in the early post-onset period. Furthermore, in this period, specific therapy for chronic agrammatic symptoms may not reduce them. Nonetheless, this therapeutic approach plays a role in improving language informativeness particularly when combined with a functional approach (75).

- Results provide evidence of linguistic and psychosocial change in individuals with chronic aphasia following impairment-based individual and socially oriented group therapies. Results failed to find that one treatment condition was superior to others (6).

- A systematic review provides some evidence of the effectiveness of SLT for people with aphasia following stroke in terms of improved functional communication, receptive and expressive language. However, there is insufficient evidence to draw any conclusion regarding the effectiveness of any one specific SLT approach over another (32).

- In the sub-acute period following stroke and controlling for the number of hours of SLT provided, there is a trend for a greater improvement in language and functional communication measures with Intensive Therapy compared with Regular Therapy (22).

- The values held by SLTs match guideline recommendations for best practice, however the clinical reality is that the assessment of progressive dysarthria remains predominantly impairment-focused. New tools need to be developed and integrated into practice to target interaction in assessment and intervention, to reduce the gap between best practice recommendations and clinical reality (33).

- Speech and language therapists who work with dysarthric patients with chronic progressive multiple sclerosis should monitor cognitive-linguistic impairment. An awareness of this might influence assessment, intervention and management, including the information and advice given to patients and their relatives (61).

- Dysphagia treatment in the elderly requires a multiprofessional setting, differentiated assessment, and functional training of oral motor skills and sensation and swallowing techniques (47).

- Speech-language pathologists and registered dieticians play major and complementary roles in assessment and treatment of individuals with dysphagia (73).

- The Comprehensive Voice Rehabilitation Program (CVRP) and Vocal Function Exercises (VFES) were both found to be effective in treating functional dysphonia. (3).

- Lee Silverman Voice Treatment extended version (LSVT-X) successfully increased vocal SPL (which was consistent with improvements following traditional LSVT), decreased perceived voice handicap, and improved functional speech in individuals with PD. Further large-scale research is required to truly establish LSVT-X efficacy (76). LSVT also discussed in (62).

- Communication supports, referred to as augmentative and alternative communication (AAC), are an integral part of medical speech-language pathology practice. Patients can maintain effective, functional communication with AAC supports (5).

- There is no evidence to recommend enhancing the provision of early communication therapy by a qualified SL therapist over and above usual post stroke care. SL therapy service reorganisation should consider skill mix and timing within a stepped care model and should take place within the context of a trial (30), (31).

- There is limited evidence demonstrating improvement in functional communication as a consequence of group participation (20).

- Barriers to Evidence Based Practice are lack of time, specialty training and high quality evidence. To improve SLPs’ management of adults with Functional Voice Disorders, it is suggested that SLPs need both greater access to voice training and to use practice-based evidence by actively collecting and reporting clinical data (15).
References

(1) Meier EL, Johnson JP, Villard S, Kiran S. Does Naming Therapy Make Ordering in a Restaurant Easier? Dynamics of Co-Occurring Change in Cognitive-Linguistic and Functional Communication Skills in Aphasia. *American Journal of Speech-Language Pathology* 2017; 26(2):266-280. Abstract: **Purpose** This study was conducted to investigate the static and dynamic relationships between impairment-level cognitive-linguistic abilities and activity-level functional communication skills in persons with aphasia (PWA). **Method** In Experiment 1, a battery of standardized assessments was administered to a group of PWA (*N* = 72) to examine associations between cognitive-linguistic ability and functional communication at a single time point. In Experiment 2, impairment-based treatment was administered to a subset of PWA from Experiment 1 (*n* = 39) in order to examine associations between change in cognitive-linguistic ability and change in function and associations at a single time point. **Results** In both experiments, numerous significant associations were found between scores on tests of cognitive-linguistic ability and a test of functional communication at a single time point. In Experiment 2, significant treatment-induced gains were seen on both types of measures in participants with more severe aphasia, yet cognitive-linguistic change scores were not significantly correlated with functional communication change scores. **Conclusions** At a single time point, cognitive-linguistic and functional communication abilities are associated in PWA. However, although changes on standardized assessments reflecting improvements in both types of skills can occur following an impairment-based therapy, these changes may not be significantly associated with each other.

(2) Nakai Y, Jeong Jw, Brown EC, Rotherme R, Kojima K, Kambara T et al. Three- and four-dimensional mapping of speech and language in patients with epilepsy. *Brain: A Journal of Neurology* 2017; 140(5):1351-1370. Abstract: We have provided 3-D and 4D mapping of speech and language function based upon the results of direct cortical stimulation and event-related modulation of electrocorticography signals. Patients estimated to have right-hemispheric language dominance were excluded. Thus, 100 patients who underwent two-stage epilepsy surgery with chronic electrocorticography recording were studied. An older group consisted of 84 patients at least 10 years of age (7367 artefact-free non-epileptic electrodes), whereas a younger group included 16 children younger than age 10 (1438 electrodes). The probability of symptoms transiently induced by electrical stimulation was delineated on a 3D average surface image. The electrocorticography amplitude changes of high-gamma (70-110 Hz) and beta (15-30 Hz) activities during an auditory-naming task were animated on the average surface image in a 4D manner. Thereby, high-gamma augmentation and beta attenuation were treated as summary measures of cortical activation. Stimulation data indicated the causal relationship between (i) superior-temporal gyrus of either hemisphere and auditory hallucination; (ii) left superior-/middle-temporal gyri and receptive aphasia; (iii) widespread temporal/frontal lobe regions of the left hemisphere and expressive aphasia; and (iv) bilateral precentral/left posterior superior-frontal regions and speech arrest. On electrocorticography analysis, high-gamma augmentation involved the bilateral superior-temporal and precentral gyri immediately following question onset; at the same time, high-gamma activity was attenuated in the left orbitofrontal gyrus. High-gamma activity was augmented in the left temporal/frontal lobe regions, as well as left inferior-parietal and cingulate regions, maximally around question offset, with high-gamma augmentation in the
left pars orbitalis inferior-frontal, middle-frontal, and inferior-parietal regions preceded by high-gamma attenuation in the contralateral homotopic regions. Immediately before verbal response, high-gamma augmentation involved the posterior superior-frontal and pre/postcentral regions, bilaterally. Beta-attenuation was spatially and temporally correlated with high-gamma augmentation in general but with exceptions. The younger and older groups shared similar spatial-temporal profiles of high-gamma and beta modulation; except, the younger group failed to show left-dominant activation in the rostral middle-frontal and pars orbitalis inferior-frontal regions around stimulus offset. The human brain may rapidly and alternately activate and deactivate cortical areas advantageous or obtrusive to function directed toward speech and language at a given moment. Increased left-dominant activation in the anterior frontal structures in the older age group may reflect developmental consolidation of the language system. The results of our functional mapping may be useful in predicting, across not only space but also time and patient age, sites specific to language function for presurgical evaluation of focal epilepsy.


Abstract: Summary Objective To evaluate the effectiveness of the Comprehensive Voice Rehabilitation Program (CVRP) compared with Vocal Function Exercises (VFEs) to treat functional dysphonia. Study Design This is a randomized blinded clinical trial. Methods Eighty voice professionals presented with voice complaints for more than 6 months with a functional dysphonia diagnosis. Subjects were randomized into two voice treatment groups: CVRP and VFE. The rehabilitation program consisted of six voice treatment sessions and three assessment sessions performed before, immediately after, and 1 month after treatment. The outcome measures were self-assessment protocols (Voice-Related Quality of Life [V-RQOL] and Voice Handicap Index [VHI]), perceptual evaluation of vocal quality, and a visual examination of the larynx, both blinded. Results The randomization process produced comparable groups in terms of age, gender, signs, and symptoms. Both groups had positive outcome measures. The CVRP effect size was 1.09 for the V-RQOL, 1.17 for the VHI, 0.79 for vocal perceptual evaluation, and 1.01 for larynx visual examination. The VFE effect size was 0.86 for the V-RQOL, 0.62 for the VHI, 0.48 for the vocal perceptual evaluation, and 0.51 for larynx visual examination. Only 10% of the patients were lost over the study. Conclusions Both treatment programs were effective. The probability of a patient improving because of the CVRP treatment was similar to that of the VFE treatment


Abstract: Purpose: This is a systematic review of assessment and treatment of cognitive and communicative abilities of individuals with acquired brain injury via telepractice versus in person. The a priori clinical questions were informed by previous research that highlights the importance of considering any functional implications of outcomes, determining disorder- and setting-specific concerns, and measuring the potential impact of diagnostic accuracy and treatment efficacy data on interpretation of findings. Method: A literature search of multiple databases (e.g., PubMed) was conducted using key words and study inclusion criteria associated with the clinical questions. Results: Ten group studies were accepted that addressed assessment of motor speech, language, and cognitive impairments; assessment of motor speech and language activity limitations/participation restrictions; and treatment of cognitive impairments and activity limitations/participation restrictions. In most cases, equivalence of outcomes was noted across service delivery methods. Conclusions: Limited
findings, lack of diagnostic accuracy and treatment efficacy data, and heterogeneity of assessments and interventions precluded robust evaluation of clinical implications for telepractice equivalence and the broader area of telepractice efficacy. Future research is needed that will build upon current knowledge through replication. In addition, further evaluation at the impairment and activity limitation/participation restriction levels is needed.


Abstract: BACKGROUND: Communication supports, referred to as augmentative and alternative communication (AAC), are an integral part of medical speech-language pathology practice, yet many providers remain unfamiliar with assessment and intervention principles. For patients with complex communication impairments secondary to neurodegenerative disease, AAC services differ depending on whether their condition primarily affects speech and motor skills (ALS), language (primary progressive aphasia) or cognition (Alzheimer’s disease). This review discusses symptom management for these three conditions, identifying behavioral strategies, low- and high-tech solutions for implementation during the natural course of disease. These AAC principles apply to all neurodegenerative diseases in which common symptoms appear. OBJECTIVES: To present AAC interventions for patients with neurodegenerative diseases affecting speech, motor, language and cognitive domains. Three themes emerge: (1) timing of intervention: early referral, regular re-evaluations and continual treatment are essential; (2) communication partners must be included from the onset to establish AAC acceptance and use; and (3) strategies will change over time and use multiple modalities to capitalize on patients’ strengths. CONCLUSIONS: AAC should be standard practice for adults with neurodegenerative disease. Patients can maintain effective, functional communication with AAC supports. Individualized communication systems can be implemented ensuring patients remain active participants in daily activities.


Abstract: Purpose: Two philosophies of intervention exist in aphasia rehabilitation: impairment-based approaches and socially oriented approaches. Both approaches have been shown to improve communication in persons with aphasia, but no studies have directly compared the effects of each approach or a combined approach on a targeted linguistic skill. This article explores the effects of individual and group therapies used both in isolation and in combination on verb production in aphasia. Methods: Twelve individuals with chronic aphasia were trained on transitive verbs under three conditions: individual, group and combined, over a 6-week interval. Treatment was counterbalanced across subject and training groups. A delayed-treatment, within-participant design was used. Verb probe data were collected at 10 points throughout the study. Language measures were taken at two intervals pre- and two intervals post-treatment. Functional, narrative and quality-of-life measures were taken once pre- and once post-treatment. Results: Significant change was observed on linguistic, functional communication and quality-of-life measures. There was no significant effect of treatment condition. Conclusions: The results provide evidence of linguistic and psychosocial change in individuals with chronic aphasia following this treatment. Results failed to find that one treatment condition was superior to others.


Abstract: Aphasia due to stroke affects communication and quality of life. Most stroke survivors with aphasia receive speech and language therapy. Although an early start of
treatment is advocated in clinical practice, evidence for "The earlier, the better" in aphasia rehabilitation is weak. Hence, clinicians are faced with the dilemma of when to initiate intensive treatment: as early as possible, when most of the spontaneous recovery occurs but when patients are often ill, or later, when the patients' condition is more stabilized. Here we discuss whether aphasia outcome is affected by timing of treatment in relation to stroke onset and whether there is evidence for an optimal window of time during which language therapy should be provided. Findings from various rehabilitation research fields are discussed and combined to provide principles for future research.


Abstract: Objective To determine to what extent repetitive transcranial magnetic stimulation (rTMS) combined with speech and language therapy improves functional communication and basic linguistic skills of individuals with subacute aphasia. Design Randomized, blinded, and sham-controlled study. Setting Neurologic rehabilitation hospital. Participants Participants (N=30) with subacute aphasia after stroke. Interventions During a 2-week treatment period, half of the participants received 10 sessions of 20-minute inhibitory 1-Hz rTMS over the right inferior frontal gyrus (Brodmann area 45), and the other half received sham stimulation. Directly thereafter, all the participants underwent 45 minutes of speech and language therapy. Main Outcome Measures Aachen Aphasia Test, Amsterdam-Nijmegen Everyday Language Test (ANELT), a naming screening, and subscales of the FIM, all assessed the day before and the day after treatment period. Results The participants who received real rTMS significantly improved with respect to all 10 measures of basic linguistic skills and functional communication, whereas sham-treated participants significantly improved in only 6 of 10 measures (paired t tests, P < .05). There was a significant difference in the gains made by the 2 groups on 5 of 10 measures including functional communication (ANELT) (repeated-measures analysis of variance, P ≤ .05). Conclusions For the first time, this study has demonstrated that basic linguistic skills as well as functional communication are bolstered by combining rTMS and behavioral language therapy in patients with subacute aphasia.

(9) Aphasia Royal College of Speech and Language Therapists - RCSLT. Ref Type: Internet Communication

Abstract: Key Points
1. Speech and language therapists play a unique role in identification and assessment of those with aphasia. The ability to identify levels of comprehension and expression as well as retained communication abilities are unique skills of speech and language therapists.
2. Difficulties with communication are a predominant feature in reducing access to education, employment and social integration.
3. Speech and language therapists should be integral members of services supporting children and adults with aphasia, their families and carers.
4. Speech and language therapists have a key role in educating/training, others involved in care of those with aphasia including the family, health, education and social care staff.
5. Methods of speech and language therapy, supplemented by supported conversation provided by assistants, lay persons and family members show benefits in improving conversational skills.
6. Computer-based therapy directed by a speech and language therapist is beneficial, cost-effective and acceptable.
7. Specific speech and language therapy programmes aimed at reducing certain impairments have been found to be effective with some patients.
8. Communication aids (AAC), improves communication competence of some persons with aphasia


Abstract: Background: Treatments of apraxia of speech (AOS) have traditionally relied on overt practice. One alternative to this method is implicit phoneme manipulation which was derived from early models on inner speech. Implicit phoneme manipulation requires the participant to covertly move and combine phonemes to form a new word. This process engages a system of self-monitoring which is referred to as fully conscious inner speech.

Aims: The present study aims to advance the understanding and validity of a new treatment for AOS, implicit phoneme manipulation. Tasks were designed to answer the following questions. (1) Would the practice of implicit phoneme manipulation improve the overt production of complex consonant blends in words? (2) Would this improvement generalise to untrained complex and simpler consonant blends in words? (3) Would these treatment tasks activate regions known to support motor planning and programming as verified by functional magnetic resonance imaging (fMRI)?

Method & Procedures: The participant was asked to covertly manipulate phonemes to create a new word and to associate this newly formed word to a target picture among four phonologically related choices. To avoid overt practice, probes were collected only after each block of training was completed. Probe sessions assessed the effects of implicit practice on the overt production of simple and complex consonant blends in words. An imaging protocol compared semantic baseline tasks to treatment tasks to verify that implicit phoneme manipulation activated brain regions of interest.

Outcomes & Results: Behavioural: Response to implicit training of complex consonant blends resulted in improvements which were maintained 6 weeks after treatment. Further, this treatment generalised to simpler consonant blends in words.

Imaging: Functional imaging during implicit phoneme manipulation showed significant activation in brain regions responsible for phonological processing when compared to the baseline semantic task.

Conclusions: Implicit phoneme manipulation offers an alternative to traditional methods that require overt production for treatment of AOS. Additionally, this implicit treatment method was shown to activate neural areas known to be involved in phonological processing, motor planning, and programming.


Abstract: This study reports on current aphasia rehabilitation practices of speech-language pathologists in Australia. A 30-item web-based survey targeted approaches to aphasia rehabilitation, education, discharge, follow-up practices, counselling, interventions to improve communication access, community aphasia support services, and challenges to practice. One hundred and eighty-eight surveys were completed representing ~33% of the potential target population, with 58.5% urban and 41.5% rural participants across all states and territories. Respondents reported embracing a wide variety of approaches to aphasia rehabilitation; however, significant challenges in providing aphasia management in acute and residential care were identified. Low levels of knowledge and confidence were reported for both culturally and linguistically diverse clients and discourse approaches. Group and intensive services were under-utilized and clinicians reported inflexible funding models as major barriers to implementation. Few clinicians work directly in the community to improve communicative access for people with aphasia. Despite the chronic nature of aphasia, follow-up practices are limited and client re-entry to services is restricted. Counselling is a high frequency practice in aphasia rehabilitation, but clinicians report being under-prepared for the role. Respondents repeatedly cited lack of resources (time, space, materials) as a
major challenge to effective service provision. Collective advocacy is required to achieve system level changes.


Abstract: In this review, I discuss conversation analytic informed intervention for aphasia, a language disorder acquired following brain damage. As well as describing this form of intervention and outlining features of the studies produced over the last 15 to 20 years that provide evidence of its effectiveness, I discuss some features of this approach that may be of relevance to interventionist conversation analysis more generally. Data are in British English and in Swedish with English translation.

(13) Dementia. Royal College of Speech and Language Therapists - RCSLT.

Ref Type: Internet Communication

Notes: [see pp 8-9]


Abstract: Background

Therapy guidelines recommend speech and language therapy (SLT) as the "gold standard" for aphasia treatment. Treatment intensity (i.e., >5 hours of SLT per week) is a key predictor of SLT outcome. The scientific evidence to support the efficacy of SLT is unsatisfactory to date given the lack of randomized controlled trials (RCT), particularly with respect to chronic aphasia (lasting for >6 months after initial stroke). This randomized waiting list-controlled multi-centre trial examines whether intensive integrative language therapy provided in routine in- and outpatient clinical settings is effective in improving everyday communication in chronic post-stroke aphasia.

Methods/Design

Participants are men and women aged 18 to 70 years, at least 6 months post an ischemic or haemorrhagic stroke resulting in persisting language impairment (i.e., chronic aphasia); 220 patients will be screened for participation, with the goal of including at least 126 patients during the 26-month recruitment period. Basic language production and comprehension abilities need to be preserved (as assessed by the Aachen Aphasia Test). Therapy consists of language-systematic and communicative-pragmatic exercises for at least 2 hours/day and at least 10 hours/week, plus at least 1 hour self-administered training per day, for at least three weeks. Contents of therapy are adapted to patients' individual impairment profiles.

Prior to and immediately following the therapy/waiting period, patients' individual language abilities are assessed via primary and secondary outcome measures. The primary (blinded) outcome measure is the A-scale (informational content, or 'understandability', of the message) of the Amsterdam-Nijmegen Everyday Language Test (ANELT), a standardized measure of functional communication ability. Secondary (unblinded) outcome measures are language-systematic and communicative-pragmatic language screenings and questionnaires assessing life quality as viewed by the patient as well as a relative.

The primary analysis tests for differences between the therapy group and an untreated (waiting list) control group with respect to pre- versus post 3-week-therapy (or waiting period, respectively) scores on the ANELT A-scale. Statistical between-group comparisons of primary and secondary outcome measures will be conducted in intention-to-treat analyses.
Long-term stability of treatment effects will be assessed six months post intensive SLT (primary and secondary endpoints).

(15) Chan AK, McCabe P, Madill CJ. The implementation of evidence-based practice in the management of adults with functional voice disorders: A national survey of speech-language pathologists. *International Journal of Speech-Language Pathology* 2013; 15(3):334-344. Abstract: This study examined Australian speech-language pathologists’ (SLPs) use of evidence-based practice (EBP) when treating adults with functional voice disorders (FVDs). It was hypothesized that SLPs would report using the available evidence to care for their clients but may be limited by time and skills. Fifty-eight SLPs completed a 26-item survey. A combination of indirect and direct voice therapy was most frequently reported, with hum and nasal consonants, pitch extension, elimination of glottal attack, and diaphragmatic breathing being the most frequently used techniques. In the absence of higher levels of evidence, 98% of respondents reported they relied on clinical experience to guide their clinical decision-making. Despite a lack of research evidence supporting this decision, SLPs also reported simultaneously using a combination of direct voice therapies to cater to the needs of their individual clients. Barriers to EBP were lack of time, specialty training and high quality evidence. To improve SLPs’ management of adults with FVDs, it is suggested that SLPs need both greater access to voice training and to use practice-based evidence by actively collecting and reporting clinical data.

Notes: [Full text available with NHS OpenAthens]


Abstract: Based on the anatomical and functional commonality between singing and speech, various types of musical elements have been employed in music therapy research for speech rehabilitation. This study was to develop an accent-based music speech protocol to address voice problems of stroke patients with mixed dysarthria. Subjects were 6 stroke patients with mixed dysarthria and they received individual music therapy sessions. Each session was conducted for 30 minutes and 12 sessions including pre- and post-test were administered for each patient. For examining the protocol efficacy, the measures of maximum phonation time (MPT), fundamental frequency (F0), average intensity (dB), jitter, shimmer, noise to harmonics ratio (NHR), and diadochokinesis (DDK) were compared between pre and post-test and analyzed with a paired sample t-test. The results showed that the measures of MPT, F0, dB, and sequential motion rates (SMR) were significantly increased after administering the protocol. Also, there were statistically significant differences in the measures of shimmer, and alternating motion rates (AMR) of the syllable /KS\inve$/ between pre- and post-test. The results indicated that the accent-based music speech protocol may improve speech motor coordination including respiration, phonation, articulation, resonance, and prosody of patients with dysarthria. This suggests the possibility of utilizing the music speech protocol to maximize immediate treatment effects in the course of a long-term treatment for patients with dysarthria.


Abstract: Dysarthria has a drastic impact on the quality of life of ALS patients. Most patients
suffering from dysarthria are offered speech therapy. Communication devices are prescribed less frequently. In the present study we investigated the impact of these therapeutic arrangements on quality of life in ALS patients. Thirty-eight ALS patients with dysarthria or anarthria, who underwent speech therapy and/or used communication devices answered three standardized questionnaires (Beck Depression Inventory - II (BDI), SF-36 Health Survey questionnaire (SF-36) and ALS Functional Rating Scale-revised (ALSFRS-R)) and were further interviewed about their experience with and benefit of speech therapy and communication devices. Most of the patients described a high impact of the communication device on their quality of life while the influence of speech therapy was rated less. By multiple regression analysis we confirmed an independent positive effect of communication device use on depression and psychological distress. In conclusion, communication systems improve or at least stabilize quality of life and mood in dysarthric ALS patients, and should be provided early in the disease course.

PT - Clinical Trial


Abstract: Interventions that stimulate and engage individuals with dementia physically, cognitively, and socially offer promise for improving health and well-being and for potentially slowing functional losses with disease progression. We describe a volunteer-based intervention that combines physical exercise, cognitive-linguistic stimulation, and social outings for older persons living with dementia in rural communities. One-year follow-up data, although clearly preliminary (n = 8), suggest stability in global cognition, mood, and aspects of physical fitness. Challenges to implementing dementia interventions in rural areas are discussed.

PT - Clinical Trial


Abstract: This paper examines the evidence for community and outpatient aphasia groups using the International Classification of Functioning, Disability and Health (ICF) framework. A systematic search of the literature using eight electronic databases was completed; 29 studies met inclusion and exclusion criteria. Level of evidence and methodological quality was assessed and effect sizes calculated where possible. Evidence favouring community and outpatient groups centred on four level ii and level iii-i studies that examined the efficacy of highly structured group activities for improving specific linguistic processes with five medium-large effect sizes calculated. Medium and large effect sizes were also calculated on a level iii-i study examining number of friendships and community access. No effect sizes were available for level ii or level iii studies examining communication activity and participation. Overall, the results indicate that community and outpatient group participation can improve specific linguistic processes. There is also some evidence that group participation can benefit social networks and community access. However, there is limited evidence demonstrating improvement in functional communication as a consequence of group participation. The current evidence is not comprehensive. Further well-designed studies, particularly examining activity and participation, and contextual factors are required to advance community and outpatient aphasia group practice and participation.

Abstract: Previous research on participants with aphasia has mainly been based on standard functional neuroimaging analysis. Recent studies have shown that functional connectivity analysis can detect compensatory activity, not revealed by standard analysis. Little is known, however, about the default-mode network in aphasia. In the current study, we studied changes in the default-mode network in subjects with aphasia who underwent semantic feature analysis therapy. We studied nine participants with chronic aphasia and compared them to 10 control participants. For the first time, we identified the default-mode network using spatial independent component analysis, in participants with aphasia. Intensive therapy improved integration in the posterior areas of the default-mode network concurrent with language improvement. Correlations between integration and improvement did not reach significance, but the trend suggests that pre-therapy integration of the default-mode network may predict therapy outcomes. Functional connectivity allows a better understanding of the impact of semantic feature analysis in aphasia.


Abstract: Background: There is conflicting evidence regarding the benefits of intensive speech and language therapy (SLT), particularly because intensity is often confounded with total SLT provided. Aims: A two-centre, randomized, rater-blinded, parallel study was conducted to compare the efficacy of 100 h of SLT in a regular (RT) versus intensive (IT) treatment in sub-acute post-stroke aphasia. Methods & Procedures: Consecutive patients with aphasia, within 3 months of a left hemisphere ischemic stroke, were randomized to IT (2 h per day x 5 days per week, 10 weeks) or RT (2 h per week x 50 weeks). Evaluations took place at 10, 50 and 62 weeks. Primary outcome was the frequency of responders, defined by 15% increase of Aphasia Quotient (AQ) from the baseline to 50 weeks. Secondary outcomes were changes from the baseline in AQ and functional communication profile (FCP) at 50 and 62 weeks and improvement stability between 50 and 62 weeks. Outcomes & Results: Thirty patients were randomized and 18 completed the study. No significant differences were found between groups in primary or secondary outcomes, although IT patients (N = 9) obtained higher scores in language measures between 10 and 62 weeks in per protocol analysis. The number of non-completions was identical between groups. Conclusions & Implications: This study suggests that, in the sub-acute period following stroke and controlling for the number of hours of SLT provided, there is a trend for a greater improvement in language and functional communication measures with IT compared with RT. The lack of statistical significance in results was probably due to the small sample size. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

Notes: [Available with NHS OpenAthens]


Abstract: Purpose: Studies investigating language deficits in individuals with left temporal-lobe epilepsy have consistently demonstrated impairments in proper name retrieval. The aim of this Phase I rehabilitation study was to investigate the effects of a linguistically distributed word retrieval treatment on proper name retrieval in an individual with left temporal-lobe epilepsy. Method: A 61-year old right-handed male with left temporal-lobe epilepsy (clinical onset at the age of 50) and a deficit in proper name retrieval participated in this study. A single-subject, repeated-probe ABAA design with testing before, immediately after, and 3 months after treatment completion was employed. Proper name retrieval
treatment was administered 2 hr per day for 5 days. Results: Results demonstrated improved naming on trained items and maintenance of trained items 3 months after treatment completion. Conclusion: Treatment, which took advantage of the individual's undamaged linguistic networks, promoted the reorganization of networks supporting proper naming, leading to improved proper name retrieval. Further research replicating these findings in individuals with varying degrees of proper name retrieval impairment is warranted. Additionally, the mechanism behind the observed improvements in proper name retrieval needs to be investigated further using functional neuroimaging


Abstract: Background: Aphasiologists are motivated to select "functional", "relevant" and "useful" items for use in therapy; yet the field lacks discussion on what is meant by these terms and how to identify such items. Aims: The purpose of this article is to review the meaning of "functionally relevant" in the aphasia treatment literature and to specify challenges in identifying potentially relevant items for therapy. Main Contribution: This article shows that aphasiologists lack clear definitions, strategies and concrete tools to assist with identification of functionally relevant items for language therapy. Two main categories of functional vocabulary are defined: personally chosen vocabulary and generally frequent vocabulary. The review of the existing aphasia literature demonstrates the strengths and weaknesses of these approaches. Two critical points are raised related to selection of therapy items using data from language corpora. Firstly, it is paradoxical that aphasiologists often try to target the most common vocabulary in therapy but that language corpora have not been used to determine the identity of the most frequent words. Secondly, the analyses of the language corpora show that the most frequent spoken words represent a wide variety of word classes, such as adjectives, adverbs and pronouns. Yet, only a few treatment studies have targeted words other than concrete nouns and verbs. Conclusions: There is a need to use objective sources to identify and choose treatment targets. In addition, more therapy attempts should be directed to words other than the most concrete nouns and verbs. Use of frequency-based lists provides one way to identify and increase the number of items that are potentially relevant across people. Frequency-based vocabulary lists can also be used as a tool when asking people with aphasia or their significant others to identify items that they personally think should be targeted in therapy. Without creating and publishing common tools for this purpose, change in practice is difficult


Abstract: Background: Functional neuroimaging studies with poststroke aphasia patients have shown increased activation of the unaffected hemisphere, which hypothetically reflects a maladaptive strategy of brain reorganization. Objective: We investigated whether repetitive transcranial magnetic stimulation (rTMS) inhibiting the right-hemisphere homologue of Broca’s area improves language restitution if combined with speech/language therapy. Methods: Forty aphasic patients during the subacute phase of ischemic stroke were randomized to a 3-week aphasia rehabilitation protocol in combination with real or sham rTMS. Naming, repetition, and comprehension were assessed using the Boston Diagnostic Aphasia Examination at baseline, immediately after therapy, and 15 weeks after completing treatment. Results: Although language functions improved in both experimental and control groups after 3 weeks, only slight group differences in degree of recovery were revealed between patients receiving rTMS and control participants. Follow-up revealed that severely aphasic rTMS patients demonstrated significantly greater improvement than patients receiving sham stimulation in repetition. Conclusions: Inhibitory rTMS applied to the right
frontal language homologue is not effective for all poststroke aphasia patients, although it might benefit selected patients


Abstract: Primary objective: To investigate speech pathologists' current practice with adults who are in post-traumatic amnesia (PTA). Method: Speech pathologists with experience of adults in PTA were invited to take part in an online survey through Australian professional email/internet-based interest groups. Results: Forty-five speech pathologists responded to the online survey. The majority of respondents (78%) reported using informal, observational assessment methods commencing at initial contact with people in PTA or when patients' level of alertness allowed and initiating formal assessment on emergence from PTA. Seven respondents (19%) reported undertaking no assessment during PTA. Clinicians described using a range of techniques to monitor cognitive-communication during PTA, including static, dynamic, functional and impairment-based methods. Conclusions: The study confirmed that speech pathologists have a key role in the multidisciplinary team caring for the person in PTA, especially with family education and facilitating interactions with the rehabilitation team and family. Decision-making around timing and means of assessment of cognitive-communication during PTA appeared primarily reliant on speech pathologists' professional experience and the culture of their workplace. The findings support the need for further research into the nature of cognitive-communication disorder and resolution over this period.


Abstract: Background: Negative affectivity and neurocognitive deficits including executive dysfunction have been shown to be detrimental to rehabilitation therapies. However, research on the relationship between neuropsychological deficits and improvement in speech-language therapy (SLT) for aphasia is sparse. Objective: To examine the relationships among neurocognitive and psychological functioning and improvement in SLT following aphasia due to stroke. Methods: Fifty patients who were ≥9 months post stroke and enrolled in outpatient SLT to treat aphasia participated. Using standard language assessment measures, the authors evaluated language functioning at initiation of the study and after participants completed various SLT protocols. Executive functioning, visuospatial skills, attention, and memory also were assessed to provide indices of convergent and discriminant validity. Participants' mood and affectivity were evaluated by self-report, and their functional abilities and recovery of function since stroke were assessed via caregiver report. Results: A multiple regression model testing the combined powers of neurocognitive and psychological variables was significant (P = .004, R2 = 0.33), with psychological and neurocognitive functioning accounting for 15% of the variance in relative language change beyond that accounted for by stroke severity and gross cognitive functioning. Negative affectivity expressed on the Positive and Negative Affectivity Scale made unique contributions to the model. Conclusions: Improvement in SLT is substantially related to neurocognitive and psychological functioning, particularly affectivity. Assessment of these characteristics may assist in identifying patients who are likely to improve and in tailoring treatment programs to yield optimal outcomes.

Abstract: OBJECTIVE: To study the effects of daily treatment time on functional gain of patients who have had a stroke. DESIGN: A retrospective cohort study. SETTING: An inpatient rehabilitation hospital (IRH) in northern California. PARTICIPANTS: Three hundred sixty patients who had a stroke and were discharged from the IRH in 2007. INTERVENTIONS: Average minutes of rehabilitation therapy per day, including physical therapy, occupation therapy, speech and language therapy, and total treatment. MAIN OUTCOME MEASURES: Functional gain measured by the Functional Independence Measure, including activities of daily living, mobility, cognition, and the total of the Functional Independence Measure (FIM) scores. RESULTS: The study sample had a mean age of 64.8 years; 57.4% were men and 61.4% were white. The mean total daily therapy time was 190.3 minutes, and the mean total functional gain was 26.0. A longer daily therapeutic duration was significantly associated with total functional gain ($r = .23$, $P = .0094$). Patients who received a total therapy time of $<3.0$ hours per day had significantly lower total functional gain than did those treated $\geq 3.0$ hours. No significant difference in total functional gain was found between patients treated $\geq 3.0$ but $<3.5$ hours and $\geq 3.5$ hours per day. The daily treatment time of physical therapy, occupational therapy, and speech and language therapy also was significantly associated with corresponding subscale functional gains. In addition, hemorrhagic stroke, left brain injury, earlier IRH admission, and a longer IRH stay were associated with total functional improvement. CONCLUSIONS: The study demonstrated a significant relationship between daily therapeutic duration and functional gain during IRH stay and showed treatment time thresholds for optimal functional outcomes for patients in inpatient rehabilitation who had a stroke.

PT - Comparative Study

(29) Young A, Gomersall T, Bowen A, ACT N, I. Trial participants' experiences of early enhanced speech and language therapy after stroke compared with employed visitor support: a qualitative study nested within a randomized controlled trial. Clinical Rehabilitation 2013; 27(2):174-182.
Abstract: To explore trial participants’ experiences of the process and outcomes of early, enhanced speech and language therapy after stroke with support from an employed visitor. Design: Qualitative study nested within a randomized controlled trial. Participants: Twenty-two people who, after stroke, had a diagnosis of aphasia (12), dysarthria (5) or both (5) and who participated in the ACT NoW study. Setting: Eight English NHS usual care settings. Method: Individual interviews. Thematic content analysis assisted by a bespoke data transformation protocol for incorporating non-verbal and semantically ambiguous data. Results: Participants highly regarded regular and sustained contact with someone outside of immediate family/friends who engaged them in deliberate activities/communication in the early months after stroke. Participants identified differences in the process of intervention between speech and language therapists and employed visitors. But no major discriminations were made between the impact or value of this contact according to whether provided by a speech and language therapist or employed visitor. Participant-defined criteria for effectiveness of contact included: impact on mood and confidence, self-recognition of progress and the meeting of individual needs

(30) Bowen A, Hesketh A, Patchick E, Young A, Davies L, Vail A et al. Clinical effectiveness, cost-effectiveness and service users' perceptions of early, well-resourced communication therapy
following a stroke: a randomised controlled trial (the ACT NoW Study). Health Technology Assessment 2012; 16(50):1-160.

Abstract: OBJECTIVE: To determine the clinical effectiveness, cost-effectiveness and service users' views of enhanced early communication therapy by speech and language (SL) therapists compared with attention control (AC). DESIGN: Successful feasibility study followed by a randomised trial with economic evaluation, and nested qualitative study using 32 individual interviews. SETTING: Twelve English NHS hospital and community stroke services. PARTICIPANTS: One hundred and seventy adults with aphasia or dysarthria admitted to hospital with stroke, December 2006 to January 2010. Eligibility determined by NHS SL therapists. Seventeen people declined follow-up. INTERVENTIONS: A best-practice, flexible intervention by NHS SL therapists, up to three contacts per week for up to 16 weeks compared with a similar number of AC contacts by employed visitors. MAIN OUTCOME MEASURES: Primary outcome was blinded, functional communicative ability 6 months post randomisation on the Therapy Outcome Measure activity subscale (TOM). Secondary outcomes were participants' perceptions on the Communication Outcomes After Stroke scale (COAST); carers' perceptions of participants from part of the Carer COAST; carer well-being on Carers of Older People in Europe Index and quality-of-life items from Carer COAST. Serious adverse events (SAEs) were recorded. Economic evaluation: participants' utility (European Quality of Life-5 Dimensions), service use and cost data from medical records and carers, and a discrete choice experiment. RESULTS: Intervention typically started after 2 weeks, providing 22 contacts. Both groups improved on the TOM. The estimated 6 months' group difference [95% confidence interval (CI)] was 0.25 (-0.19 to 0.69) points in favour of SL therapy. Sensitivity analyses adjusting for baseline chance imbalance or not imputing values for decedents further reduced this difference. Per-protocol analyses rejected a possible dilution of therapy from controls refusing allocation and receiving NHS SL therapy. There was no evidence of added benefit of therapy on any secondary outcome measure or SAEs, although the latter were less frequent in the therapy group [odds ratio 0.42 (95% CI 0.16 to 1.1)]. Regardless of group allocation, interviewed participants reported positive impacts on their confidence and mood, identified drivers for change and valued early and sustained contact. Health economic analysis indicated a high level of uncertainty. Early enhanced SL therapy for communication is likely to be cost-effective only if decision-makers are prepared to pay >= £25,000 to gain one unit of utility. CONCLUSIONS: These findings exclude the possibility of a clinically significant difference of 0.5 points on the TOM. There was no evidence, on any measure, of added benefit of early communication therapy beyond that from AC. It is unclear whether therapy is more or less cost-effective than AC. Early, frequent contact was highly valued by users and had good uptake. Functional communication improved for both groups, plausibly due to natural recovery and early and regular opportunity to practise everyday communication with a professional (therapist/visitor). There is no evidence to recommend enhancing the provision of early communication therapy by a qualified SL therapist over and above usual care. SL therapy service reorganisation should consider skill mix and timing within a stepped care model and should take place within the context of a trial.


Abstract: OBJECTIVE: To assess the effectiveness of enhanced communication therapy in the first four months after stroke compared with an attention control (unstructured social contact). DESIGN: Externally randomised, pragmatic, parallel, superiority trial with blinded outcome assessment. SETTING: Twelve UK hospital and community stroke services. PARTICIPANTS: 170 adults (mean age 70 years) randomised within two weeks of admission to hospital with stroke (December 2006 to January 2010) whom speech and language
therapists deemed eligible, and 135 carers. **INTERVENTIONS:** Enhanced, agreed best practice, communication therapy specific to aphasia or dysarthria, offered by speech and language therapists according to participants’ needs for up to four months, with continuity from hospital to community. Comparison was with similarly resourced social contact (without communication therapy) from employed visitors. **OUTCOME MEASURES:** Primary outcome was blinded, functional communicative ability at six months on the Therapy Outcome Measure (TOM) activity subscale. Secondary outcomes (unblinded, six months): participants’ perceptions on the Communication Outcomes After Stroke scale (COAST); carers’ perceptions of participants from part of the Carer COAST; carers’ wellbeing on Carers of Older People in Europe Index and quality of life items from Carer COAST; and serious adverse events. **RESULTS:** Therapist and visitor contact both had good uptake from service users. An average 22 contacts (intervention or control) over 13 weeks were accepted by users. Impairment focused therapy was the approach most often used by the speech and language therapists. Visitors most often provided general conversation. In total, 81/85 of the intervention group and 72/85 of the control group completed the primary outcome measure. Both groups improved on the TOM activity subscale. The estimated six months group difference was not statistically significant, with 0.25 (95% CI -0.19 to 0.69) points in favour of therapy. Sensitivity analyses that adjusted for chance baseline imbalance further reduced this difference. Per protocol analyses rejected a possible dilution of treatment effect from controls declining their allocation and receiving usual care. There was no added benefit of therapy on secondary outcome measures, subgroup analyses (such as aphasia), or serious adverse events, although the latter were less common after intervention (odds ratio 0.42 (95% CI 0.16 to 1.1)). **CONCLUSIONS:** Communication therapy had no added benefit beyond that from everyday communication in the first four months after stroke. Future research should evaluate reorganised services that support functional communication practice early in the stroke pathway. This project was funded by the NIHR Health Technology Assessment programme (project No 02/11/04) and is published in full in Health Technology Assessment 2012;16(26):1-160. **TRIAL REGISTRATION:** ISRCTN78617680

PT - Multicenter Study
PT - Randomized Controlled Trial

(32) Brady MC, Kelly H, Godwin J, Enderby P. Speech and language therapy for aphasia following stroke. Cochrane Database of Systematic Reviews 2012;(5).
Abstract: Aphasia is an acquired language impairment following brain damage that affects some or all language modalities: expression and understanding of speech, reading and writing. Approximately one-third of people who have a stroke experience aphasia. To assess the effectiveness of speech and language therapy (SLT) for aphasia following stroke. We searched the Cochrane Stroke Group Trials Register (last searched June 2011), MEDLINE (1966 to July 2011) and CINAHL (1982 to July 2011). In an effort to identify further published, unpublished and ongoing trials we handsearched the International Journal of Language and Communication Disorders (1969 to 2005) and reference lists of relevant articles and contacted academic institutions and other researchers. There were no language restrictions. Randomised controlled trials (RCTs) comparing SLT (a formal intervention that aims to improve language and communication abilities, activity and participation) with (1) no SLT; (2) social support or stimulation (an intervention that provides social support and communication stimulation but does not include targeted therapeutic interventions); and (3) another SLT intervention (which differed in duration, intensity, frequency, intervention methodology or theoretical approach). We independently extracted the data and assessed the quality of included trials. We sought missing data from investigators. We included 39 RCTs (51 randomised comparisons) involving 2518 participants in this review. Nineteen randomised comparisons (1414 participants) compared SLT with no SLT where SLT resulted in significant benefits to patients’ functional communication (standardised mean difference
(SMD) 0.30, 95% CI 0.08 to 0.52, P = 0.008), receptive and expressive language. Seven randomised comparisons (432 participants) compared SLT with social support and stimulation but found no evidence of a difference in functional communication. Twenty-five randomised comparisons (910 participants) compared two approaches to SLT. There was no indication of a difference in functional communication. Generally, the trials randomised small numbers of participants across a range of characteristics (age, time since stroke and severity profiles), interventions and outcomes. Suitable statistical data were unavailable for several measures. Our review provides some evidence of the effectiveness of SLT for people with aphasia following stroke in terms of improved functional communication, receptive and expressive language. However, some trials were poorly reported. The potential benefits of intensive SLT over conventional SLT were confounded by a significantly higher dropout from intensive SLT. More participants also withdrew from social support than SLT interventions. There was insufficient evidence to draw any conclusion regarding the effectiveness of any one specific SLT approach over another. [CINAHL Note: The Cochrane Collaboration systematic reviews contain interactive software that allows various calculations in the MetaView.]


Abstract: BACKGROUND: Dysarthria knowledge is predominantly impairment-based. As a result, speech and language therapists (SLTs) have traditionally adopted impairment-focused management practices. However, guidance for best practice suggests that SLTs should consider the client holistically, including the impact of dysarthria beyond the impairment.

AIMS: To investigate the current assessment and treatment practices used by UK SLTs with clients with progressive dysarthria and to identify whether these satisfy the needs of SLTs in their everyday practice. To investigate the extent to which they consider oromotor abilities, intelligibility, functional communication, participation and interaction to be important regarding assessment and treatment decisions. To explore whether management decisions are affected by level of clinical experience or settings in which SLTs work.

METHODS & PROCEDURES: An online survey of UK SLTs working with adults with progressive dysarthria.

OUTCOMES & RESULTS: A total of 119 SLTs completed the survey. Respondents considered that targeting the levels of impairment, activity and participation are important in the management of clients with progressive dysarthria, as recommended by clinical guidelines and recent research. However a particularly high proportion of respondents reported the use of impairment-based assessments. Respondents reported lacking the necessary tools to target interaction in assessment and intervention. The intervention that respondents use with clients varies according to the progressive disorder and dysarthria severity. There is evidence for a trend that less experienced SLTs and those working predominantly in hospital-based settings focus on the impairment, whereas more SLTs with more experience and those based in predominantly community-based settings look beyond the impairment.

CONCLUSIONS & IMPLICATIONS: The values held by SLTs match guideline recommendations for best practice, however the clinical reality is that the assessment of progressive dysarthria remains predominantly impairment-focused. New tools need to be developed and integrated into practice to target interaction in assessment and intervention, to reduce the gap between best practice recommendations and clinical reality. Ongoing research into the effectiveness of SLT intervention with clients with progressive dysarthria is required to guide clinical management decisions.

[Available with NHS OpenAthens]

Abstract: Objective: Positive results have been reported with melodic intonation therapy (MIT) in nonfluent aphasia patients with damage to their left-brain speech processes, using the patient’s intact ability to sing to promote functional language. This pilot study sought to determine the immediate effects of introducing modified melodic intonation therapy (MMIT), a modification of MIT, as an early intervention in stroke patients presenting with Broca’s aphasia. Method: After a randomized controlled single-blind design, 30 acute stroke survivors with nonfluent aphasia were randomly assigned to receive MIT treatment or no treatment. A pre/post test, based on the responsive and repetition subsections of the Western Aphasia Battery, was developed for this study. Results: After 1 session, a significant within-subject change was observed for the treatment group's adjusted total score (p = .02), and a significant difference between groups was found for adjusted total score (p = .02) favoring the treatment group. The treatment group also showed a significant change in their responsive subsection scores (p = .01) when their pre-tests from Visit 1 to Visit 2 were compared, whereas the control group showed no change, suggesting a possible carry-over effect of MIT treatment. Conclusion: This study provides preliminary data supporting the possible benefits of utilizing MMIT treatment early in the recovery of nonfluent aphasia patients.


Abstract: Background: Brain and language theories suggest the application of general neuroscientific and linguistic principles in the neurorehabilitation of language. The interwoven nature of language and action has long been emphasised in linguistic pragmatics, and recent neuroscience research has indeed demonstrated tight functional interactions between language and action mechanisms of the human brain. This provides important arguments in favour of practising language in communicative settings, rather than with the sole purpose of producing linguistic structures. Intensive language-action therapy (ILAT), including its most popular form called constraint-induced aphasia therapy (CIAT), realises language-action embedding in synergy with the use of intensive training and guidance by modelling, shaping, and explicit rules. ILAT leads to significant improvement of language performance in chronic post-stroke aphasia within a short period of time. A comprehensive description of its methods has thus far been missing. Aims: We describe the methods of ILAT, illustrate its use, and outline methods for linguistic-pragmatic evaluation of its effects. Main Contribution: We explain the general principles and practical features of ILAT methods and of language-action games (LAGs) constituting this method. The structure of and materials for two LAGs, the REQUEST and PLANNING games, are highlighted by discussing in detail their respective action-structure, materials, and rules. These LAGs are employed to encourage the use of language in communicative contexts through interactive requests and the planning of joint activities. A main linguistic focus is on object nouns in the REQUEST game and on action verbs in the PLANNING game. Focusing and tailoring of LAGs to patients’ communicative needs by means of modelling, shaping, and explicitly introduced communication rules are also explained. Finally the assessment of communicative success is illustrated based on clinical measures, performance within LAGs, and the Communicative Aphasia Log (CAL). Conclusions: Different linguistic-pragmatic and social-interactive forms of communication can be translated into specific therapeutic LAGs in the context of ILAT to target specific speech acts and parts of speech. Apart from clinical tests, methods for evaluating communication performance are available for assessment of therapy success.

Abstract: Background: Primary progressive aphasia (PPA) is a neurodegenerative disorder with no effective pharmacological treatment. Cognition-based interventions are adequate alternatives, but their benefit has not been thoroughly explored. Our aim was to study the effect of speech and language therapy (SLT) on naming ability in PPA. Methods: An open parallel prospective longitudinal study involving two centers was designed to compare patients with PPA submitted to SLT (1 h/week for 11 months) with patients receiving no therapy. Twenty patients were enrolled and undertook baseline language and neuropsychological assessments; among them, 10 received SLT and 10 constituted an age- and education-matched historical control group. The primary outcome measure was the change in group mean performance on the Snodgrass and Vanderwart naming test between baseline and follow-up assessments. Results: Intervention and control groups did not significantly differ on demographic and clinical variables at baseline. A mixed repeated measures ANOVA revealed a significant main effect of therapy (F(1,18) = 10.763; p = 0.005) on the performance on the Snodgrass and Vanderwart naming test. Conclusion: Although limited by a non-randomized open study design with a historical control group, the present study suggests that SLT may have a benefit in PPA, and it should prompt a randomized, controlled, rater-blind clinical trial.


Abstract: PURPOSE: Canada's Best Practice Recommendations for Stroke Care state that a minimum of one hour per day of each of the relevant core therapies be provided to patients admitted for inpatient rehabilitation. We examined whether this standard was met on a single, specialized stroke rehabilitation unit and if amount of therapy was an independent contributor to functional improvement. METHODS: One-hundred and twenty-three, consecutive patients admitted to a 30-bed stroke rehabilitation program over a 6-month period with the confirmed diagnosis of stroke, were included. Workload measurement data were used to estimate the amount of therapy that patients received from core therapists during their inpatient stay. A multivariable model to predict Functional Independence Measure (FIM) gains achieved was also developed using variables that were significantly correlated with functional gain on univariate analysis. RESULTS: On average, patients received 37 min of active therapy from both physiotherapists (PT) and occupational therapists (OT) and 13 min from speech-language pathologists per day. Admission FIM, length of stay, total OT and PT therapy time (hrs) were significantly correlated with FIM gain. In the final model, which explained 35% of the variance, admission FIM score and total amount of occupational therapy (OT) emerged as significant predictors of FIM gain. CONCLUSIONS: Patients admitted to a specialized rehabilitation unit received an average of 37 min a day engaged in therapeutic activities with both occupational and physical therapists. Although this value did not reach the standard of one hour, total amount of OT time contributed significantly to gains in FIM points during hospital stay.


Abstract: A distinguishing feature of Broca's aphasia is non-fluent halting speech typically involving one to three words per utterance. Yet, despite such profound impairments, some patients can mimic audio-visual speech stimuli enabling them to produce fluent speech in real time. We call this effect 'speech entrainment' and reveal its neural mechanism as well as explore its usefulness as a treatment for speech production in Broca's aphasia. In Experiment 1, 13 patients with Broca's aphasia were tested in three conditions: (i) speech entrainment with audio-visual feedback where they attempted to mimic a speaker whose
mouth was seen on an iPod screen; (ii) speech entrainment with audio-only feedback where patients mimicked heard speech; and (iii) spontaneous speech where patients spoke freely about assigned topics. The patients produced a greater variety of words using audio-visual feedback compared with audio-only feedback and spontaneous speech. No difference was found between audio-only feedback and spontaneous speech. In Experiment 2, 10 of the 13 patients included in Experiment 1 and 20 control subjects underwent functional magnetic resonance imaging to determine the neural mechanism that supports speech entrainment. Group results with patients and controls revealed greater bilateral cortical activation for speech produced during speech entrainment compared with spontaneous speech at the junction of the anterior insula and Brodmann area 47, in Brodmann area 37, and unilaterally in the left middle temporal gyrus and the dorsal portion of Broca's area. Probabilistic white matter tracts constructed for these regions in the normal subjects revealed a structural network connected via the corpus callosum and ventral fibres through the extreme capsule. Unilateral areas were connected via the arcuate fasciculus. In Experiment 3, all patients included in Experiment 1 participated in a 6-week treatment phase using speech entrainment to improve speech production. Behavioural and functional magnetic resonance imaging data were collected before and after the treatment phase. Patients were able to produce a greater variety of words with and without speech entrainment at 1 and 6 weeks after training. Treatment-related decrease in cortical activation associated with speech entrainment was found in areas of the left posterior-inferior parietal lobe. We conclude that speech entrainment allows patients with Broca's aphasia to double their speech output compared with spontaneous speech. Neuroimaging results suggest that speech entrainment allows patients to produce fluent speech by providing an external gating mechanism that yokes a ventral language network that encodes conceptual aspects of speech. Preliminary results suggest that training with speech entrainment improves speech production in Broca's aphasia providing a potential therapeutic method for a disorder that has been shown to be particularly resistant to treatment.


Abstract: BACKGROUND AND PURPOSE: Early stroke rehabilitation has shown benefits over spontaneous recovery. Insufficient evidence exists to determine the benefits of early aphasia intervention. We hypothesized that daily aphasia therapy would show better communication outcomes than usual care (UC) in early poststroke recovery. METHOD: This prospective, randomized, single-blinded, controlled trial was conducted in three acute-care hospitals in Perth, Australia, each with over 200 stroke admissions annually. Patients with acute stroke causing moderate to severe aphasia were recruited at a median of three-days (range: 0-10 days) to receive daily aphasia therapy or usual care therapy. Individually tailored, impairment-based intervention was provided for the acute hospital stay or intervention phase (median: 19 days; range: 5-76). Primary outcome measures were the aphasia quotient and functional communication profile at acute hospital discharge or four-weeks poststroke, whichever came first. A random-number generator and sealed envelopes were used to randomize participants. Assessments were completed by a blinded assessor. RESULTS: Fifty-nine participants were recruited, with six withdrawals (10%) and seven deaths (12%) at six-months. Ninety percent had ischemic strokes, with 56.5% experiencing a total anterior circulation stroke. The group mean (+/- SD) age was 69.1 (+/- 13.9) years. Six participants (18.75%) in the daily aphasia therapy group did not complete the minimum (150 min) therapy required for this study. The daily aphasia therapy intervention phase mean therapy session time was 45 min (range: 30-80) and the total mean amount of therapy for the daily aphasia therapy participants was 331 min (range: 30-1415). Four (15%) participants in the usual care group received therapy. The collective total therapy provided to these participants was 295 min over seven sessions. Usual care participants received an average of
10.5 min of therapy per week during the intervention phase. At the primary end point, a generalized estimating equations model demonstrated that after controlling for initial aphasia severity, participants receiving daily aphasia therapy scored 15.1 more points (P = 0.010) on the aphasia quotient and 11.3 more points (P = 0.004) on the functional communication profile than those receiving usual care therapy. CONCLUSIONS: Daily aphasia therapy in very early stroke recovery improved communication outcomes in people with moderate to severe aphasia.

PT - Randomized Controlled Trial


Abstract: PURPOSE: To examine the effects and generalization of a modified script training intervention, delivered partly via videoconferencing, on dialogue scripts that were produced by 2 individuals with aphasia. METHOD: Each participant was trained on 2 personally relevant scripts. Intervention sessions occurred 3 times per week, with a combination of in-person meetings and videoconferencing, and lasted for 3 weeks per script. This study followed a multiple baseline design across scripts. Measures of accuracy, grammatical productivity, speaking rate, and articulatory fluency were obtained during baseline, intervention, and maintenance phases. Generalization probes were administered by challenging participants to engage in a conversation about their script topic with conversation partners who did not follow the script. RESULTS: Both participants showed improvement on all dependent variables for both scripts during and after the intervention phase. Generalization samples showed improved grammatical morpheme use and increased rate of speech over prebaseline samples. CONCLUSION: There is evidence that script training intervention can improve accuracy, grammatical productivity, speaking rate, and articulatory fluency in script production tasks as well as in more functional conversational tasks. Videoconferencing is a viable method of conducting script training intervention when it is supported by face-to-face intervention sessions, slight modifications to the procedure, and an emphasis on self-cuing skills.

PT - Clinical Trial [Available with NHS OpenAthens]


Abstract: Many people with Parkinson's disease suffer from disorders of speech. The most frequently reported speech problems are weak, hoarse, nasal or monotonous voice, imprecise articulation, slow or fast speech, difficulty starting speech, impaired stress or rhythm, stuttering and tremor. People with the condition also tend to give fewer non-verbal cues, such as facial expressions and hand gestures. These disabilities tend to increase as the disease progresses and can lead to serious problems with communication. This review compared the benefits of speech and language therapy versus placebo (sham therapy) or no treatment for speech disorders in Parkinson's disease. Relevant trials were identified by electronic searches of 16 medical literature databases, various registers of clinical trials and an examination of the reference lists of identified studies and other reviews. Only randomised controlled trials were included in this review. These were studies where two groups of patients were compared, one group had speech and language therapy, the other did not receive any therapy intended to improve speech. The patients were assigned to each of the groups in a random fashion so as to reduce the potential for bias. Three trials with a total of 63 patients were found comparing speech and language therapy with an untreated group. The quality of the methods used in these trials was variable, with
all studies failing in at least one critical area. All three of the controlled trials reported a positive effect of speech and language therapy for speech disorders in Parkinson's disease. Many of the outcome measures examined appeared to improve by a clinically significant amount after therapy. However, it should be noted that there were flaws in the methods used in these studies and only a small number of patients with Parkinson's disease were examined. This means that there is insufficient evidence to absolutely prove or disprove the benefit of speech and language therapy for the treatment of speech disorders in Parkinson's disease patients, but lack of evidence does not mean lack of effect. A large well designed placebo-controlled randomised trial is needed to assess the effectiveness of speech and language therapy for speech disorders in Parkinson's disease. Outcome measures with particular relevance to people with Parkinson's disease should be chosen and the patients followed for at least six months to determine the duration of any improvement.

(42) Hurkmans J, Jonkers R, Boonstra AM, Stewart RE, Reinders-Messelink HA. Assessing the treatment effects in apraxia of speech: introduction and evaluation of the Modified Diadochokinesis Test. Int J Lang Commun Disord 2012; 47(4):427-436. Abstract: BACKGROUND: The number of reliable and valid instruments to measure the effects of therapy in apraxia of speech (AoS) is limited. AIMS: To evaluate the newly developed Modified Diadochokinesis Test (MDT), which is a task to assess the effects of rate and rhythm therapies for AoS in a multiple baseline across behaviours design. METHODS: The consistency, accuracy and fluency of speech of 24 adults with AoS and 12 unaffected speakers matched for age, gender and educational level were assessed using the MDT. The reliability and validity of the instrument were considered and outcomes compared with those obtained with existing tests. RESULTS: The results revealed that MDT had a strong internal consistency. Scores were influenced by syllable structure complexity, while distinctive features of articulation had no measurable effect. The test-retest and intra- and inter-rater reliabilities were shown to be adequate, and the discriminant validity was good. For convergent validity different outcomes were found: apart from one correlation, the scores on tests assessing functional communication and AoS correlated significantly with the MDT outcome measures. The spontaneous speech phonology measure of the Aachen Aphasia Test (AAT) correlated significantly with the MDT outcome measures, but no correlations were found for the repetition subtest and the spontaneous speech articulation/prosody measure of the AAT. CONCLUSIONS & IMPLICATIONS: The study shows that the MDT has adequate psychometric properties, implying that it can be used to measure changes in speech motor control during treatment for apraxia of speech. The results demonstrate the validity and utility of the instrument as a supplement to speech tasks in assessing speech improvement aimed at the level of planning and programming of speech.

PT - Controlled Clinical Trial
PT - Validation Studies

(43) Ingham RJ, Ingham JC, Bothe AK. Integrating functional measures with treatment: a tactic for enhancing personally significant change in the treatment of adults and adolescents who stutter. Am J Speech Lang Pathol 2012; 21(3):264-277. Abstract: PURPOSE: It is proposed that stuttering treatment, particularly for adults and adolescents who stutter, may benefit from more inventive and extensive use of functional measurement-measures that are also treatment agents. Such measures can be tailored to produce more personally significant and evidence-based treatment benefits. They may be especially useful when employed in conjunction with partial self-management and performance-contingent procedures. METHOD: Previous approaches to the definition of stuttering treatment goals and the measurement of stuttering treatment outcomes are
critically reviewed. Suggestions for improvements are presented within the framework of an evidence-based and relatively standardized stuttering treatment. RESULTS AND CONCLUSION: Results from a review of existing literature and from 2 case studies show that 2 specific personally significant problems, saying one’s name and addressing large audiences, were improved by implementing these strategies in treatment. Functional measures directly connected to treatment, and partially self-managed performance-contingent schedules, merit further research as methodologies that are suitable for conducting personally significant and evidence-based treatments with adults and adolescents who stutter.

PT - Review


Abstract: Purpose: This Phase I study investigated behavioral and functional MRI (fMRI) outcomes of 2 intensive treatment programs to improve naming in 2 participants with chronic moderate-to-severe aphasia with comorbid apraxia of speech (AOS). Constraint-induced aphasia therapy (CIAT; Pulvermüller et al., 2001) has demonstrated positive outcomes in some individuals with chronic aphasia. Whether constraint to the speech modality or treatment intensity is responsible for such gains is still under investigation. Moreover, it remains to be seen whether CIAT is effective in individuals with persistent severe nonfluent speech and/or AOS. Method: A single-subject multiple-baseline approach was used. Both participants were treated simultaneously, first with Promoting Aphasics’ Communicative Effectiveness (PACE; Davis & Wilcox, 1985) and then with CIAT. Pre-/posttreatment testing included an overt naming fMRI protocol. Treatment effect sizes were calculated for changes in probe accuracy from baseline to posttreatment phases and maintenance where available. Results: Both participants made more and faster gains in naming following CIAT. Treatment-induced changes in BOLD activation suggested that better naming was correlated with the recruitment of perilesional tissue. Conclusion: Participants produced more target words accurately following CIAT than following PACE. Behavioral and fMRI results support the notion that the intense and repetitive nature of obligatory speech production in CIAT has a positive effect on word retrieval, even in participants with chronic moderate-to-severe aphasia with comorbid AOS.


Abstract: Background: Dysphagia is a common symptom of Parkinson’s disease and can have negative consequences for physical health and quality of life. A variety of treatment options are available to clinicians working with people who have dysphagia and Parkinson’s disease. These options can be broadly categorized as being compensatory or rehabilitative in nature. Aims: To explore the evidence behind treatment options available to clinicians working with dysphagia and Parkinson’s disease and to draw conclusions about whether compensatory or rehabilitative approaches are likely to provide the best outcomes for our patients. Methods & Procedures: A critical literature review of compensatory and rehabilitative interventions for dysphagia in Parkinson’s disease was undertaken. Relevant studies were analysed for their robustness and potential clinical applications. General conclusions were drawn based on the evidence base identified in this review. Main Contribution: This review outlines the lack of evidence supporting both compensatory and rehabilitative methods of treating dysphagia in Parkinson’s disease. It directs clinicians and researchers towards areas that require further investigation. Conclusions & Implications: To date, compensatory methods of treating dysphagia in
Parkinson’s disease have received more research attention than rehabilitative methods and yet neither approach has a strong evidence base. This review argues that rehabilitative methods could possibly have greater potential to increase swallowing safety and improve quality of life in the long-term than compensatory methods alone. However, at present there is a lack of research in this area.

Abstract: Background: Response Elaboration Training (RET; Kearns, 1985) has been found to consistently result in increased production of content in discourse with persons with aphasia. Positive treatment effects have been reported for persons representing a variety of aphasia types and severities. RET was modified for application with persons with acquired apraxia of speech and aphasia and positive outcomes were also associated with the modified treatment (Wambaugh & Martinez, 2000). Although RET has received systematic study, its stimulus generalisation effects are not well understood. Aims: This investigation was designed to measure the stimulus generalisation effects of modified RET (M-RET) in a variety of conditions as well as to further study the effects of M-RET applied to a personal recount condition. Methods & Procedures: Multiple baseline designs (across behaviours and participants) were utilised to examine treatment effects. Treatment was applied sequentially to picture sets and a personal recount condition with six persons with chronic aphasia. Production of correct information units (CIUs) was measured in the following conditions: (1) discourse production in response to sets of trained and untrained pictures, (2) home conversations, and (3) production of discourse in structured tasks. Formal measures of functional communication were also completed prior to and following treatment. Outcomes & Results: Increases in production of CIUs in response to pictures were observed for 11 of the 12 applications of M-RET to picture sets. Response generalisation to untrained picture sets was associated with M-RET applied to pictures sets; increases were slight and were greater for untrained sets that were probed more frequently. Maintenance of gains was generally strong for the participants with nonfluent aphasia, but was minimal for the participant with fluent aphasia. Gains were not evident for M-RET applied to personal recounts; only one participant evidenced changes possibly associated with treatment in the personal recount condition. Improvements in structured discourse samples and a functional communication measure were observed for the majority of the participants following treatment. Lack of compliance in completion of recordings of home conversations limited the utility of that measure. Conclusions: M-RET applied to pictures resulted in improvements in production of content in treated and untreated picture conditions for the majority of the participants. Treatment effects extended to additional outcome measures. Although some positive changes were observed for the participant with fluent aphasia, maintenance was problematic. Application of M-RET to a personal recount condition was not associated with improved performance for most of the participants.

Abstract: Functional dysphagia therapy (FDT) is a noninvasive procedure that can accompany percutaneous endoscopic gastrostomy (PEG) treatment and supports transitioning from tube to oral feeding. In this retrospective study, we investigated the outcome of FDT with or without PEG feeding. Patients with dysphagia were divided into two groups: those with PEG feeding (N = 117) and those with exclusively oral feeding (N = 105). Both groups received functional training (oral motor skills/sensation, compensatory swallowing techniques) from speech-language therapists. Functional oral intake, weight, Barthel index, and speech and language abilities were evaluated pre- and post-training. The non-PEG group showed a
significant post-treatment improvement in functional oral intake, with diet improvement from pasty consistency to firm meals in most cases. However, even severely disordered patients (with PEG feeding) showed a significant increase in functional oral intake, still requiring PEG feeding post-treatment but able to take some food orally. The sooner a PEG was placed, the more functional oral intake improved. Significantly more complications and higher mortality occurred in the PEG group compared to the group with exclusively oral feeding. Dysphagia treatment in the elderly requires a multiprofessional setting, differentiated assessment, and functional training of oral motor skills and sensation and swallowing techniques.

Notes: [Available with NHS OpenAthens]

(48) Edmonds LA, Babb M. Effect of Verb Network Strengthening Treatment in Moderate-to-Severe Aphasia. American Journal of Speech-Language Pathology 2011; 20(2):131-145. Abstract: Purpose: This Phase II treatment study examined the effect of Verb Network Strengthening Treatment (VNeST) on individuals with moderate-to-severe aphasia. Research questions addressed (a) pre- to post-treatment changes and pretreatment to treatment phase changes on probe sentences containing trained verbs (e.g., "The carpenter is measuring the stairs") and semantically related untrained verbs (e.g., "The nurse is weighing the baby"); (b) lexical retrieval changes in single-word naming, sentence, and discourse measures; (c) functional communication by way of proxy and participant report; and (d) error evolution. Method: A multiple-baseline approach across participants was used. Effect sizes were calculated for pre- and posttreatment and maintenance probe responses. A C statistic was used to determine changes from the baseline to treatment phases. Results: One participant exhibited improvement on all generalization measures, whereas the other participant exhibited more limited generalization. Both participants showed improvement on the functional communication measure. Conclusions: As predicted, the participants did not show the same extent of improvement that was observed in participants with more moderate aphasia (Edmonds, Nadeu, & Kiran, 2009). Nonetheless, the findings suggest that VNeST may be appropriate for persons with moderate-to-severe aphasia, especially with a small adaptation to the treatment protocol that will be retained for future iterations of VNeST.

(49) Santoro PcP, Furia CLB, Forte AP, Lemos EM, Garcia RI, Tavares RA et al. Otolaryngology and speech therapy evaluation in the assessment of oropharyngeal dysphagia: a combined protocol proposal. Brazilian journal of otorhinolaryngology 2011; 77(2):201-213. Abstract: Dysphagia is a symptom associated with an array of anatomical and functional changes which must be assessed by a multidisciplinary team to guarantee optimal evaluation and treatment, preventing potential complications. AIM: The aim of the present study is to present the combined protocol of clinical and swallowing videoendoscopy carried by ENT doctors and speech therapists in the Dysphagia Group of the ENT Department - University Hospital. MATERIALS AND METHODS: Retrospective study concerning the use of a protocol made up of patient interview and clinical examination, followed by an objective evaluation with swallowing videoendoscopy. The exam was performed in 1,332 patients from May 2001 to December 2008. There were 726 (54.50%) males and 606 (45.50%) females, between 22 days and 99 years old. RESULTS: We found: 427 (32.08%) cases of normal swallowing, 273 (20.48%) mild dysphagia, 224 (16.81%) moderate dysphagia, 373 (27.99%) severe dysphagia and 35 (2.64%) inconclusive exams. CONCLUSION: The combined protocol (Otolaryngology and Speech Therapy), is a good way to approach the dysphagic patient, helping to achieve early and safe deglutition diagnosis as far as disorder severity and treatment are concerned.

Abstract: Goal-setting is considered an essential part of rehabilitation practice and integral to person-centredness. However, people with aphasia are not always satisfied with goal-setting, and speech-language pathologists are concerned about the appropriateness of therapy. Furthermore, family members are often excluded from goal-setting, despite the impact aphasia has on them. The actual goals set by clinicians for clients with aphasia and their family members have not yet been investigated. This study aimed to examine the goals that clinicians set for their clients with aphasia and their family members. Data from in-depth interviews with 34 speech-language pathologists describing 84 goal-setting experiences with people with aphasia were coded into superordinate goals for both groups. Clinicians expressed a wide range of goals for people with aphasia and their family members, relating to communication, coping and participation factors, and education. In addition, evaluation was considered a goal for the clients. There were clients for whom no goals were set, particularly for family members, due to a lack of/limited contact. The goals described broadly addressed all aspects of the International Classification of Functioning, Disability and Health (ICF) and reflected the use of both functional and impairment-based therapeutic approaches; they also emphasize the importance of providing goal-setting options for the family members of these clients.


Abstract: Purpose: Outcomes of script training for individuals with apraxia of speech (AOS) and mild anomic aphasia were investigated. Script training is a functional treatment that has been successful for individuals with aphasia but has not been applied to individuals with AOS. Principles of motor learning were incorporated into training to promote long-term retention of scripts. Method: Three individuals with AOS completed script training. A multiple-baseline, across-behaviors design examined acquisition of client-selected scripts. Errors and speaking rates were also analyzed. Random practice and delayed feedback were incorporated into training to promote motor learning. Probes for long-term retention were elicited up to 6 months after treatment. Results: All clients successfully acquired their scripts, and probes demonstrated script retention 6 months after treatment. Errors generally decreased but remained variable even during maintenance and retention probes. Speaking rate increased for 2 clients but also remained variable. Conclusions: Script training was successful and functional for clients with AOS. Clients reported increased confidence, speaking ease, and speech naturalness. Although scripts did not become errorless, clients retained their scripts and reported using them frequently. Whether principles of motor learning may have promoted the long-term retention of scripts exhibited by participants must be determined through future research.


Abstract: Background: Many treatment approaches based on different concepts of aphasia have been proposed. Nowadays two main approaches face each other: the impairment- and the consequences-based approaches. The impairment-based approach draws directly from cognitive neuropsychology and is aimed at improving the linguistic deficit. The consequences-based approach (or functional or psychosocial approach) has its roots in the pragmatic approach and endeavours to reduce the consequences of aphasia in daily living. Aims: The aim of this study is to present a treatment for severe aphasia that partially reconciles the two approaches. It incorporates some principles of the impairment-based approach and utilises them in a 'natural' situation that has a direct impact on the daily life of
patients with aphasia. Methods & Procedures: The description of the characteristic of a conversation between two normal interlocutors serves to illustrate how a theory of conversation can help guide the clinician's behaviour during 'natural' conversation/rehabilitation with a severely aphasic patient. Application of the conversation/rehabilitation treatment is illustrated by the case of Mr I, a global aphasic patient 18 months post-onset who underwent 9 months of treatment. Outcomes & Results: Positive outcome was obtained. Mr I was initially unable to keep in contact with anybody or even understand that others were trying to interact with him. After treatment, his approach to others had substantially changed. He showed interest in what happened around him and was capable of sustaining a conversation if his interlocutors took some simple measures to facilitate his comprehension. Conclusions: The conversation/rehabilitation treatment partly reconciles the impairment- and consequences-based approaches and this study demonstrates that at least for one man with aphasia, Mr I, the treatment was successful.


Abstract: Purpose This systematic review summarizes evidence for intensity of treatment and constraint-induced language therapy (CILT) on measures of language impairment and communication activity/participation in individuals with stroke-induced aphasia. Method A systematic search of the aphasia literature using 15 electronic databases (e.g., PubMed, CINAHL) identified 10 studies meeting inclusion/exclusion criteria. A review panel evaluated studies for methodological quality. Studies were characterized by research stage (i.e., discovery, efficacy, effectiveness, cost–benefit/public policy research), and effect sizes (ESs) were calculated wherever possible. Results In chronic aphasia, studies provided modest evidence for more intensive treatment and the positive effects of CILT. In acute aphasia, 1 study evaluated high-intensity treatment positively; no studies examined CILT. Four studies reported discovery research, with quality scores ranging from 3 to 6 of 8 possible markers. Five treatment efficacy studies had quality scores ranging from 5 to 7 of 9 possible markers. One study of treatment effectiveness received a score of 4 of 8 possible markers. Conclusion Although modest evidence exists for more intensive treatment and CILT for individuals with stroke-induced aphasia, the results of this review should be considered preliminary and, when making treatment decisions, should be used in conjunction with clinical expertise and the client's individual values.


Abstract: Aphasia is an acquired language disorder affecting an individual's ability to understand the spoken word and to speak, read and write after stroke. In this article, an overview of the management of aphasia will be considered. The incidence, clinical symptoms and available treatment approaches will be outlined alongside an overview of the efficacy and current national provision of speech and language therapy services, including the results from the Royal College of Speech and Language Therapists' stroke survivors survey. Practical strategies to facilitate communication with a person with aphasia and the specific role of the speech and language therapist when working with this population group will also be discussed.

Abstract: Multiple sclerosis (MS) often leads to different levels of severity and progression of impairment and disability and to dissimilar levels of limitation in activities and participation in different social domains, with varying impacts on quality of life (QoL) among people with MS (PwMS). Results have shown that, for PwMS, prioritizing goal setting may enhance adherence to treatment. Interdisciplinary rehabilitation may prolong the functional status level of PwMS, may result in transient improvement in the aspects of impairment features, may increase their participation in activities, and may improve their QoL, even when disease progression is not modified. Single rehabilitation packages of comprehensive care have proven beneficial, such as physiotherapy, which enhances aerobic capacity, strength, pain, mood, mobility, and QoL. Occupational therapy can help reduce the impact of impairment on QoL, especially fatigue. Neuropsychological interventions, such as learning and memory remediation, psychological intervention for depressive disorders, and acquisition of coping skills and self-management techniques help PwMS to adjust to disease and disability. Speech therapy can improve intelligibility of communication. Learning swallowing techniques can help prevent material from entering the airway. Clean intermittent self-catheterization can help prevent urinary tract infections. Power wheelchairs enhance occupational performance and energy conservation. Further vocational rehabilitation settings and research are required for more appropriate interventions due to high unemployment rates among PwMS. Comprehensive care for PwMS should include planning for future independent living and long-term care needs.

(56) Rochon E, Leonard C, Burianova H, Laird L, Soros P, Graham S et al. Neural changes after phonological treatment for anomia: An fMRI study. *Brain & Language* 2010; 114(3):164-179. Abstract: Functional magnetic resonance imaging (fMRI) was used to investigate the neural processing characteristics associated with word retrieval abilities after a phonologically-based treatment for anomia in two stroke patients with aphasia. Neural activity associated with a phonological and a semantic task was compared before and after treatment with fMRI. In addition to the two patients who received treatment, two patients with aphasia who did not receive treatment and 10 healthy controls were also scanned twice. In the two patients who received treatment, both of whose naming improved after treatment, results showed that activation patterns changed after treatment on the semantic task in areas that would have been expected (e.g., left hemisphere frontal and temporal areas). For one control patient, there were no significant changes in brain activation at the second scan; a second control patient showed changes in brain activation at the second scan, on the semantic task, however, these changes were not accompanied with improved performance in naming. In addition, there appeared to be bilateral, or even more right than left hemisphere brain areas activated in this patient than in the treated patients. The healthy control group showed no changes in activation at the second scan. These findings are discussed with reference to the literature on the neural underpinnings of recovery after treatment for anomia in aphasia.

(57) Vitali P, Tettamanti M, Abutalebi J, Ansaldo AI, Perani D, Cappa SF et al. Generalization of the effects of phonological training for anomia using structural equation modelling: a multiple single-case study. *Neurocase (Psychology Press)* 2010; 16(2):93-105. Abstract: Structural Equation Modelling analysis of three longitudinal er-fMRI sessions was used to test the impact of phonological training and of the generalization process on the pattern of brain connectivity during overt picture naming in two chronic anomic patients. Phonological training yielded a positive effect on the trained material. Six months after the training, a generalization of the positive impact on the untrained items was also observed. Connectivity analysis showed that training and generalization effects shared paralleled cortical patterns of functional integration. These findings may represent the
neurophysiological correlate of the training-induced cognitive strategies for the compensation of anomia

(58) Beck AR, Stoner JB, Dennis ML. An investigation of aided language stimulation: does it increase AAC use with adults with developmental disabilities and complex communication needs? AAC: Augmentative & Alternative Communication 2009; 25(1):42-54. Abstract: A single subject ABAB design was used to determine the efficacy of aided language stimulation to teach the use of AAC techniques to adults with developmental disabilities. Sixteen participants were divided into two equal groups. In each group, half of the participants were able to communicate functionally using spoken language and half had complex communication needs and did not have functional, symbolic communication systems. Each group met twice weekly for 30 min per session. Researchers modeled the use of AAC and followed scripts during music-based interventions. Sessions focused on social greetings, choosing songs to play, learning words and movements for the songs, and discussing the songs. Participants were encouraged to interact with each other and to facilitate each other's communications. Results suggest that responsiveness and use of AAC increased for all participants with complex communication needs.

(59) Breier JI, Juranek J, Maher LM, Schmadeke S, Men D, Papanicolaou AC. Behavioral and neurophysiologic response to therapy for chronic aphasia. Archives of Physical Medicine & Rehabilitation 2009; 90(12):2026-2033. Abstract: OBJECTIVE: To characterize the relationship between neurophysiologic changes in the brain and behavioral response to constraint-induced language therapy (CILT) by using magnetoencephalography (MEG). DESIGN: Case series. SETTING: Medical school. PARTICIPANTS: Patients (N=23) with chronic aphasia after first-time unilateral stroke in the left hemisphere. INTERVENTIONS: Constraint-induced language therapy administered for 3 hours 4 times per week for 3 weeks. Language testing and functional imaging during a language comprehension task using MEG before, immediately after, and 3 months after CILT with a subgroup of patients undergoing additional MEG scanning and language testing 3 weeks before CILT. MAIN OUTCOME MEASURES: The percent of correct information units and the number of late dipoles normalized to total activation. RESULTS: Three patterns of behavioral and neurophysiologic response to CILT were identified. Patients with significant improvement in language immediately after CILT who lost these gains at follow-up had greater right hemisphere activation than other patients at all MEG scanning sessions. Patients with significant improvement in language immediately after CILT who maintained these gains at follow-up exhibited an increase in left temporal activation after CILT, whereas patients who did not exhibit significant improvement in language after CILT exhibited comparably greater activation in left parietal areas. CONCLUSIONS: Results suggest that although the right hemisphere may support recovery of language function in response to therapy, this recovery may not be stable, and some participation of perilesional areas of the left hemisphere may be necessary for a stable behavioral response. Copyright © 2009 by the American Congress of Rehabilitation Medicine.

(60) Faroqi-Shah Y, Virion CR. Constraint-induced language therapy for agrammatism: role of grammaticality constraints. Aphasiology 2009; 23(7/8):977-988. Abstract: Background: Aphasia therapy that involves a high weekly intensity, short overall duration, restriction of nonverbal communication, coupled with constraints on verbal complexity, has recently gained momentum (constraint-induced language therapy, or CILT). The gains have been documented primarily for formal language tests, especially in lexical retrieval, repetition, and comprehension measures. Measures of grammatical well-formedness, which have greater ecological validity, have not been commonly reported in prior studies. Further, it is as yet unclear if the nature of verbal constraints has any impact...
on expressive language outcomes, particularly when the primary deficit in verbal production is grammatical inaccuracy (as in the case of agrammatic aphasia). Aims: This study aimed to examine whether constraint-induced therapy is applicable for individuals with agrammatic aphasia and if the addition of a morphosyntactic constraint would influence expressive language outcomes. Methods & Procedures: In this phase I study a single participant design was used with four chronic agrammatic aphasic individuals who received 24 hours of constraint-induced therapy over 10 days, as per prior published protocols. Two of these individuals received additional morphosyntactic constraints regarding tense morphology. Formal aphasia tests, Cinderella story narration, and conversational samples were analysed at three time points: pre-treatment, post-treatment, and 3-month follow-up. Outcomes & Results: While all participants improved on at least some language measures, the overall changes were minimal and not maintained at 3 months. Participants who received morphosyntactic constraints dramatically improved on an elicited morphosyntactic test, but did not respond differently in other severity and discourse measures. Participants with lower initial language severity scores showed quantitatively larger gains after treatment. Conclusions: While constraint-induced therapy was minimally effective for the agrammatic participants in this study, and addition of a grammaticality constraint did not significantly enhance the functional outcomes, the findings do indicate that initial severity and aphasic deficit patterns may be useful in determining candidacy for constraint-induced therapy.


Abstract: Background: Multiple sclerosis is a disabling neurological disease with varied symptoms, including dysarthria and cognitive and linguistic impairments. Association between dysarthria and cognitive-linguistic deficit has not been explored in clinical multiple sclerosis studies. Aims: In patients with chronic progressive multiple sclerosis, the study aimed to investigate the presence and nature of cognitive-linguistic deficit, the association between levels of cognitive-linguistic ability and speech intelligibility, and of both of these with functional disability and time since onset of multiple sclerosis symptoms. Methods & Procedures: The Arizona Battery for Communication Disorders of Dementia (ABCD) (Bayles and Tomoeda 1993), The Assessment of Intelligibility of Dysarthric Speech (AIDS) Sentence Intelligibility Task (Yorkston and Beukelman 1984), and the Modified Barthel Activities of Daily Living Index (MBADLI) (Shah 1998) were administered to 24 chronic progressive multiple sclerosis participants with dysarthria. A total of 24 non-neurologically impaired participants, matched for gender, age and education, formed a control group. Outcomes & Results: For multiple sclerosis participants, linear regression analysis showed a strong association between ABCD and AIDS ([beta] = 0.89, p = 0.005), no association between ABCD and either MBADLI or time since onset, a strong association between AIDS and MBADLI ([beta] = 0.60, p = 0.001), and a trend towards an association between AIDS and time since onset ([beta] = -0.29, p = 0.08). Correlations between the four included ABCD construct scores and between these and the total ABCD score were significant (r>0.60, p<0.01). For each of the 15 included ABCD measures and for the four construct scores and the overall ABCD score, multiple sclerosis and control group performances were significantly different (p<0.01) and effect sizes were large (d>0.80). Conclusions & Implications: The results revealed a strong association between dysarthria, as measured by connected speech intelligibility testing, and cognitive-linguistic deficit, in people with chronic progressive-type multiple sclerosis. While some of the impairments that are associated with multiple sclerosis, including motor speech disorder, may influence performance on the ABCD, the data support the conclusion that marked cognitive-linguistic deficit is present in chronic progressive-type multiple sclerosis patients with dysarthria. Deterioration was global, rather than being indicative of a construct specific deficit, and encompassed language, both
expression and comprehension. Episodic memory and linguistic expression were especially affected. Speech and language therapists who work with dysarthric patients with chronic progressive multiple sclerosis should monitor cognitive-linguistic impairment. An awareness of this might influence assessment, intervention and management, including the information and advice given to patients and their relatives.


Abstract: Stroke is an increasing cause of disability in the United States. The frequent occurrence of communication disorders following stroke make the selection of appropriate treatment strategies of critical importance. This was a Phase I study to detect whether there was a positive treatment effect of intensive voice training (LSVT® LOUD) on two individuals with dysarthria secondary to chronic stroke. Data were collected using an A-B-A-A single subject design with three pre-, two post-, and two follow-up evaluations at 4 months following treatment. Vocal sound pressure level (SPL) changes for sustained phonation, monologue, reading, and picture description indicated increased vocal SPL following intensive treatment that was maintained at follow-up. Five listeners completed auditory-perceptual analyses of pre-and posttreatment speech samples for understandability (articulation clarity) and functional communication preference. Listeners preferred posttreatment speech samples of one participant but rated the posttreatment speech samples for the second participant as similar or worse. The second participant had greater language deficits than the first, which may have influenced listeners' ratings of speech characteristics. Both participants and family members reported positive outcomes of treatment on functional communication rating scales and in posttreatment interviews. The application of intensive voice treatment to improve functional communication in individuals with dysarthria secondary to stroke is discussed.


Abstract: There is a growing body of evidence supporting the use of group treatment for increasing functional communication skills and pragmatics. However, there is limited research on the use of combined individual and group treatment for individuals with aphasia. Combined individual and group treatment has become increasingly common in health care despite the lack of data describing the effectiveness for individuals with aphasia. For this study, 10 individuals with aphasia were recruited and assigned into either a control group (A), where they received 8 weeks of individual treatment, or an experimental group (B), where they received 2 weeks of individual treatment and 6 weeks of combined individual and group treatment. Each participant completed three evaluation batteries consisting of functional communication, language, cognitive, pragmatic, mood, and quality of life assessments. Performance on the Aphasia Diagnostic Profile (ADP) measure of alternative communication was found to be statistically different for the experimental group, although other measures did not differ significantly. Trends toward statistical significance were found for Group B's performance on the Communicative Abilities in Daily Living (CADL-2) and the ADP. Future research is needed in a larger sample of participants in order to determine the effect of combined group and individual treatment on functional communication measures.


Abstract: Purpose. To explore prognostic factors specific to the speech language pathology.
scope of practice that may be related to the functional outcome of stroke patients with dysphagia. Method. The prognostic factors analysed for 100 stroke patients with dysphagia included the swallowing portion of the Functional Assessment Measure (SFAM) at discharge as the dependent variable, and age, severity of stroke, cognitive status, length of stay, amount of individual treatment, and the SFAM, Food Texture, and Liquid Consistencies at admission as the independent variables. Correlation analysis, linear regression and descriptive statistics were used to analyse these variables. Results. Variables that had significant influences on the SFAM discharge levels included the admission ratings of the SFAM, Food Texture, Liquid Consistency, Cognitive FIM levels and length of stay. Amount of individual treatment received was also noted to be significant. Subject age, lesion site and lesion type did not reach significance in correlation or regression analysis. Conclusion. Prognostic factors may play an important role in predicting outcome. This data provides speech-language pathologists with knowledge to more effectively communicate the potential outcome of treatment and recovery to patients and families. Additionally, this study stresses the importance of the initial assessment ratings and suggests the need for inter-rater reliability of assessment measures within rehabilitation facilities.


Abstract: PURPOSE: To describe the beliefs and practices of speech-language pathologists (SLPs) about the use of percutaneous endoscopic gastrostomy (PEG) among patients with advanced dementia and dysphagia. METHOD: A survey was mailed to a geographically stratified random sample of 1,050 medical SLPs. RESULTS: The response rate was 57%, and 326 surveys met inclusion criteria. Fifty-six percent of SLPs recommended PEG for a patient with advanced dementia and dysphagia. Contrary to the evidence, many respondents believed that PEG improves nutritional status and increases survival. Relatively few SLPs believed that PEG improved patients’ functional status or quality of life. Patient factors (e.g., age or prognosis) were more often identified as influences on recommendations for PEG than were extrinsic factors (e.g., cost). Nearly 40% believed that PEG was the standard of care, while 15% believed it should be. Very few SLPs (11%) would want a PEG themselves. Perceived standard of care was significantly related to both geographic region and population density (p < .05), but self-reported practices were not. CONCLUSIONS: Discrepancies between SLPs' beliefs, the literature, and self-reported practices were observed. The findings suggest the need to connect the evidence base to clinical practice and to include SLPs in local and national discussions about end-of-life care protocols.


Abstract: Currently, there is limited information on the nature and extent of speech-language pathology services in Australia for people with aphasia. This article reports on a survey to investigate speech-language pathology practice in Australia. An aim of the research was to identify and describe current practice in relation to the International Classification of Functioning, Disability and Health. Furthermore, the frequency, duration and types of services for people with aphasia, including the clinical approaches to intervention, are reported in the context of national clinical guidelines and evidence-based practice. Survey results from 70 respondents revealed that the provision of intensive speech-language pathology intervention for people with aphasia is most common in the inpatient rehabilitation setting. Individual therapy is provided more than any other type of intervention across the continuum of care. The majority of clinicians reported a functional approach to intervention for aphasia; however, the use of impairment-based assessments
was predominantly recorded. The widespread use of the Australian Therapy Outcome Measures (AusTOMs), was an indication that the ICF framework informs outcome measurement in aphasia.


Abstract: Background: Recent research suggests the effectiveness of short-term highly intensive treatment approaches in the chronic stage of aphasia. However, the effective elements of such treatment need to be determined. Aims: The present study’s aim was to evaluate which factors attribute to the success of aphasia therapy. An intensive (3 hours/day, 10 consecutive days) model-orientated aphasia therapy (MOAT), which considers patients’ individual symptoms, was evaluated and therapy effects were compared to those of a similarly intensive training focusing on active speaking elements (constraint-induced aphasia therapy, CIAT) in order to identify the effective elements. Methods & Procedures: 12 patients with chronic aphasia received 30 hours of MOAT over 10 days. Language functions were assessed with a standardised language test (Aachen Aphasia Test) and a naming task prior to therapy, after therapy, and at a 6-month follow-up. In addition, the amount and quality of communication were assessed with questionnaires as an indication of transfer to everyday communication. Results of this treatment group were compared to those of 27 patients who were treated according to principles of CIAT. Outcomes & Results: Language functions improved significantly following treatment relative to the pre-treatment scores, and the improvements remained stable across the follow-up period. Effects were comparable to those of CIAT for most variables, except for written language and perception of everyday communication which improved more after MOAT than after CIAT. The naming task disclosed generalisation to untreated items for MOAT. Conclusions: Results confirm that an intense training focused on individual deficits leads to substantial and durable improvements in language functions in patients with chronic aphasia. The comparison across treatments suggests consideration of the functional deficit, written language, and everyday communication as effective elements in the rehabilitation of chronic aphasia.


Abstract: Background: Studies of therapy with people with aphasia tend to use impairment-based and functional measures of outcome. The views of participants are not formally evaluated. Current health and socialcare practice requires intervention to be explicitly client-centred and evidence-based. It is therefore important to investigate the broader effects of speech and language therapy. Aims: To explore the outcome of a therapy for anomia using the Communication Disability Profile (CDP), focusing particularly on participants' ratings of ‘activity’. Methods & Procedures: Overall eight people with aphasia and their conversation partners participated in the study. There was a range of severity and type of aphasia. Following two baselines (at least 8 weeks apart), there were two phases of therapy for anomia each lasting 8 weeks. This first involved the use of spoken and written cues to aid word finding. The second encouraged the use of targeted words in connected speech and conversation. Eight weeks later, after no further therapy, participants were reassessed. Outcomes & Results: Participants' word finding in picture-naming improved significantly, as did their activity ratings. The relationship between the group's word-retrieval scores and CDP activity ratings over the course of the study tended towards significance, although there was considerable variation across individuals. Furthermore, all participants rated participation in activities requiring communication higher at the end than the start of the project. Conclusions: The findings suggest that therapy which targets word retrieval can have an impact on people with aphasia’s views of their communicative activity and life.
participation. The findings support therapists' clinical insight that impairment-based interventions can effect change beyond scores on language tests.


Abstract: In aphasia therapy, intensive speech training with daily exercise has yielded effective and long-lasting learning results. Everyday communication is, to a great extent, based upon the automation of dialogue scripts in conventionalised speech acts. A script represents a standardised pattern of interaction which is put to practice in typical situations such as, for instance, in sales and shopping conversations. The present therapy study is about the development and evaluation of a video-based conversation training. It aims at improving functional everyday communication by high frequency and repetitive learning of prototypical everyday dialogues on the computer. The short and long-lasting results of four patients showed that a computer-based speech training is particularly useful for systematic and repetitive learning. Videos are a very good medium for high frequency practice of realistic everyday speech acts.


Abstract: BACKGROUND AND PURPOSE: In the outpatient setting, it can be difficult to effectively manage the complex medical and rehabilitation needs of people with Parkinson disease (PD). A multidisciplinary approach in the inpatient rehabilitation environment may be a viable alternative. The purposes of this study were: (1) to investigate the effectiveness of an inpatient rehabilitation program for people with a primary diagnosis of PD, (2) to determine whether gains made were clinically meaningful, and (3) to identify predictors of rehabilitation outcome. SUBJECTS: Sixty-eight subjects with a diagnosis of PD were admitted to an inpatient rehabilitation hospital with a multidisciplinary movement disorders program. METHODS: Subjects participated in a rehabilitation program consisting of a combination of physical therapy, occupational therapy, and speech therapy for a total of 3 hours per day, 5 to 7 days per week, in addition to pharmacological adjustments based on data collected daily. A pretest-posttest design was implemented. The differences between admission and discharge scores on the Functional Independence Measure (FIM) (total, motor, and cognitive scores), Timed ‘Up & Go’ Test, 2-Minute Walk Test, and Finger Tapping Test were analyzed. RESULTS: An analysis of data obtained for the 68 subjects admitted with a diagnosis of PD revealed significant improvements across all outcome measures from admission to discharge. Subjects with PD whose medications were not adjusted during their admission (rehabilitation only) (n=10) showed significant improvements in FIM total, motor, and cognitive scores. Improvements exceeded the minimal clinically important difference in 71% of the subjects. Prior level of function at admission accounted for 20% of the variance in the FIM total change score. DISCUSSION AND CONCLUSION: The results suggest that subjects with a diagnosis of PD as a primary condition benefited from an inpatient rehabilitation program designed to improve functional status.


Abstract: Stuttering characteristics, assessment, and treatment principles present challenges to assessment and treatment that can be addressed with virtual reality (VR) technology. This article describes how VR can be used to assist clinicians in meeting some of these challenges with adults who stutter. A review of current VR research at the Stuttering Research Laboratory at George Washington University is presented, including discussion of studies with participants who do and do not stutter. Our research suggests that affective,
behavioral, and cognitive aspects of stuttering occur in similar ways in virtual and real environments, making VR a potentially useful tool for systematic and controlled assessment and treatment of stuttering. The final section addresses possible future research endeavors using VR with persons who stutter.


Abstract: Teachers have a high percentage of voice problems. For voice disordered teachers, resonant voice therapy is hypothesized to reduce voice problems. No research has been done on the physiological, acoustic, and aerodynamic effects of resonant voice therapy for school teachers. The purpose of this study is to investigate resonant voice therapy outcome from perceptual, physiological, acoustic, aerodynamic, and functional aspects for female teachers with voice disorders. A prospective study was designed for this research. The research subjects were 24 female teachers in Taipei. All subjects received resonant voice therapy in groups of 4 subjects, 90 minutes per session, and 1 session per week for 8 weeks. The outcome of resonant voice therapy was assessed from auditory perceptual judgment, videostroboscopic examination, acoustic measurements, aerodynamic measurements, and functional measurements before and after therapy. After therapy the severity of roughness, strain, monotone, resonance, hard attack, and glottal fry in auditory perceptual judgments, the severity of vocal fold pathology, mucosal wave, amplitude, and vocal fold closure in videostroboscopic examinations, phonation threshold pressure, and the score of physical scale in the Voice Handicap Index were significantly reduced. The speaking Fo, maximum range of speaking Fo, and maximum range of speaking intensity were significantly increased after therapy. No significant change was found in perturbation and breathiness measurements after therapy. Resonant voice therapy is effective for school teachers and is suggested as one of the therapy approaches in clinics for this population.


Abstract: Swallowing disorders occur with chronic and acute medical conditions and frequently lead to nutritional deficits. Older people experience dysphagia and nutritional problems more than younger adults. Rehabilitation professionals must be aware of the potential for dysphagia and malnutrition when working with older adults and be able to identify risk factors and make appropriate referrals when necessary. Speech-language pathologists and registered dieticians play major and complementary roles in assessment and treatment of individuals with dysphagia. Dysphagia and malnutrition may lead to increased morbidity and mortality in this group and must be addressed to prevent complications and decreased functional abilities. Adequate nutrition and hydration cannot be achieved without appropriate intake for the individual's needs and unless a safe and effective method of intake can be determined. Nutritional and swallowing interventions can be implemented by all rehabilitation professionals involved with older patients with dysphagia.


Abstract: Speech-language pathologists (SLPs) who work with adults with cognitive-linguistic impairments, including aphasia, have long needed an assessment tool that predicts ability to function in the real world. In this article, it is argued that virtual reality (VR)-supported approaches can address this need. Using models of disability such as the International Classification of Functioning, Disability and Health (ICF) and the Disability Creation Process model, a case is made for using VR to reconstruct daily communicative events, thereby
capturing situations of life events. A case is also made for using virtual environments to systematically assess the impact of environmental factors that can be enablers or obstacles to successful functional communication. Before embarking on tool development, opinions of clinical SLPs were sought using a discussion group format. The Communication Abilities of Daily Living (CADL) test was proposed as an example to follow for the reconstruction of daily communication events. Clinicians were asked to discuss scenes that might be amenable to VR, while considering practical clinical needs. There was a clear interest in the development of a VR tool with a preference to assess functions that were not easily observable in clinic (e.g., financial transactions, transportation, and safety in contexts of risk). Discussants stressed the importance of developing a tool for different target populations, as well as technical features such as being able to regulate speed and level of difficulty. The potential use of VR tools for both assessment and therapy is discussed. It is argued that VR will offer clinicians the opportunity to assess functions not possible with paper-and-pencil tests.


Abstract: Background: Methods for functional and linguistic analysis of discourse have been used for describing recovery from aphasia and examining relationships between patterns of recovery and specific therapeutic programmes. This approach, however, has mainly concerned therapeutic programmes for chronic aphasic symptoms (e.g., therapy for chronicagrammatism in non-fluent aphasic subjects). Aims: The first aim of this study was to examine whether functional and linguistic analyses of discourse are suitable to describe aspects of language improvement in subjects recovering from non-fluent aphasia in the first months post-onset. A second objective was to assess the effectiveness of two therapy programmes for chronic aphasia in increasing informativeness and/or morpho-syntactic organisation of connected speech. This was made by examining in-depth the correspondence between each of the two therapy programmes and the results from functional and linguistic analysis of discourse at pre- and post-therapy evaluation. Methods & Procedures: Three subjects with non-fluent aphasia (12, 18, and 22 weeks post-onset, respectively), whose speech was characterised by reduced information content and poor morpho-syntactic organisation, received two consecutive therapy programmes, each consisting of 35 one-hour sessions in seven weeks. The first programme consisted of stimulus-response exercises for producing well-formed sentences (HELPSS, Helm-Estabrooks, Fitzpatrick, & Barresi, 1981). This was followed by a functional treatment programme in PACE format (Carlomagno, Losanno, Emanuelli, & Razzano, 1991) intended to increase informativeness of communicative (verbal and non-verbal) behaviour. At the three assessments (before and after HELPSS and after modified PACE) the three participants were asked to describe two cartoon stories and two single pictures. These connected speech samples underwent functional analysis (CIUs, Nicholas & Brookshire, 1993; Main Concept Analysis, Nicholas & Brookshire, 1995) and linguistic analysis (Marini, Caltagirone, Carlomagno, & Nocentini, 2005a; Marini, Boewe, Caltagirone, & Carlomagno, 2005b) in order to examine the pattern of language recovery. The three participants also received functional evaluation with the EFCP (Wirz, Skinner, & Dean, 1990) for assessing changes in language performance in communicative interaction. At the beginning and end of the therapy period, further evaluation was performed by means of standardised aphasia tests (AAT, Italian version, Luzzatti, Willems, & DeBleser, 1991; CADL, Italian version, Pizzamiglio et al., 1984). Outcomes & Results: Following the therapy programmes, a few changes were observed on standard aphasia tests. However, the informativeness of the speech samples by the three subjects increased. This corresponded to better rating of their language in the EFCP interview. In two subjects, the linguistic analysis of connected speech samples failed to show consistent syntactic organisation at the post-therapy evaluation and differences.
between effects of the two programmes were marginal. In the third, the pattern of recovery did not correspond closely to that predicted by the type of treatment, i.e., better syntactic organisation of speech output became evident only after the second therapy programme.

Conclusions: It is suggested that discourse analysis methods are useful for studying functional and linguistic aspects of recovery in subjects with non-fluent aphasia in the early post-onset period. Furthermore, in this period, specific therapy for chronic agrammatic symptoms may not reduce them. Nonetheless, this therapeutic approach plays a role in improving language informativeness particularly when combined with a functional approach.


Abstract: PURPOSE: The present study examined vocal SPL, voice handicap, and speech characteristics in Parkinson’s disease (PD) following an extended version of the Lee Silverman Voice Treatment (LSVT), to help determine whether current treatment dosages can be altered without compromising clinical outcomes. METHOD: Twelve participants with idiopathic PD received the extended treatment version (LSVT-X), similar to LSVT except that it was administered twice a week in 1-hr sessions over 8 weeks and required substantially more home practice. Recordings were made in a sound-treated booth immediately before and after treatment, and again 6 months later. Vocal SPL was measured for 4 different tasks and compared with data from a previous study, in which participants with PD received traditional LSVT 4 times a week for 4 weeks. Listener ratings were conducted with audio samples from both studies, using sentence pairs from a standard passage. LSVT-X participants completed the Voice Handicap Index (VHI) before each set of recordings.

RESULTS: Participants receiving LSVT-X significantly increased vocal SPL by 8 dB after treatment and maintained increased vocal SPL by 7.2 dB at 6 months. VHI scores improved for 25% of the LSVT-X participants following treatment, and listener ratings indicated audible improvement in speech. CONCLUSIONS: LSVT-X successfully increased vocal SPL (which was consistent with improvements following traditional LSVT), decreased perceived voice handicap, and improved functional speech in individuals with PD. Further large-scale research is required to truly establish LSVT-X efficacy.


Abstract: BACKGROUND: The neural correlates of training-induced improvements of cognitive functions after brain damage remain still scarcely understood. In the specific case of aphasia, although several investigations have addressed the issue of the neural substrates of functional recovery, only a few studies have attempted to assess the impact of language training on the damaged brain. AIMS: The main goal of this study was to examine the neurobiological correlates of improved picture-naming performance in 2 aphasic patients who received intensive and specific training for a chronic and severe phonological anomia. METHODS: In both participants, picture-naming performance was assessed before and after phonological cueing training. Training-induced changes in patients’ performance were correlated to brain activity patterns as revealed by pre- and post-training event-related functional magnetic resonance imaging scanning. RESULTS: Training-induced improvement was observed concurrently with changes in the brain activation patterns. Better performance was observed in the patient with the smaller lesion, partially sparing Broca’s area, who showed a left perilesional reactivation. Conversely, the patient with complete destruction of Broca’s area showed a posttraining activation in the right mirror frontal region. CONCLUSIONS: The results show that, even in the chronic stage, phonological strategies may improve impaired naming and induce cerebral reorganization.
Databases searched: CINAHL, Cochrane, Google Scholar, Medline, NICE Evidence, PubMed

Search terms:

SPEECH-LANGUAGE PATHOLOGISTS OR SPEECH THERAPY OR REHABILITATION, SPEECH AND LANGUAGE OR LANGUAGE THERAPY OR “speech and language” OR SPEECH THERAPY OR LANGUAGE THERAPY OR exp.REHABILITATION OF SPEECH AND LANGUAGE DISORDERS

MEDICALLY UNEXPLAINED SYMPTOMS OR ARTICULATION DISORDERS, FUNCTIONAL OR PSYCHOPHYSIOLOGIC DISORDERS OR psychosomatic OR exp.COMMUNICATIVE DISORDERS/th OR LANGUAGE DISORDERS/th OR SPEECH DISORDERS/th OR COMMUNICATION DISORDERS OR exp.SOMATOFORM DISORDERS OR DYSPHAGIA OR SWALLOWING OR COMMUNICATION DISORDERS/th OR SPEECH SOUND DISORDER/th OR DEGLUTITION DISORDERS/th OR dysphagi* OR swallow*

Functional

Eficac* OR effect* OR valid* or evidence

Limited to Adults/English Language only/Last 10 years

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