

Abstract.

A systematic review is one of the most important contributions to clinical decision-making for evidence-based practice (EBP). Studies focused on aphasia group treatment, published since 1981, were entered into a six-step systematic review (Dollaghan et al, 2007), to evaluate the overall quality and weight of the evidence. This review suggests that there are short-term impairment-level benefits of group aphasia treatments but that there is insufficient evidence to make conclusions about long-term outcomes or outcomes related to activities and life participation. Implications for practice and future research are discussed.

Study Description.

Group treatments have been reported to be particularly effective in improving communicative abilities while reducing social isolation and improving quality of life (Elman, 1999; Elman & Bernstein-Ellis, 1999). Group intervention is a potentially cost-effective delivery model, and thus deserves research attention to determine its effectiveness and the nature of its outcomes. In order to address this need area, we conducted a systematic review of studies addressing group intervention in aphasia therapy.

The purpose of a systematic review is to evaluate the weight and overall quality of the literature addressing a particular domain. Because a strict protocol is followed while conducting the review, conclusions from a systematic review may be more reliable and less biased than a non-systematic review (Chisolm et al., 2007).

Methods. The six steps utilized to conduct the current systematic review have been suggested as critical components for any systematic review (Dollaghan, 2007). First, a research question was posed: “Does group aphasia treatments in adults with stroke-induced aphasia produce measurable benefits in communication performance?”

Inclusion criteria for the literature review required aphasia treatment trials conducted in a group setting, with adults (≥ 18 years) with stroke-induced aphasia. Group and single-subject designs of experimental and quasi-experimental studies met inclusion criteria for the current systematic review. *Exclusion criteria* included group treatments that focused primarily on goals other than speech-language treatment (e.g., psychosocial groups). Treatment studies, not peer-reviewed, were excluded.

A comprehensive literature search of aphasia group treatment peer-reviewed, outcome studies was conducted. The key words used to conduct the search included: *group aphasia treatment, group aphasia rehabilitation, and group stroke rehabilitation*. The databases searched were *DissertationAbstracts, ERIC, MEDLINE, Science Citation Index, and Google Scholar*. Ancestral searches were conducted by reviewing book chapters and reference lists.

Eighty one original articles met criteria after 11 duplicates were eliminated. Fifty seven more were excluded because they did not include the target population or research question. Additionally, sixteen more were excluded for being qualitative studies, which was not a focus or inclusion criterion for this review. Only 8 studies remained. After reviewing reference lists, nine additional studies were located; however two of these studies were not experimental or quasiexperimental studies. Therefore, a total of 13 studies met the criteria for this systematic review.

For the 13 studies included in the present systematic review, the level of evidence (i.e., using the classification system promoted by the American Speech-Language-Hearing Association evidence-based practice technical report (ASHA, 2004)), the design, detailed sample characteristics, experimental condition, control condition, results, and follow-up results were

explored. Additionally, the 13 studies were examined in regards to participant characteristics, group treatment protocols, type of outcome measures, and short-term versus long-term effects.

Results. The quality of the extracted evidence is evaluated in order to conclude that biases that may have influenced results were minimized as much as possible (Chisolm, et al., 2007). Indicators of quality of the studies in this review were evaluated following the guidelines by Dollaghan (2007), seen in Table 1. The quality indicators included whether or not:

- the aim for the study was plausible and able to answer the reported research question
- the methods were detailed and replicable (also including type of methods)
- the results reached clinical significance
- a control group was included
- participants were randomized to groups
- group participants' characteristics were balanced
- blinding was included
- drop outs were discussed and <20%

An overall judgment of quality was provided for each study. The overall rating was deemed either *equivocal* (i.e., the evidence does not support adopting the intervention), *suggestive* (i.e., different clinicians might responsibly choose to adopt the intervention), or *compelling* (i.e., adoption of the intervention should be considered seriously).

A reliability coder coded 30% of studies independently with 90% agreement. Any discrepancies were discussed until consensus was reached.

Participant characteristics. The sample sizes were small across all studies. The study with the largest sample size per groups (32/35) was one of the studies with the weakest description of treatment tasks. Men and women were either equally represented or men were in the majority.

Approximately half of the studies reported a heterogeneous sample of aphasia types and half of the studies did not include information on aphasia types. The average time post-onset across studies ranged from four weeks to 98 months. The aphasia group sizes ranged from two-seven group members.

Treatment protocols. Five of the studies targeted a structured aphasia group treatment protocol focused solely on the production of speech. The remainder of the studies consisted mostly of informal conversations targeting communication skills and compensatory strategies. Indeed, the conversations that surfaced during the group treatments often changed the treatment tasks. For approximately half of the studies, the group treatment protocol may not be replicated exactly as conducted within those studies. The majority of the studies varied in frequency and duration.

Type of outcome measure. A chosen assessment must demonstrate whether or not the predicted treatment outcome occurred (Hawkins, 2005). It appears that aphasia researchers believe that aphasia group treatments cause meaningful changes in impairment-level language skills. The majority of studies included a comprehensive language assessment. Six of the 13 studies included outcome measures specific to life activities/participation.

Some researchers found significant measurable changes in all outcome measures. Some of the studies noted improvements only in certain aspects of communication. Some studies found positive treatment outcomes in only particular participants.

Short-term versus long-term effects. Pretest-posttest measures are meant to demonstrate the short-term effect of treatment (Hawkins, 2005). Often follow-up measures will be conducted to assess the long-term effect of treatment. Seven of the studies administered follow-up measures after treatment was terminated. All but one study found that outcomes remained stable.

The quality indicators for each of the studies led to an overall judgment. Six of the studies were rated as ‘equivocal’ indicating that the evidence does not support adopting the intervention. Six of the studies were rated as suggestive, indicating that clinicians might utilize the treatment and clinician decision-making. Only one study was rated as compelling; the adoption of the treatment should seriously be considered (Elman & Bernstein-Ellis, 1999).

The majority of the studies, seven studies, were level IIB. Four studies were Level Ib, randomized controlled trials with one partial replication (Meinzer et al., 2007).

Discussion. Overall, this systematic review indicated aphasia group treatments, in general, are effective treatment methods. Yet duplication of results is necessary to confirm efficacy of a treatment. Replication studies have not been conducted for any of the aphasia treatments other than Constraint-Induced Aphasia Treatment, and should be conducted in the future.

Additionally, the same outcome measures were repeated across most of the studies. Perhaps future studies utilizing additional outcome measures, that assess other functional communicative abilities, will result in different findings.

At present, in the short term there are impairment-level benefits of group aphasia treatments. The benefits appear to be mostly associated with impairment-level skills, such as increased reading, writing, speaking, or comprehending spoken language. Results appear promising for group aphasia treatment. Clinicians may use the systematic review to better understand the current evidence on group aphasia treatments and to support the implementation of different types of group aphasia treatments by the current evidence base.

References

American Speech-Language-Hearing Association. (2004). *Evidence-Based Practice in*

Communication Disorders: An Introduction [Technical Report]. Available from www.asha.org/policy.

- *Antonucci, S. (2009). Use of semantic feature analysis in group aphasia treatment. *Aphasiology*, 23(7), 854-866.
- *Aten, J. L., Caligiuri, M. P., & Holland, A. L. (1982). The efficacy of functional communication treatment for chronic aphasic patients. *Journal of Speech and Hearing Disorders*, 47(1), 93-96.
- *Bollinger, R. L., Musson, N. D., & Holland, A. L. (1993). A Study of Group Communication Intervention with Chronically Aphasic Persons. *Aphasiology*, 7(3), 301-313.
- Chisolm, T. H., Johnson, C. E., Danhauer, J. L., Portz, L. J. P., Abrams, H. B., Lesner, S., et al. (2007). A Systematic Review of Health-Related Quality of Life and Hearing Aids: Final Report of the American Academy of Audiology Task Force on the Health-Related Quality of Life Benefits of Amplification in Adults. *Journal of the American Academy of Audiology*, 18(2), 151-183.
- Dollaghan, C. A. (2007). *The Handbook for Evidence-Based Practice in Communication Disorders*. Baltimore: Paul H. Brookes Publishing Co., Inc.
- Elman, R. (Ed.). (1999). *Group treatment of neurogenic communication disorders : the expert clinician's approach*. Woburn, MA: Butterworth-Heinemann.
- *Elman, R., & Bernstein-Ellis, E. (1999). The efficacy of group communication treatment in adults with chronic aphasia. *Journal of Speech, Language, and Hearing Research*, 42(2), 411.
- *Faroqi-Shah, Y., & Virion, C. (2009). Constraint-induced language treatment for agrammatism: Role of grammaticality constraints. *Aphasiology*, 23(7), 977-988.

- Hawkins, D. B. (2005). Effectiveness of counseling-based adult group aural rehabilitation programs: A systematic review of the evidence. *Journal of the American Academy of Audiology, 16*(7), 485-493.
- *Maher, L., Kendall, D., Swearingin, J., Rodriguez, A., Leon, S., Pingel, K., et al. (2006). A pilot study of use-dependent learning in the context of Constraint Induced Language Treatment. *Journal of the international Neuropsychological Society, 12*(06), 843-852.
- *Marshall, R. C. (1993). Problem-focused group treatment for clients with mild aphasia. *American Journal of Speech-Language Pathology, 2*(2), 31-37.
- *Meinzer, M., Djundja, D., Barthel, G., Elbert, T., & Rockstroh, B. (2005). Long-term stability of improved language functions in chronic aphasia after constraint-induced aphasia treatment. *Stroke, 36*(7), 1462.
- *Meinzer, M., Streiftau, S., & Rockstroh, B. (2007). Intensive language training in the rehabilitation of chronic aphasia: Efficient training by laypersons. *Journal of the international Neuropsychological Society, 13*(05), 846-853.
- *Pulvermuller, F., Neining, B., Elbert, T., Mohr, B., Rockstroh, B., Koebbel, P., et al. (2001). Constraint-induced treatment of chronic aphasia after stroke. *Stroke, 32*(7), 1621.
- *Ross, A., Winslow, I., Marchant, P., & Brumfitt, S. (2006). Evaluation of communication, life participation and psychological well-being in chronic aphasia: The influence of group intervention. *Aphasiology, 20*(5), 427-448.
- *van der Gaag, A., Smith, L., Davis, S., Moss, B., Cornelius, V., Laing, S., et al. (2005). Treatment and support services for people with long-term stroke and aphasia and their relatives: a six-month follow-up study. *Clinical rehabilitation, 19*(4), 372.

*Wertz, R., Collins, M., Weiss, D., Kurtzke, J., Friden, T., Brookshire, R., et al. (1981). Veterans Administration cooperative study on aphasia: A comparison of individual and group treatment. *Journal of Speech and Hearing Research*, 24(4), 580.

Table 1. Quality assessment of group aphasia treatments meeting inclusion criteria for systematic review.

<i>Study</i>	<i>Aims Plausible & Relevant</i>	<i>Methods Detailed & Replicable; Type</i>	<i>Clinically Significant</i>	<i>Included Control Group</i>	<i>Randomized</i>	<i>Power</i>	<i>Group(s) Balanced</i>	<i>Utilized Blinding</i>	<i>Drop Outs Described; <20%</i>	<i>Overall Judgment</i>
Wertz et al. (1981)	Y	N; Prospective	Y	Y	Y	N	Y	Y	Y; N	Equivocal
Aten, Caligiuri, & Holland (1982)	Y	N; Prospective	P	N	N	N	Y	Y	Y; N	Equivocal
Bollinger et al. (1993)	Y	N; Prospective	P	N	N	N	Y	Y	Y; N	Equivocal
Marshall (1993)	Y	Y*; Retrospective	P	N	N	N	N	N	N; N	Suggestive
Elman & Bernstein-Ellis (1999)	Y	Y*; Prospective	P	Y	Y	N	Y	UR	Y; Y	Compelling
Pulvermuller et al. (2001)	P	Y; Prospective	P	Y	Y	N	N	Y	N; UR	Suggestive
van der Gaag and colleagues (2005)	Y	N; Prospective	P	N	N	N	N	N	Y; N	Equivocal
Meinzer et al. (2005)	Y	Y; Prospective	Y	Y	N	N	Y	N	Y; Y	Suggestive
Ross and colleagues (2006)	Y	N; Prospective	P	N	N	N	N	UR	Y; Y	Equivocal
Maier et al. (2006)	Y	Y; Prospective	P	Y	N	N	Y	UR	Y; Y	Suggestive
Meinzer et al. (2007)	Y	Y; Prospective	Y	Y	Y	N	Y	UR	N; UR	Suggestive
Faroqi-Shah & Virion (2009)	Y	Y; Prospective	P	N	N	N	Y	UR	N; UR	Equivocal
Antonucci (2009)	Y	P; Prospective	P	N	N	N	N	N	Y; N	Suggestive

KEY: N = No; Y = Yes; P=Partially; UR = Unable to rate, no information in study; N/A=not applicable. 'Compelling' – Adoption of the intervention should be considered seriously; 'Suggestive' – Different clinicians might responsibly make different decision about whether to adopt the intervention; 'Equivocal' – The evidence does not support adopting the intervention. *Book chapters further describe the protocols