The efficacy of group therapy for adults with chronic aphasia

Carly Cermak
M.Cl.Sc. (SLP) Candidate
School of Communication Sciences and Disorders, U.W.O.

This critical review examines the effectiveness of group therapy for adults with chronic aphasia. The reviewed study designs include: single group pre-post tests, randomized clinical trials, and non-randomized clinical trials. Overall, research supports that group therapy is effective for improving functional communication and psychological well-being in adults with chronic aphasia; however recognition of one superior therapy in the treatment of aphasia has not yet been identified.

Introduction

Aphasia has been defined as an acquired communication disorder characterized by impairment in one or more language modalities: speaking, listening, reading, and writing (Chapey, 2008). Rapid improvement of language functions, or the period known as spontaneous recovery, has been estimated to occur within the first 3 to 6 months post-onset (Chapey, 2008). Persisting impairments in communication following six months post-onset has been recognized as chronic aphasia (Elman & Bernstein-Ellis, 1999).

Treatment for aphasia most often focuses on structured individual therapy consisting of stimulus-response tasks of specific language deficits (Rosenbek, LaPointe, & Wertz, 1989; Sarno, 1991). Positive effects of individual therapy have been documented, however generalization of therapy gains to functional communication is not well understood.

Group therapy has often been viewed as an addition to individual therapy, focusing on generalization of communication skills to real-life environments (Elman & Bernstein-Ellis, 1999). It has been suggested that treatment groups offer a more naturalistic environment that fosters pragmatic skills and helps individuals build relationships through shared experiences (Davis, 1986;, Wilcox, 1983).

Objectives

The primary objective of this review is to critically evaluate existing literature regarding the efficacy of group therapy for adults with chronic aphasia. The secondary objective is to propose an evidence-based practice recommendation about the implementation of group therapy in clinical practice as well as areas of future research.

Methods

Search Strategy

Computerized databases including CINAHL, PsychInfo, SCOPUS, and PubMed were searched using the following strategy: 'Aphasia' AND 'group therapy' OR 'group treatment' OR 'communication'. In addition, references were reviewed to identify articles that may not have been found in the original database search. The search was limited to articles written in English.

Selection Criteria

Studies selected for inclusion of this critical review were required to investigate the impact of group therapy on communication and/or psychological well-being. Limitations were applied to the demographics of research participants including age and time-post onset. Participants were required to be at least 18 years of age and at least 3 to 6 months post-onset to meet criteria for adults with chronic aphasia.

Data Collection

Results of the search in congruence with the selection criteria, yielded the following types of study designs: single group pretest-posttest (4), non-randomized clinical trial (1) and randomized control trial (2).

Results

The following reviewed articles are discussed in chronological order.

Efficacy of Group Therapy on Communication

Aten, Caligiuri, & Holland (1982) used a single group pre-post test design to examine the efficacy of functional communication therapy for chronic aphasic patients. Seven male participants with a left middle cerebral artery occlusion and non-fluent agrammatic aphasia took part in the study. All subjects participated in one-hour sessions of group therapy twice weekly over a 12-week period focusing on content areas within the *Communicative Abilities in Daily Living* (CADL).

The *Porch Index of Communicative Abilities* (PICA) and the CADL were administered pre and post-treatment. The CADL was also administered after 6

weeks of therapy and 6 weeks post-therapy. Appropriate statistical analyses were conducted using t-tests to compare pre and post-treatment performances. Significant improvements were found on the CADL with scores being maintained at six months follow-up. No significant change was found between pre and post-treatment scores on the PICA.

The results of this study support functional communication therapy in improving functional communication abilities. Strengths of the study included clear eligibility criteria that controlled for etiology, gender, and aphasia type, as well as reliable and valid outcome measures. However, due to strict subject selection this study had a small sample size, affecting statistical power and increasing the possibility of a Type I error. As well, there was repeated administration of measures (i.e., CADL administered 4 times in 18 weeks), which may have affected the results.

Given the above concerns, the evidence presented in this study that functional communication group therapy is effective for improving functional communication abilities is suggestive rather than compelling.

Bollinger, Musson & Holland (1993) conducted a follow-up study to Aten et. al., (1982) using a non-randomized mixed clinical trial to examine the effects of group therapy on communication. Ten participants with chronic aphasia from either a left-hemisphere stroke, brain injury, or surgery, completed three-10 week cycles (3 one-hour sessions/week) of contemporary group treatment (CGT), structured television viewing group treatment (STVGT) and no treatment (NT) with counterbalancing of treatment order. The treatment format of each group was given in detail sufficient enough for replication.

Administration of the CADL, PICA, and the *Auditory Comprehension Test for Sentences* (ACTS) was completed at intake and after each 10-week interval until the conclusion of the study. Subjects who scored 105 and below on the CADL at intake were placed in the 'low' level group, while subjects who scored 120 and above were assigned to the 'high' level group.

Appropriate statistical analyses were completed using the Wilcoxon Matched-Pairs Signed-Ranks test (one-tailed) to determine differences in pre and post-treatment performance. Significant differences were found for the PICA at the first and second treatment intervals and the CADL at only the first.

While this study revealed positive effects of group therapy, there were several limitations that restricted the ability to draw compelling conclusions. Most notably, the division of participants into 'low' and 'high' level groups was not discussed beyond subject selection. The attempt to balance groups was well defined, however the rationale was not described. Furthermore, participants were not controlled for etiology, which may have affected the results.

Despite these limitations, there is still highly suggestive evidence that structured group therapy contributes to improved communication abilities.

Elman & Bernstein-Ellis (1999) conducted a randomized clinical trial to examine the efficacy of group communication treatment. Twenty-four participants with a left-hemisphere stroke were randomly assigned to either a 4-month immediate treatment (IT) or deferred treatment (DT) group. Within each treatment group (150-minute sessions two times weekly), participants were separated by aphasia severity (mild-moderate and moderate-severe) based on their shortened PICA (SPICA) score at intake. For both groups, outcome measures included the CADL, PICA, and the *Western Aphasia Battery -Aphasia Quotient* (WAB-AQ) and were taken at intake, during treatment, and at follow up.

An appropriate two-way (Condition X Severity) ANOVA was completed to examine the effect of group therapy. A treatment effect was found for the WAB-AB and CADL, but not the SPICA. No significant changes were noted between IT and DT groups.

The strengths of this study include its design, assessor blinding, randomization, use of control group, and thorough analyses. Subjects in both groups were balanced for age, educational level, and severity, ensuring an equal distribution between treatment groups. Research bias was eliminated through the implementation of assessors that had no knowledge of participant group membership. Statistical analysis of language measures made appropriate comparisons of performance within and between groups, and accounted for a confounding variable with the DT group. This well-designed study offers compelling evidence for the effectiveness of group therapy.

Efficacy of Group Therapy on Communication and/or Psychological Well-Being

Brumfitt and Sheeran (1997) examined the efficacy of short-term group therapy using a single group pre-post test design. Six subjects of varying aphasia

types due to a left- hemisphere stroke participated in a 90-minute session once per week for 10 weeks. Therapy consisted of communication activities that involved sharing personal experiences to address linguistic and personal challenges, and videotaping role-play activities to encourage self and group evaluation.

Five measures, administered by 8 final-year speech language pathology students, were taken at intake and again after the last group session. Communication measures included the *Functional Communication Profile* (FCP), and the *Attitude to Communication Scale* (S24). The *Stutterer's Self-Ratings of Reactions to Speech Situations Scale* was also used, as it was believed that individuals with aphasia have similar communicative demands as a long-term stutterer. Measures of psychological adjustment included the *Rosenberg Self-Esteem Scale* (RSE) and the *Hospital Anxiety and Depression Scale* (HADS). The prediction measures (only administered at intake) included the *Recovery Locus of Control Scale* (RLOC), and two statements designed to measure intent using a five-point Likert scale.

Appropriate statistical analyses using t-tests revealed positive effects post treatment for the FCP and the *Stutterer's Self-Ratings of Reactions to Speech Situations Scale*, although all measures (except for self-esteem) showed numerical improvements. A correlation analysis was completed to determine the relationship between communication and psychological adjustment. A significant correlation was found between the FCP and changes in reaction scores and to a lesser degree avoidance scores. A significant correlation was also found between FCP and self-esteem pre-therapy, but not post-therapy suggesting that communicative behaviour and self-esteem became independent of each other by the end of therapy. A partial correlation analysis was completed to determine predictors of improvement in communication and psychological adjustment and revealed that improvements in communicative behaviour were responsible for improvements in depression scores.

Although this study showed positive change in communicative behaviour and psychological well-being, results should be taken with caution. Subject selection was not well controlled for including aphasia type, severity, and gender. Additionally, not all measures used in this study had adequate reliability and validity. The RLOC's reliability has been rated as satisfactory (Partridge, 1989), and the *Stutterer's Self-Ratings of Reactions to Speech Situations Scale* has never been used with an aphasic population. Furthermore, these measures were administered by a large group of uncertified students affecting the consistency and reliability of administration.

Due to these limitations and the lack of control group to affirmatively state that improvements in communicative and psychological measures resulted from group intervention, evidence is suggestive rather than compelling that group therapy improves functional communicative ability and attitudes towards communication.

Ross, Winslow, Marchant & Brumfitt (2006) used a single group pre-post test design to evaluate the effects of group intervention on communication, life participation and psychological well-being in seven individuals with moderate chronic aphasia. Group sessions were 2 hours in duration once weekly for a total of 11 weeks. Communication measures included the *Conversational Analysis Profile for People With Aphasia* (CAPPA), and psychological well-being measures included the HADS and *Visual Analogue Self-Esteem Scale* (VASES). All measures were administered at intake, post-therapy, and 3 months follow-up.

Appropriate statistical analyses were used to compare pre-post treatment measures. Paired t-tests examining conversation experiences (CAPPA- Part B) was the only measure to show significant improvements pre and post-treatment.

Limitations of the study included inconsistent participant selection (i.e., one participant did not meet criteria for chronic aphasia), a small sample size, and participant performance variation. Furthermore, an assessment of auditory comprehension was not conducted at intake, consequently affecting the appropriateness of participant responses on measures that were administered orally (CAPPA Part A and B). Therefore, with the above limitations and only one measure showing change with group treatment, this study's evidence that group therapy can produce positive change is more suggestive than compelling.

A recent study completed by Vickers (2010) used a non-randomized convenience sample to examine the effects of group therapy on friendships. Twenty-eight participants attended a weekly aphasia group that focused on the use of multi-modal communication and the development of new social networks. Outcome measures included the *Survey of Communication and Social Participation*, a *Social Network Communication Inventory* and *The*

Friendship Scale (FS). All measures were administered at intake and post-therapy and were compared to measures completed by 12 participants in the no-treatment group.

Paired sample t-tests (two-tailed) were completed to examine social network size differences before and after aphasia for the entire group of participants. Both groups showed significantly fewer social network contacts as well as reduced frequency of contact after aphasia. A between-group comparison demonstrated that group therapy participants reported significantly greater social participation and more contact with friends, acquaintances, and paid workers than the no treatment group. Independent samples t-test of the FS revealed significantly lower levels of perceived social isolation in the treatment group.

While this study offers strong evidence that group therapy expands social networks, these results should be taken with caution. Firstly, the treatment group had a greater sample size than the no-treatment group and confounding variables such as additional therapy and assessor bias were not accounted for. Secondly, eleven of the 28 group members were attending individual speech therapy in addition to weekly group therapy. Therefore, improvements in social networks and social participation cannot be attributed to group therapy alone. Lastly, the *Social Networks Communication Inventory* was completed in collaboration with family members, contributing to a bias in participants' network size. These potential confounds considerably weaken the validity of this study's findings, resulting in more suggestive than compelling research.

Individual vs. Group Treatment

Wertz et al. (1981) conducted a randomized clinical trial to examine the effects of individual versus group therapy. Sixty-seven participants at four-weeks post onset took part in the study. Although participants did not meet criteria for chronic aphasia at intake, the length of the study surpassed the spontaneous recovery phase and therefore was included as an article for critical review.

Participants were randomly assigned to Group A, individual treatment, or Group B, group treatment. The treatment trial ran for 44 weeks with eight hours of therapy for each group weekly. Outcome measures included the PICA, *Token Test, Word Fluency Measure, Coloured Progressive Matrices,* a motor speech evaluation, a Conversational Rating, and an Informant's Rating of functional language. Due to a high attrition rate, measures were administered at intake and at 11-week intervals until the conclusion of the study.

Appropriate statistical analyses using paired t-tests examined the differences between pre-treatment and post-treatment outcomes. Both groups showed significant improvement on all measures, with most improvement noted within the first 11-week treatment period. Additionally, both groups demonstrated significant improvements at all treatment intervals on the PICA. Analysis of covariance demonstrated significantly better scores in Group A (individual therapy) across all cohorts on PICA graphic tasks as well as better scores at the 15 and 26-week interval for PICA verbal percentile performance. No other measures demonstrated a significant difference between group scores.

Strengths of the study include clear eligibility criteria and reliable outcome measures. Participant selection controlled for etiology, gender, and time post-onset, and blinded examiners controlled for research bias. Attrition rate was high, however sample size was still adequate toward the end of the study. Although this study presents a considerable confounding variable (spontaneous recovery), the extensive length of the study increases the probability of a treatment effect, which was estimated to start at 26 weeks post-onset.

Despite these limitations, this study provides compelling evidence that individual and group treatment is effective for improving communicative abilities. There were no clear differences between benefits of individual versus group treatment, although individual treatment resulted in greater improvement when effects of covariance were accounted for.

Discussion

While the literature presented in this review provides suggestive to compelling evidence that group therapy is effective, findings were somewhat inconsistent. For example, Aten et al (1982) found significant changes on a measure of functional communication (CADL), but not on a standard language test (PICA), while Bollinger et al (1993) found significant change on both measures post-therapy. Mixed findings can be explained by differences in therapy focus and frequency of treatment sessions. For example, the group treatment employed by Aten et al (1982) focused on specific real-life situations while treatment used by Bollinger et al. (1993) focused on expanding vocabulary, identifying communicative intents, and discussing current events. Each study used a different frequency of treatment with greater

change noted in studies with multiple sessions of therapy per week.

Inconsistent findings could also be explained by the difference in assessment tools and methodology used across the literature. Outcome measures varied greatly in terms of level of formality, standardization, and construct being measured. Furthermore, each study used different eligibility criteria for participant selection, impacting the sample size and statistical power of the research findings.

All studies employed strong research designs, which increased the credibility of evidence that group therapy for adults with chronic aphasia is efficacious. However, in order to identify the aspects of group therapy that are associated with positive outcomes, additional research needs to be conducted.

Future studies need to control for aphasia type and severity, as each factor can directly impact individual therapy gains as well as group outcome measures. Treatment focus should be of strong importance as this influences generalization of skills into real-world situations. Additionally, studies should obtain measures multiple times post-therapy to check for transfer and maintenance of therapy gains.

Clinical Implications

Despite variability between a few research studies analyzed in this review, at least some positive outcomes for group therapy were reported across all studies. Therefore, speech and language pathologists would be supported by the current evidence base in implementing group therapy for adults with chronic aphasia. However, it is important that clinicians consider all styles of group treatment (e.g. TV viewing, role-playing, recreational activities), as different therapy approaches have not yet been compared.

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