The Efficacy of Group Communication Treatment in Adults With Chronic Aphasia

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We examined the effects of group communication treatment on linguistic and communicative performance in adults with chronic aphasia. Participants were randomly assigned to two treatment and two deferred treatment groups. Groups were balanced for age, education level, and initial aphasia severity. Twenty-four participants completed the 4-month treatment trial. While in the treatment condition, all participants received 5 hours of group communication treatment weekly, provided by a speech-language pathologist. The focus of treatment included increasing initiation of conversation and exchanging information using whatever communicative means possible. While awaiting group communication treatment, participants in the deferred treatment groups engaged in such activities as support, performance, or movement groups in order to control for the effects of social contact. Linguistic and communicative measures were administered to all participants at entry, after 2 and 4 months of treatment, and following 4 to 6 weeks of no treatment. In addition, participants in the deferred treatment groups received an additional administration of all measures just before their treatment trial. Results revealed that participants receiving group communication treatment had significantly higher scores on communicative and linguistic measures than participants not receiving treatment. In addition, significant increases were revealed after 2 months of treatment and after 4 months of treatment. No significant decline in performance occurred at time of follow-up.

KEY WORDS: aphasia, group, treatment, efficacy, managed care

Aphasia treatment is most often focused on structured didactic therapist-client tasks in order to maximize linguistic recovery (Rosenbek, LaPointe, & Wertz, 1989; Sarno, 1991). In the clinical environment, therapy often includes individualized stimulus-response tasks chosen from such language modalities as spoken expression, auditory comprehension, reading, and writing. Treatment gains on these targeted tasks are documented; however, generalization to functional communication, especially in nonclinical environments, is often difficult to achieve (Kearns, 1989; Lyon, 1992; Thompson, 1989).

Group aphasia treatment has often been seen as an adjunct to individual therapy. Many aphasia groups focused on psychosocial adjustment and family counseling after stroke (Aten et al., 1981; D'afflitti & Weitz, 1974; Marquardt, Tonkovich, & DeVault, 1976). Fewer targeted speech-language improvement as the central goal of the aphasia group. Of the published articles on group treatment for aphasia, the majority provide anecdotal accounts of treatment effectiveness (Agranowitz, Boone, Ruff, Seacat, & Terr, 1954; Aronson, Shatin, & Cook, 1956; Bloom,

1962; Corbin, 1951; Fawcus, 1992; Kearns & Simmons, 1985; Pachalska, 1991). Fewer studies address the question of treatment efficacy (Aten, Caliguri, & Holland, 1982; Bollinger, Musson, & Holland, 1993; Wertz et al., 1981).

The anecdotal reports of aphasia groups from the 1950s and the early 1960s focused on the communication benefit of groups (Agranowitz et al., 1954; Aronson et al., 1956; Bloom, 1962; Corbin, 1951). Bloom (1962), in a description of group communication treatment for aphasia, stressed the need to have patients use and understand language in daily situations that were meaningful to the participants.

Few empirical research studies have examined the efficacy of group treatment for aphasia (Aten, 1991), despite the fact that speech-language pathologists are asked to achieve functional communication improvement by their clients, the community, and third-party payers. A group-treatment study (Aten et al., 1982) examined the effectiveness of functional communication treatment for seven nonfluent patients with chronic aphasia. Group treatment was provided 2 hours weekly for 12 weeks, focusing on improving functional communication in simulated real-life situations. Aten et al. found significant improvement on the Communicative Abilities in Daily Living test (CADL; Holland, 1980), but not on the linguistic measure of aphasia as assessed by the Porch Index of Communicative Ability (PICA; Porch, 1973).

Bollinger et al. (1993) investigated the efficacy of group treatment using a treatment/withdrawal design. Ten chronically aphasic individuals received 3 hours a week of group treatment for a total of 40 weeks. Bollinger et al. found significant improvement on both the CADL and the PICA but not on the third measure of language, which tested auditory comprehension.

Wertz et al. (1981) provided another empirical account of the efficacy of group treatment. Individuals with aphasia were randomly assigned to either individual or group treatment and received 8 hours of total treatment weekly. Group treatment involved participation in general discussions of current events or other topics rather than direct manipulation of speech or language abilities. The PICA was the only measure that showed significant differences between individual and group treatment. Wertz et al. state that the treatment gains and the cost advantages of group treatment should lead speech-language pathologists to consider it as part of a client's treatment plan.

These studies, although they differ with respect to the specific outcomes, as well as the content, frequency, and duration of treatment, do provide empirical support for the effectiveness of group treatment. However, Kearns (1994) asserts that further intensive research is vital, in order to unmask the true benefits of group treatment for those with aphasia.

Group treatment for individuals with aphasia may actually offer certain advantages to individual treatment. First, it may facilitate generalization of functional communication to natural environments. There are several reasons for this. A group environment promotes interaction among members, which in turn should foster pragmatic skills including improved turn-taking and communicative initiation, as well as increasing the variety of communicative functions or speech acts (Davis, 1986; Wilcox, 1983). The group environment also provides the opportunity for a wider array of communicative partners, more natural tasks, and peer modeling and support for acquisition of communicative strategies, increasing the likelihood of generalization of treatment gains to home and community environments (Green, 1982; Kearns, 1994; Lyon, 1992).

Second, group communication treatment may either directly or indirectly improve psychosocial functioning and participation in community life by providing a supportive environment in which communication and successful adjustment to life with aphasia is encouraged and modeled by the therapist and perhaps, more importantly, by other aphasic individuals (Herrmann & Wallesch, 1989; Kagan & Gailey, 1993; Lafond, Joanette, Ponzio, Degiovani, & Sarno, 1993; Le Dorze & Brassard, 1995; Lyon, 1992; Parr, Byng, Gilpin, & Ireland, 1997; Pound, 1996; Ryff, 1989; Sarno, 1991; Sinyor et al., 1986; Strauss, Burrucker, Cicero, & Edwards, 1967). By its nature, group treatment can incorporate elements of group process and self-help work that are considered critical following many disorders and situations (Bertcher, 1994; Luterman, 1996; Tuckman, 1965; Yalom, 1985). Individuals having similar diagnoses may use group sessions to solve common issues that directly affect their quality of life (Kurtz, 1997; Luterman, 1996; Markus & Nurius, 1986; Marshall, 1993). In addition, the content of group treatment can be directed toward one or more levels (impairment, disability, and handicap) of the WHO (1980) framework. Proposed WHO revisions (1997) redefine these levels as impairment, activity, and participation.

Finally, group treatment is a cost-effective way of providing professional treatment to aphasic individuals as compared with traditional, individual speech-language therapy (Aten et al., 1982; Kearns, 1994). This is becoming increasingly important as health care moves rapidly to a managed care model and decreases in authorized treatment become commonplace (Elman, 1998; Elman & Bernstein-Ellis, 1995). Given that aphasia is typically a chronic disorder, group treatment may be a vehicle for individuals to continue receiving practice and support for the long-term consequences of living with aphasia, without incurring significant economic hardships (Elman, 1998; Jordan & Kaiser, 1996).

The purpose of the present study was to determine the efficacy of group communication treatment for chronically aphasic clients by random assignment to either a treatment or deferred treatment group. Opportunity for socialization was provided for all participants in the deferred treatment group until they began their treatment trial. Treatment in the groups focused on providing a variety of functional communication situations and problems that heightened the importance of receiving and sending messages using whatever means possible.

Our key experimental questions included:

1. Will group communication treatment for chronically aphasic clients result in change on linguistic tests of aphasia as measured by the Shortened Porch Index of Communicative Abilities (SPICA; Disimoni, Keith, & Darley, 1980) and the Western Aphasia Battery–Aphasia Quotient (WAB AQ; Kertesz, 1982)?

2. Will group communication treatment for chronically aphasic clients result in change on a communicative test of aphasia as measured by the Communicative Abilities in Daily Living (CADL; Holland, 1980)?

Method

Participants

All of the aphasic clients who participated in the study were chronically aphasic (more than 6 months post-onset) and had completed individual speech-language treatment that was available to them through their insurance coverage. All aphasic individuals had sustained a single, left-hemisphere cerebrovascular accident that was documented in the medical record; were 80 years of age or younger; had no major medical complications or history of alcoholism; were within and/or inclusive of the 10th and 90th overall percentile on the SPICA at entry; were premorbidly literate in English; and agreed to participate in the study.

Ninety individuals responded to our call for research participants and were screened on the telephone for the basic selection criteria. From this telephone screening, 45 people were asked to complete testing on our dependent measures. Following receipt of complete medical records, individuals with multiple brain lesions or diagnosed alcoholism were excluded. The remaining 28 participants meeting subject selection criteria were enrolled in the treatment study.

Design

Participants were randomly assigned to one of two conditions. Immediate treatment (IT) participants received immediate assessment and immediate communication treatment. Deferred treatment (DT) participants received immediate assessment but deferred communication treatment. The DT group began their treatment following the completion of the IT groups' 4-month treatment trial. In order to control for the effect of social contact and to ensure that none of the participants was isolated at home during the DT interval, DT participants attended 3 or more hours weekly of social group activities of their choice, such as movement classes, creative/performance arts groups, church activities, and support groups. DT participants were reassessed on all measures following this "socialization" period, just before their deferred treatment.

Once randomly assigned to IT or DT groups, participants were assigned to either mild-moderate or moderate-severe aphasia groups based on their initial aphasia severity as measured by the SPICA overall percentile. Participants with moderate aphasia (defined as a SPICA overall percentile between 50 and 65) could be assigned to either the mild-moderate or moderate-severe groups. Therefore, an attempt was made to balance the participant groups for age, education level, and time post-onset. The result was four groups of 7 individuals each (two groups immediate and two groups deferred). Individuals with mild or moderate aphasia formed both an IT and DT group, and individuals with moderate or severe aphasia made up the remaining two groups. Five individuals dropped out of the study before they completed their treatment: 1 in the IT mild-moderate group because of transportation difficulties; 1 in the DT mild-moderate group with medical complications; and 3 because of time constraints (1 in the IT mild-moderate group, 1 in the DT mild-moderate group, and 1 in the DT moderate-severe group). In addition, 1 participant in the DT group enrolled following initial testing but before DT began. A total of 24 participants successfully completed the 4-month treatment trial. Participants in the IT and DT groups did not differ significantly in age, education, months post-onset, or SPICA overall percentile [all $p > .20$, all $t(11) \leq 1.27$]. See Table 1 and Table 2 for individual participant information and descriptive data on the IT and DT groups.

Test Battery

A multimethod battery of outcome measures (Elman, 1995) was administered at intake, after 2 and 4 months of treatment, and 4 to 6 weeks following completion of treatment (follow-up). The DT group participants were also reassessed on all measures before beginning their treatment trial ("pretreatment").

Traditional language measures included language batteries for aphasia (SPICA; WAB AQ) and a test of functional communication for aphasia (CADL). Testing

Table 1. Participant characteristics including age, sex, months post-onset (MPO), WAB aphasia classification, SPICA overall percentile, education level (in years), WAB AQ, and CADL scores at intake in the mild-moderate and moderate-severe immediate- and deferred-treatment groups.

Sex	Classification	Age	MPO	SPICA%	Education	WAB AQ	CADL
				Immediate (*n* = 12)			
Mild-Moderate							
M	Broca's	46	7	57	16	61.5	120
M	Anomic	67	103	80	20	88	125
M	Unclassified	58	77	78	15	85.9	134
F	Anomic	38	17	76	14	80.8	131
F	Anomic	72	13	90	16	92.9	136
M (SD)		56.2 (14.2)	43.4 (43.7)	76.2 (12.0)	16.2 (2.3)	81.8 (12.2)	129.2 (6.6)
Moderate-Severe							
F	Trans. Motor	79	36	35	16	61.4	96
F	Broca's	58	33	35	15	13.1	57
M	Trans. Motor	60	21	58	14	72.8	116
M	Broca's	49	29	30	12	18.9	106
F	Broca's	51	12	30	16	24.2	64
M	Broca's	63	16	61	12	45.9	124
M	Conduction	58	26	47	14	55.9	98
M (SD)		59.7 (9.8)	24.7 (8.8)	42.3 (13.1)	14.1 (1.7)	41.7 (23.2)	94.4 (25.2)
				Deferred (*n* = 12)			
Mild-Moderate							
M	Anomic	52	336	60	16	80.2	113
F	Anomic	80	36	64	11	75.1	102
F	Unclassified	70	43	78	16	94.3	129
F	Anomic	58	23	67	12	87.7	130
F	Anomic	71	14	88	16	92.8	131
M*	Anomic	52	134	76	20	76.4	129
M (SD)		63.8 (11.5)	97.7 (124.5)	72.2 (10.4)	15.2 (3.3)	84.4 (8.3)	122.3 (12.0)
Moderate-Severe							
M	Broca's	47	10	42	18	57.4	121
M	Conduction	48	19	54	14	67.3	107
F	Broca's	65	59	23	18	20.7	70
F	Broca's	71	137	50	18	63.5	104
M	Conduction	59	42	46	16	65.3	114
M	Conduction	55	7	54	16	54.4	123
M (SD)		57.5 (9.5)	45.7 (49.0)	44.8 (11.7)	16.7 (1.6)	54.8 (17.4)	106.5 (19.4)

*Subject enrolled late into study; information is from pretreatment testing session.

Table 2. Descriptive data for participants at intake in the immediate- and deferred-treatment groups.

	Immediate treatment (*n* = 12)			Deferred treatment (*n* = 12)		
	M	*SD*	Range	*M*	*SD*	Range
Age (years)	58.3	11.4	38–79	60.7	10.6	47–80
Education (years)	15	2.1	12–20	15.9	2.6	11–20
Months post–onset	32.5	28.7	7–103	71.7	94.2	7–336
SPICA %	56.4	21.2	30–90	58.5	17.7	23–88

required approximately 3 to 5 hours for each participant. Depending on the client's stamina, testing was distributed over one to three sessions. The Communicative Effectiveness Index (CETI; Lomas et al., 1989), the Affect Balance Scale (ABS; Bradburn, 1969), interview data, connected speech measures (Nicholas & Brookshire, 1993), and conversations about videotaped television segments were also collected. These data will be presented in a future manuscript.

All tests were given by one of two speech-language pathologists trained to administer the measures. All

scores derived from the tests were checked for accuracy by one of two speech-language pathology interns who were blind to participant group membership. Scoring discrepancies were resolved by consensus.

Treatment

One speech-language pathologist (the second author), with the assistance of a student intern or a peer volunteer, provided 5 hours of communication group treatment weekly (2-1/2-hour periods on 2 days) for each of the aphasic groups. In addition to the 5 hours of group treatment, two 30-minute social breaks with coffee and refreshments were provided in the middle of each session. A total of 4 months (32 sessions) of group communication treatment was provided. A minimum attendance rate of 80% at all therapy sessions was mandatory for inclusion in this study.

Group communication treatment focused on the following: improving the ability to convey a message using whatever strategy was most useful, fostering initiation for conversational exchanges, expanding understanding of the communication disorder, expanding self-awareness of personal goals and recognition of progress made towards those goals, and promoting confidence for attempts at communicative situations relevant to the individual.

All groups spent the opening 90 minutes discussing current activities and events in their lives. Topics relevant to the ongoing discussion were introduced and elaborated on by either the speech-language pathologist or group members. Pre-established topics or themes were not typical. Most often, the speech-language pathologist facilitated discussion around topics that emerged given the interest that day or recent problems experienced by the group members. Exchange of information during group discussions was enhanced by a variety of clinical techniques including the use of communicative drawing (Lyon, 1995); role playing; natural gestures; resources such as maps, personalized notebooks, number lines (Bernstein-Ellis & Elman, 1999; Kagan, 1995); conversational prompting (Cochrane & Milton, 1984); graphic choices (Garrett & Beukelman, 1992); and scripting (Beeson & Holland, 1994). Conversational initiation was facilitated by such techniques as asking group members to lead a topic, sharing the facilitator's role around the table, directly requesting increased participation, encouraging peer feedback and cueing, and using peer volunteers (Bernstein-Ellis & Elman, 1999; Elman, 1999). Occasionally, sessions were guided by a previously scheduled topic, with group members encouraged to bring in "props," such as photos or souvenirs to facilitate the discussion. The next 30 minutes or so of the group's time was spent as a social break

where family members were encouraged to join the group for refreshments and conversation. The final hour was spent in either wrapping up the opening discussion or reviewing current news stories. Occasionally, reading and writing practice tasks—such as name and address copying, sentence and/or paragraph generation, and proofreading exercises—were completed. During several sessions, the final hour was used to engage in social games such as Uno or blackjack. In addition to these activities, once weekly for about 60 minutes—instead of the final hour's discussion or tasks—groups were co-led by a performing artist who introduced exercises and activities involving creative expression such as mime, art projects, or acting in dramatic vignettes.

Results

A variety of analyses were used to assess the efficacy of group communication treatment. All significance levels were set at the .05 alpha level. As previously discussed, one participant in the DT mild-moderate group did not enter the study until the pretreatment test date. Therefore, his scores will not be included in analyses requiring intake data. Another participant, in the IT mild-moderate group, was unable to complete follow-up CADL testing because of illness. Her scores are not included in analyses requiring follow-up CADL data.

Effects of Social Stimulation

First we looked at whether DT group participants who had attended social or movement groups during their first 4 months showed significant change on any dependent measure between the time that they enrolled in the study and the time that they began treatment. None of the paired t tests comparing DT participants' SPICA, WAB AQ, and CADL scores at intake to pretreatment was significant [all $p > .05$, all $t(10) \le 2.19$].

We were also interested in changes that DT participants made during their 4-month social stimulation period as opposed to their 4-month treatment period. Two-way (Severity × Change) repeated measures ANOVAs were run in which the mild-moderate and moderate-severe groups were compared on the change made before treatment (pretreatment scores minus intake scores) versus after treatment (post-treatment scores minus pretreatment scores). Analyses revealed that participants made significant change after but not before group communication treatment was begun. The main effects for change on the SPICA overall [$F(1, 9) = 14.29$, $p < .005$] and WAB AQ [$F(1, 9) = 6.09$, $p < .05$] were significant. The CADL analysis was not significant [$F(1, 9) = 1.92$, $p \ge .20$], but scores did show greater improvement after treatment began.

Effects of Group Communication Treatment

Next we analyzed the change in treatment scores for each group. Because participants encompassed a wide range of aphasia severity, use of treatment change scores reduced within-group variance, thereby increasing statistical power. Given the design, we were able to control for both time and treatment by comparing change scores in the IT group (post-treatment scores minus intake scores) with those of the DT group (pretreatment scores minus intake scores). Two-way (Condition × Severity) ANOVAs were performed in which the potential treatment effect with group membership (mild-moderate groups vs. moderate-severe groups) was compared. A treatment effect was found for the WAB AQ [$F(1, 19) = 7.43$, $p < .05$] and the CADL [$F(1, 19) = 5.50$, $p < .05$], with the SPICA not significant [$F(1, 19) = 3.20$, $p > .08$]. In addition to the main effect for treatment, a severity main effect [$F(1, 19) = 10.25$, $p < .01$] and a treatment-by-severity interaction were revealed for the CADL [$F(1, 19) = 6.98$, $p < .05$]. Inspection of the data indicated that greater changes occurred for the most severely affected participants—many changing 20 to 30 points on the CADL with treatment. However, participants with milder aphasia did not show large changes on the CADL, perhaps because their scores were close to the CADL's ceiling at intake. In addition, more individuals who scored lowest on the CADL at intake were members of the IT groups, as participant groups had been balanced using SPICA overall percentiles and not CADL scores.

Clinical Significance

Katz and Wertz (1997) define *clinical significance* as "the amount of change clinicians might accept as indicating improvement" (p. 501). Therefore, using criteria selected by Katz and Wertz, we analyzed our treatment effects by counting how many individuals made "clinically significant" changes on the SPICA overall percentile (at least 10 percentile points) and the WAB AQ (at least 5 points). In the IT groups, 6 of 12 individuals made "clinically significant" changes on the SPICA after 4 months of treatment, compared to 1 of 11 individuals in the DT groups "no-treatment" time period. On the WAB AQ, 7 of 12 individuals in the IT groups made "clinically significant" changes, compared to 3 of 11 individuals in the DT groups. The study by Katz and Wertz (1997) did not include the CADL as a dependent measure. However, for the present study, we defined a clinically significant change on the CADL as a change of at least 10 points. Using this criterion, the IT groups had 5 of 12 individuals who made "clinically significant" changes, compared to 2 of 11 individuals in the DT groups.

Pattern of Change in Immediate and Deferred Groups

Before embarking on the analyses of the pattern of change across the various testing times during treatment (intake/pretreatment through follow-up), we needed to determine if the IT and DT groups had similar patterns of performance both before and during treatment, to see if data could be combined. Paired *t* tests for the SPICA and WAB scores indicated that no significant differences were found when comparing IT group intake scores to DT group pretreatment test scores. In addition, paired *t* tests were not significant for treatment effects over time when using either mean scores or change scores for the IT or DT treatment groups. It was decided to treat the CADL data similarly, keeping in mind the previously discussed interaction. Therefore, all participant data were pooled.

Treatment Change Over Time

We wanted to determine whether participants made significant change on mean test scores over the four test times (intake/pretreatment, 2 month, 4 month, and follow-up). A two-way (Severity × Time) repeated measures ANOVA was performed, followed by Scheffé multiple comparison tests. Analysis of SPICA scores revealed a significant main effect for severity (mild-moderate versus moderate-severe) [$F(1, 22) = 27.91$, $p < .0001$] and a significant main effect for test time [$F(3, 66) = 15.32$, $p < .0001$] without a significant interaction [$F(3, 66) = 0.37$, $p > .75$]. Analysis of the WAB scores revealed a significant main effect for severity [$F(1, 22) = 23.14$, $p < .0001$] and a main effect for time [$F(3, 66) = 31.69$, $p < .0001$] without a significant interaction [$F(3, 66) = .64$, $p > .50$]. Analysis of CADL scores revealed a significant main effect for severity [$F(1, 21) = 9.53$, $p < .01$] and a main effect for time [$F(3, 63) = 19.87$, $p < .0001$], as well as a significant severity-by-time interaction [$F(3, 63) = 4.71$, $p < .01$].

Scheffé multiple comparison tests were performed using a .05 significance level. Comparisons were completed of each test time with the preceding test time. Multiple comparisons on SPICA mean test scores indicated that the SPICA overall scores differed significantly when comparing 2-month scores with intake/pretreatment scores. No significant differences were found for comparisons with the 4-month or follow-up scores. WAB AQ scores differed significantly when comparing 2-month scores with intake/pretreatment scores and 2-month scores with 4-month scores. No significant difference was found for follow-up scores. In an attempt to unravel the CADL severity-by-time interaction, separate analyses were performed for the mild-moderate and moderate-severe groups. These analyses confirmed the

earlier findings that only the moderate-severe group changed significantly over time. In the moderate-severe participant group, CADL scores changed significantly when comparing intake/pretreatment scores with 2-month scores and 2-month scores with 4-month scores. There was no significant change at follow-up. See Table 3 for a summary of the repeated measures ANOVAs on mean test scores from intake/pretreatment through follow-up test times.

Discussion

Our results suggest that treatment was efficacious. The DT groups did not change significantly on any measure between intake and pretreatment. In addition, the IT groups' WAB AQ and CADL scores were significantly higher after 4 months of treatment than those of the DT groups at the same point in time. Further, more individuals in the IT groups than in the DT groups made "clinically significant" changes. Our DT groups did not show statistically significant changes on outcome measures during the time that they awaited treatment (i.e., while they participated in social activities such as support, performance, or movement groups). Consequently, the group communication treatment rather than social contact was responsible for the treatment effect.

The pattern of change in the treatment groups indicates that treatment had benefits over time. After 2 months of treatment, the SPICA overall, WAB AQ, and CADL (for the moderate-severe group) performance differed significantly from performance before treatment. An additional 2 months of group communication treatment resulted in additional significant change on the WAB AQ and CADL. Importantly, treatment gains were maintained for approximately 1 month without treatment. No significant decrement of group scores resulted when participants were retested following 4 to 6 weeks of a no-treatment period.

Table 3. Summary of two-way repeated measures ANOVAs for mean test scores across testing times.

Outcome measures	Intake/ PreTx	2 month	4 month	Follow-up
SPICA OA	11.10	11.51*	11.75	11.65
(percentiles)	(55)	(61)	(64)	(63)
WAB AQ	65.00	69.31*	72.23*	71.81
CADL	112.48	117.96	122.26	122.13
Mild-Mod	126.20	128.80	130.20	131.00
Mod-Severe	101.92	109.62*	116.15*	115.31

Note. Means with asterisks differ significantly from preceding means at < .05 significance level using Scheffé multiple comparison tests.

Our findings indicate that group communication treatment was efficacious for our participants with chronic aphasia when using statistical significance on traditional linguistic and communicative outcome measures as the criterion. Our results support those of Bollinger et al. (1993) and Aten et al. (1982) with chronically aphasic individuals and those of Wertz and colleagues (1981) with acutely aphasic individuals. Both of these studies found that significant improvements were made on linguistic-dependent measures following group treatment.

Many of the participants with aphasia and their family members reported that dramatic life changes and psychosocial benefits occurred during and after participation in our group communication treatment. We are now analyzing these interview data to determine if the changes show common themes. We have had strong family feedback that many individuals in our study showed increased confidence for conversation, especially with strangers. We are also impressed by many "firsts" that participants with chronic aphasia achieved while enrolled in our group communication treatment research. For example, some individuals literally ventured out of their houses and socialized with others for the first time in many years; one individual began to take public transportation to attend groups when encouraged by the other group members; and another individual summoned up the courage to talk with a salesperson and finally take back some new shoes that had never fit.

We are using analyses of our discourse measures and interview data to determine whether participants in the present study showed generalization of their treatment gains to outside environments. With continuing analysis of these data, our goal is to gain a fuller perspective on the communicative disabilities and real-life handicaps that were affected by group communication treatment (Le Dorze & Brassard, 1995; Parr et al., 1997; Simmons-Mackie & Damico, 1996).

The present study demonstrated that 5 hours per week of group communication treatment over 2- and 4-months duration provided efficacious treatment for adults with chronic aphasia. However, many questions remain unanswered. For example: Would individuals make similar changes with less treatment per day or per week? Would individuals continue to make similar gains if treatment had continued for a longer duration? Exactly which aspects of the group communication treatment package were responsible for the treatment effects?

The present study did not address the question of whether group communication or individual speech-language treatment is superior. The study by Wertz and colleagues (1981) is the only one that has compared individuals receiving group treatment with those receiving individual treatment. The PICA was the only measure in

that study on which significant differences were revealed between those participants who received individual treatment and those participants who received group treatment. Given the increasing pressure for cost-effective service delivery by third-party payers and by consumers, replication of the Wertz et al. study with inclusion of measures to test WHO (1997) activities/limitations and participation/restrictions is extremely important to both speech-language pathologists and to individuals with aphasia.

Acknowledgments

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