Effectiveness of communication partner training program for employees working with persons with aphasia

Thesis

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By

Caitlin Berry, B.A.

Graduate Program in Speech Language Pathology

The Ohio State University

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Thesis Committee

Dr. Stacy Harnish, Advisor

Jennifer Brello

Abstract

The present study aims to identify the effectiveness of communication partner training (CPT). Through CPT, communication participation, effectiveness of communication, as well as the social experience of communication between PWA and their communication partners can be enhanced (Elman, 2016). Ten employees affiliated with this program participated in the CPT training, however, one participant's responses were not included in the data. The present study involved three pre and post treatment questionnaires measuring objective knowledge of aphasia, ability to identify effective and ineffective communication strategies, and self-reported abilities to facilitate communication for PWA in a variety of communication settings. The results demonstrated that the CPT program may be beneficial to teach effective communication strategies and improve the comfort of the communication partner when interacting with PWA, however, there was a lack of statistically significant improvement on objective knowledge of aphasia. Implications, future directions, and limitations are discussed.

Vita

May 2012 ..... Magnificat High School

May 2016..... B.A., Speech Language Pathology, Loyola University Maryland

May 2016..... B.A., Spanish, Loyola University Maryland

2016 to present ..... The Ohio State University

Fields of Study

Major Field: Speech Language Pathology

Table of Contents

List of Tables

Chapter 1. Background

Aphasia is an acquired language disorder which causes difficulty in communicative interactions, therefore, impacting the person with aphasia's (PWA) ability to participate in everyday life activities (Blumstein, 1994; Lyon et al., 1997; Sarno, 1993). Aphasia may affect an individual's ability to speak fluently, comprehend language, read, and write. The severity and type of deficits are dependent on the site and diffusivity of the lesion in the language centers of the brain. Aphasia most commonly occurs as a result of a cerebrovascular accident (CVA), but can also occur as a result of an acquired brain injury, brain tumor, or progressive neurological disease (National Aphasia Association, 2009; National Institute on Deafness and Other Communication Disorders; 2017). Presently, NIDCD estimates that approximately 2 million people, or 1 in 250 in the United States today, are living with aphasia (2017). The greatest recovery from aphasia is typically seen within 2-3 months. If symptoms of aphasia persist beyond this point, a full recovery is unlikely, however, the potential for improvement remains months to years after this time period (National Aphasia Association, 2009).

Aphasia may involve difficulty with expressive language, language comprehension, reading comprehension and writing. Expressive language deficits include anomia, making finding words and speaking fluently difficult (ASHA, n.d.; Dorze & Brassard, 2007). Anomia causes PWA to speak in single words or short phrases, making

their speech appear labored. In addition, paraphasias, or word substitutions, as well as syntactic errors are common breakdowns in expressive language. Receptive language deficits may cause the individual to have difficulty understanding spoken language, particularly with a fast rate of speech and in the presence of environmental distractions. In addition, understanding syntax, idioms, and figures of speech may be difficult (ASHA, n.d.).

Impact of Aphasia on Life Participation

Traditionally, aphasia has been defined in terms of neurological impairments, for example, difficulty word finding or producing complex language. In more recent years, aphasia has been defined to highlight the significant impairment that the disorder has on an individual's life participation (Simmons-Mackie & Kagan, 2007; Turner & Whitworth, 2006). Due to the role that communication plays in everyday life, communication deficits impact an individual's social life, work status, psychosocial health, and overall life participation. The World Health Organization's (WHO) International Classification of Functioning, Disability, and Health (ICF) aims to define the impact of aphasia not only in terms of impairment, but also highlight the substantial implications the language disorder has on a person's ability to participate in their desired life activities. In addition, the WHO ICF model aims to bring forward personal and environmental factors which may act as barriers or facilitators in the experience of PWA (Kagan, Black, Duchan, Simmons-Mac, & Square, 2001; World Health Organization, 2001).

The WHO ICF model demonstrates that the severity of the communication impairment varies not only based on neurological impairment, but is dependent on the

life activities each PWA wishes to participate in on a daily basis (Worrall, 2000). Davidson, Worrall, & Hickson (2003) completed a naturalistic observation of healthy older adults and PWA in order to gather information about the differences in daily activities completed by each group. Researchers found that PWA communicated with a fewer number of communication partners than healthy older adults. In addition, communication topics of the PWA were limited to "here and now" content, and lacked discussions around books, news, current affairs, politics, and expression of opinions. Furthermore, storytelling, commenting, questioning, and joking were reduced, impacting the PWA social interactions and ability to detail life's experience through conversation (Davidson et al., 2003; Frank, 1995). Reduction of storytelling abilities in PWA was highlighted due to its fundamental role in social interaction and self-expression (Frank, 1995).

Dorze & Brazzard (1995) completed a similar study in which interviews with PWA, their relatives, and their friends were completed to better understand the impact of aphasia on activities and participation. Individuals with aphasia reported irritation with word finding deficits, frustration when others spoke for them, and fatigue in conversation interactions (Dorze & Brazzard, 1995). Moreover, changes in interpersonal relationships including loss of friends, increased tension with spouses, and decreased authority over their children were found. In addition to difficulty maintaining relationships, PWA experienced difficulty forming new relationships due to decreased participation in social settings and recreational activities, anxiety in unfamiliar social situations, decreased ability to initiate conversations, and overall reduced tendency to contribute to

conversation (Dorze & Brazzard, 1995). Employment opportunities were also found to be impacted, as PWA reported reduced ability to hold or acquire a job. Friends and family reported changes in interpersonal relationships, stress when trying to understand the PWA message, frustration in the presence of communication breakdowns, and decreased participation in activities which were previously enjoyed together. Furthermore, they reported the perception that the PWA is not interested in conversing with them (Dorze & Brazzard, 1995).

Howe, Worrall, & Hickson (2008) completed interviews with PWA in order to identify perceptions of environmental barriers which inhibit their ability to participate in life activities. Environmental factors are considered to be any factor outside of the PWA, such as physical barriers, however, may also include communication partners and their behaviors, values, and attitudes (Worrall, Rose, Howe, Kryss, & Hickson, 2007). Ineffective repair strategies utilized by communication partners were identified by PWA as an environmental barrier. These strategies include speaking for the PWA, finishing a sentence for the PWA, correcting the PWA mispronunciation or word substitution, speaking louder in response to communication breakdowns, fast rate of speech and attempting to guess the intended message (Brown et al., 2006; Howe et al, 2008). PWA noted that a cause of many of these ineffective strategies was likely due to another environmental barrier; lack of knowledge and understanding of aphasia and the resulting communication deficits. Awareness of aphasia remains as a large environmental barrier, as only 1.6 - 7.6% of randomly polled persons were familiar with aphasia (Code et al., 2001). Participants reported negative impacts in conversation with communication

partners who lacked knowledge and understanding about aphasia (Brown et al, 2007; Howe et al., 2008).

The Life Participation Approach to Aphasia (LPAA) was developed in order to address the difficulty PWA experience when participating in their everyday life activities, as well as the environmental barriers that contribute to the disruption of participation in these activities. The LPAA interventions aim to compensate for loss of function and improve everyday communication interactions. For PWA this approach may include external supports, internal strategies, and education of persons in the community with the goal of enhancing the experience of PWA (Chapey et al., 2000; Duchan, Linda, Garcia, Lyon, & Simmons-Mackie, 2001; Elman, 2016).

Communication Partner Training

The present study aims to identify the effectiveness of communication partner training (CPT), one popular intervention which falls under the LPAA. The goal of this intervention is to overcome environmental barriers which make communication challenging for PWA. While some PWA experience minimal functional benefit from traditional aphasia therapy, CPT has the potential to improve quality of social participation and interactions for PWA (Sorin-Peters, 2004). Through CPT, communication participation, effectiveness of communication, as well as the social experience of communication between PWA and their communication partners can be enhanced (Elman, 2016). While CPT does not change the impairment, changing the communication style of communication partners is a way of altering an environmental

barrier to facilitate successful interactions, and aid in completion of desired life activities (Turner & Whitworth, 2006).

CPT is aimed not only to ease the burden of communication on PWA, but also their communication partners (Cruice, Worrall, Hickson, & Murson, 2003). A communication partner can be defined as any person who interacts with PWA, including their family and friends, however, may also include members of the community such as healthcare providers and service industry workers. CPT may include learning about communication skills or strategies to enhance interactions with PWA, educational training on aphasia, and counseling programs which focus on the psychosocial aspects of aphasia. In recent years, CPT has shifted from focusing of educational and psychosocial training to a focus on training of communication skills and strategies. In a systematic review (Simmons-Mackie, Raymer, & Cherney, 2016) completed in 2016, 20/25 studies focused primarily on communication strategy training, 4/25 focused equally on communication strategy training and education, and 1/25 focused equally on communication strategy training and counseling In addition to different methods of CPT, participant groups varied as well. In 16/25 studies both the PWA and a communication partner were included, and in 9/25 studies only the communication partner was included (Simmons-Mackie, Raymer, & Cherney, 2016).

In a 2001 study, Kagan et al. completed CPT with a group of volunteer communication partners. The group was trained on strategies during a one day workshop which included background of the intervention as well as specific communication strategies to utilize in conversation with PWA. Strategies trained included utilization of

gestures, writing key words, verifying that the PWA understands the message being communicated, checking in throughout the conversation to ensure the PWA is following, and ensuring that the PWA has adequate opportunity to participate in conversation. With the goal of identifying social life participation, the social effectiveness of the communication interaction was measured in addition to the effectiveness of the transmission of information. The study found that improvements in volunteers' competency with utilization of strategies correlated to improvements in PWA social interaction and transmission of information (Kagan et al., 2001).

In a similar study, McMenamin, Tierney, & MacFarlane (2015) measured the effectiveness of CPT through the qualitative responses of participants with chronic aphasia, 3-10 years post CVA. The participants reported a number of positive thoughts and feelings following their interactions with a volunteer who received CPT. PWA found conversation with the trained volunteer to be easier and reported increased confidence in their communication abilities following the interactions (Menamin et al., 2015).

Rayner & Marshall (2003) completed a study in which volunteers of an aphasia group were educated about aphasia and trained on communication strategies to utilize with PWA. Volunteers improved in knowledge of aphasia and communication strategies and demonstrated ability to utilize this knowledge in interactions in the PWA. Researchers found a positive correlation between improvements of the volunteers and the participation of the PWA, indicating that by removing environmental barriers, participation of the PWA was improved (Rayner & Marshal, 2003).

Study Aim

CPT programs have been researched in recent years in order to address impairments of PWA under the WHO ICF. Following CPT, PWA reported improvements in activity and participation as well as psychosocial health (Simmons-Mackie, Raymer, Armstrong, Holland, & Cherney, 2010). While there is research to support the effectiveness of CPT in a variety of communication partners including family members, volunteers, and healthcare providers, there is not yet information to identify the effectiveness of CPT on individuals who provide services for PWA. The present study aims to identify the effectiveness of a 1.5 hours CPT program for employees who work with or interact with PWA. To date, studies measuring the effectiveness of CPT programs have included many hours of training (1.25 - 100 hours), however, due to cost and time constraints this length of training may not be feasible for all potential communication partners of PWA (Boysen & Wertz, 1996; Simmons-Mackie et al., 2016). Shorter training time may have positive implications on the ability to spread awareness of aphasia and facilitate CPT strategy training and education over a wider population. The goal of the study is to identify improvement in the following areas following a 1.5 hour CPT program for employees of Columbus Parks and Recreation. The research questions are

1. Do participants in a 2-hour CPT program improve their knowledge about aphasia?
2. Do participants improve their ability to identify environmental barriers which may contribute to the PWA's reduced ability to participate in daily life activities?
3. Do participants feel more comfortable and competent with their ability to interact with PWA following the CPT program?

Chapter 2. Methods

Participants

The present study was conducted at the Franklin Park Adventure Center. Participants included employees and volunteers for the Therapeutic Recreation program, which sponsors modified recreational activities for adults with disabilities. This setting was selected because PWA may attend the therapeutic recreation program and therefore, the employees may benefit from the CPT training. Participants were recruited through a flyer which was distributed to employees and volunteers by the department manager. Ten employees affiliated with this program participated in the CPT training, however, one participant's responses were not included in the data as the post training questionnaires were not returned. Of the nine participants, four (44.44%) reported having some experience with persons with aphasia, however, no participants had close friends or family members with aphasia. Participants had not received explicit aphasia education or training prior to this study.

Participant characteristics (sex, age, education, current/most recent job) as well as the participants' experiences with PWA was collected through a questionnaire administered immediately prior to the CPT program (Table 1). Age of participants ranged from 26 - 60 with an average age of 40.89. Of the nine participants, five (55.56%) were

male and four (44.44%) were female. Two participants (22.22%) have a high school diploma, two participants (22.22%) have an associate's degree, four participants (44.4%) have a bachelor's degree, and two participants (22.22%) have a master's degree. Informed consent was obtained from each participant.

Table 1. Participant Characteristics

Participant	**Sex**	**Age**	**Occupation**	**Education**	**Experience with PWA**
A	M	39	Therapeutic Recreation	High School Diploma	no
B	M	32	Staff at FPR	High School Diploma	no
C	M	47	Recreation Leader	Master's degree	some
D	M	38	Staff Columbus Parks and Recreation	Master's degree	no
E	F	48	Therapeutic Counselor	Associate Degree	no
F	M	38	Staff Columbus Parks and Recreation	Associate Degree	no
G	F	60	Therapeutic Recreation Manager	Bachelor's degree	some
H	F	26	Occupation Therapy Student	Bachelor's degree	some
I	F	40	Recreational Therapist	Bachelor's degree	some

Training Program

The present study involved a pre and post treatment design. Data was collected on the day of intervention immediately prior to the CPT program and immediately following. The CPT training program was completed over a 1.5 hour session.

Educational content and communication strategies were developed and adapted from previous research studies (Marshall, 1998; Simmons-Mackie, Raymer, & Cherney, 2016). Information was delivered through a presentation accompanied with slides, visual aids, and videos. The program consisted of three parts: 1) aphasia education 2) training of communication strategies 3) simulation to practice learned communication strategies.

1. *Aphasia Education.* Information for the aphasia education portion of the program was gathered from the Aphasia Institute, National Aphasia Association, and NIDCD and included information such as incidence and prevalence, etiology, prognosis and language impairments caused by aphasia.
2. *Strategy Training.* The second portion of the course included strategies to support conversation for PWA. Three videos from Aphasia Access were utilized to reinforce information taught during the presentation. The videos were titled *Adjusting your Talking, Using Gestures and Body Language*, and *Using Writing and Graphics*. The videos provided descriptions of specific techniques as well as clips of a speech-language pathologist utilizing the taught strategies with a PWA.
3. *Strategy Simulation.* Following the presentation, a small group activity was completed to simulate conversation with a PWA, as PWA were not involved in the study. The goal of the simulation was to facilitate carryover of instructed strategies and improve the communication partners comfort utilizing the strategies. The person acting as the PWA was given a list of language

impairments and the communication partner was instructed to utilize strategies to help the PWA communicate. The group was given paper and a basic communication board. Researchers provided feedback and suggestions to help facilitate successful communicative interactions through utilization of strategies.

Chapter 3. Design

Questionnaires

Three questionnaires were administered pre and post training program. Instructions for each questionnaire were provided in verbal and written format. Participants with visual or motor impairments completed the questionnaires verbally with the assistance of a researcher.

The Aphasia Quiz (Appendix A), modified from the National Aphasia Association, was administered pre and post training program in order to determine the participants' objective knowledge of aphasia (National Aphasia Association, 2009). The questionnaire included a list of true and false statements and participants were instructed to circle only the items they believed to be true.

The Strategy Questionnaire was developed from the Aphasia Institute's Supported Conversation for Adults with Aphasia (Aphasia Institute, 2015). The questionnaire was designed to measure the participants' ability to identify effective communication strategies (e.g. using multiple choice questions) and ineffective communication strategies (e.g. finishing the persons' sentences) to utilize to support PWA in conversation. The questionnaire has three parts: Part 1) *ways to support conversation for PWA*, Part 2) *ways to help the PWA understand your message,* and Part

3) *ways to help the PWA express their message*. Participants were asked to circle which strategies they believed were effective under each category.

A modified version of the *Communication Effectiveness Index* (CETI) was administered pre and post intervention to assess participants' self-reported abilities to facilitate communication for PWA in a variety of communication settings. The CETI is a 10-cm visual analogue scale (VAS), designed to quantitatively assess the PWA functional communication abilities over time. The CETI contains 16 items related to different communication situations (e.g. "Getting somebody's attention", "Giving yes and no answers appropriately"). The rater is instructed to mark along the scale somewhere between "not at all able", the far left end of the scale, and "as able as before", the far right end of the scale (Loma, et al., 1989).

Chapter 4. Results

Due to the small sample size, we relied on descriptive statistics and compared the pre and post intervention means for each questionnaire. Summary of results are detailed in Tables 2-6 and described below.

Education Questionnaire: The Aphasia Quiz

No significant difference between pre and post intervention means was found for The Aphasia Quiz. Table 2 details pre and post mean for each question by participant. The pre intervention mean was 71.61 and the post intervention mean was 76.55, with a mean difference of 4.94. Participant D showed the greatest improvement, (pre 66.67, post 88.89, difference 22.22). Participants B and C had detrimental change from pre to post questionnaire (pre mean 66.67, post mean 55.5, difference -11.11). Participants F and G did not experience change from pre to post questionnaire (pre 88.89, post 88.89, difference 11.11). Participant F and G had the greatest pre intervention mean (88.89) and were among the highest scorers on the post intervention questionnaire (participant A, D, F, G, H, post mean 88.89).

Table 3 details pre and post questionnaire mean scores by question. The greatest difference from pre to post intervention was found on item 7 “Although most people with aphasia are older than 50 years of age, it is not unusual for younger people to acquire this

disability" (pre 66.67, post 100.00, difference 33.34). Item 1 (pre 100.00, post 88.89, difference -11.1), item 3 (pre 100.00, post 88.89, difference -11.1), item 6 (pre 88.89, post 77.78, difference -11.11), and item 8 (pre 88.89, post 66.67, difference -22.22) had detrimental change from pre to post questionnaire. Items 1 and 3 had the highest pre intervention means (100.00). Items 2 and 8 had the greatest post questionnaire means (100.00).

Table 2. The Aphasia Quiz, Results by participant

Participant	Pre	Post	Difference
A	77.78	88.89	11.11
B	66.67	55.56	(11.11)
C	66.67	55.56	(11.11)
D	66.67	88.89	22.22
E	44.44	55.56	11.12
F	88.89	88.89	0.00
G	88.89	88.89	0.00
H	77.78	88.89	11.11
I	66.67	77.78	11.11
Max:	88.89	88.89	22.22
Mean:	**71.61**	**76.55**	**4.94**
Median:	**66.67**	**88.89**	**11.11**
Min:	44.44	55.56	(11.11)

Table 3. The Aphasia Quiz, Results by question

#	Statement (T/F)	Pre	Post	Difference
1)	Most people are familiar with aphasia	100.00	88.89	(11.11)
2)	Aphasia means a person has difficult retrieving words for speech and usually has	88.89	100.00	11.11
3)	The cause of aphasia is usually due to a heart attack	100.00	88.89	(11.11)
4)	If people have aphasia they will always have a significant memory loss as well	55.56	66.67	11.11
5)	A person with aphasia may have no noticeable physical impairment	55.56	77.78	22.22
6)	All individuals with aphasia have every similar symptoms of the same approximate severity	88.89	77.78	(11.11)
7)	Although most people with aphasia are older than 50 years of age, it is not unusual for younger people to acquire this disability	66.67	100.00	33.33
8)	Some individuals with aphasia return to work, however, most are forced to retire or change jobs and work in a modified capacity	88.89	66.67	(22.22)
9)	Recovery from aphasia is usually complete within six months of treatment	0.00	22.22	22.22
	Max:	100.00	100.00	33.33
	Mean:	**71.61**	**76.54**	**4.94**
	Median:	**88.89**	**77.78**	**11.11**
	Min:	0.00	22.22	(22.22)

Strategy Questionnaire

A significant difference was found from pre to post intervention for the Strategy Questionnaire (Table 4). Table 4 details pre and post mean for each question by participant. The mean difference from pre to post questionnaire was 13.97 (pre 74.04, post 87.93). Participant D showed the greatest improvement on this measure following CPT program, (pre 66.67, post 100.00, difference 33.33). Participant A did not experience change from pre to post questionnaire (pre and post mean 80.95, 0.00 difference). Participant H had the highest pre CPT program score (pre 95.24, post 100.00, difference 4.76). Participants D, G, and H had the highest post training score (100.00).

Table 5 details pre, post, and difference for each question on the strategy questionnaire. The greatest improvement from pre to post questionnaire was Part 3, item 3 “provide multiple choice options” (pre 22.23, post 100.00, difference 77.78). Part 3, item 1 “ask as many questions as you can” (pre 55.56, post 33.33, difference -22.22), part 3 item 4 “correct mispronounced words” (pre 66.67, post 55.56, difference -11.11) and part 3 item 5 “finish their sentences if they are trouble” (pre 77.78, post 55.56, mean difference -22.22), had detrimental change from pre to post intervention. Part 1, item 1 and Part 3, item 2 had the greatest pre intervention mean (100.00). Part 1, item 1 and 2, Part 2 items 1, 2, 4, 5, and 6, and Part 3, items 2, 3, 6, and 7 had the highest post intervention mean (100.00).

Table 4. The Strategy Questionnaire, Results by participant

Participant	Pre	Post	Difference
A	80.95	80.95	0.00
B	57.14	66.67	9.53
C	66.67	96.23	28.56
D	66.67	100.00	33.33
E	61.90	76.19	14.29
F	71.43	85.71	14.28
G	90.48	100.00	9.52
H	95.24	100.00	4.76
I	76.19	85.71	9.52
Max:	95.24	100.00	33.33
Mean:	**74.07**	**87.94**	**13.75**
Median:	**71.43**	**85.71**	**9.53**
Min:	57.14	66.67	0.00

Table 5. The Strategy Questionnaire, Results by Question

Part 1: To help support conversation you should:

#	Statement (T/F)	Pre	Post	Difference
1)	Provide opportunities for conversation	100.00	100.00	0.00
2)	Speak for the person	77.78	88.89	11.11
3)	Use the best/preferred method of communication for that person	77.78	100.00	22.22
4)	Eliminate distractions and background noise	88.89	100.00	11.11
5)	To reward communication attempts, always say "I understand" even when you do not	77.78	77.78	0.00
6)	Recap long conversations	66.67	100.00	33.33
	Max:	100.00	100.00	33.33
	Mean:	**81.48**	**94.45**	**12.96**
	Median:	**77.78**	**100.00**	**11.11**
	Min:	66.67	77.78	0.00

Part 2: To help the PWA understand your message you should:

#	Statement (T/F)	Pre Mean	Post Mean	Difference
1)	Talk to them like they are a child	88.89	100.00	11.11
2)	Use short and simple sentences	88.89	100.00	11.11
3)	Speak louder if they do not understand you	77.78	77.78	0.00
4)	Use clear intonation	88.89	100.00	11.11
5)	Use gestures	55.56	100.00	44.44
6)	Write down key words and topics	44.44	100.00	55.56
7)	Pause between thoughts	88.89	88.89	0.00
8)	Add as much detail as you can if they do not understand you the first time	44.44	66.67	22.23
	Max:	88.89	100.00	55.56
	Mean:	**72.22**	**91.67**	**19.45**
	Median:	**83.34**	**100.00**	**11.11**
	Min:	44.44	66.67	0.00

Part 3: To help the PWA express their thoughts you should:

#	Statement (T/F)	Pre Mean	Post Mean	Difference
1)	Ask as many questions as you can	55.56	33.33	(22.23)
2)	Ask yes or no questions to confirm message	100.00	100.00	0.00
3)	Provide multiple choice options	22.20	100.00	77.80
4)	Correct mispronounced words	66.67	55.56	(11.11)
5)	Finish their sentences if they are having trouble	77.78	55.56	(22.22)
6)	Request the use of pointing, gestures, and written key words	66.67	100.00	33.33
7)	Give the person time to respond	88.89	100.00	11.11
	Max:	100.00	100.00	77.80
	Mean:	**68.25**	**77.78**	**9.53**
	Median:	**66.67**	**100.00**	**0.00**
	Min:	22.20	33.33	(22.23)

CETI

The CETI is scored between 0 and 100 for each of the 16 items, with a higher score indicating increased self-reported ability or comfort level helping a PWA in the specified situation. A mean score for each of the 16 items, between 0 and 100, was found for each participant. Descriptive statistics found significant change from pre to post intervention CETI scores. Table 6 details each participant's scores from pre and post intervention, as well as the difference between the scores. Participant B did not complete the back side of the pre or post CETI. The data from this participant was included in the descriptive statistic due to the CETI protocol which states that it is not necessary to complete each of the 16 items (Lomas et al., 1989). The mean CETI improvement was 18.91. Participant D had the greatest improvement (52.74), with a pre score of 14.50 and a post score of 67.24. Participant B had detrimental change of -3.67 (pre 57.29, post 53.66).

Table 6. Communication Effectiveness Index (CETI), Results by participant

Participant	Pre	Post	Difference
A	68.56	69.56	1.00
B	57.29	53.65	(3.64)
C	69.76	84.29	14.53
D	14.50	67.24	52.74
E	39.29	75.94	36.65
F	54.00	78.06	24.06
G	46.18	70.17	23.99
H	65.53	70.88	5.35
I	56.75	72.31	15.56
Max:	69.76	84.29	52.74
Mean:	**52.43**	**71.34**	**18.92**
Median:	**56.75**	**70.88**	**15.56**
Min:	14.50	53.65	(3.64)

Chapter 5. Discussion

Main Findings

The present study aimed to 1) improve participants' knowledge of aphasia 2) improve participants' ability to identify environmental barriers which may contribute to the PWA's reduced ability to participate in daily life activities and 3) improve participants' comfort and competency with their ability to support PWA in communication interactions. Results of this study were in line with previous studies on CPT programs (Kagan et al., 2001; Simmons-Mackie, Raymer, & Cherney, 2016). These results demonstrated that such programs may be beneficial to teach effective communication strategies and improve the comfort of the communication partner when interacting with PWA. Despite improvement on the strategy questionnaire and the CETI, there was a lack of clinically significant improvement on The Aphasia Quiz, leading us to consider the effectiveness of participant selection, outcome measures, and intensity of intervention.

Participant Selection

The number and sample of participants was found to be a limitation of the present study. With a relatively small sample size (9) of participants selected from a single

facility, generalization of results should be considered with caution. In addition, future studies should consider additional exclusion criteria to reduce confounding variables such as cognitive impairments, visual impairments, motor impairments, and other disabilities which were not controlled for. We hypothesize that cognitive and visual impairments may have been one variable which contributed to results of The Aphasia Quiz. With a larger sample size and stricter exclusion criteria, it is possible that more or less improvement may have been found. Future research utilizing a different sample will help clarify the role specific variables have in the outcome of the CPT program.

Outcome Measures

Results of the present study lead us to consider the constructs we chose to measure: 1) whether participants improved on their general knowledge of aphasia, measured through The Aphasia Quiz, 2) whether participants improved their knowledge of effective and ineffective communication strategies, measured through the Strategy Questionnaire, and 3) whether participants improved their comfort and competency with their ability to support PWA in conversations, measured through the CETI. The Aphasia Quiz did not measure change from pre to post questionnaire as it was expected to do so. Despite the lack of improvement on The Aphasia Quiz, awareness of aphasia has been found to be an important factor in contributing to the success of communication interactions with PWA (Brown et al, 2007; Code et al., 2001; Howe et al., 2008). Therefore, we believe that including general education of aphasia is key to any CPT program. Although it is important to include this information in the training program,

future research may elect to exclude this as an outcome measure, and consider the constructs which captured the change CPT creates. In the present study, these constructs were 1) improvement in identifying effective and ineffective communication strategies and 2) improvement in self-reported comfort and competency interacting with PWA.

Intensity of Intervention

Intensity of CPT programs is one factor which has been highly variable among research studies, as training programs have ranged anywhere from 1.25 hours to 100 hours in duration (Simmons-Mackie, Raymer, & Cherney, 2016). The present study aimed to identify the effectiveness of a relatively short 1.5 hour CPT program. The results of the present study demonstrated that improvement was made, despite the short length of intervention. These results may have positive implications on the ability to improve awareness of aphasia for populations beyond the immediate family members and friends of PWA. While service industry workers, health professionals, and other members of society may not be able to participate in a training program of great length, they may be able to participate in a shorter program. The overall goal of CPT programs is to increase awareness of aphasia and train communication partners to use effective strategies to support PWA in conversation. Future research should consider including CPT programs of relatively low intensity to demonstrate whether improvements can be made across all constructs (education, strategy, and comfort level of communication partner). In addition, future research should consider performing an analysis of the relationship of intensity of CPT program and cost. By providing this information, future

researchers and speech-language pathologists may be more inclined to implement a CPT program of their own, and therefore, continue to spread awareness of aphasia.

Chapter 6. Conclusions

As previous research suggests (Kagan et al., 2001; Simmons-Mackie & Kagan, 2007; Turner & Whitworth, 2006; Worrall et al., 2007; World Health Organization, 2001), factors which contribute to aphasia impairments lie not only within the PWA, but also environmental barriers outside of the PWA, such as the behaviors of communication partners. The present study demonstrates that through CPT programs, potential communication partners for PWA can improve their ability to identify effective communication strategies and improve their self-reported comfort level with supporting PWA in conversation. Although PWA were not included in this study, in previous studies, PWA have identified the knowledge of communication partners as a key factor in contributing to their comfort and confidence in conversation, further indicating the potential value of the present study. Future research studies should continue to identify additional populations to deliver CPT programs, as well as additional measures which may have more success demonstrating improvement on all outcome measures.

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Appendix A. Modified Aphasia Quiz

Part 1: Circle all *TRUE* statements:

1. Most people are familiar with aphasia.
2. Aphasia means a person has difficulty retrieving words for speech and usually has some problems reading, writing, and understanding spoken language.
3. The cause of aphasia is usually due to a heart attack.
4. If people have aphasia they will always have a significant memory loss as well.
5. Aphasia is more prevalent than Parkinson's Disease or Muscular Dystrophy.
6. A person with aphasia may have no noticeable physical impairment.
7. All individuals with aphasia have very similar symptoms of the same approximate severity.
8. Although most people with aphasia are older than 50 years of age, it is not unusual for younger people to acquire this disability.
9. Some individuals with aphasia return to work, however, most are forced to retire or change jobs and work in a modified capacity.
10. Recovery from aphasia is usually complete within six months of treatment.