Development of a Training Program to Increase Student Clinician Competency when Communicating with People with Aphasia

Meghan Doherty
Saint Louis University

Chevie Lay
Washington University in St. Louis School of Medicine

Follow this and additional works at: https://encompass.eku.edu/jote

Part of the Occupational Therapy Commons, and the Other Rehabilitation and Therapy Commons

Development of a Training Program to Increase Student Clinician Competency when Communicating with People with Aphasia

Abstract

The Washington University in St. Louis Stroke Clinic is a student-run free clinic (SRSC) designed to enhance student learning and provide the community with no-cost evidence-based occupational therapy services. Aphasia is a common communication impairment after stroke that affects the ability to access services and give and get information, and impacts life participation and satisfaction. Conversation partner training is an evidence-based treatment approach to improve communication with people with aphasia (PWA). The purpose of this project was to develop and evaluate the effectiveness of student clinician training about communicating with PWA using conversation partner training in the SRSC. This study was a single-group prospective pre-post cohort study with two phases. In Phase 1, eight students completed a series of formal and informal feedback measures to evaluate student perception of the current training. In Phase 2, six students completed a conversation partner education protocol with a flipped classroom model and includes self-evaluation and evaluation of competency with a skills check-out. Student clinicians reported increased knowledge, skills, and confidence in their ability to communicate with PWA. Students demonstrated increased skill in acknowledging and revealing the competence, building rapport, as well as giving and receiving valuable information. This was the first study looking solely at the value of student occupational therapy education on communicating with PWA. Through this experience, these students were better prepared to interact with future clients with aphasia.

Keywords

Stroke, aphasia, supported conversation, free clinic, education

Creative Commons License

Acknowledgements

Development of a Training Program to Increase Student Clinician Competency when Communicating with People with Aphasia

Meghan Doherty, OTD, OTR/L[1] and Chevie Lay, MSOT, OTR/L[2]

Saint Louis University[1] and Washington University[2]

United States

ABSTRACT

The Washington University in St. Louis Stroke Clinic is a student-run free clinic (SRSC) designed to enhance student learning and provide the community with no-cost evidence-based occupational therapy services. Aphasia is a common communication impairment after stroke that affects the ability to access services and give and get information, and impacts life participation and satisfaction. Conversation partner training is an evidence-based treatment approach to improve communication with people with aphasia (PWA). The purpose of this project was to develop and evaluate the effectiveness of student clinician training about communicating with PWA using conversation partner training in the SRSC. This study was a single-group prospective pre-post cohort study with two phases. In Phase 1, eight students completed a series of formal and informal feedback measures to evaluate student perception of the current training. In Phase 2, six students completed a conversation partner education protocol with a flipped classroom model and includes self-evaluation and evaluation of competency with a skills check-out. Student clinicians reported increased knowledge, skills, and confidence in their ability to communicate with PWA. Students demonstrated increased skill in acknowledging and revealing the competence, building rapport, as well as giving and receiving valuable information. This was the first study looking solely at the value of student occupational therapy education on communicating with PWA. Through this experience, these students were better prepared to interact with future clients with aphasia.

INTRODUCTION
Every year, 795,000 people in the United States have a stroke (Benjamin et al., 2017). Aphasia, a cognitive communication disorder, affects approximately 30-34% of individuals with stroke (Flowers et al., 2016). Aphasia affects a person's ability to understand and express language. Individuals with aphasia are oftentimes marginalized, labeled by their condition, and made invisible by their assumed inability to communicate (Dalemans, Wade, van den Heuvel, & de Witte, 2009). Persons living with aphasia (PWA) are at risk of not being able to communicate successfully with their healthcare providers, and ultimately, their right to participate and engage in decisions regarding their healthcare may be compromised (Flowers et al., 2016; O'Halloran, Hickson, & Worrall, 2008). As a result, PWA are often not able to access healthcare services in the same way as their stroke survivor counterparts who do not experience aphasia; they may be left out of decisions about their care or be perceived as incompetent because of their communication deficit (Kagan, 1995; McGilton et al., 2011; Simmons-Mackie et al., 2007).

For healthcare providers, conversation is a critical means to deliver quality care and to involve clients in the treatment planning process. The ability to connect with clients through conversation not only builds better rapport, but the actual quality of healthcare is improved (Roter & Hall, 2006). Evidence suggests that when PWA are involved in the treatment planning process, such as the planning that occurs in occupational therapy (OT), client motivation is increased, treatment time is more efficiently utilized by healthcare professionals, and a more holistic approach is achieved (Leach, Cornwell, Fleming, & Haines, 2010). However, health sciences students report feeling underprepared for clinical communication (Hill, Davidson, & Theodoros, 2010).

Experts in aphasia rehabilitation indicate that best practice is to offer interventions that target the actual lived experience of those with aphasia (Lyon et al., 1997; Van Der Gaag et al., 2005). The Life Participation Approach to Aphasia (LPAA) model emphasizes reengagement in life by strengthening an individual's ability to participate in the activities of their choosing (Kagan et al., 2008). This requires interventions to go beyond rehabilitating just the language impairment itself. One environmental intervention stands out: Supported Conversation for Persons with Aphasia (SCA; Simmons-Mackie, Raymer, Armstrong, Holland, & Cherney, 2010). SCA is an intervention aimed at training communication partners, not PWA, to decrease barriers to communication by both acknowledging and revealing the competence of persons with aphasia. The focus of SCA is on interaction and social connection rather than solely being able to exchange information (Kagan et al., 2008). SCA utilizes pictures, gestures, written keywords, and explicit recognition of the client's intact cognitive ability.

Multiple studies have investigated SCA with communication partners and found it to be effective for enhancing communication between a PWA and his or her communication partner (Simmons-Mackie, Raymer, & Cherney, 2016). SCA training is effective with volunteer community members, medical students, speech therapy students, and nursing students (Duchan, Linda, Garcia, Lyon, & Simmons-Mackie, 2001; Finch et al., 2017; L. Legg & Langhorne, 2004; Rayner & Marshall, 2003; Welsh & Szabo, 2011).

Communication training has also been piloted with occupational and physiotherapy students and with practicing nurses, respectively (Cameron et al., 2015; McGilton et al., 2011). Results of these varied trainings show an improved ability of conversation partners to reveal and acknowledge competence of PWA (Rayner & Marshall, 2003), establish rapport and obtain information (C. Legg, Young, & Bryer, 2005), and significantly improve communication effectiveness of the PWA despite not receiving any direct training (Kagan, Black, Duchan, Simmons-Mackie, & Square, 2001). Limitations with the body of literature indicate additional need for evidence for conversation partner training in OT education. To date, only one study has included OT students, and it was conducted with PWA who had already been extensively trained in communication techniques and did not represent the typical PWA in a clinical setting. However, the positive findings of the study, namely increased student confidence and demonstration of communication strategies, indicates that this warrants additional studies.

Student healthcare professionals, as well as their clients with aphasia, may benefit from learning techniques of SCA. Specifically, student clinicians would likely benefit from a toolkit of conversation partner skills including formal SCA online training, that would result in techniques to acknowledge and reveal clients' competence, build rapport, and allow clients to give and receive valuable information pertinent to their health and wellbeing. This would allow them to enter the workforce prepared to impact their client's care. While the successful translation of conversation partner training into clinical practice has not been extensively researched, a study with nursing professionals demonstrated that conversation partner training improved their ability to carry over personalized communication plans with their patients with stroke on an inpatient unit (McGilton et al., 2011).

The Washington University in St. Louis Student-Run Stroke Clinic (SRSC) is a free student-run clinic designed to enhance student learning and provide the St. Louis community with free OT services for those who have experienced a stroke or brain injury. The clinic provides uninsured and underinsured individuals in the St. Louis community the opportunity to increase their independence and participation in desired occupations through evidence-based OT interventions – an opportunity that they would not otherwise receive without this clinic. The clinic also provides students with real-world clinical experience in preparation for fieldwork and future practice, specifically related to OT's role in stroke rehabilitation.

Fortunately, the consequences of aphasia can be lessened by environments that are highly supportive (Duchan et al., 2001; Simmons-Mackie et al., 2007). In order to provide a supportive environment that enables PWA to increase occupational performance and participate in life, SCA has been identified as an efficacious intervention (Simmons-Mackie et al., 2016). The purpose of this project was to revise and evaluate the effectiveness of a student clinician conversation partner training protocol in the SRSC. It was hypothesized that this training would not only increase student clinicians' knowledge and comfort level, but also their perceived skill and competency with communicating with PWA.

METHODS

Research Design
This study was a single-group prospective pre-post cohort study with two phases measuring the effect of education about aphasia on students' communication competence. In the first phase we collected feedback about the existing educational protocol from a group of second year student clinicians on working with clients with aphasia, and used the feedback to revise the protocol. In the second phase, we delivered the new educational protocol with first-year student clinician participants and collected outcomes. See Figure 1 for an overview of the phases. This study was reviewed and approved by the Washington University in St. Louis Institutional Review Board (IRB). Students provided written informed consent to an individual who was not responsible for assigning their grade in coursework.
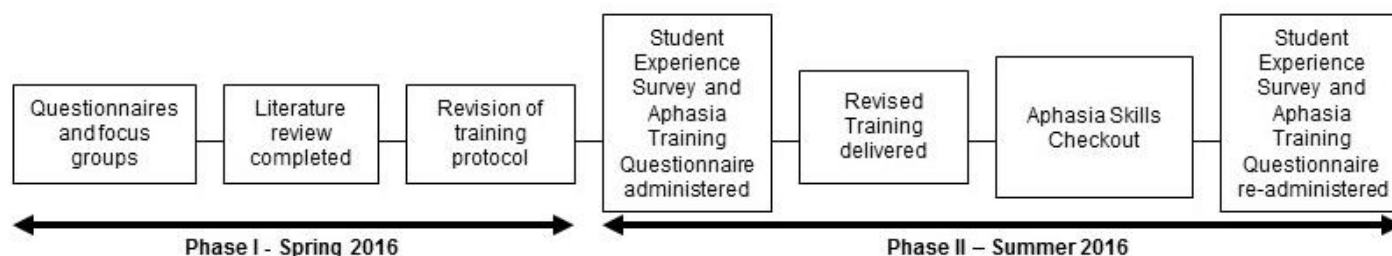

Figure 1. Overview of study phases.

Participants and Setting
Participants included graduate students in either a Master of Science in Occupational Therapy (MSOT) or Doctorate of Occupational Therapy (OTD) degree program at Washington University who elected to participate in the SRSC as a course requirement. Students were majority female, between the ages of 23 and 31, and had little to no exposure to PWA. Phase I included eight student participants in their second year of study in the spring of 2016. Phase II included six student participants in their first year of study in the summer of 2016. The setting was a small-group lab-based classroom setting at a private university graduate program.

PHASE I: EVALUATION OF EXISTING TRAINING PROTOCOL
The SRSC implemented an aphasia communication training protocol during graduate students' initial semester of clinic training in their first year of graduate coursework. The existing training protocol utilized a flipped classroom approach (McLaughlin et al., 2014) that emphasized content first being learned outside of class, primarily online. Class time was then dedicated to experiential learning through in-class activities, exploring topics in greater detail, and other opportunities to engage students in the content outside of the traditional lecture method. The flipped classroom model has been shown to be an effective alternative for instruction and training on key concepts to first-year graduate students in the health professions field (Tune, Sturek, & Basile, 2013).

To prepare for communication with PWA, students engaged in a self-directed learning module comprised of reading one textbook chapter that explained aphasia as an impairment, the etiology and neuroscience behind the impairment, and how aphasia affects the lives of clients (Stewart & Riedel, 2011), viewing a short PowerPoint presentation about aphasia and stroke, and completing an online SCA training module (Aphasia Institute, 2015). The online module consisted of videos of several communication scenarios with PWA, both with and without the use of SCA strategies. Finally, students participated in communication role-plays with other first-year students to apply the content.

Feedback was collected from eight second-year student clinicians regarding the training they had received the year before, in order to revise the training protocol for the next cohort. One-on-one interviews and a small focus group with second-year student clinicians regarding their perceptions of the effectiveness of the previous training were also conducted by the authors (see Table 1). The interviews addressed specific components of the training protocol and allowed student clinicians to provide "would be even better if" suggestions. Data was organized to identify patterns of responses for educational items to retain and ones to add based on gaps of knowledge found in the responses.

Table 1

Phase 1 Focus Group Content Questions

1. Did you feel prepared to get and give information to your client with aphasia?
2. What were the most helpful training resources and why?
3. Is there anything you would add or change to your training prior to your first session?
4. Is there anything that you would have like to have seen or had training on?
5. Was there anything that was hard to explain that you used SCA for?
6. Do you have any additional comments or suggestions?

Two tools from the training protocol were identified by a consensus of students as the most helpful. These included the Aphasia Institute (2015) online SCA training module and a document titled "Talking to your OT" which was a publication with pictographs, also published by the Aphasia Institute. Students also agreed on the following recommendations: 1) practicing with an experienced clinician or student as the students did not know how to role play having aphasia, 2) having more training videos of students with live clients with aphasia, 3) a video of an OT completing goal-setting and 4) more training on alexia, the reading impairment component of aphasia. Three respondents felt prepared when completing initial paperwork with their client, including treatment consent, and explained that giving the Frenchay Aphasia Screening Test (FAST; Enderby & Crow, 1996) helped most in deciding how to apply SCA principles.

Some individual responses also guided adaptations to the training. One individual felt less confident after training, perhaps due to more exposure to communication challenges. Another stated she may not be totally prepared, but now knew where to look for resources. Other suggestions included having a video guiding how to complete consent forms with PWA, and how to teach SCA concepts to caregivers or family members of PWA.

For the final phase of evaluation of the existing training protocol, we performed a literature review of aphasia rehabilitation topics impacting PWA using PubMed, CINAHL, and Google Scholar databases. Studies including SCA, conversation partner training, assessment of PWA, and delivery of healthcare to PWA were included. Healthcare providers in studies included students in various medical and allied health fields, nurses, speech language pathologists, occupational and physical therapists. The summary of the literature review formed the introduction to this manuscript.

Student feedback was combined with the literature review results to identify changes for the revised training (see Table 2). The authors also decided through literature review and focus group feedback that selection of an overarching learning theory would improve the structure of the training.

Table 2

Original and Revised Aphasia Conversation Partner Training Protocols

Educational Component	Existing Training	Revised Training
Flipped classroom approach	X	X
Textbook reading	X	X
SCA Online Training Module	X	X
Student Experience Survey	X	X
PowerPoint presentation: Stroke and Aphasia	X	X
PowerPoint presentation: OT Interventions for Aphasia		X
In-class role play with peers	X	X
In-class role play with experienced student clinicians or OTs		X
Social Learning Theory		X
OT-specific Training Videos		X
Aphasia Skills Check-out with MSC		X
Aphasia Training Questionnaire (ATQ)		X

PHASE II: REVISION OF TRAINING PROTOCOL
In response to student feedback, the revised training protocol was divided in two sections: items completed prior to lab and items completed during lab. Prior to lab, students first completed the same textbook reading and online Aphasia Institute (2015) SCA training as the original protocol. In addition, students viewed a new OT-specific training video developed for the project that included a student clinician modeling conversation partner techniques with a real client with severe global aphasia and completed a worksheet. This addition was based on student feedback requesting live client content focused on obtaining therapy goals. During the lab sessions, students participated in one original and one new PowerPoint presentations (OT Interventions for Aphasia), hands-on experiential learning, and completion of the skills competency checkout outlined below. Student clinicians participated in hands-on experiential learning by role-playing and practicing SCA techniques with two trained second year student mentors with experience working with PWA as well as licensed OT feedback. Role plays included a scenario of a PWA with alexia. Role plays included practice of obtaining occupational profile information from a client with mild receptive and expressive aphasia and a second client with severe expressive aphasia and mild receptive, including alexia. Finally, student clinicians participated in the skills competency checkout to demonstrate proficiency of using SCA techniques.

In addition to maintaining the flipped classroom model, the social learning theory also informed the development of the revised conversation partner training (Bandura, 1978). The social learning theory's basic tenets for behavioral change include modeling, observation, and imitation to facilitate learning by involving important cognitive processes including attention, retention, reproduction, and motivation (Bandura, 1978). In the revised training, students completed the teaching and modeling through in-person and video sources. Social learning theory in the literature supports both clinical learning (Secomb, 2008) and knowledge translation of research into practice, both goals of this training (Gagliardi, Webster, & Straus, 2015; Thomas, Menon, Boruff, Rodriguez, & Ahmed, 2014). Both observational learning and experiential learning have been identified as crucial guides for classroom education and clinical training for health professions such as medical doctors and nurses (Bahn, 2001; Yardley, Teunissen, & Dornan, 2012). See Table 2 for a comparison of the revised training protocol to the original training protocol.

Measures
The revised aphasia conversation partner training protocol was evaluated through multiple outcome measures: pre-post Student Experience Survey (SES), pre-post Aphasia Training Questionnaire (ATQ) on perceived ability to communicate with clients with aphasia, and a final Aphasia Skills Checkout that assessed student competency through the Measure of Skill in Supported Conversation (MSC; Kagan et al., 2004).

SES. All student clinicians in the SRSC were required to complete the SES prior to receiving any stroke rehabilitation training as well as at the end of each semester. The survey was a self-report measure that required each student clinician to rate their comfort and skill level on various clinical skills. Students rated their comfort on a scale

of 1-5 (1 = very uncomfortable; 5 = very comfortable) and skill on a scale of 1-5 (1 = very unskilled; 5 = very skilled). The following item addressing communication with clients with aphasia was added to the survey: communicate effectively with clients that have aphasia (cognitive communication disorder). The SES was created for the SRSC, therefore did not have established reliability and validity.

ATQ. All student clinicians completed the ATQ. The survey was completed prior to receiving any communication training and again following the student clinician's Aphasia Skills Check-out. Like the previous survey, the student clinicians rated their ability to perform various clinical skills on a scale of 1-5 (1 = very unskilled; 2 = unskilled; 3 = I need more practice; 4 = skilled; 5 = very skilled). The provided skills specifically relate to communicating with clients with aphasia and were determined based upon specific standards set forth by the Accreditation Council for Occupational Therapy Education (ACOTE). The ATQ was created for the SRSC, therefore did not have established reliability and validity.

Aphasia Skills Checkout/ MSC. The Aphasia Skills Checkout involved trained second-year students role-playing a client with global aphasia using a scripted case study developed by the instructor/first author, a licensed OT. Each first-year student was responsible for demonstrating competency by using conversation techniques to obtain a goal from the client in one of the Canadian Occupational Performance Measure (Law et al., 1998) goal areas: self-care, productivity, or leisure.

Student competency was determined using the MSC, an outcome tool used to measure the skill of conversation partners in providing SCA (Kagan et al., 2004). Four items were measured: Acknowledging Competence, and three aspects of Reveals Competence: Ensures that partner with aphasia understands, ensures that partner with aphasia has a means of responding, and Verifies. Scores range from 0-4 (0= competence not acknowledged or no use of techniques to reveal competence, 1 = needs a lot of supervision, 2= moderate level of supervision, 3 = doesn't need much supervision e.g. 1x/month, 4 = outstanding). A score greater than or equal to 2 was required for both acknowledging competence and revealing competence to demonstrate proficiency on the checkout. The MSC has established interrater reliability and construct validity (Kagan et al., 2004).

Phase 2 Results
A total of six students (n = 6) participated in the training protocol in January-April 2017. Five student clinicians completed the SES prior to and following training (one neglected to turn in materials); median comfort level prior to training was 3.00 and median skill level prior to training was 2.00, indicating students felt unskilled and uncomfortable communicating with PWA (see Table 3). Post training, the median comfort level was a 4.0 and median skill level was 4.0 for communicating with PWA. The post training median scores indicate that students felt able to communicate with PWA, but more practice was beneficial and they still felt the need for feedback from mentors.

Table 3

Student Experience Survey: Self-Report Comfort and Skill Level to Communicate Effectively with a Person with Aphasia

	Median	
	Pre Training	Post Training
Comfort Level	3.0	4.0
Skill Level	2.0	4.0

* *n = 5*

Six student clinicians completed the ATQ both pre- and post-training; median skill level is reported for each item (see Table 4). Prior to training, students felt very unskilled performing each of the clinical skills with a PWA. Following the training, student clinicians reported feeling capable of screening and assessing, evaluating occupational performance, and obtaining an occupational profile from a PWA, but would need help from a mentor some of the time. Students felt they would be skilled interacting with PWA through written, oral, and nonverbal communication.

Table 4

Aphasia Training Questionnaire: Self-Report Ability to Perform Clinical Skill with Person with Aphasia

	Median	
Item	Pre Training	Post Training
Screen and assess	1.0	3.00
Evaluate occupational performance	1.0	3.00
Obtain occupational profile	1.50	4.00
Interact through written, oral, and nonverbal communication	2.00	4.00
Provide occupational therapy intervention	1.00	2.00

* *n = 6*

Student clinicians participated in the Aphasia Skills Checkout after completing the conversation partner training. The median scores for acknowledging and revealing competence are measured by the MSC (see Table 5). The median for acknowledging competence was 2.50 indicating students acknowledge competence as it was appropriate and there are no major concerns for the student. The median for revealing competence was 2.00-2.50, indicating students were able to get information and there are no major concerns regarding students using SCA techniques with instructors portraying PWA. Both scores indicate a minimum to moderate level of supervision.

Table 5

Aphasia Skills Checkout: Median Score on Measure of Skill in
Supported Conversation

	Median
Acknowledges competence	2.50
Reveals competence	
Ensures partner with aphasia understands	2.50
Ensures partner with aphasia has a means of responding	2.00
Verifies	2.50

* *n = 6*

While significance was not analyzed for any outcome measure due to the small sample size, the tables demonstrate that these student clinicians reported increased comfort and skill level for communicating and performing specific clinical skills with future PWA. The skills checkout demonstrates that students were competent in using conversation partner techniques to acknowledge and reveal competence of an instructor portraying a PWA.

In combination, the literature review identifying evidence-based practices, feedback from student clinicians, and the guiding theories informed the design of the final training program to prepare student clinicians to communicate effectively with clients with aphasia.

DISCUSSION

This training protocol was developed to prepare student clinicians to communicate with PWA. Due to the burgeoning number of stroke survivors and prevalence of post-stroke aphasia, this is an essential skill for all healthcare professionals working with this population. When an individual's ability to access services, participate in communication-intensive activities such as setting goals with a therapist or completing a

transaction with a cashier, give and get information, and make informed decisions is reduced by their communication disability, life participation and satisfaction can be greatly affected (Cruice, Worrall, Hickson, & Murison, 2003; Simmons-Mackie et al., 2007). The impact on PWAs' access to services and ability to make informed healthcare decisions require that educational curricula address the development of these skills. The training protocol as an interactive learning module allowed us to train students to acknowledge competence, reveal competence, and decrease barriers to communication with PWA. The flipped classroom model was a feasible way to deliver content; this teaching method reduces in-class instruction time, allowing for more active participation in class for practice and evaluation of clinical skills (Betihavas, Bridgman, Kornhaber, & Cross, 2016; Prober & Khan, 2013).

Student clinician scores on post measures were sufficient for students in their first year of their graduate program, in particular because student clinicians in the SRSC were always under the supervision of a third-year OTD student mentor as well as a licensed OT. On the SES item regarding "comfort and skill to communicate effectively with a person with aphasia," students' median rating indicated they would need help from a mentor some of the time. Post-scores on the ATQ revealed that students were confident in completing assessments and communicating with people with a portrayed PWA, but might need help from a mentor. Student clinicians still felt unskilled providing OT intervention to PWA; however, at this point in the student clinicians' stroke clinic training and academic program curriculum, they had not yet received education on stroke intervention planning. Therefore, these scores were to be expected. On the MSC, median scores ranged from 2.0 to 2.5. This equated to a minimum to moderate level of supervision. Again, the scores were appropriate and demonstrated their readiness to communicate with PWA. This could be further measured in the future by evaluating their interactions with PWA during clinic treatment sessions.

If students and OT practitioners are not educated in the proper ways to communicate successfully with PWA, they cannot provide them equitable care (Kagan, 1995; Simmons-Mackie et al., 2007). All aspects of the OT process are affected, including obtaining an occupational profile, administering assessments, and completing interventions (Tucker, Edwards, Mathews, Baum, & Connor, 2012). Student clinicians who completed this SCA training reported increased comfort, skill, and ability to use SCA techniques as well as demonstrated competency using the skills with a simulated PWA as the result of receiving the training. These results mirror those of similar trainings developed for conversation partners of PWA as well as students and practitioners in healthcare fields (Simmons-Mackie et al., 2016). This study contributes to the body of literature showing that training students can improve communication skills with patients and improve the quality of care performed (Finch et al., 2017; Finch et al., 2013; Kagan et al., 2001; C. Legg et al., 2005; Rayner & Marshall, 2003; Welsh & Szabo, 2011). It is one of the first studies of its kind completed with OT student clinicians who treated PWA across the continuum of care.

Limitations and Future Research

There were several limitations to the current study including the fact that it was designed specifically for the SRSC at Washington University in St. Louis. The study was completed with a small cohort of six students and in only one student-run clinic. Although it could be beneficial for other student-run clinics and practicing OTs, it may not be generalizable to all educational programs. The students were not compared to students without training, as it would not be ethical to have certain students unprepared to treat PWA. This study also did not utilize real clients with aphasia during the ASC. Current first-year students may or may not have had any prior client interaction experience. Therefore, not having access to real clients actually experiencing aphasia for training purposes was a significant barrier to the training. Due to the limited and strict timeline of clinic training, pre-training data was not gathered for the ASC to determine the training's overall effectiveness.

Therefore, future directions for this project include repeating the training with a second cohort of students to further investigate student learning. Revisions may be indicated based on additional student feedback of the training protocol utilizing PWA in the ASC, and further comparing student check-out performance with their actual clinic performance throughout the clinic semester. Eventually, we will measure client outcomes to ensure that outcomes for clients with aphasia are equivalent to that of other clinic clients who do not have barriers to communication. Another area for improvement would be inclusion of speech-language pathologists and students for interdisciplinary education; unfortunately, at this institution there is not a graduate program in speech for collaboration.

CONCLUSION

Conversation partner training is a valuable environmental intervention for student clinicians to utilize to minimize communication barriers and maximize clients' participation in conversation and in life. This study addresses the research gap that exists between the effectiveness of conversation partner techniques and their impact on student learning. Therefore, it adds to the body of literature dedicated to OT student learning and aphasia training of healthcare professionals.

By implementing this training protocol in student-run clinics, OT educational curriculum, and in clinical practice, both current and future clinicians may experience increased comfort, knowledge, and skills to decrease barriers to conversation. As a result, OTs will be better prepared to provide quality service and care to their future clients with aphasia.

References

Aphasia Institute. (2015). *An introduction to supported conversation for adults with aphasia (SCA) self-directed learning module*. Retrieved from https://www.aphasia.ca/home-page/health-care-professionals/knowledge-exchange/self-directed-sca-module/

Bahn, D. (2001). Social learning theory: Its application in the context of nurse education. *Nurse Education Today, 21*(2), 110-117. https://doi.org/10.1054/nedt.2000.0522

Bandura, A. (1978). Social learning theory of aggression. *Journal of Communication, 28*(3), 12-29. https://doi.org/10.1111/j.1460-2466.1978.tb01621.x

Benjamin, E. J., Blaha, M. J., Chiuve, S. E., Cushman, M., Das, S. R., Deo, R., . . . Gillespie, C. (2017). Heart disease and stroke statistics—2017 update: A report from the American Heart Association. *Circulation, 135*(10), e146-e603. https://doi.org/10.1161/CIR.0000000000000485

Betihavas, V., Bridgman, H., Kornhaber, R., & Cross, M. (2016). The evidence for 'flipping out': A systematic review of the flipped classroom in nursing education. *Nurse Education Today, 38*, 15-21. https://doi.org/10.1016/j.nedt.2015.12.010

Cameron, A., McPhail, S. M., Hudson, K., Fleming, J., Lethlean, J., & Finch, E. (2015). Increasing the confidence and knowledge of occupational therapy and physiotherapy students when communicating with people with aphasia: A pre–post intervention study. *Speech, Language and Hearing, 18*(3), 148-155. https://doi.org/10.1179/2050572814Y.0000000062

Cruice, M., Worrall, L., Hickson, L., & Murison, R. (2003). Finding a focus for quality of life with aphasia: Social and emotional health, and psychological well-being. *Aphasiology, 17*(4), 333-353. https://doi.org/10.1080/02687030244000707

Dalemans, R., Wade, D. T., van den Heuvel, W. J., & de Witte, L. P. (2009). Facilitating the participation of people with aphasia in research: A description of strategies. *Clinical Rehabilitation, 23*(10), 948-959. https://doi.org/10.1177/0269215509337197

Duchan, R., Linda, J., Garcia, A. K., Lyon, J. G., & Simmons-Mackie, N. (2001). Life participation approach to aphasia: A statement of values for the future. *Language Intervention Strategies in Aphasia and Related Neurogenic Communication Disorders, 235*. https://doi.org/10.1044/leader.FTR.05032000.4

Enderby, P., & Crow, E. (1996). Frenchay aphasia screening test: Validity and comparability. *Disability and Rehabilitation, 18*(5), 238-240. https://doi.org/10.3109/09638289609166307

Finch, E., Cameron, A., Fleming, J., Lethlean, J., Hudson, K., & McPhail, S. (2017). Does communication partner training improve the conversation skills of speech-language pathology students when interacting with people with aphasia? *Journal of Communication Disorders, 68*, 1-9. https://doi.org/10.1016/j.jcomdis.2017.05.004

Finch, E., Fleming, J., Brown, K., Lethlean, J., Cameron, A., & McPhail, S. M. (2013). The confidence of speech-language pathology students regarding communicating with people with aphasia. *BMC Medical Education, 13*(1), 92. https://doi.org/10.1186/1472-6920-13-92

Flowers, H. L., Skoretz, S. A., Silver, F. L., Rochon, E., Fang, J., Flamand-Roze, C., & Martino, R. (2016). Poststroke aphasia frequency, recovery, and outcomes: A systematic review and meta-analysis. *Archives of Physical Medicine and Rehabilitation, 97(12)*, 2188-2201. https://doi.org/10.1016/j.apmr.2016.03.006

Gagliardi, A. R., Webster, F., & Straus, S. E. (2015). Designing a knowledge translation mentorship program to support the implementation of evidence-based innovations. *BMC Health Services Research, 15*(1), 198. https://doi.org/10.1186/s12913-015-0863-7

Hill, A. E., Davidson, B. J., & Theodoros, D. G. (2010). A review of standardized patients in clinical education: Implications for speech-language pathology programs. *International Journal of Speech-Language Pathology, 12*(3), 259-270. https://doi.org/10.3109/17549500903082445

Kagan, A. (1995). Revealing the competence of aphasic adults through conversation: A challenge to health professionals. *Topics in Stroke Rehabilitation, 2*(1), 15-28. https://doi.org/10.1080/10749357.1995.11754051

Kagan, A., Black, S. E., Duchan, J. F., Simmons-Mackie, N., & Square, P. (2001). Training volunteers as conversation partners using supported conversation for adults with aphasia (SCA) a controlled trial. *Journal of Speech, Language, and Hearing Research, 44*(3), 624-638. https://doi.org/10.1044/1092-4388(2001/051)

Kagan, A., Simmons-Mackie, N., Rowland, A., Huijbregts, M., Shumway, E., McEwen, S., . . . Sharp, S. (2008). Counting what counts: A framework for capturing real-life outcomes of aphasia intervention. *Aphasiology, 22*(3), 258-280. https://doi.org/10.1080/02687030701282595

Kagan, A., Winckel, J., Black, S., Felson Duchan, J., Simmons-Mackie, N., & Square, P. (2004). A set of observational measures for rating support and participation in conversation between adults with aphasia and their conversation partners. *Topics in Stroke Rehabilitation, 11*(1), 67-83. https://doi.org/10.1310/CL3V-A94A-DE5C-CVBE

Law, M., Baptiste, S., Carswell, A., McColl, M., Polatajko, H., & Pollock, N. (1998). *Canadian Occupational Performance Measure.* Canadian Association of Occupational Therapists Ottawa, ON.

Leach, E., Cornwell, P., Fleming, J., & Haines, T. (2010). Patient centered goal-setting in a subacute rehabilitation setting. *Disability and Rehabilitation, 32*(2), 159-172. https://doi.org/10.3109/09638280903036605

Legg, C., Young, L., & Bryer, A. (2005). Training sixth-year medical students in obtaining case-history information from adults with aphasia. *Aphasiology, 19*(6), 559-575. https://doi.org/10.1080/02687030544000029

Legg, L., & Langhorne, P. (2004). Rehabilitation therapy services for stroke patients living at home: Systematic review of randomised trials. *Lancet, 363*(9406), 352-356. https://doi.org/10.1016/S0140-6736(04)15434-2

Lyon, J., Cariski, D., Keisler, L., Rosenbek, J., Levine, R., Kumpula, J., . . . Blanc, M. (1997). Communication partners: Enhancing participation in life and communication for adults with aphasia in natural settings. *Aphasiology, 11*(7), 693-708. https://doi.org/10.1080/02687039708249416

McGilton, K., Sorin-Peters, R., Sidani, S., Rochon, E., Boscart, V., & Fox, M. (2011). Focus on communication: Increasing the opportunity for successful staff–patient interactions. *International Journal of Older People Nursing, 6*(1), 13-24. https://doi.org/10.1111/j.1748-3743.2010.00210.x

McLaughlin, J. E., Roth, M. T., Glatt, D. M., Gharkholonarehe, N., Davidson, C. A., Griffin, L. M., . . . Mumper, R. J. (2014). The flipped classroom: A course redesign to foster learning and engagement in a health professions school. *Academic Medicine, 89*(2), 236-243. https://doi.org/10.1097/ACM.0000000000000086

O'Halloran, R., Hickson, L., & Worrall, L. (2008). Environmental factors that influence communication between people with communication disability and their healthcare providers in hospital: A review of the literature within the International Classification of Functioning, Disability and Health (ICF) framework. *International Journal of Language & Communication Disorders, 43*(6), 601-632. https://doi.org/10.1080/13682820701861832

Prober, C. G., & Khan, S. (2013). Medical education reimagined: A call to action. *Academic Medicine, 88*(10), 1407-1410. https://doi.org/10.1097/ACM.0b013e3182a368bd

Rayner, H., & Marshall, J. (2003). Training volunteers as conversation partners for people with aphasia. *International Journal of Language & Communication Disorders, 38*(2), 149-164. https://doi.org/10.1080/1368282021000060308

Roter, D., & Hall, J. A. (2006). *Doctors talking with patients/patients talking with doctors: Improving communication in medical visits (2nd ed)*. Westport, CT: Praeger Publishers.

Secomb, J. (2008). A systematic review of peer teaching and learning in clinical education. *Journal of Clinical Nursing, 17*(6), 703-716. https://doi.org/10.1111/j.1365-2702.2007.01954.x

Simmons-Mackie, N., Raymer, A., Armstrong, E., Holland, A., & Cherney, L. R. (2010). Communication partner training in aphasia: A systematic review. *Archives of Physical Medicine and Rehabilitation, 91*(12), 1814-1837. https://doi.org/10.1016/j.apmr.2010.08.026

Simmons-Mackie, N., Raymer, A., & Cherney, L. R. (2016). Communication partner training in aphasia: An updated systematic review. *Archives of Physical Medicine and Rehabilitation, 97*(12), 2202-2221. e2208. https://doi.org/10.1016/j.apmr.2016.03.023

Simmons-Mackie, N. N., Kagan, A., O'Neill Christie, C., Huijbregts, M., McEwen, S., & Willems, J. (2007). Communicative access and decision making for people with aphasia: Implementing sustainable healthcare systems change. *Aphasiology, 21*(1), 39-66. https://doi.org/10.1080/02687030600798287

Stewart, C., & Riedel, K. (2011). Managing speech and language deficits after stroke. In G. Gillen (Ed.), *Stroke rehabilitation: A function based approach.* St. Louis, MO: Mosby Elsevier.

Thomas, A., Menon, A., Boruff, J., Rodriguez, A. M., & Ahmed, S. (2014). Applications of social constructivist learning theories in knowledge translation for healthcare professionals: A scoping review. *Implementation Science, 9*(1), 54. https://doi.org/10.1186/1748-5908-9-54

Tucker, F. M., Edwards, D. F., Mathews, L. K., Baum, C. M., & Connor, L. T. (2012). Modifying health outcome measures for people with aphasia. *American Journal of Occupational Therapy, 66*(1), 42-50. https://doi.org/10.5014/ajot.2012.001255

Tune, J. D., Sturek, M., & Basile, D. P. (2013). Flipped classroom model improves graduate student performance in cardiovascular, respiratory, and renal physiology. *Advances in Physiology Education, 37*(4), 316-320. https://doi.org/10.1152/advan.00091.2013

Van Der Gaag, A., Smith, L., Davis, S., Moss, B., Cornelius, V., Laing, S., & Mowles, C. (2005). Therapy and support services for people with long-term stroke and aphasia and their relatives: A six-month follow-up study. *Clinical Rehabilitation, 19*(4), 372-380. https://doi.org/10.1191/0269215505cr785oa

Welsh, J. D., & Szabo, G. B. (2011). Teaching nursing assistant students about aphasia and communication. *Seminars in Speech and Language, 32*(3), 243-255. https://doi.org/10.1055/s-0031-1286178

Yardley, S., Teunissen, P. W., & Dornan, T. (2012). Experiential learning: Transforming theory into practice. *Medical Teacher, 34*(2), 161-164. https://doi.org/10.3109/0142159X.2012.643264