Supported Communication Video Training for the Nursing Department in an Inpatient Rehabilitation Hospital

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Abstract

Purpose: The aim of this study was to develop a valid educational intervention to improve knowledge and confidence using communication strategies when interacting with a person with aphasia.

Design: A quantitative, nonrandomized pretest/posttest research study was performed.

Methods: Pre- and postcourse assessments were completed with learning participants. This educational intervention was developed using the underlying theoretical concepts of the integrated behavioral model.

Results: Forty-nine new employees from the nursing department participated in this study, with 61% reporting less than 1 year of experience. Pre- to posttraining assessments on the Test of Knowledge of Aphasia improved from 3.7 to 5.8 ($p \leq .0001$) for direct knowledge, from 5.5 to 8.2 ($p \leq .0001$) for confidence self-efficacy, and from 5.3 to 7.6 ($p \leq .0001$) for knowledge self-efficacy.

Conclusion: Results indicated this theory-driven educational training was effective in training employees from the nursing department working in an inpatient rehabilitation environment.

Clinical Relevancy: Improving communication effectiveness is critical for overall quality of care and patient safety.

Keywords: Aphasia; communication; education; healthcare professional; healthcare setting; interdisciplinary; stroke.

Introduction and Background

Aphasia is the medical term for impairment of language following a stroke, brain injury, or other neurological change, most commonly affecting the left hemisphere of the brain (Doogan et al., 2018; Fridriksson et al., 2018). Aphasia can cause changes in a person's auditory comprehension, reading comprehension, written expression, and, most commonly, verbal expression abilities (Doogan et al., 2018; Rohde et al., 2018). Aphasia can be classified as either fluent or non-fluent, with each of these types including sub-types (Fridriksson et al., 2018; Rohde et al., 2018). Classification depends on the location of the lesion in the brain and the deficits the patient is demonstrating (Rohde et al., 2018). Often aphasia can be severe enough that it significantly interferes with an individual's ability to communicate their basic wants and needs, thus creating challenges for both the patient and healthcare providers.

Individuals with aphasia have considerable communication challenges when interacting with their care providers, potentially resulting in reduced quality and safety of care provided to the patient (Hemsley et al., 2013; Jensen et al., 2015). Previous research revealed healthcare providers in an acute care hospital setting frequently did not communicate effectively with patients who have acquired neurogenic communication disorders, such as aphasia (Hemsley et al., 2013). Furthermore, up to 75% of all patient harm events have been associated with communication failures (Hemsley et al.,

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2013). Difficulty with communication can also have a negative impact on rehabilitation goals and outcomes (Jensen et al., 2015).

Given the importance of communication with care provided in the rehabilitation setting, several researchers have investigated various methods of supportive communication training with healthcare professionals (Heard et al., 2017; Hemsley et al., 2013; Kagan, 1995; Kagan et al., 2001; Legg et al., 2005; Simmons-Mackie et al., 2007; Sorin-Peters et al., 2010). Kagan (1995, 1998) first described the components and benefits of training healthcare providers to interact with persons with aphasia (PWAs) and introduced Supported Conversation for Adults With Aphasia. With proper training, improvements were noted, with the ability of healthcare providers functioning as communication partners while interacting with a PWA (Kagan, 1998). In addition, a reduction in the overall psychosocial consequences of aphasia was observed following implementation of this training (Kagan, 1998).

Simmons-Mackie et al. (2007) studied the effectiveness of a program titled Communicative Access Improvement Project, involving training healthcare professionals across acute care, rehabilitation, and long-term care in a 2-day training course. Results revealed participants of the Communicative Access Improvement Project had positive outcomes in improved team knowledge of alternative forms of communication methods, improved ability to identify appropriate resources, and improved understanding of communication access and decision-making. Sorin-Peters et al. (2010) created an 8-hour workshop for nursing staff on a stroke unit in a long-term continuing care facility. The researchers assessed the participants' knowledge of aphasia via the Knowledge of Aphasia Questionnaire pre- and posttraining workshop and 1 month following the intervention. Results revealed statistically significant increases in total scores ($p \leq .0001$ pre- to postworkshop and $p < .002$ 1 month postintervention), indicating improved knowledge of aphasia and related communication strategies. Although both studies demonstrated improvements following supportive communication training, a potential limitation of these training programs was the length of time required to train healthcare professionals as most organizations do not have the resources to support either a 1- or 2-day training on this topic.

With the advancements of technology, online training offers an efficient and cost-effective way to train healthcare providers about necessary skills and knowledge. Heard et al. (2017) investigated the effectiveness of combined online training and face-to-face training as compared to face-to-face-only training, with supportive communication for healthcare professionals to improve their knowledge and perceived confidence with communication with PWAs. They recruited 64 inpatient rehabilitation staff members, nurses, allied health staff and medical staff. The researchers found both groups improved posttraining in their immediate and delayed (3–4 months) knowledge of aphasia and perceived confidence in communicating with individuals with aphasia as measured via the Test of Knowledge of Aphasia. The results indicated no difference between training methods.

Power et al. (2020) more recently investigated online training versus face-to-face for communication partner training with students in healthcare professions. In this 45-minute online training, they found no differences in learning outcomes between the online group versus the face-to-face group. This study provided additional evidence to support online learning for supportive communication partner training. To date, however, there are no published studies specifically investigating the effectiveness of online only communication partner training during a new employee orientation education program.

Even though the link between good communication and high-quality, safe, and effective care has been well established (Hemsley et al., 2013; The Joint Commission, 2010), along with evidence to support effective communication training models, many healthcare institutions do not provide standard training on how to appropriately communicate with PWAs. Given the literature supporting partner training and online training options, the overall goal of this study was to develop an efficient online educational intervention to improve knowledge and confidence of members of the nursing department regarding aphasia and the use of supportive compensatory communication strategies when communicating with a PWA.

Methods and Materials

Video Development

This project created a theory-driven, online, educational video for staff in the nursing department to increase the effectiveness of their communication with PWAs. The training video focused on supportive communication strategies. To facilitate the effectiveness of education with adult learners, the researchers designed the video using the theoretical concepts of the integrated behavioral model (IBM) to explain behavior and intention within health education (Glanz et al., 2015). With the IBM, the determinants of behavior include the knowledge and skills to perform the behavior, the intention to perform the behavior, and understanding the environmental constraints that may inhibit the intention to perform the behavior.

The three main constructs of the IBM that support the underlying determinants of behavior include attitude, perceived norms, and personal agency. Attitude is directly influenced by a learner's feelings about the behavior and their behavioral beliefs. By designing an educational training video that focuses on the specific knowledge and skills needed to perform the behavior (i.e., effective communication style with individuals with aphasia) and focuses on the salience of the behavior, the learner's attitude may be positively influenced. Perceived norms include the beliefs about others' expectations and behaviors that influence an individual intention to perform the behavior, including social pressures. It was thought that including a rehab nurse and a former patient in the video might increase positive behaviors. Finally, personal agency includes the perceived control a learner has over performing the behavior and their self-efficacy (i.e., confidence) to perform the behavior. The use of the IBM as the framework for the video might enhance the effectiveness of the education model to achieve behavioral change.

The video includes an introduction by a speech-language pathologist with general education about aphasia. The video also includes specific case-based scenarios of visual, verbal, and environmental strategies that are appropriate to use with a PWA, including functional examples of implementation of these strategies on a hospital unit. In addition, a certified rehabilitation nurse from an accredited stroke unit provides education on the benefits of using supportive communication strategies on the hospital unit. This concrete introduction of the video was designed to target the attitude construct of the IBM. Following this education, the video progressed to include a speech-language pathologist interviewing a PWA to target the perceived norms construct of the IBM. This PWA provided examples of positive and negative interactions she had in her hospital experience and her emotional response to these interactions. Finally, simulated interactions demonstrating correct and incorrect interactions between a nurse and a PWA are provided to incorporate the personal agency construct of IBM. The learner is asked to select "correct" versus "incorrect" response following video examples and is provided with reinforcement of their responses. The scenarios in this interactive section included examples such as communication while the nurse administers medications and the patient attempts to inform the nurse of his breakfast preferences.

To make the educational intervention concise and efficient for members of the nursing department, the video was only 10 minutes in length. It was professionally recorded by a hired videographer using a Panasonic DMC GH4 camera and standard Audiotechnica lavaliere microphone. The video was uploaded to the online interactive learning management system utilized for education purposes through the sponsoring facility. Each participant was assigned the training and completed the training independently in the organization's computer laboratory during the new employee orientation as part of the scheduled learning.

Design

This study used a quantitative, nonrandomized research design to evaluate the effectiveness of the training to increase the skills and knowledge to effectively communicate with individuals with aphasia. The study used a one-group pretest/posttest design as all participants received the same educational intervention. Participants were recruited through the organization's new employee orientation program (i.e., new to the organization) and included direct care providers from the nursing department. All participants provided online consent to use the data derived from their participation in the pre- and posttest evaluation of the effectiveness of the training video. The study was reviewed by the organization's institutional review board and was deemed exempt.

Outcome Measures

To evaluate changes in direct knowledge of the participants related to aphasia and use of compensatory strategies, the primary outcome measure used was the Test of Knowledge of Aphasia developed by Heard et al. (2017). Previous research investigated the reliability of the Test of Knowledge of Aphasia reporting point-to-point intrarater reliability at 90% and point-to-point interrater reliability at 92% (Heard et al., 2017). The complete test consists of two 10-point Likert ratings regarding confidence and knowledge, five multiple-choice questions, and five open-ended short answer questions. For this study, only selected questions were used: the Likert rating score questions and the four multiple-choice questions. Each question was scored and analyzed separately. With the Likert rating scale questions, the scores range from 1 to 10, with a higher score indicating higher levels of self-efficacy related to confidence and knowledge. With the four multiple-choice questions, the total range of points was 0 to 16, with a higher score reflecting better performance. With the first two multiple-choice questions, only one correct answer was allowed for each question, and each was worth 1 point. The next multiple-choice question was related to difficulties caused by aphasia and had four correct responses (question worth maximum of 4 points) out of a potential of eight responses. The final multiple-choice question was related to appropriate use of compensatory

strategies and had 10 correct responses (question worth a maximum of 10 points) out of 22 potential responses. With the latter two multiple-choice questions, participants received credit for each correct item selected; however, if the participant selected an incorrect response, a point was deducted.

To evaluate if the constructs of IBM used in the development of the training materials were achieved, six specific statements were created by the research team (see Figure 1). Participants were asked to rate these statements related to self-reported improvements with knowledge, comfort, confidence, and ease of use by responding to a 5-point Likert rating scale. A rating of 1 indicated the participant strongly disagrees with the statement, whereas a rating of 5 indicated the participant strongly agrees with the statement. The IBM questionnaire rating scale was administered to the participants both pre- and post-video education.

Data Analysis

All information was de-identified as each participant was provided with a unique identifier number. For the entire study sample, paired *t* tests were completed on the pre- and post-course assessment to evaluate if statistically

Please rate the following statements on a scale from 1 to 5. A score of "1" reflects you "Strongly Disagree" with the statement. A score of "5" reflects you "Strongly Agree" with the statement.

1. I am comfortable communicating with individuals with aphasia
2. I am comfortable using supportive communication techniques when communicating with individuals with aphasia
3. I plan on using supportive communication techniques when communicating with individuals with aphasia
4. It is easy to use supportive communication techniques when communicating with individuals with aphasia
5. It can sometimes take too much time to use supportive communication techniques with individuals with aphasia
6. It is important to use supportive communication techniques when communicating with individuals with aphasia

Figure 1. Integrated Behavioral Model Construct Statements Administered (5-Point Likert Scale).

significant changes in self-efficacy, direct knowledge, attitude, and intention to use the behavior occurred. For intergroup comparisons between the job classification within nursing, independent *t* tests were completed with specific questions on the Test of Knowledge of Aphasia. To control for a Type 1 error, the Bonferroni correction was applied when completing the multiple comparisons with the subtest of the Test of Knowledge of Aphasia. The level of significance was set at .05. Analyses were completed using SPSS Version 23.0.

Results

The study included 49 participants from the nursing department at a free-standing rehabilitation hospital, with 63% (n = 31) representing certified nursing assistants and 37% (n = 18) representing registered nurses. Most participants (90%) identified as female. The highest educational level obtained was as follows: high school diploma, 63%; bachelor's degree, 33%; and postgraduate work, 4%. Figures 2–4 summarize the overall years of experience working in their current role, years of experience specific to working with individuals following a stroke, and prior aphasia training for the entire study group and by job classification. Most of the participants reported: 1) less than one year of overall experience in a healthcare setting, 2) less than one year specific experience working with stroke survivors, and 3) no prior training in aphasia.

Table 1 summarizes the three major outcomes from pre- to posteducation related to the Test of Knowledge of Aphasia for the entire study sample. Overall, participants demonstrated statistically significant improvement from pre- to posttraining with the self-efficacy outcome measure for confidence and knowledge. The assessment of the participant's direct knowledge was calculated based upon the responses involving aphasia and supportive communication strategies. Again, participants demonstrated statistically significant improvement from pre- to posttraining with direct knowledge. Table 2 summarizes the differences observed based upon the nursing department job category (certified nursing assistant vs. registered nurse). With these three outcomes, no differences were observed between groups, suggesting that both groups demonstrated similar performance.

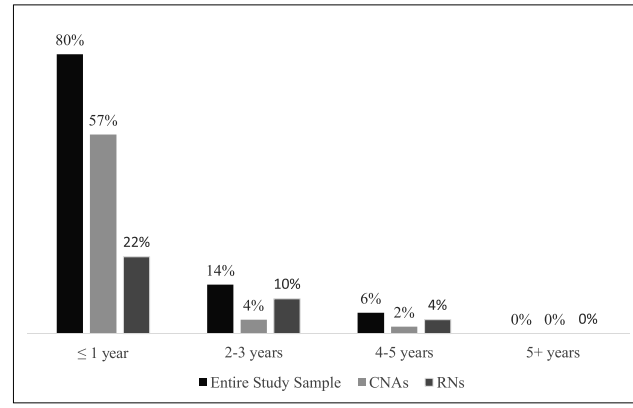

Figure 3. Years of Experience Working With Individuals Following A Stroke.

Table 3 summarizes the self-reported outcomes for the IBM constructs using a 5-point Likert scale developed specifically for this study. Results are presented for the entire study sample and by job category. Figure 1 lists the six statements that each participant rated both pre- and posttraining, with a higher score reflecting a stronger agreement with the statement. With five of the six statements, statistically significant changes from the pre- to post-course evaluation with the ratings were observed. The one construct that did not change was the perceived barrier of time, as participants did not perceive this to be a barrier at either the pre- or posttraining.

Discussion

The aim of this study was to evaluate the effectiveness of an online educational video designed to improve the understanding and awareness of supportive communication

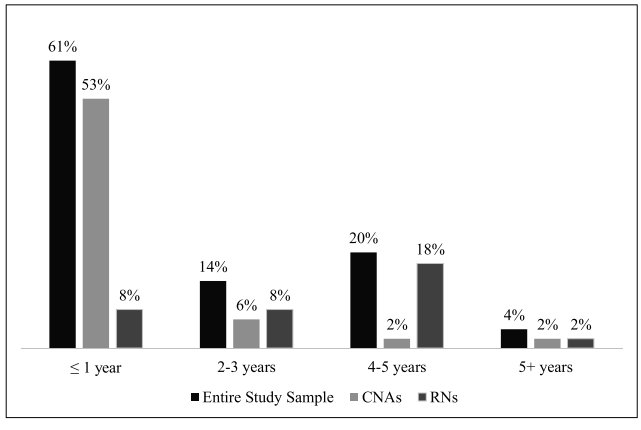

Figure 2. Years of Experience.

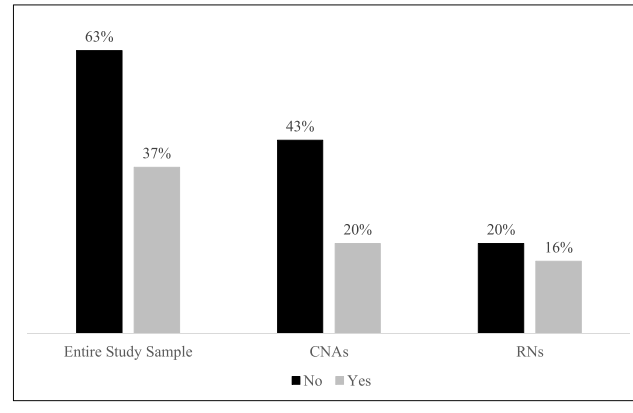

Figure 4. Prior Aphasia Training.

Table 1 Test of Knowledge of Aphasia Results ($N = 49$)

Variable	Mean Precourse Score	Mean Postcourse Score	Significance
Self-efficacy confidence	5.5 ($SD = 1.6$)	8.2 ($SD = 1.2$)	$p \leq .0001$
Self-efficacy knowledge	5.3 ($SD = 1.5$)	7.6 ($SD = 1.3$)	$p \leq .0001$
Direct knowledge score	3.7 ($SD = 3.7$)	5.8 ($SD = 2.8$)	$p \leq .0001$

strategies in members of the nursing department working with PWAs at an inpatient rehabilitation hospital. The results indicated statistically significant improvements in knowledge, confidence, comfort of use, intention to use, ease of use, and importance of use from pre- to posttraining. These results are consistent with literature reporting success with healthcare professional training on supportive communication strategies (Heard et al., 2017; Hemsley et al., 2013; Kagan, 1995; Kagan et al., 2001; Legg et al., 2005; Power et al., 2020; Simmons-Mackie et al. 2007; Sorin-Peters et al., 2010).

Many studies reviewed utilized training methods that required increased time and resources; however, no mention of the use of a specific underlying theoretical model for learning was described with these studies. Results of this study provide further support of the importance of using an underlying theoretical learning model when designing educational interventions for healthcare providers in the rehabilitation setting (Brady et al., 2018). The use of an underlying theoretical model allowed the investigators to create both a valid and efficient online learning module to accommodate the working environment in which this project took place. Given the statistically significant results of this study, effective training can take place in a shorter amount of time to accommodate productivity standards.

The use of the IBM in the development of the educational video is believed to be a crucial part of the success with this project. The constructs in the model were helpful in guiding the authors to a successful outline for the video. In addition, it assisted in developing the questions that were created for pre- and postassessment. Providing a theory-driven education intervention to healthcare providers to effectively communicate with PWAs may help mitigate the known care challenges. Use of video training may improve the efficiency as well as the standardization of the training. The concept of self-efficacy with learning new skills is essential for healthcare providers because if an individual does not believe a behavior can be performed, even when a positive expected value and a positive normative belief is associated with this behavior, the person may not perform the behavior (Perkins et al., 2007). Self-efficacy scales for task-specific activities with healthcare providers have been found useful as a motivational construct for providing direct patient care (Stump et al., 2012). Clear goals and meaningful work increase motivational learning and self-efficacy with healthcare providers. Educational interventions should be designed to improve the skill set in a specific area and should include these concepts (McMillan et al., 2007). Results of this study provide further evidence to support the use of a theory-based intervention. Ruiz et al. (2006) reported three major benefits to e-learning: increased accessibility to employees, learner's ability to control their pace of learning, and improved standardization of the education being provided. Nursing educators should strive to design effective and efficient learning activities using concepts from various educational learning theories (Glanz et al., 2015).

Limitations

There are some recognized limitations with this current study. First, only selected items from the Test of Knowledge of Aphasia were used in this study, and there was no long-term posttraining assessment with this project. Although it is common practice to use selected items from standardized tests, validation of using only selected items for this test was not conducted. Future research should investigate the use of the full test pre- and posttraining. Furthermore, even though gains were observed immediately following the training, future research should focus on the sustainability of these gains over time to evaluate the carryover of learning. Previous studies have reported follow-up

Table 2 Certified Nursing Assistant Versus Registered Nurse Outcomes (Test of Knowledge of Aphasia)

	n	Mean	*SD*	Significance
Pre-self-efficacy confidence				
CNA	31	5.6	1.45	$p = .372$
RN	18	5.2	1.95	
Post-self-efficacy confidence				
CNA	31	8.3	1.21	$p = .493$
RN	18	8.0	1.28	
Pre-self-efficacy knowledge				
CNA	31	5.13	1.40	$p = .261$
RN	18	5.67	1.68	
Post-self-efficacy knowledge				
CNA	31	7.5	1.39	$p = .360$
RN	18	7.8	1.20	
Pre-direct knowledge				
CNA	31	4.3	3.12	$p = .181$
RN	18	2.7	4.52	
Post-direct knowledge				
CNA	31	5.6	2.26	$p = .545$
RN	18	6.2	3.67	

Note. CNA = certified nursing assistant; RN = registered nurse.

Key Practice Points

- Persons with aphasia can have considerable communication challenges when interacting with their care providers. These challenges may result in reduced safety and have a negative impact on rehabilitation goals.
- Developing a theory-driven, innovative education intervention for new employees in nursing departments may help mitigate the known care challenges of working with persons with aphasia.
- Results of this project provide evidence to support the effectiveness of the communication video training program designed to increase the skills and knowledge of healthcare providers to effectively communicate with individuals with aphasia.

assessments of one month or greater; however, the post-training assessment for this study was immediately after the training.

Second, there was not an examination of how this type of educational program may improve overall patient outcomes related to reducing harm. Although this aspect was outside the scope of this current project, further study in this area could provide additional justification for the widespread use of this educational video. Finally, the lack of return demonstration with the participants is another recognized limitation of this study. Although it was outside the scope of this current investigation, future research could investigate the training needs associated with participants demonstrating the use of supportive communication strategies through return demonstration simulations.

Conclusion

The findings of this study suggest a theory-driven online educational video was an effective and efficient tool to improve the direct knowledge, perceived confidence, and perceived knowledge of members of the nursing department. Improving communication effectiveness should assist with improving overall quality of care and patient safety. Furthermore, the results of this study provide additional evidence to the literature base supporting innovative healthcare training programs for healthcare professionals working with PWAs.

Conflict of Interest

The authors report no conflict of interest.

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Table 3 Self-Reported Outcomes for Integrated Behavioral Model (IBM) Constructs

IBM Construct	Group Entire Study ($N = 49$) CNAs ($n = 31$) RNs ($n = 18$)	Precourse Score	Postcourse Score	Significance
Comfort communicating with PWAs	Entire study	3.16	4.14	$p \leq .0001$
	CNAs	3.19	4.26	$p \leq .0001$
	RNs	3.11	3.94	$p \leq .0001$
Comfort using strategies	Entire study	3.42	4.45	$p \leq .0001$
	CNAs	3.39	4.55	$p \leq .0001$
	RNs	3.50	4.28	$p \leq .0001$
Intention to use strategies	Entire study	4.41	4.84	$p \leq .0001$
	CNAs	4.32	4.87	$p \leq .001$
	RNs	4.56	4.79	$p = .104$
Ease to use strategies	Entire study	3.45	4.24	$p \leq .0001$
	CNAs	3.42	4.29	$p \leq .0001$
	RNs	3.50	4.17	$p = .01$
Barriers to use strategies	Entire study	2.16	1.87	$p = .223$
	CNAs	1.80	1.58	$p = .256$
	RNs	2.78	2.39	$p = .218$
Importance to use strategies	Entire Study	4.67	4.90	$p = .015$
	CNAs	4.65	4.90	$p = .043$
	RNs	4.72	4.90	$p = .187$

Note. CNAs = certified nursing assistants; RNs = registered nurses; PWAs = persons with aphasia.

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