

Original Article**Are Speech Therapists Suitable Candidates for Communication Partners in Stroke Aphasia? A Systematic Literature Review****Georgia Detsaridou**

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Abstract

Background: People suffering from aphasia after a stroke, face limitation in daily performance and perplexing language difficulties. Communication difficulties are always been hard to management and the rehabilitation process of communication does not present homogeneity. Investigating options in communication approach, the role of communication partners is highlighted. This role is mentioned to work properly when it is guided and goal – directed by speech therapists.

Purpose: To review literature leading to the necessity of speech therapists as communication partners (CPs) in stroke aphasia

Method: Two databases (Medline, Science Direct) were systematically searched up to October 2022.

Results: Five studies met inclusion and exclusion criteria. The assignment of the communication partner role is thrichotomized between the medical staff, the family support environment (caregiver) and the trained speech therapists. The results led to a qualitative superiority for the management of communication problems by trained speech therapists.

Conclusions: This study found that the role of CPs is essential, regardless of the person providing the communication training. However, it is emphasized that the knowledge of the use of multiple methods and approaches by speech therapists in the role of CPs prevails over other non-trained partners.

Keywords: Communication Partners, stroke, aphasia, speech therapy.

Introduction

Aphasia is a disorder that results from damage to portions of the brain, mainly in the Broca and Wernicke areas. Stroke is being characterized as the most common reason leading to aphasia, while approximately 20-40% of all strokes result in acute aphasia (Souza and Arcuri, 2014; Doogan *et al.*, 2018; Fridriksson *et al.*, 2018; Davis, Namasivayam-Macdonald and Shune, 2021; Volkmer *et al.*, 2021). Global aphasia, Anomic aphasia, and Primary Progressive Aphasia are other types of aphasia, consisted of combinations of deficits. Different symptoms are reported depending on the affected area (Yourganov *et al.*, 2015). Damage to the frontal lobe implies disturbances in higher brain processes such as motivation, planning, social behavior, and language/speech production. Therefore, damage in Broca's area results in a non-fluent expressive type of aphasia (Pirau and Lui, 2022). Patients with Wernicke's aphasia are dealing with problems in reading, and writing, especially with the inability to name common objects (Leblanc, 2021). Global aphasia typically occurs after large perisylvian lesions in the area of the left middle cerebral artery territory and is associated with contralateral hemiparesis, due to the proximity of the language and motor control area to the cortex. Patients with aphasia commonly have difficulty with expressiveness in their speech (Kim and Paik, 2014). Anomic aphasia, which is caused by damage to the brain's left hemisphere and is characterized by difficulty naming objects and concepts with relatively preserved comprehension, fluency, and repetition (Kaufman *et al.*, 2017). Lastly, The clinical expression of primary progressive aphasia is regularly related to atrophy of the anterior regions of the temporal lobes, usually more prominent on the left side. Due to this damage, the speech of the patients is greatly affected. Patients suffering from primary progressive aphasia complain of decreased unplanned speech output with frequent word-finding pauses, phonologic paraphasias, and repetition deficits. It resembles aphasia in Alzheimer's disease (Kertesz and Harciarek, 2014; Volkmer *et al.*, 2021; Acharya and Maani, 2022; Le and Lui, 2022).

The management of the communication deficit of people with aphasia must begin with a comprehensive assessment of these difficulties. The role of the interdisciplinary team is to evaluate and design an intervention program. However, an important element of success is

considered to be the way of approaching the person with aphasia. The use of appropriate communication strategies is essential in rehabilitation process, since it promotes safety and satisfaction. Due to aphasia, patients often strive to communicate to health professionals their needs and complaints regarding their health care. A recent study carried out in Canada on people suffering from aphasia, revealed a low quality of care performance, presenting the negative effect of aphasia, not only in their autonomy, but also in forming relationships and in perceiving social environment. Therefore, the ability to communicate therapeutically focuses on the existence of Communication Partners (CPs) (Souza and Arcuri, 2014). CPs, are trained to communicate with people with aphasia and intend to facilitate the daily activities for them. CP's role may be undertaken by care's relatives, medical staff or by speech- language pathologists. Since aphasia is a chronic condition, effective rehabilitation is considered essential for both patients and supporters. The way aphasia affects patients' quality of life is evident in many domains of their life. In particular, language impairment can often lead to low mood and reduced social functioning. Therefore, interventions could mainly target the operative causes of damage, aiming to the causal harm reduction that could contribute to the effectiveness of the intervention strategies used (Lee *et al.*, 2015; Eriksson *et al.*, 2016). Facilitating communication is a major issue in the rehabilitation of people suffering from aphasia. Informing, organizing, and training communication partners is being explored as a possible means of promoting part of the rehabilitation process of people suffering from aphasia.

The present systematic literature review attempts to highlight the suitability of speech therapists in their role of CP in individuals with aphasia after stroke.

Materials and methods: The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA checklist) was used to guide this study.

Literature Search: Literature research of two databases (Medline, Science Direct) was conducted by one investigator (AG) in order to trace all relevant studies published between 2012 and 2022, using the terms "Stroke" OR "Aphasia" AND "Communication Partners" AND "Speech Therapist" as keywords. The retrieved articles

were also hand searched for any further potential eligible articles.

Eligibility criteria: Only full-text original articles published in the English language were included. Secondary analyses, reviews, guidelines, meeting summaries, comments, unpublished abstracts, or studies conducted on people with other diagnoses other than aphasia after stroke were excluded. There was no other restriction on study design or sample characteristics.

Data extraction: Data extraction was performed using a predefined data form created in Excel. We recorded the Year of publication, author, name of the article, number of participants, diagnosis, method, and, finally, the main results of the study.

Data analysis: No statistical analysis or meta-analysis was performed due to the high heterogeneity among studies. Thus, the data were only descriptively analyzed.

Results

Database searches - Study Characteristics

Souza and Arcuri (2014) examined the therapeutic and communication strategies used by healthcare professionals toward patients with aphasia. The communication strategies that were applied in 27 subjects (35-42 years) of the nursing staff of neurological units in a general hospital were noted in detail such as gestures, verbal communication, written communication, and touch. The techniques used were participant observation and interviews. The data was classified into qualitative variables that were statistically analyzed by absolute and relative frequencies and into quantitative variables. Effective communication between patients who suffer from aphasia and the care staff is mentioned to be difficult to be reached due to the resistance of professionals in learning new and more effective methods. Care staff was not considered as the most suitable selection for taking on the CPs role. However, the underlined important interactions between patients and care staff (CPs), brought results with a positive impact on assistance. On the other hand, Gillespie and Hald (2017) focused

on the use of a range of subtle strategies to scaffold or facilitate, expression and comprehension. More specifically, the positive effects of these approaches were analyzed, focusing on the catalytic assistance of speech therapists. Twenty people with aphasia and their main CPs (n = 40) living in the UK were video recorded engaging in a joint task.

Three basic questions were performed: a) which communication strategies are used by CPs for patients with aphasia b) which strategies are judged to be more effective c) why do patients with aphasia often resist the guidance of CPs. Gillespie and Hald's research reveal the poor use of communication strategies among CPs that consisted of untrained family members. The most common scaffolding strategies used were steering, reformulating, prompting, offering options, gesturing, reading aloud, repairing, and checking agreement. By contrast, less frequently, there were also episodes of teacher-like correcting and praising. The heterogeneity and the lack of training had an impact on speech production. Their findings support that "interactional dominants", that is a term to describe a persons' effort to direct and control the actions and utterances of other person, whilst also avoiding being directed and controlled, seems to be an effective strategie used from CPs to patients with aphasia. The respond to the second research question, revealed the unwillingness of communication between patients that is not easy to be explained. For that reason, researchers introduced the theory of paradox. The resistance of patients with aphasia to the help of CPs is mainly silence or refusal by shaking their heads. In this particular study, 75% of patients with aphasia resisted even a little in the instructions of their CPs. The training of CPS by speech therapists could play a catalytic role, but it does not predict the outcome of therapeutic communication between a CP and a patient with aphasia (Gillespie and Hald, 2017).

The results of the database research are recorded in Figure 1.

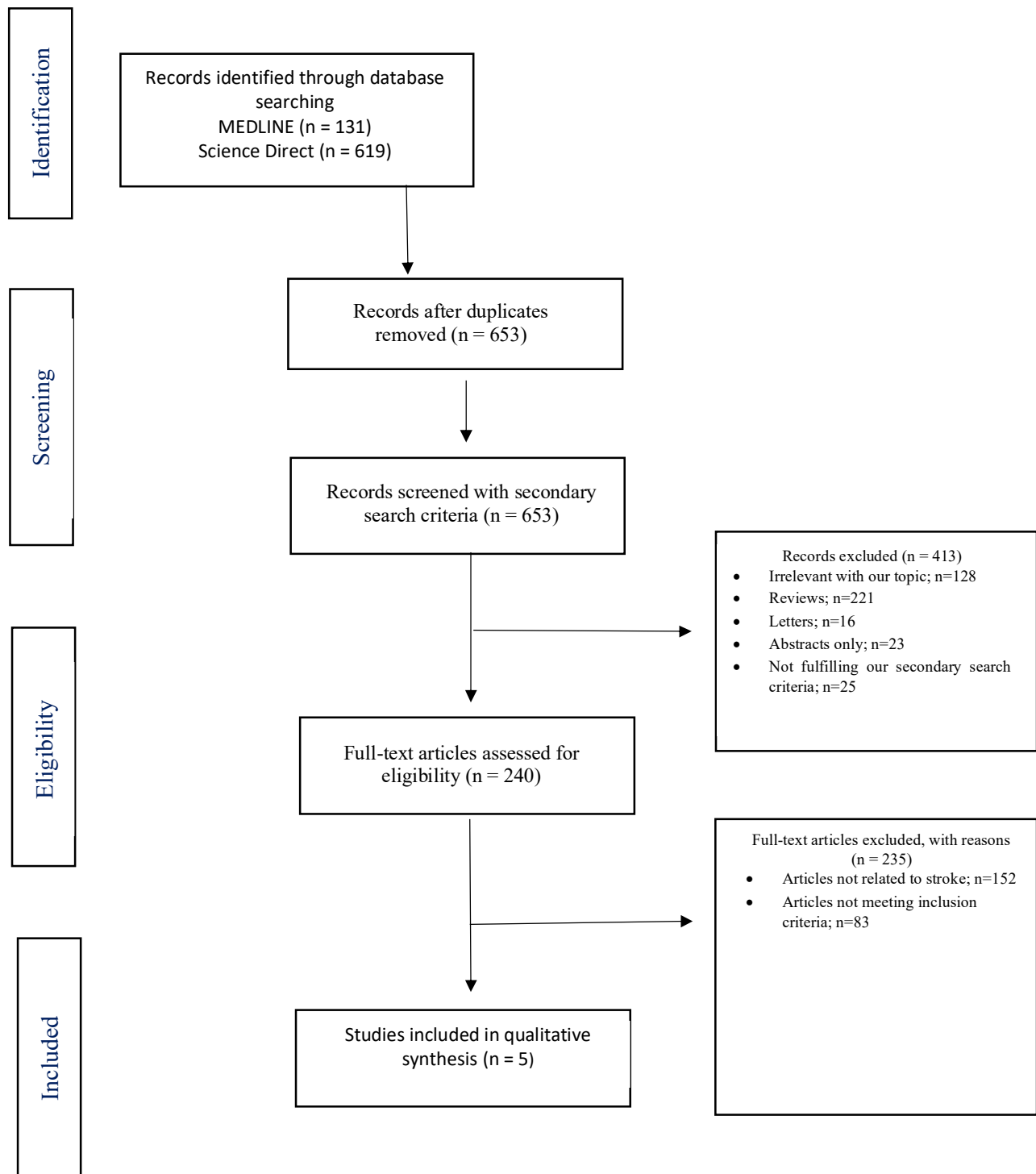


Figure 1. Prisma flow diagram including searching of databases

Study Characteristics continues

Finch et al (2017), focused on the necessity of CPs training by speech therapists comparing a trained group of CPs students and a non-trained group of speech therapist students. Patients with aphasia (n=10 average age 61 years old) were videotaped while interacting through a structured conversation with a second group of speech therapist students. The transcribed conversations were first globally analyzed using the Measure Supported Conversation Competency (MSC) and Measure of Participation in Conversation (MPC). The MSC rates the skill of the conversation partner on two scales: Acknowledging Competence and Revealing Competence. The Acknowledging Competence score includes ensuring that the conversation is appropriate to the context and that the CP is sensitive to patients with aphasia. The MPC rates the participation of the PWA according to the PWA's social connection with the CP (Interaction score) and the ability of the PWA to exchange information (Transaction score). The conversation topics included: weather, plans for the weekend, stroke, rehabilitation, aphasia, mobile phones, the speech pathology program, hobbies, sports animals, family members, and country of origin. The trained group of CPs students, received significantly higher MSC Revealing Competence scores, used more props during the conversations and introduced more new ideas into the conversation than non-trained group of speech therapist students. The researches revealed that more gestures, written language, images that captured emotions and photographs were used by the trained group of CPs students compared to non-trained group of speech therapist students. No significant differences between groups in MSC Acknowledging Competence score, MPC Transaction or Interaction score, number of interruptions, and number of small or large mistakes during the conversation were determined. The results suggest that the training courses that was undertaken by trained group of CPs students seemed to reflect to a better interaction

between students and patients with aphasia. The higher MSC Revealing Competence scores from the trained students compared to the untrained students suggest that the trained students successfully applied the information and strategies acquired during the training to real conversations with aphasic patients (Finch *et al.*, 2017).

The above findings were also confirmed by another study (Chang *et al.*, 2018). The researchers claimed that communication with people after a stroke is supposed to be particularly difficult. In addition, they affirmed that the contribution of speech therapists to the training of CP contributes to a better performance in their communication with people suffering from aphasia. In this survey a total of 122 clinicians took part and the use of the CPs programs and their support procedures were investigated. The development of freely accessible step-by-step CPT programs guided by trained speech therapists, was pointed key part of successful communication.

In another study (Beckley, Best and Beeke, 2017), researchers examined SLTs' current Communication Strategy Training CST practices in speech language therapists (n=37). The researchers explored whether information was misunderstood, when the training of people with aphasia, was carried out by the speech therapists or by CTs that were trained by speech therapists. The techniques that were identified in both cases, were: Environmental Restructuring, Collaboration, Bridging, Reflection, and Prompts. All techniques were reported by the authors, to be equivalent. However, they stood out among them the "restructuring" and "collaboration" techniques. From the present study, it is concluded that the "direct training" of people with aphasia by speech language therapists, seems to superior to the "indirect training" through CP's, as it motivates and remove passivity of participation in communication training. The characteristics of the included studies are presented in Table 1.

Publication Year	Author	Name of Article	Number of Participants	Diagnosis	Method	Results
2014	Souza & Acuri	Communication Strategies Of The Nursing Team In The Aphasia After Cerebrovascular Accident	27 aphasic patients	Aphasia after stroke	Gestures Verbal communication Written Communication Touch	Importance of speech pathologists' contribution to the training of CP
2017	Gillespie & Hald	The paradox of helping: Contradictory effects of scaffolding people with aphasia to communicate	20 people with aphasia and their main communication partners (n = 40)	Aphasia	Reading aloud, breaking down sentences, speaking for, prompting, and facilitating gestures.	The training of CPS by speech therapists will play a catalytic role, but it does not predict the outcome of therapeutic communication between a CP and a patient with aphasia.
2017	Finch, Cameron, Fleming, Lethlean, Hudson, McPhail	Does communication partner training improve the conversation skills of speech-language pathology students when interacting with people with aphasia?	10 people with Aphasia (5 males, 5 females)	Aphasia	Supported conversation	Speech-language pathology students benefit from participation in the communication partner training program
2018	Chang, Power, O'Halloran Foster	Stroke communication partner training: a national survey of 122 clinicians on current practice patterns and perceived implementation barriers and facilitators	147 participants	Communication disorders post-stroke	Developing freely accessible step-by-step CPT programs. Supportive workplace culture and freely accessible formal training opportunities are also needed.	Stroke communication partner training (CPT) enhances CPs' ability to support the communication and participation of people post-stroke
2017	Beckley, Best, Beeke	Delivering communication strategy training for people with aphasia: what is current clinical practice?	37 speech therapy students	Work with people suffering from aphasia	Environmental Restructuring, Collaboration, Bridging, Reflection and Prompts	On the one hand, highlighted the passive role that patients with aphasia often have during their conversation with CPs but on the other hand, marked the important techniques used by speech pathologists in training.

Discussion

CP as an intervention

CP is being considered as an environmental intervention facilitated by speech–language therapists, that focuses on how training communication partners use supportive communication strategies during interactions with aphasic individuals. Additionally, CP is considered to be a high-quality clinical practice guideline by providing strong evidences for post stroke aphasia management (Shrubsole, Power and Hallé, 2022). The aspects of intervention consists of training on multimodal communication skills and implementation of educational and counselling programs.

Stroke survivors, after their in-hospital care, deal with various problems regarding their speech and social abilities. Reseachers on CP (Coelho, Ylvisaker and Turkstra, 2005) indicated that there are some areas at communication functioning that cannot be simulated, such as pauses in conversation, people's staring, and waiters' annoyance, all of which the individual with aphasia struggles to communicate. The basic CP's orientation is to facilitate the conversation, for example by giving time, but they can equally expose their partners' difficulties by using barrier behaviors, such as test questions. This type of interventions aims to change conversational behaviors, enhance conversational skills and confidence, and reduce barriers, improving the flow of natural conversation. Additionally, they result in improved quality of life and well-being for individuals with aphasia. Finally, CPs strengthen people with aphasia being more tolerant of the concerning idiosyncrasies, that often occur after a stroke (Hemsley and Balandin, 2014; Volkmer *et al.*, 2021).

As communication partner program is being proposed to be an innovative application of a social approach to aphasia intervention, the Supported Conversation for Adults with Aphasia (SCA) is counted among these programs, which has been developed by the Institute for the Study of Aphasia in Canada and recognize the importance of supporting communication partners. It is based on CP's training including family members and health professionals (Hall, Boisvert and Steele, 2013; Simmons-Mackie, Raymer and Cherney, 2016; Cameron *et al.*, 2019). Nonetheless, more research is needed to collect objective audit data to describe CP practices. There is a considerable variation in

treatment approaches (Sirman, Beeke and Cruice, 2017) and no structured intervention model with specific steps, stages and individual objectives has been proposed.

Impact of CP on individuals with aphasia

Successful types of communication lead to improvements in language function that enhances neuroplasticity (Nithianantharajah and Hannan, 2006), expediting the process of rehabilitation. The improvement in the quality and quantity of communication is a decisive factor at the relational function of the patient, both with his family and with his social environment, as it mediates the reduction of social stigmatization (Volkmer *et al.* 2021).

The review indicated multidimensional profits from training in CP to family members, health professionals and community. However, there is a lack of guidance regarding the definition of the best candidate for communication partner training. Health clinicians should establish specific methodological tools for measuring and assessing both the capacity and the effectiveness of the CP interventions.

Candidates for providing CP

A crucial clinical and research question is who is considered a suitable candidate for the provision of CP. The dilemma turns mainly to the choice between familiar and unfamiliar partners, which could be answered if we are able to specify the specific goals of such a binary relationship. The variables of the dyad depends on the familiarity and the duration of the relationship between the CP and the individual with aphasia (Simmons-Mackie *et al.*, 2016).

There is research evidence for the provision of CP by health professionals and medical staff, especially during hospitalization. Nevertheless, it has been observed that health professionals occasionally underestimate the degree of severity of the communication difficulties and skills of the stroke survivors (Harmon *et al.*, 2016; Rose *et al.*, 2018). Thus, skilled partners can facilitate communication across a range of types and severity of aphasia, health professionals argue that increasing knowledge about aphasia could improve communication and contribute more actively to the care and rehabilitation of stroke survivors (Hemsley and Balandin, 2014). Ideally, everyone who works in a healthcare facility should receive education about the aphasia treatment and should have the basic knowledge to

use specific conversational techniques (Leaman and Edmonds, 2020; Nichol *et al.*, 2022; van Rijssen *et al.*, 2022). In a recent systematic review (Shrubsole *et al.*, 2022) the challenges of CP by clinicians consisted of staffing and resource barriers, lack of clinician confidence in providing CP training and a lack of specific guidance for health professionals about the methodology of CP training interventions.

This review supports the idea that speech therapists are suitable candidates for CPs, because they can improve communication with restorative treatments focused on impairment. Moreover, they are skilled to play their part in a two-way conversation and more effective at getting messages in and out. By implementing strategies during communication breakdowns, such as gestures, drawings, use of pictures, verifying questions, eliminating distractions and simplifying speech, they succeed to communicate in a way that they can be understood.

Respectively, implementation challenges have been mentioned, when CP training is provided by family members. The importance of facilitating communication is mainly expressed by the family caregivers, as they openly state their need to better understand their relative, who is struggling in communicating with other people, and offer them the best treatment, even if they need to redefine the way they will communicate with each other (Cherney *et al.*, 2013; Horton, Lane and Shiggins, 2016). A key recommendation for successful CP training is the engagement with both family members and stroke survivors. When the CP is a family member, three main difficulties have been noted, the limited transmission of information in communication, the lack of a multidimensional approach, and the state of burden under the “trainer’s” role.

Based on this review, it appears that further research is needed about characteristics of both the CP and the stroke survivor, and the functioning of this dyad that could affect the outcomes of CP training programs.

Limitations of the study: There are a number of limitations to this study. The searching and screening process were carried out by only one person. We aimed to make this process replicable by including detailed methodology information justifying these decisions. The heterogeneity of the CP training interventions that were mentioned across the reviewed studies could also be considered as a limitation. Another limitation is

the lack of meta-analysis of the findings, due to insufficient data to allow the analysis. Although a variety of search engines were used to minimize missed articles, there is the potential that some studies were missed in this review.

Conclusion: The present literature review indicates the need of CPs as facilitators for enabling communication of people with aphasia after a stroke. A skilled, goal directed speech language therapist is the most suitable candidate to support the liaison, as a technique to provide communication access. However, although the need for CP’s is universally accepted in aphasia, determining the best means of providing education has not been fully studied. Further refinement of the implementation of CP training strategies should be contracted, containing individuals with aphasia, family members and health professionals.

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