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Communication partner training for persons with aphasia: a systematic review of Portuguese language publications

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ABSTRACT

Background: With the exception of one systematic review of CPT research in Chinese, existing syntheses of Communication Partner Training (CPT) in aphasia have focused on research published in English, leaving a significant gap in knowledge regarding context-specific findings that might inform culturally and linguistically tailored CPT programs. Portuguese, as the fifth most spoken language in the world and the first in the Southern Hemisphere, remains one of the most under-represented languages in aphasia research. Identifying research published in the language of Portuguese could inform the development of contextually relevant CPT interventions.

Aims: This study aimed to synthesise (1) Portuguese-language research on CPT interventions in aphasia and (2) evidence directly relevant to the development of culturally and linguistically sensitive CPT for this community ("CPT-adjacent research").

Methods & Procedures: Following the PRISMA protocol we systematically searched the literature, using search terms translated from a previous systematic review of English-language literature with additional synonyms added based on linguistic usage in Portuguese. The search was conducted in Scopus, Web of Science, PubMed, and Scielo using language filters as well as in the Portuguese-specific databases of Scielo Portugal, B-On, Lilacs, and CAPES and university thesis and dissertation electronic databases RCAAP and BDTD. The search identified 1275 unique papers, 4 of

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which met the inclusion criteria for the first aim of the study, with a further 22 meeting the criteria for the second aim. All 26 of the included studies were from either Portugal or Brazil.
Outcomes & Results: Overall, all four studies addressing CPT intervention reported positive effects including positive changes in the perception of conversational abilities, improved use of communication strategies by communication partners; and an improvement in quality of life, although not perceived burden. The intervention studies had a generally low level of methodological quality. The CPT-adjacent studies reported on contextually relevant factors that could inform the development of CPT interventions for this cultural-linguistic group.
Conclusion: The studies highlight that in both Portugal and Brazil SLT aphasia intervention extends to equipping persons communication partners, with strategies that enhance communication with persons with aphasia. CPT-adjacent research provides contextually-specific evidence that could guide the development of future CPT research for Portuguese Speaking countries. Finally, despite the small number of studies on CPT as an intervention, these findings highlight the invisibility of otherwise relevant evidence, due to the English-language bias in evidence synthesis.

Resumo

Introdução: As pesquisas existentes sobre o Treino de Parceiros de Comunicação (TPC) na afasia têm-se focado em estudos publicados em inglês, com exceção de uma revisão sistemática sobre intervenções com TPC em chinês, deixando uma lacuna significativa no conhecimento existente sobre descobertas específicas do contexto que poderiam informar programas de TPC cultural e linguisticamente adaptados. O português, sendo a quinta língua mais falada no mundo e a primeira no Hemisfério Sul, permanece como uma das línguas mais sub-representadas na investigação sobre afasia. Identificar os estudos publicados na língua portuguesa poderá informar o desenvolvimento de intervenções com TPC contextualmente relevantes.
Objetivos: Este estudo teve como objetivo sintetizar (1) estudos em língua portuguesa sobre intervenções com TPC na afasia e (2) evidências diretamente relevantes para o desenvolvimento de programas de TPC cultural e linguisticamente sensíveis para esta comunidade ("estudos adjacentes ao TPC").
Métodos e Procedimentos: Foi realizada uma revisão sistemática da literatura, em conformidade com o protocolo PRISMA, utilizando os termos de procura traduzidos da revisão sistemática da literatura, em língua inglesa, efetuada por Simmons-Mackie et al. (2016). Foram ainda adicionados sinônimos destes termos, com base no seu uso linguístico em

português. A pesquisa foi conduzida nas bases de dados Scopus, Web of Science, PubMed, e Scielo, utilizando filtros de idioma. Foram igualmente consultadas bases de dados específicas em português, nomeadamente a Scielo Portugal, B-On, Lilacs e CAPES, e as bases de dados eletrônicas de teses e dissertações universitárias RCAAP e BDTD. Foram encontrados 1275 artigos, dos quais 4 cumpriram os critérios de inclusão definidos para o primeiro objetivo do estudo, e 22 cumpriram os critérios definidos para o segundo objetivo. Todos os estudos incluídos ($N = 26$) foram desenvolvidos em Portugal ou no Brasil.
Resultados: Em geral, todos os estudos que abordaram diretamente uma intervenção com TPC ($n = 4$) reportaram efeitos positivos, incluindo mudanças positivas na perceção das competências conversacionais, melhoria no uso de estratégias de comunicação pelos parceiros de comunicação e melhoria na sua qualidade de vida. Os estudos de intervenção considerados, apresentaram um baixo nível de qualidade metodológica. Os estudos adjacentes ao TPC reportaram fatores contextualmente relevantes, que poderiam informar o desenvolvimento de intervenções de TPC para este grupo cultural e linguístico.
Conclusão: Os estudos destacam que, tanto em Portugal quanto no Brasil, a intervenção terapêutica na afasia considera o envolvimento dos parceiros de comunicação, com o treino de estratégias que melhoram a sua comunicação com pessoas com afasia. Os estudos adjacentes ao TPC fornecem evidências especificamente contextualizadas que poderão orientar o desenvolvimento de estudos futuros de TPC em países de língua portuguesa. Finalmente, apesar do número limitado de estudos encontrados sobre TPC, os resultados descritos destacam a invisibilidade de evidências relevantes, devido ao viés da língua inglesa, na síntese de evidências existentes.

Introduction

Communication Partner Training (CPT) in aphasia is an evidence-based environmental intervention that focuses on the communication between the person with aphasia and typically communicating partners (CPs) (e.g., family members, healthcare professionals, volunteers, service professionals) (Simmons-Mackie et al., 2016). Outcomes of CPT are typically considered in relation to CPs knowledge of aphasia and the communication behaviours of CPs and PWA in conversation. Distal multi-determined outcomes are also considered, including participation, wellbeing, and quality of life, making synthesis of CPT research inherently challenging (Saldert et al., 2018). Apart from one systematic review that analysed CPT papers published in Chinese (Kong et al., 2021), syntheses of CPT-

related research have only included studies published in English, leaving a significant gap in knowledge regarding context-specific findings that might inform culturally and linguistically tailored CPT programs. Indeed, Portuguese-speaking participants are documented to be one of the most under-represented groups when considering the number of speakers globally compared to their inclusion in aphasia research (Beveridge & Bak, 2011). The tendency to privilege English-language publications in systematic reviews risks further under-representation.

Structural barriers and embedded prejudice prevent researchers from the Global South from disseminating their work in effective and efficient ways (Gibbs, 1995). Scholarship that is published in local languages is a valuable means to share science within the community from which it is generated. However, the current structures of academia frequently render such scholarship invisible. The detrimental impact of this marginalisation extends to the researchers themselves, the communities that they serve (including diaspora), and the discipline more broadly who miss a relevant body of evidence, often without recognising that it exists (Salager-Meyer, 2008). The amount of evidence in languages other than English is likely not insignificant when considering reports from other fields of scientific enquiry. For example, approximately 35% of scientific documents on conservation were written in languages other than English (Amano et al., 2016). In our own discipline, the most comprehensive systematic review reports on 56 studies addressing CPT as an intervention (Simmons-Mackie et al., 2016), all of which were published in English. A paper synthesising Chinese-language publications reports 11 CPT intervention studies (Kong et al., 2021). Considering these figures, the existing body of evidence is arguably comprised of 67 studies, but 16% of these are invisible when English-language publications are privileged in the synthesis process. Addressing this evidence gap is not as simple as avoiding language filters in literature searching. Many local publications may not be indexed in the "mainstream" databases (Gibbs, 1999). As shown in Kong et al. (2021) and in the findings outlined below, it is necessary to identify language-specific and regional databases and repositories. Ignoring these repositories of evidence results in biases in understanding the field of study (*ibid*) – an issue of critical relevance in CPT when considering that language and communication are inherently bound up with cultural and linguistic practices. This paper presents a systematic synthesis of Portuguese-language research that could inform further development of culturally and linguistically sensitive CPT for Portuguese speaking communities.

Stroke and aphasia in Portuguese-speaking communities

According to the Community of Portuguese-Speaking countries (CPLP; https://www.cplp.org/), Portuguese is the fifth most spoken language in the world, the first in the Southern Hemisphere and one of the most used languages on the internet and social networks. It is growing strongly, particularly in Africa, and could nearly double its current 260 million speakers by the end of the century, as per the United Nations demographic projections. The countries that constitute the CPLP are Angola, Brazil, Cape Verde, Guinea Bissau, Equatorial Guinea, Mozambique, Portugal, S. Tomé and Principe and East Timor. In this study it was only possible to explore and present data from Portugal and Brazil, the largest of the Portuguese-speaking communities and the countries with longest established Speech and Language Therapy programs. The authors are not aware of publications on

aphasia intervention from the remaining seven countries of the CPLP, personal communication with speech and language therapists (SLTs) in these settings suggest that services are sparce and research is limited.

Using the Global Burden of Disease, Nascimento et al. (2018) have described trends in cardiovascular disease across the Portuguese speaking countries that comprise the CPLP. Brazil and Portugal show the lowest age-standardised mortality from cardiovascular disease of the CPLP (Nascimento et al., 2018), but stroke remains an important cause of mortality and morbidity in both countries. In Brazil, stroke and stroke-related morbidity is not only the main cause of mortality, but also of disability (Lopes et al., 2016). In Portugal stroke continues to be a major cause of mortality and morbidity (Instituto Nacional de Estatística: statistics Portugal, 2021). There is a scarcity of comprehensive national data regarding aphasia in both Brazil and Portugal despite the high incidence of stroke. A retrospective cohort study in Brazil found that among individuals who had their first-ever ischemic stroke, there was an incidence rate of 22.6% for aphasia (Lima et al., 2020). In Portugal the real number of people with aphasia (PWA) is still unknown, however given that Portugal has one of the highest stroke rates in the European Union, estimates suggest that the prevalence of aphasia is around 40 000, with about 8000 new cases of aphasia every year (Portuguese Institute of Aphasia, IPA; https://ipafasia.pt/en/instituto-portugues-de-afasia/). CPLP countries differ significantly from each other in terms of socioeconomic dimensions, public expenditure on health, literacy levels, but there is increasing recognition that health-related actions can be positively influenced through understanding the similarities and differences in health across these countries (Nascimento et al., 2018).

In Portugal there is a documented lack of SLT services available and supported by the state. Some individuals are referred to care units or rehabilitation centres, but the capacity is limited (Carvalhal, 2019). Caregivers play an important role in aphasia intervention and post-stroke caregiving often rests on informal care within the family (Bierhals et al., 2019). As in other countries of the Organization for Economic Cooperation and Development (OECD), the pandemic of 2020 triggered a deep recession in Portugal and put the health system under great pressure. In 2021 Portugal ranked 16th among the 19 countries in the euro zone in terms of people's purchasing power. However, even before the pandemic, European Union reports identify that, in 2019, 2.8% of the Portuguese population had difficulty to access health care services due to their costs, distance and waiting lists. Private specialized intervention is available only to a small fraction of the Portuguese population (Instituto Nacional de Estatística: statistics Portugal, 2022). SLTs report reliance on the *BAAL (Bateria de Avaliação de Afasia de Lisboa)* (Castro-Caldas, 1979; Damásio, 1973; Ferro, 1986) as the only assessment tool to plan for intervention. Nevertheless, over the last ten years several studies have been conducted, focusing on the translation and adaptation of various assessment protocols. These protocols enable Portuguese SLTs to assess the consequences of aphasia in people's daily lives, particularly in their activities of daily living and social participation (M. Matos et al., 2014; M. A. Matos et al., 2013). SLTs in Portugal are aware of the growth of CPT as an intervention approach (Leal, 2009) and the increasing emphasis on participation is evident through the establishment of the Portuguese Institute of Aphasia/*Instituto Português da Afasia (IPA)* in 2015. The institute is located in the north of Portugal and therefore not accessible to all PWA in the country.

Brazil faces a number of similar challenges in relation to aphasia. High demand and long waiting times for care are major challenges in public health services due to lack

of professionals, impacting on the "therapeutic window of opportunity" (Cera et al., 2019). Inequalities in access to SLT across the federative units of Brazil remain a challenge, despite an increase in the supply of SLT in the Brazilian Unified Health System and in Primary Health Care (Sousa et al., 2017). Aphasia Interventions have historically focused on language rehabilitation, although there is an increase in community and group-based interventions (Abreu et al., 2021). Online platforms such as *Rede Afasia Brasil* and *Portal da Afasia* have gained traction over the last years, aiding in the dissemination of knowledge about aphasia. CPT is not widely implemented in Brazil, and the term appears for the first time in 2019 in a chapter written by a Portuguese author who contributed to a Brazilian book on Speech Therapy (A. P. S. Valente, 2019).

CPT is a potentially attractive intervention in both Brazil and Portugal, with implications for other Portuguese speaking countries of the CPLP, as it represents a relatively resource efficient means to address the outcomes of communicative participation, social inclusion, and Quality of Life. However, Portuguese-language scholarship on CPT has not yet been synthesised. This study sought to identify the scholarship published in Portuguese that has been, and will likely continue to be, overlooked. In addition, by prioritising papers published in Portuguese we intentionally forefront the localness of context-specific interventions. This systematic review fills an important gap in synthesising CPT-related research published in Portuguese, with implications extending to many countries in the Global South.

Methods

Research design

This study aimed to synthesise Portuguese-language research on CPT interventions for PWA and their CPs as well as evidence directly relevant to the development of culturally and linguistically sensitive CPT for this community. The research question of this study was "What is the effect of communication partner training for PWA and their CP (on any domain of functioning) as documented in research published in Portuguese, and what Portuguese-language evidence exists to guide the development of cultural-linguistically sensitive CPT for this population?"

The systematic search was conducted between 11th January and 29th March of 2022, using the following databases: Scopus, Web of Science, PubMed, Scielo, Scielo Portugal, B-On, Lilacs and CAPES. University thesis and dissertation electronic databases were also included in the search, namely the Portuguese database *Repositórios Científicos de Acesso Aberto de Portugal* (RCAAP) and the Brazilian database *Biblioteca Digital Teses e Dissertações do Brazil* (BDTD).

The search terms used were translated from the 2016 review of Simmons-Mackie et al. and additional search terms were added according to cultural specifications (synonyms), following Kong et al. (2021). The included studies should address adults of at least 18 years of age, and interventions with PWA of any aetiology and CPT. The search string by database is presented in Supplemental File 1.

All study designs were eligible for inclusion (group design, randomized or

non-randomized controlled trials, case study or single-participant research design, quantitative or qualitative research). Articles were imported into Covidence® software, which was used throughout the review process.

Measures and analysis

The articles identified during the search process were subjected to a two-step screening process: the title and abstract screening were performed by two researchers, and the full text screening was performed by the same reviewers independently and blinded to each other's decisions. Disagreements were resolved through discussion and consensus. One of the CPT intervention studies (Magnus et al., 2019) was retrieved as a Portuguese abstract. The paper itself was in English, but the research team had access to the Portuguese-language project which was substantially more detailed. The decision was taken to include this study, although the language of the peer-reviewed paper was in English, as the study was well aligned with the aims of the review and the extraction was enhanced by access to the Portuguese-language dissertation.

Based on the reviewers' discussion, the data collection considered the following aspects: participants' characteristics (country, number of participants, age, gender, time post-onset, aetiology, aphasia type, and aphasia severity), CP characteristics, intervention description and outcome measures. The extracted data from the included articles was summarised and synthesised.

As in Simmons-Mackie et al. (2016) review, evaluation on the quality of articles were also conducted by 2 independent reviewers using 3 classification systems, namely the American Academy of Neurology Classification of Evidence (American Academy of Neurology, 2011), the Physiotherapy Evidence Database (PEDro) scale (Maher et al., 2003), and the Single-Case Experimental Design (SCED) Scale (Tate et al., 2008). The PEDro scale, originally designed for evaluating the methodological quality of randomized controlled trials in physiotherapy, comprises 11 items, each scored as yes (1 point) or no (0 points). The total score, excluding the eligibility criterion (item 1), yields a maximum of 10 http://www.pedro.org.au. The SCED Scale is tailored for a meticulous evaluation of single-case study methodological quality, ensuring consistency among raters. With 11 items, the scale systematically assigns a quality score, dedicating 10 items to assess methodological quality and the application of statistical analysis.

The initial data extraction form, encompassing data on participants, interventions, outcome measures and main findings, was piloted on 2 papers, before data extraction on the remaining papers was undertaken. The extraction form was kept for CPT studies. Data was coded thematically for those papers that did not directly address CPT as an intervention but were deemed to contain implications for the development of future CPT studies in Portuguese (i.e., CPT-adjacent studies). Given the heterogeneity of this group of studies, a thematic approach to systematizing relevant findings was considered more suitable.

Results

A total of 1450 articles meeting the initial inclusion criteria were identified (see Figure 1); 175 records were eliminated as duplicates. Based on the abstract screening of the

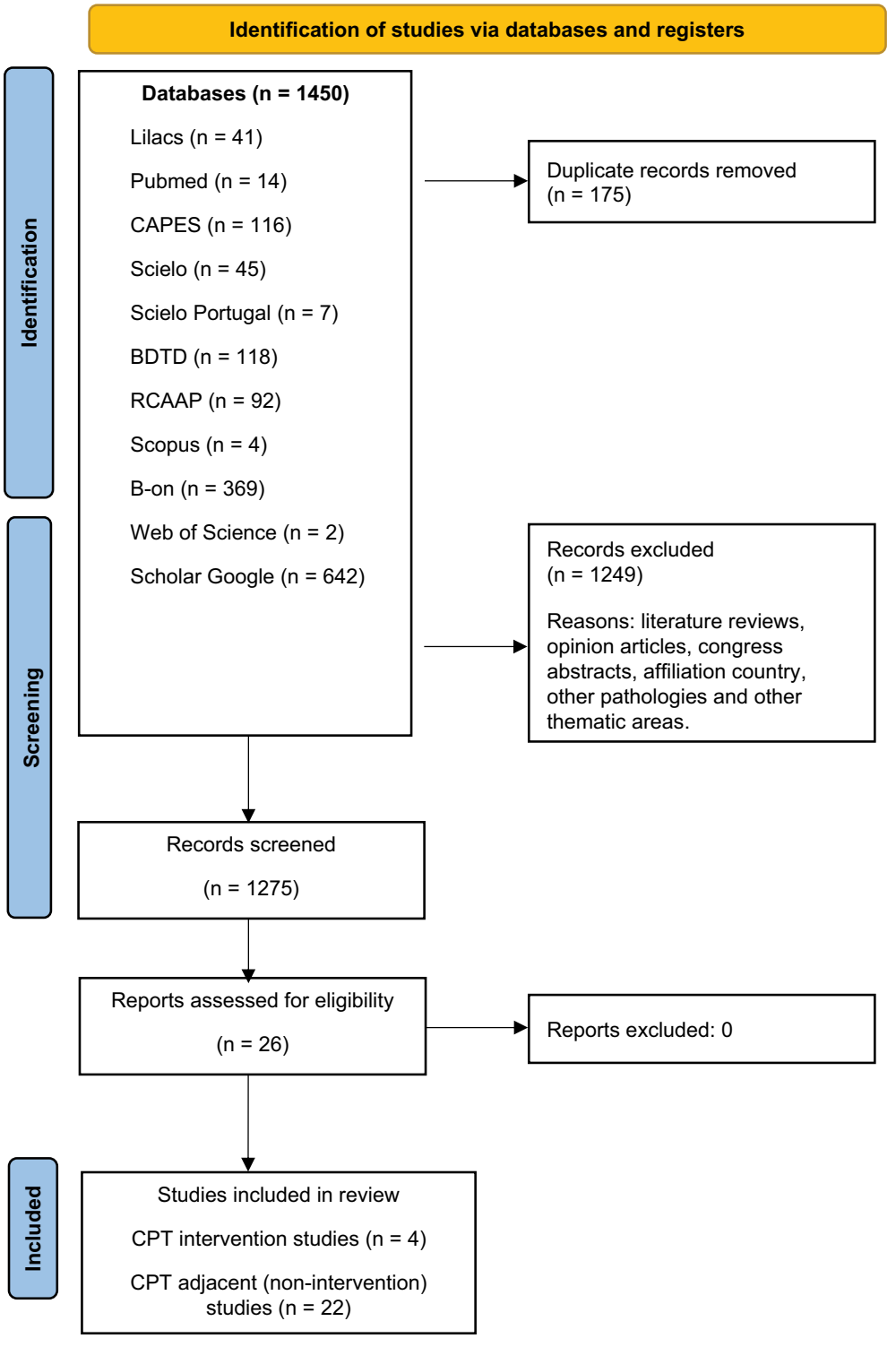


Figure 1. PRISMA flow diagram.

remaining 1275 articles, 1249 articles were rejected. A total of 26 studies were included. The included studies reflect two groups of findings – (1) those directly involving a CPT intervention ($n = 4$) and, (2) those CPT-adjacent studies whose samples included PWA and their CP and which contained findings and discussions relevant to future development of a culturally-sensitive CPT intervention for Portuguese speaking contexts ($n = 22$).

CPT intervention studies

Descriptive review

Four intervention studies were included in this review, two from Brazil and two from Portugal (see Table 1 for overview). Of the studies from Portugal, both were Masters theses, one case-study (P. A. S. Valente, 2013) and the other a quasi-experimental design (Pereira, 2014). In P. A. S. Valente (2013) the intervention involved a couple and the aim was to analyze the efficacy of an individualized CPT program with a greater focus on turn-taking and repairing strategies. In contrast, the Pereira (2014) study evaluated the effects of a CPT program directed to health professionals (HPs) in the context of PWA receiving palliative care.

One of the Brazilian studies, an intervention study led by Machado in 2004, aimed to evaluate the effect of an education program on the perception of communication functionality of ten individuals with aphasia and their caregivers. In Magnus et al. (2019), a quantitative experimental study, the focus was on assessing the effectiveness of a communication intervention program for caregivers of four PWA.

Participants characteristics

The four CPT intervention studies included involved a total of 19 PWA (8 males; 11 females) with a mean age from 55–78 years. Almost all participants (79%) presented with chronic post-stroke aphasia with different aphasia subtypes. Table 2 provides a summary of the characteristics of the participants with aphasia.

Table 1. Characteristics of CPT intervention studies included.

Study	Country	Study Design	Study aim/objective	Method of analysis
Machado (2004)	Brazil	Quasi-experimental (quantitative, qualitative)	To investigate the impacts of an educational program with caregivers in PWAs perception of communicative abilities and difficulties	Descriptive and inferential statistical analysis
P. A. S. Valente (2013)	Portugal	Case study (prospective)	To analyse the effect of a CPT program directed at a couple in which the husband has aphasia, with a greater focus on turn-taking and repairing strategies	Discourse analysis
Pereira (2014)	Portugal	Quasi-experimental (quantitative, qualitative)	To evaluate the effects of a CPT program for health professionals in the context of palliative care	Thematic analysis
Magnus et al. (2019)	Brazil	Quasi-experimental (quantitative)	To develop a short educational program about aphasia (SEPA) for family caregivers of people with aphasia and verify its effect in their burden and quality of life	Descriptive and inferential statistical analysis

CPT – Communication partner training.

Table 2. Participants characteristics in CPT Intervention studies included.

Study	Country	Number of participants with aphasia	Age (mean)	Sex	Control matching criteria	Time post-onset	Etiology	Aphasia type	Aphasia severity
Machado (2004)	Brazil	10	62.7	3 M, 7F	NA	27.7 months (±21.8)	Stroke	1 conduction, 5 Broca's and 4 global	NS
P. A. S. Valente (2013)	Portugal	1	55	M	NA	48 months	Stroke (hemorrhagic)	Global	Level 3 (Aphasia Severity Scale)
Pereira (2014)	Portugal	4	78	3F, 1 M	NA	NS	Stroke and ALS	NS	NS
Magnus et al. (2019)	Brazil	4	65	3 M, 1F	NA	30 months (median)	Stroke	Broca's Aphasia	NS

NA = not applicable, NS = not stated, *M* = male, F = female, ALS = Amyotrophic Lateral Sclerosis.

A total of 29 CPs were represented in the intervention studies (7 males; 22 females) with a mean age across studies ranging from 30–57 years. Of these, 14 were formal carers and the remaining were family members. Table 3 provides a summary of the characteristics of these participants.

Intervention description

Three of the four included studies (Machado, 2004; Magnus et al., 2019; Pereira, 2014) offered a short education program (between 2 and 5 hours) addressing themes such as stroke and aphasia, communication strategies and considerations of health and quality of life. P. A. S. Valente (2013) used a more comprehensive program, including 9 sessions of training (comprising a total of 22 hours) to a spouse of a man with global aphasia in domiciliary context. The full description of the included intervention studies is available in Table 4.

A range of outcome measures were used across the included studies. Machado (2004) and P. A. S. Valente (2013) both used the Conversation Analysis Profile for People with Aphasia (CAPPA) (Whitworth et al., 1997) to evaluate conversation before and after the intervention. P. A. S. Valente (2013) used the interview and conversational recording components of the CAPPA and also applied the Measure of Skill in Supported Conversation (MSC) (Kagan et al., 2004). Pereira (2014) used The Montreal Evaluation of Communication Questionnaire for use in Long-Term Care (MECQ-LTC) (Le Dorze et al., 2000) to measure and characterize the communicative process between CP (health professionals) and their patients before and after intervention. Finally, Magnus et al. (2019) focused on the more distal outcomes of quality of life (using the WHOQOL-BREF (WHOQOL Group, 1994)) and caregiver burden (measured using the Zarit Burden Interview (Zarit et al., 1980)). The details of the outcomes reported are shown in Table 5.

Treatment effects of CPT in the Portuguese-speaking population

Overall, all four studies suggested some positive effects in their respective interventions. Positive changes in the perception of conversational abilities were reported in two studies (Machado, 2004; P. A. S. Valente, 2013). Improved use of supportive communication strategies by the CPs was described in both the P. A. S. Valente (2013) and Pereira

Table 3. Characteristics of communication partners in CPT intervention studies included.

Study	Number of CP	Age (mean)	Sex	Education	Employment	Affinity
Machado (2004)	10	47.5	8F, 2 M	9.4 years (±4.2)	NS	Family members: 1 sister-in-law, 1 mother, 3 spouses, 5 daughters
P. A. S. Valente (2013)	1	57	F	12 years	Unemployed	Spouse
Pereira (2014)	14	30	10F, 4 M	6HS, 8C	6 nurses, 2 PT, 6 HA	Formal carers
Magnus et al. (2019)	4	61 (median)	3F, 1 M	2ES, 1C, 1HS	NS	Family members: 1 brother-in-law, 1 sister, 1 spouse,1 daughter

NA = not applicable, NS = not stated, *M* = male, F = female, ES = elementary school, HS = high school, C = college, PT = Physiotherapists, HA = Health Assistants.

Table 4. Intervention descriptions for included CPT studies.

Study	Category of intervention	Training length	Total training amount	Intervention setting	Intervention description	Predominant intervention focus with CP	Training format
Machado (2004)	Orientation/ education program	6 weekly meetings of 50 minutes each	5 hours	University	Three exposition sessions covering stroke and aphasia, how it affects language in general and in the specific case of each patient, psychological effects of aphasia, how to manage stress, how CP can help, and three training sessions based on conversational samples between PWA and their CP, focusing on communication strategies tailored to each dyad.	Broad intervention with focus on communication strategies and quality of life.	Groups comprised of PWA and CP + guide
P. A. S. Valente (2013)	Individual training of CP and PWA + education program about aphasia	9 sessions	22 hours	Patient's home	**3 phases: 1st phase just with CP**: What is aphasia; type of aphasia; characteristics of "good conversation"; effect of aphasia on conversation; psychosocial consequences; supported communication; importance of communication partners. **2nd phase just with CP**: general communication strategies (according to the principles of SCA); conversation structure: Turn-taking and repair; specific strategies for the couple. **3rd phase: both PWA and CP**: practical training of strategies with the couple; role-playing and "conversational coaching"; final self-assessment.	Communication strategies	Individual + Dyad

(*Continued*)

Table 4. (Continued).

Study	Category of intervention	Training length	Total training amount	Intervention setting	Intervention description	Predominant intervention focus with CP	Training format
Pereira (2014)	Education program	2 months	2-hours workshop	Palliative Care Unit	Two groups of formal carers were involved. An experimental group and a control group, both assessed before and after intervention using the MECQ-LTC. A 2-hour workshop was given to the experimental group. In this workshop the communication strategies found in the literature to facilitate communication were explored. By the end of this workshop, a communication plan, with the specific strategies used by each patient with communication disorders involved in the study and the strategies each CP should use to facilitate communication with each of them was shared.	Communication strategies	Group of health professionals + communication plan per patient
Magnus et al. (2019)	Short education program about aphasia (SEPA)	2 meetings of 1 hour each with a one-week interval	2 hours	University	Two expositive sessions. The first session covered the topics: neural substrates of language, stroke and other brain diseases, and aphasia (concept, types, symptoms, consequences). After 7 days, the second session was carried out and covered the topics: relationship between people with aphasia and caregivers, strategies to improve communication, and general orientation about quality of life and health. At the end of each session, 30 minutes were dedicated to questions and an open discussion.	General intervention covering education about aphasia, strategies for communication and relationship with caregivers.	Group

CP = communication partner, PWA = people with aphasia, SCA = Supported Conversation for Adults with Aphasia, CAPPA = Conversation Analysis Profile for People with Aphasia.

Table 5. Outcome measures for CPT intervention studies included.

Study	Category of intervention	Participants	Outcome category	Outcome measures	Test description	Results	Change	Remarks to caution for interpretation
Machado (2004)	Orientation/ educational program	PWA and CP	Perception of conversational abilities	Percentage of agreement between CP and SLT regarding functional abilities. (Complete CAPPA)	Quality of Life was only assessed pre-intervention, using the SF-36. CAPPA was used pre- and post-intervention. CAPPA consists of an interview with the CP, a 10-minute recording of a conversation between CP and PWA/an analysis of agreement between findings of interview and discourse analysis. Therefore, the measure is one of agreement between CP and SLT perception of communicative abilities.	The first analysis (covering pre and post intervention agreement) did not find any statistically significant change in any of the dyad groups. The second analysis investigates the internal groupings within each group, i.e., similarities across dyads. Results indicate aphasia classification is not a determinant factor for CAPPA score. The third analysis compares CP perception before and after intervention. The only statistically significant finding regarded speech apraxic errors in PWA discourse.	Greater agreement between rating by CP and PWA, but no statistical difference was observed.	Definitions of functionality and difficulties in communication might differ between individuals.

(*Continued*)

Table 5. (Continued).

Study	Category of intervention	Participants	Outcome category	Outcome measures	Test description	Results	Change	Remarks to caution for interpretation
P. A. S. Valente (2013)	Individual training of CP and PWA + Educational Program about aphasia	PWA and CP	Perception of conversational abilities/ Communication Profile	Performance in CAPPA and Measure of Skill in Supported Conversation (Parts A and C of CAPPA)	CAPPA consists of an interview with the CP/ a 10 minute recording of a conversation between CP and PWA and analysis of conversation/ Measure of Skill in Supported Conversation provides an index of the ability of a CP to provide support for the PWA by communicating in a way that acknowledges the person's inherent competence while at the same time facilitating his/her ability to exchange thoughts, opinions, and feelings that help to reveal inherent competence.	The results suggest that the training undertaken with the wife, in order to improve their communicative behaviors and attitudes, had a very positive impact on the quality of the conversation with the husband with aphasia.	Positive change, mainly described in a qualitative way – The CP was more aware of aphasia's impact in her husband's communication and of the right strategies to use to facilitate conversation.	Small sample size, no control group.

(*Continued*)

Table 5. (Continued).

Study	Category of intervention	Participants	Outcome category	Outcome measures	Test description	Results	Change	Remarks to caution for interpretation
Pereira (2014)	Orientation/ educational program	Formal Carers	Communication Strategies	MECQ-LTC	MECQ-LTC is a tool to determine the needs and problematic communication situations specific to long-term care. It also aims to reveal a resident's usual means of communication and the strategies used by speakers to better understand or be understood by the resident.	The results obtained showed changes in terms of communication between professionals and patients, with an increase in the number and frequency of the use of various strategies by both.	There was an increase in the number and frequency of the communication strategies used, which lead to a decrease of the communicative effort in areas such as nutrition, health care and general communication. More verbal strategies were used, though there is greater difficulty in adaptation and use of AAC. The program was generally well structured and implemented, meeting the needs of participants.	Small sample size
Magnus et al. (2019)	Short educational program about aphasia (SEPA)	CP	Burden assessment and quality of life	Performance in Zarit and WHOQOL-Bref at pre- and post-intervention times	Zarit's Burden interview is aimed at caregivers of people with mental and physical illnesses. The WHOQOL-Brief is an evaluation of quality of life in 4 domains: physical, psychological, social relations.	No statistically significant change in pre-post intervention, but greater median values in all outcome measures post intervention.	There was a generalized trend of improvement in several measures. Qualitative observation by therapists and participants supports a generally positive impact of the intervention.	Small sample size, no control group, lack of adherence of family caregivers.

PWA = people with aphasia, CP = communication partner, SLT = Speech-Language Therapist, MECQ-LTC = The Montreal Evaluation of Communication Questionnaire for use in Long-Term Care, AAC = Augmentative and Alternative Communication, MSSC = Measure of Skill in Supported Conversation, WHOQOL-Bref = World Health Organization Quality of Life – Bref.

(2014) studies. Finally, an improvement in quality of life, but not perceived burden, was reported by Magnus et al. (2019).

The findings of Machado (2004) demonstrated relatively modest improvements in the measure of communication functionality, but the subjective reports from the group were noteworthy. All caregivers expressed enthusiasm for the program and reported greater ease in communication with the person with aphasia in their daily lives. Moreover, caregivers reported a post-CPT intervention increase in the motivation of PWA to participate in the sessions and engage in communication activities at home. This impression was confirmed by the speech and language therapist evaluator, who noted that there was high attendance and engagement among the participants.

The results of the P. A. S. Valente (2013) study suggest that the CPT had a positive impact on the quality of the conversation between the PWA and CP as measured by the CAPPA (Whitworth et al., 1997) and the Measure of Skill in Supported Conversation (Kagan et al., 2004). A positive change was also reported related to the CP awareness of the impact of aphasia and the most appropriate communication strategies.

Magnus et al. (2019) demonstrated a positive impact of CPT intervention on the burden and quality of life of the CPs. The observed improvements in individual performance also suggest that education programs may have a positive impact on caregivers' burden and quality of life, although such multi-determined outcomes may be attributed to factors beyond the specific CPT intervention administered.

Finally, in the single study to address formal caregivers, Pereira (2014) found positive changes in the communication between professionals and patients, with an increase in the number and frequency of the use of various communication strategies by both. There was an increase in the number and frequency of the communication strategies used, and a decrease in the communicative effort observed. The intervention program was considered as generally well-structured and implemented, meeting the needs of participants. More detailed results are presented in Table 5.

Research quality review

Regarding the AAN Classification of Evidence guidelines, both Portuguese and Brazilian studies investigating CPT were rated as Class IV as they did not meet the criteria to be considered as randomized controlled clinical trials, presenting a very high risk of bias. In the classification of the evidence, 100% consensus was reached.

The PEDro scale was also used but only one study (Pereira, 2014) met the criteria to be assessed with it. The study was scored with 5 out of 10, and did not meet the criteria of blindness (subject, therapy, and assessors), concealing allocation, and measures of variability. Inter-rater reliability between raters was 90%.

Only one Portuguese study (P. A. S. Valente, 2013) was evaluated using the SCED scale, obtaining a final score of 7 out of 11. The study did not meet the criteria of independence of assessors and inter-rater reliability as the same researcher made the pre and post assessment and the intervention. In addition, the analysis lacked statistical methods and evidence for generalisation. Inter-rater agreement was 82%.

In relation to the Brazilian studies (Machado, 2004; Magnus et al., 2019), both were analyzed using the PEDro and the SCED scales. The two received identical ratings on the two scales, being 5 out of 10 and 8 out of 11 points respectively, with inter-rater reliability

of 90% (disagreements in rating were discussed and resolved through consensus). In the PEDro scale the studies did not meet the criteria of blindness (subject, therapy, and assessors), concealing allocation, and measures of variability. Concerning the SCED scale, they did not meet the criteria of independence of assessors, inter-rater reliability (the same researcher made the pre and post assessment and the intervention), and they lacked evidence for generalisation.

CPT-Adjacent studies

Descriptive review

A total of 12 studies from Brazil and 10 from Portugal were included as CPT-adjacent studies, not directly reporting on an intervention but nonetheless reporting on relevant topics that could contribute to the development of future CPT studies in the CPLP.

Studies involved presented a variety of designs and methods. Fourteen of these studies consisted predominantly of qualitative studies (Barros, 2016; Bassi, 2006; DiGiulio, 2011; Dresch et al., 2017; Godoy, 2016; Jesus, 2021; Kiyan et al., 2008; Mano et al., 2015; M. A. Matos, 2012; Miolo et al., 2017; Moleta et al., 2011; Monje, 2007; Panhoca & Pupo, 2010; Silva & Patrício, 2010), of which 7 used thematic analysis (Barros, 2016; DiGiulio, 2011; Jesus, 2021; Kiyan et al., 2008; M. A. Matos, 2012; Miolo et al., 2017; Silva & Patrício, 2010), 6 used discourse analysis (Bassi, 2006; Mano et al., 2015; Moleta et al., 2011; Monje, 2007; Panhoca & Pupo, 2010; Ponte & Fedosse, 2016) and 1 used a case report format (Dresch et al., 2017). Two studies (Galamba, 2012; Gil et al., 2020) involved literature reviews. Six studies (Ângera, 2011; Carleto, 2011; Coelho, 2020; Godoy, 2016; Lima et al., 2021; Salgueiro, 2014) used predominantly quantitative methods. Most considered only one timepoint for data collection, with the exception of one study (Lima et al., 2021) which was longitudinal. This longitudinal study (Lima et al., 2021) consisted of a non-randomized clinical study of a multi-component aphasia group therapy which included family members and caregivers. Caregivers were not the primary focus, but received instructions post therapy sessions, constituting a more informal approach. Moreover, two educational meetings with PWA and caregivers alike were conducted.

Within the included studies, 9 used semi-structured interviews (Barros, 2016; Bassi, 2006; DiGiulio, 2011; Godoy, 2016; Kiyan et al., 2008; M. A. Matos, 2012; Miolo et al., 2017; Panhoca & Pupo, 2010; Silva & Patrício, 2010), 1 used an unstructured observational schedule (Dresch et al., 2017), 4 used questionnaires (Ângera, 2011; Coelho, 2020; Jesus, 2021; Salgueiro, 2014), while 6 utilised standardised tools such as SAQOL for PWA (Carleto, 2011), WHOQOL-Bref (Carleto, 2011; Monje, 2007; Ponte & Fedosse, 2016) and CAPPA-P Brief (Portuguese version) (Mano et al., 2015). The literature reviews were reported based on appropriate guidelines, with Gil et al. (2020) using the PRISMA (2009) process and the Joanna Briggs Institute method, and Galamba (2012) applying the Guyatt and Rennie (2002) guidelines.

A summary of the characteristics of these non-CPT studies is provided in Tables 6 and 7.

Main findings relevant to CPT

An analysis of the studies' objectives allows for a broad categorisation into three broad groups. Studies investigated: (1) factors that impact the quality of life, participation and

Table 6. Characteristics of CPT-adjacent studies.

Study	Country	Study design	Study aim/objective	Method of analysis
Ângera (2011)	Portugal	Quantitative, transversal, descriptive-exploratory	Describe how the students of 3rd year of Bachelor of Nursing of a Portuguese university communicate with aphasic patients. To identify the strategies they use, their difficulties and knowledge they have about the characteristics of different types of aphasia.	Descriptive statistics (Microsoft Excel) and qualitative analysis.
Barros (2016)	Portugal	Transversal, qualitative	Explore the knowledge of formal caregivers about the person who is a victim of stroke, contributing to the improvement of communicative quality in the Continuing Care Units.	Thematic Analysis.
Coelho (2020)	Portugal	Quantitative, descriptive, and cross-sectional	To know the nursing interventions used by rehabilitation nurses when communicating with PWA.	Descriptive analysis using the SPSS.
Galamba (2012)	Portugal	Literature review	To understand the changes of communication in people with neurological disease and how the rehabilitation nurse contributes to the recovery of those who experience a new stage of their life cycle.	The author used the following MeSH terms: Rehabilitation AND Nursing AND Communication.
Gil et al. (2020)	Portugal	Scoping review	To answer the research question: Which nursing interventions enable the informal caregiver of a person with aphasia in the home context?	The research was carried out with MeSH descriptors, combining the research strategy Nurs*AND Aphasia OR Homenursing AND Caregivers. Data collection used the Joanna Briggs Institute method and PRISMA guidelines.
Jesus (2021)	Portugal	Exploratory, cross-sectional, descriptive, qualitative and quantitative	To identify the communication strategies used with PWA by HP and final year health students trained in Portuguese higher education institutions, as well as to explore their knowledge, training and needs on the subject.	Descriptive statistics of quantitative data (Microsoft Excel) and thematic analysis.
Mano et al. (2015)	Portugal	Non experimental, quantitative, qualitative, descriptive, transversal	Identifying communicative difficulties presented by the CP in interaction with PWA; identifying communicative difficulties presented by the PWA; identifying strategies that simplify the communication between the CP and the PWA and determine the dyad's communicative profile: PWA – CP.	Descriptive analysis using the SPSS Program; discourse analysis.

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Table 6. (Continued).

Study	Country	Study design	Study aim/objective	Method of analysis
M. A. Matos (2012)	Portugal	Observational, descriptive, transversal	To carry out the translation and adaptation to Portuguese of the Communication Disability Profile (CDP) (Swinburn & Byng, 2006) and the Participation Objective Participation Subjective (POPS) (Brown et al., 2004) in order to equip the SLTs of our country with tools to cover the different areas mentioned. It was also intended to meet the real needs of Portuguese PWA, make a survey of the consequences of stroke and aphasia in their daily lives and see how chosen instruments accurately identify these needs.	Thematic Analysis (using ICF categories).
Salgueiro (2014)	Portugal	Quantitative, descriptive	To identify communication difficulties of nurses when communicating with PWA; to identify diagnostic activities implemented by nurses for aphasia assessment; to identify the interventions performed by nurses to communicate with PWA.	Descriptive analysis using the SPSS; content analysis for qualitative data.
Silva and Patrício (2010)	Portugal	Qualitative, observational, descriptive, transversal	To verify if informal caregivers of PWA consider relevant their participation in the habilitation/rehabilitation process of their relatives in speech-language therapy, considering the impact of aphasia in their own lives.	Thematic analysis.
Bassi (2006)	Brazil	Descriptive, observational, qualitative	To explore the social-cognitive path of enunciative and pragmatic meaning construction in situations of face-to-face interactions, involving aphasic and non-aphasic subjects.	Discourse analysis.
Carleto (2011)	Brazil	Descriptive, cross-sectional, quantitative	To investigate factors that impact quality of life of PWA and their caregivers.	Descriptive statistics of quantitative data (Microsoft Excel and SPSS).
DiGiulio (2011)	Brazil	Exploratory, descriptive, qualitative	To investigate the impacts of aphasia on caregivers or relatives of PWA who had fluent and non-fluent aphasia and who used Augmentative and Alternative Communication.	Thematic analysis.
Dresch et al. (2017)	Brazil	Descriptive, observational, qualitative	To discuss health promotion and prevention practices in a group context for caregivers of PWA.	Not specified

(*Continued*)

Table 6. (Continued).

Study	Country	Study design	Study aim/objective	Method of analysis
Godoy (2016)	Brazil	Descriptive, observational, quantitative	To describe the quality of the relationship between family members/caregivers and adults and elderly poststroke, who are attending a rehabilitation program.	Descriptive statistics of quantitative data.
Kiyan et al. (2008)	Brazil	Descriptive, observational, qualitative	To explore how the family of PWA experience difficulties in communication.	Thematic analysis.
Lima et al. (2021)	Brazil	Quantitative, clinical study, pre-post test, non-randomized	To verify whether the multicomponent aphasia group therapy program could significantly improve quality of life and communication in people with sub-acute stroke-related aphasia.	Descriptive and inferential pre-post intervention statistical analysis of quantitative data.
Miolo et al. (2017)	Brazil	Exploratory, transversal, qualitative	To discuss the impact of individuals' motor and aphasia-related impairments on relatives/informal caregivers' daily lives	Thematic analysis.
Moleta et al. (2011)	Brazil	Descriptive, observational, qualitative	To analyze the views of an aphasia caregiver's family group about the caregiver definition and its implications.	Content discourse analysis.
Monje (2007)	Brazil	Descriptive, observational, quantitative, qualitative	To assess the quality of life of people with aphasia and their caregivers.	Descriptive statistics of quantitative data and discourse analysis.
Panhoca and Pupo (2010)	Brazil	Descriptive, observational, quantitative, qualitative	To investigate the quality of life of caregivers of PWA.	Descriptive statistics of quantitative data and discourse analysis.
Ponte and Fedosse (2016)	Brazil	Descriptive, observational, quantitative, qualitative	To investigate the correlation between the impact of Acquired Brain Injury (ABI) on the labor activity of individuals of working age on their quality of life.	Descriptive statistics of quantitative data, content discourse analysis.

CPT – Communication partner training, ICF – International Classification of Functioning, Disability and Health, SPSS – Statistical Package for the Social Sciences, HP – Health Professionals.

relationships of PWA and their family caregivers (Carleto, 2011; Dresch et al., 2017; Godoy, 2016; Lima et al., 2021; M. A. Matos, 2012; Miolo et al., 2017; Moleta et al., 2011; Monje, 2007; Panhoca & Pupo, 2010; Ponte & Fedosse, 2016; Silva & Patrício, 2010); (2) the role of family CPs and the linguistic and communication features of interactions between PWA and their family CPs (Bassi, 2006; DiGiulio, 2011; Kiyan et al., 2008; Mano et al., 2015; M. A. Matos, 2012; Silva & Patrício, 2010), and (3) the relevance and nature of communication strategies used by healthcare professionals interacting with PWA (Ângera, 2011; Barros, 2016; Coelho, 2020; Galamba, 2012; Jesus, 2021; Salgueiro, 2014). Table 7 present the summary of findings of non-CPT intervention studies.

In relation to the first category of findings, Silva and Patrício (2010) reported a decrease in the quality of life of family CPs related to the presence of aphasia. Likewise, Ponte and Fedosse (2016) also reported impacts on various domains of the quality of life of caregivers of PWA related to the communication difficulties experienced. M. A. Matos (2012)

Table 7. Data collection tools and findings from CPT-adjacent studies.

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
Ângera (2011)	Communication strategies used in health care by nursing students.	CP (nursing students)	Questionnaire	The questionnaire is composed of two parts: demographic data collection and students' feedback regarding aphasia knowledge and communication strategies used in health practice.	The students identified some communication strategies to use with PWA although they refer to having some difficulties during the communication process and don't always feel prepared to treat/care PWA.
Barros (2016)	Communication strategies used by CP with PWA; knowledge of formal CP about aphasia; importance of communication in the professional intervention of formal CP; main communication difficulties experienced by formal CP with PWA; importance of an intervention in terms of training professionals in the field of communication.	CP (HP)	Semi-structured interviews	The interviews were structured in the following sections: demographic data, aphasia and communication knowledge, and communication strategies used with PWA.	All participants agreed that aphasia is characterized by a difficulty in expression/understanding; that communication is a way of interacting with others and with the environment; that the gesture and writing are the most used strategies, and that there is a need for training to improve communication in the context studied.

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Table 7. (Continued).

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
Coelho (2020)	Strategies used by formal CP.	CP (nurses)	Questionnaire	The questionnaire was adapted from one previously developed in the study of Salgueiro (2014).	Rehabilitation Nurses mentioned performing "Often" or "Always" interventions such as "Promoting adequate physical space", "Ensuring privacy", "Introducing yourself to the patient", "Enhancing the patient's ability to communicate", "Referring availability to communicate", "Giving simple guidance each time", "Giving the patient time to complete the message, without interrupting him", "Listening carefully", "Using simple words and short sentences", "Using keywords", "Showing images for the patient to name", "Using non-verbal communication", "Encouraging the patient to repeat words", "Recognizing the patient's progress, praising him", "Teaching how to manipulate usual objects", "Teaching how to verbalize words", "Teaching how to use non-verbal communication", "Using drawings", and "Providing the patient with written input".
Galamba (2012)	Importance of the intervention of rehabilitation nurses to the communication improvement of patients with neurologic disease.	NA	Guyatt and Rennie (2002) levels of evidence	Scale that proposes 7 levels of evidence.	Nurses need specific training regarding communication problems so that they can commit more to the care of PWA. It is necessary for nurses to establish effective communication with patients with post-stroke aphasia so that they are able to understand the oral or written information that is transmitted to them.

(*Continued*)

Table 7. (Continued).

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
Gil et al. (2020)	Nursing interventions that empower informal caregivers of PWA in home context.	NA	PRISMA 2009 Flow Diagram and Joanna Briggs Institute review protocol	NA	The importance of an empathic relationship with the PWA as it is important to guarantee effective communication. They also stated the relevance of using communication strategies with the PWA and the caregiver in order to enable a better social interaction and psychological state.
Jesus (2021)	Communication strategies used with PWA by HP and final year health students.	CP	Self-administered online questionnaire	Structure of the questionnaire: 1) demographic, academic, and professional information; 2) knowledge, training, and intervention in the areas of communication and aphasia; 3) strategies used in communicating with PWA; and 4) the need for training about communication with PWA.	Most used communication strategies are visual/physical strategies (e.g., gestures, images, writing and drawing). The level of knowledge is low for both groups studied, but the demand for training can be considered high, reaching 50% in both groups. There was also a tendency to use the same strategies (gestures, images/ symbols, reduction of verbal discourse, use of concise speech, writing and drawing) for different purposes (understanding, expression, recognition of competences).
Mano et al. (2015)	Communication strategies used by CP and the difficulties felt by the dyad during conversation.	PWA and CP (FM)	CAPPA-P Brief, sociodemographic questionnaires	The CAPPA-P Brief is an instrument for analyzing the conversational profile of PWA. The questionnaire is applied by SLTs to obtain specific information about the impact of aphasia in the conversation between the PWA and CP. For its application, this instrument presents a structured interview for each of the elements of the communication dyad, and an analysis of a sample conversation between both.	The findings showed that the CP has a more realistic knowledge of the PWA abilities than themselves. It also was able to confirm that there are a wide range of strategies diversity used by the dyad, being its effectiveness variable.

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Table 7. (Continued).

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
M. A. Matos (2012)	Assessment of Activity limitations and Participation Restrictions of PWA and their FM. Identification of Barriers and Facilitators.	PWA, FM and SLTs	Semi-structured interviews (individual and in group)	The topics approached were consequences of stroke and aphasia in terms of body functions and structures and in levels of activity and participation of the person interviewed.	Regarding activities/participation, all felt the consequences focus on categories of interaction and personal relationships, social, civic and community life and major life areas. In terms of barriers and facilitators SLTs value information and structural barriers as the most important barriers to social participation of PWA, while PWA and family member groups value personal factors as well as environmental and attitudinal barriers.
Salgueiro (2014)	Communication strategies and barriers when communicating with PWA, diagnosis and intervention for PWA performed by nurses.	CP (nurses)	Questionnaire	The questionnaire approached the following three domains: sociodemographic, education on communication and intervention regarding communication with PWA.	When communicating with PWA, nurses often encounter challenges in comprehending the patient's oral expression and accurately perceiving their feedback on the message. Other difficulties, such as lack of time, space and communication tools, dealing with both personal and the patient's anxiety, intervening with the family and identifying appropriate strategies, were also reported. Nurses reported the need for more training on communication, more research in this field, greater involvement with families, regular use of communication strategies, having more support material and technological means available, having better conditions in the service and better articulation with SLTs.

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Table 7. (Continued).

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
Silva and Patrício (2010)	QOL analysis and the importance of caregiver participation in SLT intervention.	CP (informal carers)	Semi-structured interviews and analogical visual scale	The interviews used a 5-point analogical visual scale (1 – very poor, 5 – very good). The interviews analyzed the following domains: physical health, psychological health, level of independence, environment, and social relationships.	Caregivers' QOL decreased and there were changes in their communication patterns, their roles and relationships. They consider SLT important for the improvement of communication skills of their own and their relatives, and for the relationship between them; they consider their participation relevant, even if they cannot always be in SLT sessions.
Bassi (2006)	Perspectives on discourse	PWA and CP	Recordings of semi-structured group interactions.	Group setting interaction was conducted and recorded (persons with and without aphasia). Analysis focuses on the interactive contexts of language use.	The examples explored via qualitative analysis revealed the importance of considering the approaches that individuals with aphasia and their caregivers take on language to their own possibility of discourse organization.
Carleto (2011)	Quality of life of people with aphasia and their family members.	PWA and CP	SSQOL and Aphasia Semiology Assessment for PWA; WHOQOL-Bref CP	Data collection consisted of socioeconomic questionnaires, standardized scales for quality-of-life measures, as well as an Aphasia Semiology Assessment by the author.	The quality-of-life domains least affected were mobility and personal care, while the most affected domains were language and behavior. Regarding relatives, personal relationships and psychological state were found to be least affected, while physical and environmental aspects were the most affected. A statistical correlation was found between the quality of life of people with aphasia and their relatives. Both the family members and people living with aphasia had their quality of life reduced after the stroke episode.

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Table 7. (Continued).

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
DiGiulio (2011)	Impact of aphasia on caregivers	CP	Semi-structured interviews	Conversations were recorded and transcribed. Data then underwent qualitative, exploratory analysis based on two major thematic points: (1) the process of caring for someone and how SLP can contribute to it; (2) language and the impact of aphasia on caregivers and their communication.	The reports of overload and impacts on family relationships indicate a delicate terrain for CPT interventions, above all because caregivers already perceive their position as one with many responsibilities and little support. It seems likely that a framework that empowers PWA and that seeks for community effort could help alleviate these difficulties. AAC was not discussed in detail, being generally addressed as useful, especially in non-fluent aphasia.
Dresch et al. (2017)	Health and QOL of caregivers to PWA	CP	Qualitative descriptions	Systematic observations.	The group activities promoted health and QOL for participants and their families. Caregivers felt free to expose their desires and successes in relation to their personal life.
Godoy (2016)	Impact of aphasia on the family caregiver	PWA and CP	Questionnaires	For data collection interviews with questionnaires to characterize the interactional aspects between the family/ caregiver and the cared person (Burden interview).	The study reports negative correlations between levels of independence in PWA, both in basic and instrumental activities, and caregiver burden. A positive correlation was found between the level of dependency in daily activities and daily care hours by the caregiver. The burden levels were considered low to moderate, which the author links to a naturalistic learning curve for dealing with stroke and aphasia difficulties, thus justifying the need for educational and training programs targeted at caregivers.

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Table 7. (Continued).

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
Kiyan et al. (2008)	Caregiver stress due to communication difficulties in aphasia	CP	Semi-structured interview.	Conversations were recorded and transcribed. Afterwards, a thematic analysis followed, targeting the psychological impacts of difficulties in communication through a psychoanalytical framework.	The study focuses on three thematic categories: caregivers' subjective perception of their relationship to the PWA; caregivers' emotional states; and changes and necessary adaptations in daily life. Analysis showed significant caregiver distress associated with feelings of grief over the irreversible change in communicative configuration, as well as a lack of understanding about stroke and aphasia.
Lima et al. (2021)	Multicomponent group intervention	PWA, CP	Burden Interview – Zarit (CP), BDA. SAQOL-39 (PWA)	Individual interviews, as well as individual assessment were conducted with the caregivers in two separate groups: one receiving multicomponent group intervention, and the other not receiving it.	The communication domain in the quality-of-life score was significantly higher than that obtained prior to therapy for participants with caregiver presence. All caregivers presented mild to moderate overload and with a higher prevalence of females playing the role of caregiver.
Miolo et al. (2017)	Impact of aphasia on the family caregiver	CP	Semi-structured interviews	The main data collection tool was interviews with caregivers/relatives in which information about their background, such as age/marital status/financial conditions, changes in routine, was collected. Furthermore, caregiver's perception of the condition after the injury was also noted.	After the injury, major changes and transformation in the daily routines, personal, social and economic lives of both the PWA and their relatives are noted. Additionally, caregivers have a hard time understanding and communicating with their affected family members. Moreover, it was also noted that the caregivers tend to prioritize caring for the affected patient.
Moleta et al. (2011)	Caregiver implications	CP (FM)	Semi-structured interview	Interviews were recorded and transcribed, with subsequent discourse analysis.	In respect to the caregiver implications, it was verified some conflicts in the relations between the individual with aphasia and their caregivers, because there are difficulties to recognize the possibilities and autonomy of aphasic individuals in the context of aphasia when considering the emotional, physical, and linguistic dimensions

(*Continued*)

Table 7. (Continued).

Study	Study Focus	Participants	Data collection tools	Data collection and description	Main findings
Monje (2007)	Experiences of communication challenges (caregivers and PWA)	PWA and CP	Questionnaire, semi-structured interview.	Both quantitative and qualitative data were obtained. The quantitative data was collected through generic questionnaire for assessing QOL – World Health Organization Quality of Life – abbreviated, WHOQOL-BREF version in Portuguese, to both groups (people with aphasia and caregivers). Qualitative data were obtained by oral testimony, in the light of the Oral History methodology, through analyzing recordings of interviews that were built with a script of specific questions for people with aphasia and their caregivers.	The interviews give voice to the point of view of people with aphasia and their caregivers about the communication challenges they face and the coping strategies that they developed to deal with aphasia in their daily lives.
Panhoca and Pupo (2010)	Caregiver stress due to communication difficulties in aphasia	CP	Burden Interview, Zarit; Demographic Questionnaire; Semi-structured interview.	Standardized questionnaire: Burden Interview, Zarit as well as demographic data via interview. Physical, social and emotional burden; Demographic data: sex, age, education (years), time spent as a caregiver, relationship to the PWA, difficulties in dealing with PWA, Aphasia type. Qualitative data from interviews.	Approximately 94% of participants reported difficulties in being a caregiver of PWA. The biggest complaint was about language and communication (43.3%). Those who had this complaint had on average a greater burden score. Caregivers reported distress when the PWA shows irritation due to not being understood, implying emotional consequences to issues of communication.
Ponte and Fedosse (2016)	Impact of aphasia on the family caregiver	PWBI, CP	Questionnaires, semi-structured interview	International Classification of Functioning, Disability, and Health (ICF) and World Health Organization Quality of Life – Bref (WHOQOL – Bref) were both applied to the participants. Qualitative analysis of the interview was also utilized.	The onset brain damage related impairments disrupt the injured individuals and their families (informal caregiver), affecting QOL in all domains, especially in the physical and environmental domains of relatives/caregivers. The relatives/caregivers (77.7% women; 96.3%, primary caregivers; mean age 52.6 years, and low schooling), observed changes in the work routine and family structure (85.2%). Communication difficulties with the caregiver results in consequences in care.

NA = not applicable, NS = not stated, *M* = male, F = female, ES = elementary school, HS = high school, C = college, PT = Physiotherapists, HA = Health Assistants, SLT = Speech-Language Therapist, OT = Occupational Therapist; FM = family members, HP = Health Professionals, FYS = final year health students, PWBI = People with brain injuries, QOL = quality of life.

concluded that aphasia has significant consequences on the activities and social participation of PWA and their CPs and that there are multiple barriers experienced in daily living. Several studies (Godoy, 2016; Kiyan et al., 2008; Lima et al., 2021; Miolo et al., 2017; Monje, 2007) reported on difficulties and care-work overload faced by caregivers of PWA, who are often female family members providing informal and unpaid care. The findings of Moleta et al. (2011) suggested CPs may underestimate the potential for autonomy of PWA. This misperception or underappreciation of the competence of the PWA might contribute to an excessive sense of responsibility in caregivers which may have a negative impact on communication. This evidence demonstrates a bidirectional relationship between communication and caregiver burden, a factor that is perhaps still overlooked in the construction of CPT interventions or may be particularly important within the cultural context in CPLP. The findings of DiGiulio (2011) suggest that community-oriented approaches should be considered in order to avoid interventions that increase the load on family members, again pointing to a feature of CPT-design that may be considered where applied in Portuguese-speaking communities.

The second category of findings related to the role of the family CP and the specific linguistic and communication features or strategies used in the interactions between PWA and their family CPs. Mano et al. (2015) identified the existence of CP strategies to communicate with PWA, suggesting that reinforcing existing positive skills may be a potential starting point in this context. M. A. Matos (2012) concluded that the severity of aphasia influences the strategies used by CP to communicate with PWA, a finding which is echoed in the English-language literature and necessitates a range of communication support strategies. CPs considered their participation important in SLT intervention, which they felt to be important for the improvement of communication skills of their own and their relatives (Silva & Patrício, 2010). Recognising the role of the CP was highlighted by Gil et al. (2020) who explored nursing interventions that nurture an empathetic relationship between the family CP and PWA and the potential for communication strategies to enhance social interaction and psychological wellbeing. Signalling the recognition of the importance of considering CP in aphasia intervention, Lima et al. (2021) offered a multicomponent group intervention that included guidance to caregivers, although not specifically CPT: Caregivers received information about the therapeutic activities from the same professional who provided intervention for PWA. The study found a significant positive impact on communication-related domains in quality-of-life assessments.

The final category of studies, which were all based in Portugal, addressed the relevance and nature of communication strategies used by healthcare professionals interacting with PWA. Health professionals involved in the studies referred to have difficulties during the communication process with PWA (Ângera, 2011; Salgueiro, 2014), including students reporting that they do not always feel prepared to work with PWA effectively (Ângera, 2011), and reinforced the need for more education on the topic (Galamba, 2012). Salgueiro (2014) identified difficulties in understanding the patients' oral communication, and reported on barriers in the clinical setting that could be overcome with more communication support materials, technological means and human resources, including engagement with SLTs. Despite these gaps, Coelho (2020) documented good awareness of rehabilitation nurses with regards to the appropriate communication strategies for PWA. Similarly, appropriate strategy use was mentioned by healthcare professionals and

final year students in a questionnaire-based study by Jesus (2021), however, the demand for information on aphasia and communication strategies can be considered high, reaching 50% in both qualified professionals and student groups.

Discussion

The present study aimed to review Portuguese-language papers published in Portugal and Brazil, involving CPT interventions for PWA. This workgroup formed part of a larger project whose objective was to analyse the existent research on CPT approaches in languages other than English. The methodology used was in line with a previous publication from the Chinese workgroup (Kong et al., 2021), both guided by the original Simmons-Mackie et al. (2016) review. CPT for health professionals has proved to be successful in other contexts, although cultural-linguistic features are important considerations either in adapting existing resources (e.g., KomTil program in Denmark), or in generating culturally specific interventions (e.g., Isaksen et al., 2023). The adaptation efforts reported by Isaksen et al. (2023) used local expert cultural-linguistic teams. We suggest that efforts to synthesise existing literature published in languages other than English form an important foundation to complement local expert teams and enhance evidence-based culturally specific adaptations.

Due to the scarce number of studies ($n = 4$) retrieved in both Portuguese language countries, the initially defined inclusion criteria were extended to CPT-adjacent studies that could contribute to a better description of the current state of the art in these countries. A total of 22 CPT-adjacent studies were included.

CPT intervention studies

There is a scarcity of published papers on "pure CPT" in Portuguese-speaking countries, although it is an emerging field. Despite the limited research publications, training CPs is a common clinical practice in both Brazil and Portugal, although it may not have been traditionally recognized as CPT or investigated from that perspective. The organic integration of CPT into clinical practice is encouraging and there is a need to systematically capture and document this experiential knowledge. It is crucial to value the CPT model within the Portuguese-language context and integrate it with locally contextualized approaches, an approach justified by the multicounty collaboration reported by Isaksen et al. (2023). By doing so, a context-sensitive and evidence-based approach to CPT can be developed in both Portugal and Brazil.

A comparison of the included studies from Brazil and Portugal reveals a notable difference in focus. Brazilian studies tended to be more focused on education programs while Portuguese studies primarily explored communication strategies that can be employed by CPs to enhance their communication with PWA. The Brazilian studies, with their emphasis on education programs, likely center on training CPs in specific techniques or approaches for working with individuals with aphasia. On the other hand, the Portuguese studies appear to prioritize equipping CPs with communication strategies that can be flexibly applied in various communication contexts. Both approaches have their merits, and the distinction in focus may reflect the specific interests and priorities within each country. It was not possible to draw conclusive insights due to the limited

number of available studies. Integrating the insights from both education programs and communication strategies, a more comprehensive and context-sensitive approach to CPT can be developed in the future.

With regards to the time post-onset of the patients involved in our studies, unlike Kong et al. (2021), in which 54.5% (6/11) of the studies were reported to have been conducted during the acute phase with PWA, all four of the included studies in the current review focused on training formal and informal caregivers of individuals with chronic aphasia, similar to the existing international reviews on CPT (Simmons-Mackie et al., 2010, 2016).

Although a small number of articles were included in the present study, family members were the most common group of CPs, but the number of CPs trained was largest with respect to healthcare professionals, consistent with the previous literature (Simmons-Mackie et al., 2016). Pereira (2014) focused on health professionals in a palliative care unit, emphasizing the importance of training health professionals as CPs to create a more accessible healthcare system for PWA. This training enables PWA to actively participate in their rehabilitation process, promoting a patient-centered approach as is increasingly advocated in international literature (Miller et al., 2016). The importance of training across disorders, highlighted by Simmons-Mackie et al. (2016), was also considered by Pereira (2014) as she included other types of disorders, such as ALS, in the intervention. A broader CPT intervention of this type would allow for a greater dissemination of care in a cost-effective manner, and may therefore be of special interest to Portugal and Brazil, given their specific resource limitations.

The included CPT studies had a limited number of participants with aphasia and their CPs, which restricts the generalizability of the results. However, despite this limitation, most of the included studies reported positive outcomes for both PWA and their CPs, underscoring the importance of further developing larger-scale studies and highlighting the significance of CPT in aphasia intervention.

In line with the work of Simmons-Mackie et al (2010, 2016). and in contrast to the study conducted by Kong et al. (2021), we made the decision in this systematic review to include only studies that focused on the direct training of CPs to enhance their interaction quality with PWA. We specifically excluded studies that addressed CPs training for the purpose of task-shifting as defined by the World Health Organisation as the redistribution of task to other members of the healthcare workforce (World Health Organization, 2008). In other words, where communication partners were healthcare workers and were trained to deliver therapy tasks for language and/or communication improvement, these studies were excluded. This decision was driven by the desire of the research team to generate findings that would specifically inform the *development of CPT* in Portuguese speaking countries, extending the focus beyond the traditional language therapy tasks. As such, task-shifting studies were considered irrelevant to this review.

Regarding the included CPT intervention studies ($n = 4$) it is worth noting that both studies from Portugal (Pereira, 2014; P. A. S. Valente, 2013) and one of the Brazilian studies (Machado, 2004) are Masters theses. These types of studies are typically not considered in systematic reviews and are often categorized as grey literature. However, it is important to consider such information and studies in future systematic reviews, particularly because not all countries follow the same tradition of publishing data gathered during academic investigations conducted for the purpose of obtaining a degree. In addition, the well-

documented structural barriers facing scholars who use languages other than English (Márquez & Porras, 2020) may influence graduate students or early career researchers in their decisions on whether or not to publish their thesis findings. The limited number of studies may also be related to the history of education of SLT in these two countries. In Portugal, the SLT course was only recognized as a university program in 2000. This recognition allowed Portuguese SLT professionals to advance in their studies and pursue Masters and PhD degrees. Prior to this, there was no tradition of publishing in the field. In Brazil the field of speech and language therapy was officially recognised in 1981 (Behlau & Gasparini, 2006) and the publication landscape of SLT research has been in steady development. While publications in peer reviewed journals constitute a significant part of SLT publications in Brazil, most studies are not indexed in international databases (Brasil et al., 2020)

The assessment of methodological quality of the involved studies using scales such as the ANN Classification of evidence, PEdro, and SCED Scales, as suggested by Cherney et al. (2013), indicated low scores for both the Portuguese and Brazilian studies, raising concerns about their methodological rigor. These findings contrast with those of the Chinese workgroup (Kong et al., 2021) who reported one included study classified as Class I on the ANN Classification of evidence. Our findings are consistent with the results reported by Simmons-Mackie et al. (2016), where none of the 25 studies in the updated systematic review met the criteria for good quality and positive clinical recommendations according to the AAN criteria.

This systematic review encountered issues of limited descriptive detail regarding PWA and their CPs, as well as CPT procedures, as has been described in Simmons-Mackie et al (2010, 2016). and Cruice et al. (2018).

CPT-Adjacent intervention studies

Studies that concern data relevant to informing the future development of CPT for the CPLP were identified from both Brazil and Portugal, addressing communication, relational and quality of life related interventions for PWA and their CPs. A common focal point is the insufficient infrastructure for long term aphasia care. Brazilian studies often refer to caregiver burden (Godoy, 2016; Kiyan et al., 2008; Panhoca & Pupo, 2010), which might be a consequence of insufficient availability of support and intervention programs (Bierhals et al., 2019).

Most of the included studies were conducted by nurses (Ângera, 2011; Coelho, 2020; Galamba, 2012; Gil et al., 2020; Salgueiro, 2014) or involved nurses in the intervention (Barros, 2016; Mano et al., 2015). This finding suggests a possible lack of specialized professionals in these contexts or specifically in the places where PWA are treated after their stroke. It also highlights the opportunity for SLTs in healthcare institutions to train other health professionals to facilitate communication with PWA and cascade such training. This approach may help to prevent frustration for both patients and healthcare providers and reduce the risk of adverse events (Clarke & Forster, 2015). In the Brazilian context, publications from the area of social service (Monje, 2007) also suggest multidisciplinary practices as a potential solution for infrastructural and systemic difficulties. Building on existing interventions through collaboration could fulfil the service gaps in this context. For example, the group intervention for caregivers of PWA described by Lima

et al. (2021) provide a feasible framework for the implementation of specific communication strategies by SLTs.

Interdisciplinary approaches might provide fertile ground in both countries, as evidenced by the CPT-adjacent studies which refer to nursing and linguistics. In Brazil, perspectives grounded in linguistics draw attention to how meaning is jointly constructed in conversations and shed light on the value of utilizing alternative and unconventional strategies to achieve communication goals (Kleppa, 2014; Tagliaferre, 2010).

Several community-based organisations are already providing such services and are well-placed to further CPT research and practice in both countries. Such examples of good practice include the Portuguese Institute of Aphasia, particularly its work on CPT. They are currently offering CPT training to several hospital teams, providing online courses for health professionals on the subject, and instructing numerous students from various universities across the country. In Brazil, multiple initiatives with public as well as private financial support have been developed to increase understanding about aphasia care. Chief amongst them are the websites Portal da Afasia and Rede Afasia Brasil; the specialized centre for aphasia care, Casa da Afasia.

It has also been shown that interventions targeting the wellbeing of informal caregivers are very well received (Dresch et al., 2017; Mano et al., 2015; Silva & Patrício, 2010), although there are few initiatives of this kind documented. The acceptance of this type of intervention bodes well for CPT, specifically if it is designed and communicated as enhancing the wellbeing of the caregiver by optimizing communication.

A specific issue raised in both countries studies is the gender bias perceived in caregivers of PWA. The group consists mostly of female relatives who perform this function without a significant support network (DiGiulio, 2011; Mano et al., 2015; Panhoca & Pupo, 2010). The repercussions of long-term informal caregiving in the context of aphasia include changed family relationships, work overload, financial insecurity, and chronic fatigue (Carleto, 2011; DiGiulio, 2011; Godoy, 2016; Kiyan et al., 2008; Lima et al., 2021; Miolo et al., 2017; Moleta et al., 2011; Monje, 2007; Panhoca & Pupo, 2010; Ponte & Fedosse, 2016). These impacts might be aggravated by existing gender inequalities.

To our knowledge, there are no studies tackling the gender differences in the context of CP centered interventions. Different forms of delivering CPT considering gender inequalities and social support needs may be necessary, specifically in contexts with strong cultural norms around gender and family roles. In such contexts, CPT interventions may be best received if presented as a way of easing the caregiving role by enhancing communication and participation of a network of CPs. Situating CPT as a community-oriented approach is another development that should be considered in CPLP.

Study limitations

This study has several limitations regarding its methodology. Firstly, it lacks a previous protocol registration in specific platforms for systematic reviews, such as PROSPERO, which would have allowed for documentation of changes to the initially defined inclusion criteria. Additionally, the reviewers were not blind to article authorship, and a meta-analysis of the CPT studies was not performed due to the characteristics of the identified studies. These limitations were also reported

in Simmons-Mackie et al. (2016) report. Furthermore, the limited number of studies included and their weak methodological quality, as well as the fact that many of them were not published in scientific peer-reviewed journals but rather as dissertations, constrained the authors from drawing general conclusions or providing indications for clinical practice. It is possible that some recent reports of CPT research in Portuguese language may have been missed. The current momentum in the field within both countries means that there is a likelihood that new publications may be in the publishing pipeline or recently released. The time gap between the search period (end of March 2022) and the publication of the paper reflects some of the challenges in undertaking this type of review, particularly across countries.

Conclusions

The aim of this study was to perform a systematic review of Portuguese-language research in communication partner training (CPT). Although only four studies were included that directly explore CPT-two Portuguese and two Brazilian – they all reported positive outcomes. These studies comprised group as well as dyadic interventions involving different family members of PWA and health professionals from a palliative care unit. The methodological quality of the included studies was classified as low. In future studies, it is crucial to employ more robust methodological designs in order to generate stronger evidence regarding the effectiveness of CPT interventions.

The studies highlight that in both Brazil and Portugal there exists an extension of SLT aphasia intervention to domains beyond the language impairment, including equipping PWA and their CPs with strategies that allow them to communicate, as well as addressing the communication environment to eliminate possible barriers to active participation, both in rehabilitation processes and in society in general. In developing CPT intervention for the Portuguese-speaking community it may be strategic to associate CPT with mental health and social service support. Attention to socioeconomic factors and support networks present in the communities are also key in designing successful and culturally sensitive CPT interventions. Approaches that can increase the involvement of more communication partners rather than continuing to target the main caregiver could advance CPT in these contexts. Opportunities for multidisciplinary and community-oriented CPT interventions warrant exploration on the basis of the CPT-adjacent evidence and may be particularly useful where resources are constrained as is the case in many of the Portuguese speaking countries represented in the CPLP.

When the number of Portuguese-language publications on CPT interventions ($n = 4$) is considered alongside the numbers identified by the Chinese-language CPT workgroup ($n = 11$; Kong et al., 2021), it is apparent that 21% of existing research on CPT has been published in these two languages alone.[1] This finding highlights the invisibility of otherwise relevant evidence, an invisibility perpetuated by the evidence-synthesis processes which favours English-language publications and mainstream databases over more regional or language-specific sources.

Note

1. Based on a total of 71 studies: 4 identified in the current study; 11 identified in the Chinese-language review (Kong et al., 2021); and 56 identified in the comprehensive systematic review of English-language publications (Simmons-Mackie et al., 2016).

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