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Something old, something borrowed, something new: frameworks to guide cultural adaptations and their documentation in aphasia treatments

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ABSTRACT

Background and Aims: There is a crucial need to improve cultural and linguistic representation in the field of aphasia research and in clinical practice. One way to increase representation in the field of aphasiology is by adapting treatments to the diverse cultures and languages of the world. Adapting existing evidence-based interventions for diverse cultural contexts increases fit, acceptability, engagement, and access to aphasia interventions. However, such adaptations must be approached systematically and with careful documentation of the process. This paper aims to 1) present frameworks that can guide cultural and linguistic adaptations of aphasia treatments (i.e. bottom-up and top-down approaches), and 2) present a framework that can guide the documentation of critical elements that must be considered and reported when adapting aphasia treatments.

Methods and Procedures: This discussion paper examines bottom-up and top-down approaches for adapting aphasia treatments to diverse linguistic and cultural contexts. It also introduces a practical framework to support researchers and clinicians in systematically documenting these adaptations. The arguments presented here are based on a critical review of the relevant literature. Illustrative examples are provided to demonstrate how these approaches and the framework can be applied.

Outcomes & Results: The approaches and the framework discussed in this paper can help clinicians and researchers adapt evidence-based treatments for aphasia, document their adaptation process, and trace a path for future treatment modifications. This paper could provide much-needed support for increasing aphasia intervention development and research for diverse cultures and languages, thereby increasing access to appropriate interventions for *all* persons with aphasia and their care partners.

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Background

Aphasia research is not representative of the world's cultures and languages (Beveridge & Bak, 2011; Egia-Zabala & Munarriz-Ibarrola, 2024). In fact, over 85% of aphasia treatment research has focused on English speakers (Beveridge & Bak, 2011), and systematic reviews have overlooked substantial amounts of relevant research published in languages other than English (e.g., Kong et al., 2021; Matos et al., 2025), leaving a need to improve cultural and linguistic representation in the field of aphasiology. Although the field has begun to move toward this representation goal, systematic steps are required to make aphasia treatments appropriate for the world's cultures and languages. Culturally appropriate treatments are critical given that cultural behaviors (e.g., traditional customs), cultural beliefs (e.g., spiritual values, outlook on life), and attitudes towards health and disability are deeply ingrained in communities and influence health and well-being (e.g., Dillard et al., 2021; Pachter, 1994). Thus, a given community's cultural behaviors and beliefs should be considered when developing or adapting aphasia treatments.

Furthermore, it is well-documented that people from minoritized groups¹ receive fewer rehabilitation services, lower quality of such services, and show poorer positive treatment outcomes (e.g., Bright et al., 2018; Ellis et al., 2014; Kayola et al., 2023; Keeney et al., 2017). This pattern seems to occur across minoritized groups within the Global North countries (e.g., people who speak Spanish in the United States) and also in minoritized groups in Global South countries (e.g., people living in low-income countries).² As an example of this pattern in the Global North, Blacks in the US are less likely to receive rehabilitation services, including home-based and inpatient services, when compared to Whites (e.g., Keeney et al., 2017). As an example of this pattern in the Global South, it has been reported that people in these countries face health system barriers (e.g., low prioritization of rehabilitation services and inadequate numbers of rehabilitation specialists) and patient barriers (e.g., limited health literacy, financial constraints), as well as low coverage of rehabilitation services (e.g., Bright et al., 2018), leaving rehabilitation needs mostly unmet (e.g., Bernhardt et al., 2020; Kayola et al., 2023).

Increasing aphasia research for the world's cultures and languages is especially important in a world facing rising immigration, driven by armed conflict (Crippa et al., 2025), economic inequality (e.g., Kwilinski et al., 2022), political instability (e.g., Ajide & Alimi, 2019), and climate change (e.g., Burzyński et al., 2022), among others. Clinicians and researchers serving people with aphasia from minoritized groups worldwide are left with a few possibilities when providing evidence-based treatments, undermining the rights of people with aphasia to receive treatment on an equal basis (see Quique et al., 2025).

Option one is to implement evidence-based treatments in an "as-is" format, "something old". By this, we mean that clinicians could apply treatments exactly as reported in the scientific literature without modifications. This would be the least preferred option given that, likely, those treatments were designed, developed, and tested in a different language and culture; thus, there is no available scientific evidence that supports that those treatments "as-is" are effective when applied to new populations without adaptations. Although we will not discuss the specific details, this option could be achieved through collaboration with interpreters when patients and clinicians do not share the same language. An additional problem with this option is that there are multiple

documented issues when interpreting aphasia assessments (e.g., syntax changes when interpreting both patient responses and Speech-language Pathologists – SLPs – instructions, which compromises assessment content validity; see Babbitt et al., 2022; Roger & Code, 2011; Roger et al., 2000).

Option two is to use clinical intuition and cultural sensitivity (e.g., cultural awareness knowledge and training) to make cultural and linguistic adaptations to a given evidence-based treatment, “something borrowed”. This is likely done with the best intentions, but it lacks systematicity and risks modifying treatment components that could be key for treatment efficacy. It has been reported that there is a lack of clinical guidelines to treat patients who do not share the same language as their SLP, and SLPs have reported a lack of confidence, skills, and preparation to work with culturally and linguistically diverse people with aphasia (e.g., Larkman et al., 2022). Still, it is likely that option two is implemented by practicing clinicians seeking to fulfill the needs of the patients they serve. Notably, option two requires increased cultural sensitivity and awareness (see Hwang, 2006, discussion on this topic); below, we will discuss a top-down approach to cultural adaptations that can help clinicians and researchers in the process of increasing their cultural sensitivity and awareness. Although this option may be a step forward in adapting treatments to meet the needs of individual patients, it does not mean that the step of developing scientific evidence to support the application of aphasia treatments for minoritized groups is unnecessary. On the contrary, clinicians’ experiences can motivate the development of scientific evidence; the researcher-practitioner partnership is key to converting this option into evidence-based practice (see discussions of this topic in Alonzo et al., 2022; Vollebregt et al., 2022).

Option three is to develop *new* evidence-based treatments that can fit the specific needs of the population that they serve, “something new”. The critical constraint with this option is time, specifically the considerable time required to design and test a new intervention, as well as the substantial time it takes for evidence-based treatments to be implemented in clinical settings (e.g., Rubin, 2023). Time is a critical factor in this option since people with aphasia from minoritized groups need culturally and linguistically appropriate treatments *now*. A detailed description of this option is beyond the scope of this paper, as our focus is on adapting and documenting the adaptation of existing aphasia treatments. Research on developing behavioral interventions from “scratch” is extensive (see Gitlin & Czaja, 2015). We suggest exploring that literature for a comprehensive understanding while integrating the ideas presented here regarding linguistic and cultural factors.

Simplistically, these three options can be thought of as something old (option one), something borrowed (option two), and something new (option three). In aphasiology, it remains to be established whether treatment outcomes differ when administering treatments with each of the three options. Nevertheless, those options are clearly better than not providing treatment to people with aphasia from minoritized groups. It is also unknown if one of those options would work better when adapting treatments for people from minoritized groups in the Global South vs. the Global North. There are multiple layers of complexity when considering adaptations of interventions for people with aphasia belonging to minoritized groups. In this paper, we aim *not* to provide a silver bullet to address all these issues but to contribute to the discussion about adapting evidence-based treatments for people with aphasia from minoritized groups by providing

guidelines that can push the field forward. Adapting evidence-based aphasia treatments to diverse cultural contexts can increase fit, acceptability, and engagement (Stirman et al., 2019). Thus, an adequate cultural adaptation can positively impact treatment outcomes.

Further, as the evidence regarding aphasia treatments for minoritized groups is slowly growing, more systematic approaches should be taken. Specifically, there is a pressing need for frameworks (i.e., systematic steps) that enable evidence-based treatments to be linguistically and culturally adapted according to the language, context, and specific needs of diverse populations. To clarify, adaptation refers to making deliberate changes to a given treatment to increase engagement, acceptability, fit, and effectiveness in new contexts (Domenech Rodríguez & Bernal, 2012; Steinka-Fry et al., 2017), in this case, in new languages or cultures. Different knowledge fields, including implementation science, have developed frameworks that can guide the process of cultural and linguistic adaptations of an evidence-based intervention, as well as guide the documentation process of such adaptations.

This paper aims: 1) to present two frameworks that can guide cultural and linguistic adaptations of aphasia treatments (i.e., bottom-up and top-down approaches). These frameworks can be used by researchers and clinicians wanting to adapt aphasia treatments for people who belong to culturally and linguistically minoritized groups. 2) to present a framework that can guide the documentation of critical elements that must be considered when adapting aphasia treatments. Specifically, in aim 2, we will discuss the Framework for Reporting Adaptations and Modifications-Enhanced (FRAME; Stirman et al., 2019) applied to aphasia treatment adaptations (FRAME-A). Overall, these frameworks can help researchers and clinicians adapt evidence-based treatments for aphasia, document their adaptation process, and trace a path for future treatment modifications.

Frameworks for cultural and linguistic adaptations of treatments

There are multiple approaches that can be used when adapting aphasia treatments for cultural and linguistic minoritized groups, as well as several considerations to take into account (see examples in Castro et al., 2010). In this paper, we present two primary frameworks that cover bottom-up and top-down adaptation approaches. Broadly, bottom-up approaches refer to steps to adapt existing evidence-based treatments with stakeholder involvement (based on Hwang, 2009). Top-down approaches (based on Hwang, 2006) aim to pool clinicians' and researchers' knowledge to identify areas for adaptation that can enhance the effectiveness and applicability of the adapted intervention. The choice of which approach to use depends on both the cultural context and the nature of the intervention being adapted. Additionally, these approaches can and should be integrated (see Hwang, 2009), as described in Interactions between bottom-up and top-down approaches below.

A bottom-up approach for adapting evidence-based treatments

A bottom-up approach, introduced by Hwang (2009), involves a community-based developmental approach to adapting evidence-based treatments. Such an approach may be considered one of co-design and may employ participatory methods (see O'Brien et al., 2021, for a discussion on co-design considerations with culturally and linguistically diverse

communities). The bottom-up approach we describe here can be used to adapt existing evidence-based aphasia treatments, especially when there is a special interest in understanding a specific culture, which can then guide the modification of the treatment to fit cultural traits. A bottom-up approach can be used to systematically adapt treatments to new languages or cultures without removing treatment components that could compromise treatment efficacy, but adapting them carefully to fit the language and culture. This approach has five phases, which will be discussed within the context of aphasia interventions.

The first phase is generating knowledge and collaborating with stakeholders to examine salient cultural traits, communication needs, cultural and linguistic fit, discuss treatment components and goals, and preview potential changes to the treatment. In this phase, it is key to identify stakeholders to collaborate, which, in aphasia treatment, can involve people with aphasia, clinicians administering the treatment (e.g., SLPs), friends of people with aphasia, community health workers, care partners, other healthcare professionals (e.g., neurologists, mental health professionals), representatives of the healthcare system, religious workers, and cultural brokers (i.e., people with knowledge of the socio-cultural, religious, national and historical issues specific to the population).

Engaging in discussions with stakeholders can occur through focus groups (Aguirre et al., 2014) or similar qualitative research techniques to gather input on what needs to be modified within the treatment to fit the cultural and linguistic characteristics of the target population. Thus, discussions with stakeholders should include the current state of evidence regarding the treatment, its components, and reported efficacy from the populations in which it has been tested. It should also include discussions of the treatment materials typically used for delivering the treatment, as these materials would also require linguistic and cultural adaptations. It is important to note that no “small” point of discussion exists at this stage. All pieces of knowledge gathered in this phase are key for future treatment modifications and are used to develop adaptations *for* them and *with* them.

The second stage in this approach is integrating generated information with theoretical, empirical, and clinical knowledge. The first stage will likely leave the researcher with an abundant source of information that needs to be organized and compiled. In this phase, the information gathered is synthesized, taking into account three main aspects: the theoretical underpinnings that support the treatment (e.g., learning principles), the published evidence of the intervention (e.g., efficacy, effectiveness, reported treatment components, any reported modifications during implementation), and the clinical experiences of those delivering the intervention. Thus, the knowledge gathered in the first step is organized and combined with existing theoretical, empirical, and clinical information to develop an initial adapted version of the treatment tailored to the target population. As a result of this stage, a “first draft” of the adapted treatment will be produced, which could be shaped as a draft of the treatment manual.

The third stage involves stakeholders once more to review the first version of the culturally adapted intervention. In this phase, a similar group of stakeholders to that in stage one (e.g., clinicians, friends of people with aphasia, cultural brokers) can be included in focus groups to show them the adaptation’s first version and highlight the changes made. Participants would be invited to share feedback on the adapted intervention, with a specific focus on the elements that have been adapted. In this phase, it is recommended

to have a specific focus group with stakeholders involved in the intervention's delivery to review the adapted version of the intervention and examine aspects such as whether treatment components have been changed in a way that could affect efficacy. Areas that require further improvement will be identified, and revisions will be made accordingly. Once the content of the intervention has been finalized, incorporating stakeholder feedback, the first version of the treatment manual is written in the language(s) of the target population.

The fourth stage involves testing the culturally adapted intervention by piloting it to assess its preliminary efficacy. This can be done in a small group within a single setting or in a range of settings serving the target population. This choice would depend on the nature of the intervention and where it is typically delivered (e.g., hospitals, clinics, community centers, virtually, etc.). Testing the intervention in locations where it can be delivered is crucial for two main reasons: to assess its sustainability and to consider local challenges arising from the healthcare system or specific context. Sustainability and practical challenges are likely to arise at this stage, which may not have been anticipated when adapting the intervention (Aguirre et al., 2014), but must be documented and considered. Below, we will provide another framework (FRAME) that can help continually *document* further changes made during the implementation process. Analyzing pilot data for preliminary efficacy and presenting it to local staff and providers is key at this stage to improve scalability and sustainability in the future. It is also crucial to gather their feedback on the treatment's fit. Further amendments made following the pilot testing phase (e.g., acceptability studies) will be finalized in the fifth and final stage.

The fifth stage is finalizing the culturally adapted intervention. This stage involves gathering feedback from those involved in the pilot testing phase about what worked and what needs to be improved. Feedback may be gathered through focus groups or interviews with clinicians involved in delivering the intervention (e.g., SLPs) and the recipients of the intervention (e.g., people with aphasia). The team involved in the adaptation may then consider the feedback gathered and their experiences with piloting the intervention to make further modifications. After these adaptations, the team can finalize the adapted intervention.

It is also worth noting that when interventions are adapted to enhance cross-cultural fit within immigrant communities, acculturation must be considered; multiple intervention versions, with minimal changes, could also be considered to suit specific participant groups within these communities (Hwang, 2006).

A top-down approach for adapting evidence-based treatments

Although the bottom-up approach described above is one way to adapt evidence-based aphasia treatments to diverse cultures, it is not the only way. A stakeholder-grounded or community-based development approach might not be suitable in contexts where awareness of specific conditions (e.g., aphasia awareness) is lacking, when evidence-based treatments are unavailable/non-existent for a particular community, or where individuals are unaccustomed to voicing opinions about their healthcare due to cultural norms (e.g., when clinicians are viewed as the sole authority in decision-making; Brabers et al., 2016; Murray et al., 2007). Given the importance of developing evidence that supports aphasia treatments for these populations with cultural responsiveness,

researchers and clinicians may consider starting with a top-down approach or combining it with a bottom-up approach.

Hwang (2012) suggested that the top-down approach was not specifically developed to aid in the design of culturally adapted evidence-based treatments, but rather to improve cultural competency and awareness among clinicians and researchers. Increasing cultural competency and awareness can contribute to the development of treatments (Centeno et al., 2020; Grandpierre et al., 2018). Thus, researchers and clinicians who employ top-down approaches seek to be culturally responsive practitioners, acknowledging and understanding the impact on individuals, families, and communities. This cultural responsiveness includes a profound understanding of healthcare beliefs and practices within the communities receiving the evidence-based treatment. Additionally, this responsiveness includes a reflection on one's cultural competence to ensure that the process of cross-cultural adaptation does not inadvertently harm the context in which it is being developed. Hwang (2006) introduced six domains when adapting an evidence-based intervention for a new cultural context. These domains were based on his extensive experience working with people from ethnic minorities. We will summarize those domains in the following paragraphs.

The first domain refers to dynamic issues and cultural complexities. Above, we mentioned the importance of cultural awareness and responsiveness in the process of cultural adaptations of treatments. An awareness of the complexities of working with culturally diverse populations requires a time investment. This investment is crucial to prevent inadvertently stereotyping or generalizing cultural values and beliefs, and to avoid making cultural assumptions about a subset of an ethnic group that cannot be applied without caution to the broader population. For example, assumptions about the mother tongue of choice, family dynamics, and even the financial burden of healthcare should be taken into account. People at higher risk for stereotypes and generalizations include, among many others, religious minorities, racial minorities, linguistic minorities, and immigrants. Attention to these assumptions is particularly key in countries with diverse religions, multiple spoken languages, and significant socio-economic divides.

Beyond the awareness of cultural complexities, it is key to ensure that adapted evidence-based treatments are open to dynamic- and need-based modifications during the delivery and implementation. This openness aims to accommodate interventions according to the specific characteristics and complexities of the target contexts. For this purpose, researchers and clinicians adapting interventions should develop skills in dynamic sizing (i.e., identifying when an intervention adaptation can be generalized, when it needs to be individualized, and at which subgroup level). For example, in the context of adapting treatments for Spanish speakers with aphasia in the US, at the broadest level, certain adaptations, such as using Spanish as the primary language and incorporating cultural values like family involvement, can be generalized across most Spanish-speaking groups. However, subgroup-level adaptations may be necessary to address lexical, phonological, and cultural differences among communities, such as Mexican-American, Cuban-American, or Puerto Rican populations, etc. For instance, vocabulary choices, culturally relevant imagery, and regional accents may need to be tailored to enhance relevance. At the individual level, further customization may be required based on a client's personal characteristics and preferences.

The second domain is orienting clients to therapy, which refers to initial guidance on the benefits of the treatment. For example, in resource-constrained contexts where people with aphasia and their families might not have regular access to a range of therapy services, an initial step consists of orienting them to the nature and benefits of aphasia treatment. This orientation includes introducing basic concepts of aphasia, outlining therapy procedures, explaining the rationale behind specific treatment approaches, and presenting the evidence supporting their effectiveness. For people with acquired communication disorders who may not have had access to treatments or who may be experiencing changes in their access to healthcare and life participation, this orientation is all the more crucial. By establishing a foundational understanding of what aphasia therapy entails, clinicians and researchers can foster informed engagement, build trust, and enhance the likelihood of sustained participation in aphasia treatment.

The third domain is understanding cultural beliefs. This domain refers to understanding beliefs about health and disability, as well as what constitutes an appropriate treatment in specific contexts. This domain would also include understanding the specific beliefs and unique contexts of the *individual* with aphasia and their care partners. Hwang (2006) posits that this domain is integral to ensuring safe and respectful service delivery. This understanding is fundamental when discussing treatment options with people with aphasia, addressing misconceptions, breaking down stereotypes, and relating concepts to the person's culture and values. For example, in cultures where family plays a central role in caring for people with aphasia, acknowledging this role by incorporating treatment approaches such as Communication Partner Training (CPT) would be crucial. Integrating one's culture into treatment approaches is valuable in building a trusting relationship with stakeholders and improving treatment outcomes.

The fourth domain focuses on improving the client-therapist relationship. It refers to improving the client-therapist relationship based on cultural awareness and competence. This improvement positions clinicians to support their clients in feeling more confident and satisfied when accessing rehabilitation services. An important aspect of the client-therapist relationship is understanding cultural differences in attitudes towards authority, hierarchy, and power dynamics. For example, a clinician who typically encourages open dialogue and shared decision-making may need to adjust their approach when working with people with aphasia from India who are accustomed to viewing healthcare professionals as authoritative figures. In such cases, clients may expect more directive guidance and may be less comfortable questioning treatment goals, plans, and alike. Clinicians can reflect on how their attitudes toward authority influence their approach to clients from different cultural backgrounds versus those from similar ones. Overall, improving the client-therapist relationship must be prioritized while adapting treatments for diverse cultural contexts (see a discussion from the field of psychology in Comas-Díaz, 2006; Smith & Trimble, 2016), especially when working with populations that have experienced reduced access to healthcare services due to social inequalities.

The fifth domain is about understanding cultural differences in expression and communication. Understanding cultural nuances in communication can further enhance client-therapist relationships, which is particularly important in cases of communication disorders such as aphasia. When working with people with acquired communication disorders, a lack of understanding of cultural nuances in language can be detrimental to the overall therapeutic process (i.e., diagnostic accuracy, setting goals, developing

therapeutic activities, and monitoring progress). For example, a clinician working with a Spanish-speaking client might use picture cards for a naming task, including images of unfamiliar objects not commonly used in the client's culture. If the client struggles to name these items, it could be misinterpreted as a language deficit rather than a cultural mismatch. Without cultural awareness, clinicians risk misjudging clients' abilities, setting inappropriate goals, and designing therapy activities that lack personal relevance. Topics, themes, and treatment materials should also be adapted to what may be considered appropriate for the target culture. For example, discussing the impact of acquired communication disorders on family relationships and finances may be perceived negatively in some cultures.

The last domain is addressing cultural issues specific to the population. It refers to developing an understanding of the cultural issues and complexities of healthcare service delivery specific to a given population. For example, when working with Indigenous communities in the US, a clinician must understand the historical mistrust of healthcare systems due to systemic discrimination and be open to discussing community-based approaches and even traditional healing practices. Acknowledging cultural service delivery issues can open discussions of reservations about therapeutic interventions and increase access (i.e., decrease dropouts due to service access). Issues may interconnect various domains, such as access to support, family structures, socio-economic status, attitudes towards health, and linguistic barriers, among others.

Interactions between bottom-up and top-down approaches

The bottom-up and top-down approaches are not discrete and should be considered together, depending on the context in which a treatment adaptation will occur. Hwang (2006) suggests that operating dually from a bottom-up and top-down approach may be the best option. This is because it is not only important to work on adapting interventions, but clinicians must work to become culturally responsive healthcare practitioners. The bottom-up approach provides a series of stages to guide researchers and clinicians through adapting evidence-based aphasia treatments for new languages and cultures. Although the top-down approach does not offer specific steps to follow, it provides a platform for developing cultural awareness and competence. It also provides an opportunity to deeply explore cultural traits and survey readiness within a specific cultural and linguistic population.

This section discusses how one might engage in an integrated bottom-up and top-down (IN-TB) approach to the cultural adaptation of an intervention. We discussed earlier that the cultural context in which the intervention is being adapted and clinicians' cultural competence are key determinants of which approach might be used first. In bottom-up approaches, contextual knowledge and understanding of the intervention's principles are recognized, and the potential for the new culturally adapted intervention within the target context is often recognized. The process, therefore, starts with extensive stakeholder discussion and scrutiny of the intervention elements and resources to assess their applicability within the context. In top-down approaches, however, there is an added phase where work is carried out to enhance the acceptability of the intervention that is to be adapted. These approaches are often led by experts and have comparatively less stakeholder involvement. Furthermore, in top-down approaches, a greater effort is made

to maintain the original components of the intervention while adapting it to suit the target cultural context.

Considering the complexities and steps involved in the process of cultural adaptation, using a framework can be useful in guiding researchers and clinicians who wish to employ an IN-TB approach to cultural adaptation. Figure 1 illustrates the stages and domains involved in both bottom-up and top-down approaches. Additionally, it maps an existing framework onto these approaches, providing an example that demonstrates how other frameworks discussed in the literature can be integrated. Specifically, we mapped the Participatory and Iterative Process Framework for Language Adaptation (PIPFLA; Mariñez-Lora et al., 2016) to the bottom-up and top-down approaches discussed.

The PIPFLA outlines an 11-step process, including a first *preparation phase*, which involves work carried out before the actual adaptation work begins (Mariñez-Lora et al., 2016). When following an IN-TB approach, this preparation phase can be extended to generate knowledge about the applicability and acceptability of the intervention approach, adapt it to the cultural context, and integrate it with existing knowledge, both theoretically and clinically (bottom-up elements). It could also involve steps taken to orient clients from the target cultural context to the intervention, thereby supporting its acceptability within that context. Consideration of the cultural relevance of concepts and resources should be undertaken in this preparatory phase, prior to initiating the translation process (step 2 of the PIPFLA). Further consideration of the linguistic applicability of translated resources and their cultural relevance may be revisited during the translation and harmonization phases. The

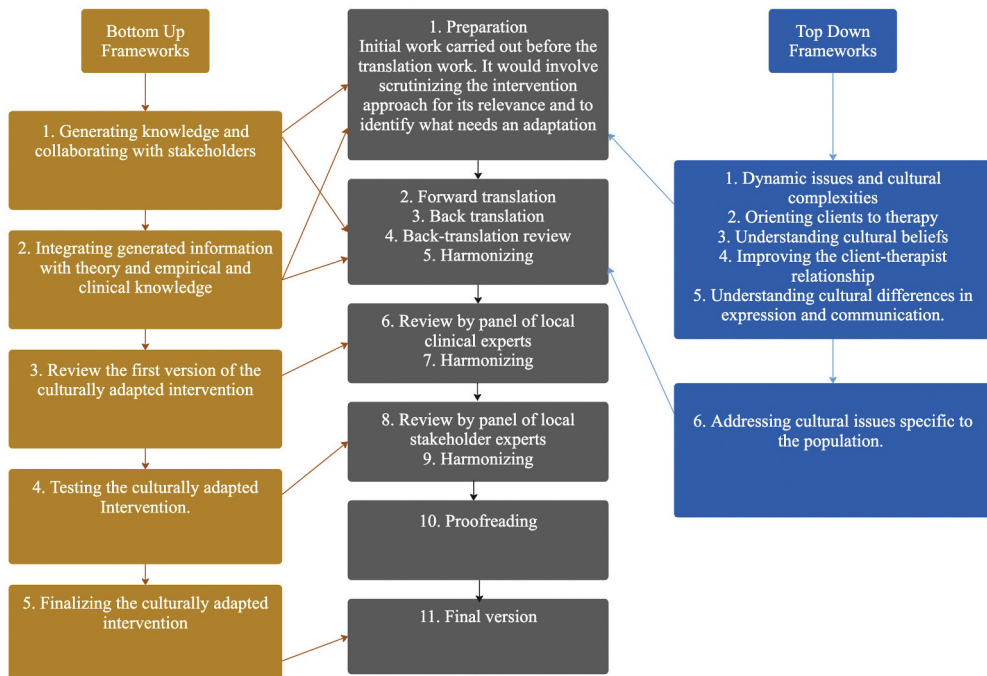


Figure 1. The bottom-up approach is depicted in gold. The top-down approach is depicted in blue. The PIPFLA, in gray, has been mapped to the bottom-up and top-down approaches.

remaining steps can be followed as outlined by Mariñez-Lora et al. (2016) and should be referred to when considering this approach. This approach is suggestive and illustrates one way of integrating bottom-up and top-down approaches when planning the adaptation of an evidence-based intervention.

Additional considerations for cultural adaptations of evidence-based aphasia treatments

In this section, we will briefly introduce additional frameworks and key considerations relevant to the cultural adaptation of evidence-based treatments. For example, Resnicow et al. (1999) described a public health model that incorporated cultural adaptations that can occur at either the surface or deep structural levels of a culture. Notably, the distinction between surface and deep structures does not imply a hierarchy of importance; rather, Resnicow et al. (1999) emphasize that both levels are essential components of the adaptation process. Surface structures refer to using intervention materials that match a community's "superficial" characteristics, such as places, food, everyday expressions, language of preference, clothing, and similar features. Deep structures refer to the incorporation of social, historical, and psychological aspects that influence health within a specific community. Thus, in adapting aphasia treatments for Spanish-speaking individuals, as an example, a surface structure adaptation might involve translating treatment materials into colloquial Spanish or using culturally familiar images during therapy. In contrast, a deep structure adaptation would consider the cultural values surrounding communication within Hispanic families, such as family engagement, to inform the design of treatment sessions.

Another key framework for achieving cultural appropriateness was proposed by Kreuter et al. (2003). This framework comprises five adaptation strategies: peripheral, evidential, linguistic, constituent-involving, and socio-cultural. Each of these strategies will be described, and examples of their application in aphasiology will be provided. The first strategy, peripheral, is similar to the surface structure level proposed by Resnicow et al. (1999). It refers to giving programs and materials the appearance of being culturally appropriate. For example, using colors or images that may appeal to a specific culture. It is expected that changing the appearance can increase the receptivity and acceptance of specific programs or interventions (Schiffman, 1995). In the field of aphasia, some researchers and clinicians have started to make cultural adaptations by adapting their recruitment materials at this level to increase the attention of target populations.

The second strategy, evidential, refers to increasing the perceived relevance of a health condition by presenting evidence of its impact to members of the target population, thereby highlighting the importance of adapting and developing interventions for them. Weinstein's precaution adoption model posits that perceiving that a problem affects "others like you" can stimulate thinking about the problem, lead to a decision to take preventive action, and facilitate planning to take action (Weinstein, 1988). The evidential strategy has been broadly used by healthcare researchers and clinicians who have documented the prevalence and impact of non-communicable diseases, including stroke, to generate action plans within specific country contexts. Within the aphasia literature, this strategy has been employed by SLPs and other healthcare professionals working with aphasia to document the current practices and challenges prevalent in various contexts,

serving as a call to clinicians and researchers to improve clinical practice (e.g., Pauranik et al., 2019).

Within underexplored contexts, research has also been conducted to investigate the perceptions of healthcare professionals regarding aphasia, aiming to identify knowledge gaps related to the impact of aphasia and promote interventions that address these gaps in both knowledge and clinical practice (e.g., Pauranik et al., 2020). Additionally, aphasia awareness has been recognized as a significant global issue (Simmons-Mackie et al., 2020), and campaigns to increase awareness continue to be ongoing and warranted (e.g., Bennington et al., 2024, 2025). The lack of aphasia awareness generates a lack of “evidential” cultural adaptations. Thus, there is much to do to adapt evidence-based care to countries worldwide, taking into account socio-economic, linguistic, and cultural aspects.

The next strategy in Kreuter et al.’s framework (2003) is linguistic. It refers to providing programs and materials in the dominant language of the target group. This strategy should also be extended to account for the language of preference of individuals with aphasia, recognizing that preference may vary based on proficiency, context, and communicative needs. The focus of *linguistic* adaptations has generally been on translation equivalence (i.e., finding words that have the same meaning in different languages). Notably, although these translation efforts represent a first step, translation equivalence *alone* is insufficient for linguistic adaptations, as it will be discussed below. Beyond linguistic adaptations, it is crucial to consider adaptations that also align with cultural norms and values, which represent a more complex level of adaptation (see the deep structures described by Resnicow et al., 1999). Nevertheless, it is encouraging that the aphasia field is moving towards increasing diversity and representation, starting with some linguistic adaptations. Many research groups have increased efforts to recruit people from diverse backgrounds using the linguistic strategy. For example, Scimeca et al. (2022) reported using a community-based recruitment approach to disseminate recruitment materials in Spanish and English to reach Hispanic bilinguals with aphasia.

Beyond recruitment, some other researchers and clinicians have also translated treatment materials to work with bilingual individuals with aphasia. For example, Sandberg et al. (2020) described the development of an online interactive naming tool for bilingual aphasia. They *translated* their words and features from English into different languages. They reported that a native speaker of the language checked the accuracy of the translations. They also sent surveys to native speakers with sets of the word battery to examine their translation accuracy and to examine whether the features describing each word made cultural sense. The authors acknowledged that it was possible that “non-native speakers could have completed the surveys”. Another study that exemplifies the use of the linguistic strategy was published by Kiran and Roberts (2010). They reported a study that included four bilingual people with aphasia for whom they developed their first set of treatment materials in English (picturable English nouns), which were then translated into French or Spanish. To restate, although translation equivalence represents a first step in the linguistic adaptation of aphasia treatments, it is not sufficient on its own to constitute a comprehensive linguistic or cultural adaptation.

Although many considerations for cultural adaptations of treatments have been discussed thus far, examining the linguistic strategy within Kreuter et al. (2003) framework highlights the importance of linguistic adaptations in aphasia treatments. Returning to the analogy of “something old, something borrowed, something new”, cultural *and*

linguistic adaptations in aphasia treatment should be viewed as a long-lasting partnership; one cannot exist meaningfully without the other. By linguistic adaptations, we refer to the process whereby the linguistic components of an intervention, for example, instructions, treatment materials, and even the active ingredients of a specific treatment, are *not merely translated from one language to another* but are systematically adapted within the target language.

Linguistic adaptations involve multiple levels of complexity; for example, semantic factors must be considered to ensure that words and sentences convey appropriate meaning in the new linguistic and cultural context. Syntactic factors would involve aligning sentence structures with the grammatical norms of the target language. Pragmatic factors would address appropriateness and language use within the intervention's new sociolinguistic context. Further, when making a linguistic adaptation of specific lexical items, it is key to account for language-specific properties such as lexical frequency, imageability, and age of acquisition, among others. These variables often differ substantially across languages; for example, a high-frequency word in one language may be relatively infrequent in another, potentially altering task difficulty. These examples illustrate that linguistic adaptation is a complex, multilayered process that extends far beyond simple translation between languages.

Moreover, the frameworks discussed above emphasize the importance of linguistic adaptations. For instance, the PIPFLA model (Maríñez-Lora et al., 2016) incorporates a translation process in Step 2. Similarly, Resnicow et al. (1999) highlight surface structure, which involves aligning treatment materials with the target language. Notably, although Resnicow et al. (1999) refer to this adaptation process as surface structure, this should not be interpreted to imply that linguistic adaptations are simple, superficial, or devoid of complexity. On the contrary, those experienced with language disorders, such as aphasia, understand that language is inherently complex and far from superficial. Kreuter et al. (2003) also identify linguistic adaptation as one of five key strategies in the adaptation process. The idea is that psycholinguistic and linguistic variables should be considered when making linguistic adaptations of aphasia treatments. Similarly, the linguistic characteristics of a monolingual person with aphasia, as well as cross-linguistic differences in bi- or multilingual individuals with aphasia, should be carefully considered during this adaptation process.

Although this paper focuses on adaptations of aphasia interventions, this section briefly highlights that most adaptation work across languages has focused on aphasia *assessments*. A detailed exploration of what adapting assessments for diverse languages and cultures entails is beyond the scope of this paper's aims. There are assessment adaptations to different languages of the Stroke and Aphasia Quality of Life Scale-39 (e.g., Kiran & Krishnan, 2013; Lata-Caneda et al., 2009), the Western Aphasia Battery (e.g., Kertesz, 2022; Kertesz & Pascual-Leone, 2000), and the Comprehensive Aphasia Test (e.g., Martínez Ferreiro et al., 2024; Mavis et al., 2021; Visch-Brink et al., 2014; Zakariás & Lukács, 2022), among many others. Additionally, new assessment tools have been developed for specific contexts, such as the Indian Aphasia Battery (e.g., Kaur et al., 2017). There are frameworks specifically designed to guide the adaptation of assessments to new languages that can be consulted (e.g., Cruchinho et al., 2024). Additionally, discussions in aphasiology have highlighted major efforts to adapt the Comprehensive Aphasia Test for use in other languages (e.g., Martínez-Ferreiro et al., 2024), underscoring that, as

mentioned above, mere translations are insufficient; instead, adaptations need to account for the specific linguistic features of the target language, as well as for cultural variables.

Returning to Kreuter et al.'s framework (2003), the next strategy is constituent-involving. This strategy involves drawing directly on the experience of members of the target group (i.e., involving stakeholders to adapt an intervention). Members of the target group can be involved in multiple ways. For example, researchers can work directly with lay members of the population to work as cultural brokers during the intervention adaptation process. Another possibility involves collaborating with local health professionals who are members of the target group or have a deep understanding of their needs. This strategy has been increasingly used in the aphasia literature. For example, Isaksen et al. (2023) reported a grassroots-led multinational partnership focusing on knowledge exchange relating to CPT in Austria, Egypt, Greece, India, and Serbia. Local teams included health professionals (e.g., SLPs, neurologists, neuropsychologists, physiotherapists, occupational therapists, and psychologists) across the different countries. The local teams worked on the cultural and linguistic adaptation of KomTil (a version of CPT for healthcare workers). The goal was for these teams to subsequently use the adapted intervention resources to continue providing CPT to healthcare professionals in their local contexts. The nature of the CPT adaptations varied across countries, and the extent of adaptation often depended on similarities and differences between the target cultural and linguistic context and the source (Danish) context.

Quique et al. (2022) also described a cultural and linguistic adaptation of a scripted sentence-learning protocol for Colombian Spanish speakers with aphasia. The treatment materials (scripted sentences) were co-designed by a Colombian SLP with extensive clinical experience working with people with aphasia and by a linguist, a native Spanish speaker. These treatment materials were language-specific for Colombian Spanish speakers (e.g., used appropriate wording to express culturally relevant ideas, actions, and events). A local graphic designer created images associated with each sentence, serving as cues during practice sessions, and ensured that the visual materials were also culturally relevant. In addition, the treatment was administered by local SLPs with expertise in aphasia, which made it easier to connect with participants who shared a cultural and linguistic background. This study found that Colombian speakers with aphasia showed increased learning of scripted sentences over time, indicating a successful adaptation of this protocol to the culture and language.

Another example of a constituent-involving strategy was reported by Tessier et al. (2021). These researchers described an adaptation of CPT for public transportation staff in Montreal, Canada. The development of the CPT intervention adapted for this particular population included consultations with transport drivers, a chief operating officer, and passengers with communication disorders. In this example, the constituent-involving nature was related to a specific professional group rather than a broader cultural group. Further, the design of this CPT intervention followed an andragogical process, where learners share the learning process by designing, delivering, and evaluating the training; in other words, the target group was involved not only during the adaptation process but also during its implementation. The intervention was then delivered to 13 drivers in the city. The driver's knowledge regarding communicating with people with communication disorders improved after training. Additionally, post-intervention videos showed better communicative interactions, which speaks to the effectiveness of the adapted

intervention using this strategy. Overall, it has been noted that community stakeholder engagement in any project design and implementation leads to higher effectiveness, efficiency, equity, flexibility, legitimacy, sustainability, and replicability (e.g., Sherman & Ford, 2014).

The last strategy in Kreuter et al.'s framework (2003) is sociocultural. This refers to discussing health-related issues in the context of broader social and/or cultural values and characteristics of the intended audience. Using this approach, a group's cultural values, beliefs, and behaviors are recognized, reinforced, and built upon to provide context and meaning to information and messages about a given health problem or behavior. Thus, this is a higher level of stakeholder involvement, which includes a deeper understanding of the sociocultural characteristics of a given population. Still, this level of adaptation is achieved by including stakeholders throughout the intervention adaptation process. The field of aphasia has witnessed a gradual increase in stakeholder involvement in research, as demonstrated by the examples below. However, less has been done to include minoritized populations as stakeholders in achieving adaptations for cultural and linguistic minorities.

Stakeholder-engaged research (SER) is an umbrella term that encompasses research methods designed to involve individuals who are affected by research outcomes as active research advisors and collaborators. SER includes identifying appropriate stakeholders, using engagement strategies, and maintaining an effective relationship between researchers and stakeholders (Goodman & Sanders Thompson, 2017). An example of SER in the field of aphasiology is Project BRIDGE (Building Research Initiatives by Developing Group Effort; Brice & Hinckley, 2022). They have developed training programs for stakeholders (people with aphasia, families, and clinicians) who want to participate as collaborators in research. Currently, more than 20 multi-stakeholder research teams across North America are collaborating on projects that are important to individuals living with aphasia.

As mentioned, less has been done in SER for people with aphasia from minoritized groups. Seles Gadson et al. (2022) explored the health-related quality of life in African Americans with aphasia. The authors developed a survey for African Americans to examine the quality of life and whether social support and networks were predictors of health-related quality of life in this population. They found that African Americans with aphasia reported lower health-related quality of life relative to controls, but social support and networks were not predictors of quality of life. This type of research, in which stakeholders are deeply involved in understanding sociocultural characteristics, is a critical step that can guide the future development of treatment adaptations.

As can be inferred from Kreuter et al.'s framework (2003), some treatment adaptations may involve multiple of the discussed strategies. For example, in culturally similar contexts, a linguistic strategy may suffice, but this would vary contextually. Deciding which strategy is most appropriate to adapt an intervention for a given cultural context would benefit from community and stakeholder discussion. Overall, the terminology we have introduced in this section, can be used in combination with the bottom-up and top-down approaches described above. Further, documenting the changes made proactively and reactively to interventions, as well as the processes (e.g., decisions, considerations) that underlie and inform these changes, the nature of the modifications, the resulting product, and its impact is crucial to

ensure the modifications maintain or improve the fidelity of the intervention being adapted. Thus, to ensure good practice when carrying out cultural adaptations, using a framework that systematically and rigorously accounts for such documentation is crucial. We will move our discussion to one such framework – The Framework for Reporting Adaptations and Modifications-Enhanced (FRAME; Stirman et al., 2019) – and our application to aphasia treatments for culturally and linguistically minoritized groups.

Framework for reporting/documenting adaptations and modifications-enhanced (FRAME)

The Framework for Reporting Adaptations and Modifications-Enhanced (FRAME; Stirman et al., 2019) is used to document modifications and adaptations of evidence-based interventions (Figure 2). It considers the level at which treatment modifications are made and the type and nature of such modifications (Stirman et al., 2013). The initial framework was expanded to include cultural adaptations (e.g., Barrera et al., 2017; Sundell et al., 2016). The specific inclusion of cultural adaptations considered various levels of stakeholders, including challenges encountered at organizational and socio-political levels, among providers, and at the intended recipient's level. FRAME considers factors such as what, how, when, and why modifications are made to fit specific cultural contexts. It also serves as a tool to document the extent to which modifications are fidelity consistent.

This section aims to discuss FRAME in ways that can guide the documentation of adaptations of evidence-based aphasia treatments for diverse cultures. It will also present an overview with illustrative examples of how FRAME has been used to document an adaptation of a CPT program developed for diverse contexts (e.g., Isaksen et al., 2023). FRAME facilitates the documentation of modifications of evidence-based interventions for new cultures and can guide future documentation of adaptations of evidence-based aphasia intervention approaches. FRAME comprises eight aspects, which are described below.

When and how modifications occur? This aspect involves documenting whether the modification was made before treatment implementation, during the implementation process, or in later stages of scaling up and sustainment. In cases of cultural adaptation, certain modifications (proactive adaptation) are likely to be needed before treatment implementation. These proactive adaptations aim to enhance the intervention's fit, as well as improve its feasibility and sustainability. They may also be influenced by organizational systems and regulations.

A key difference between adapting assessments and adapting evidence-based interventions lies in the timing of adaptation (i.e., when the adaptation occurs). Unlike assessments, where the cultural adaptation can be completed once the adapted version has undergone normative testing and final publication, interventions may require iterative adaptations during the implementation process. Moreover, it is likely that interventions will also require further cultural and linguistic adaptations during the scaling-up process in real-world contexts. Documenting when modifications are made is key in the process of assessing the



Figure 2. Schematic of FRAME to document the adaptation of evidence-based aphasia treatments. The first column depicts FRAME domains. The second column provides examples of each domain. The third column presents an application of FRAME-A from the communication partner training study by Isaksen et al. (2022).

implemented intervention, planning to scale up, or considering further cultural and linguistic adaptations.

The proactive or reactive nature of a modification. This aspect refers to capturing whether specific modifications were planned or responsive. When modifications are

planned, they occur before the delivery of an intervention. For example, linguistic modifications to instructions, prompts, or linguistic stimuli used in aphasia interventions are generally proactive. Further, some modifications to who is involved, the resources used, where the intervention is delivered, and the time allocated to specific elements of an intervention may require modification in advance of piloting the adapted intervention. However, further modifications would need to be made reactively due to gaps in resource access and availability across different cultural contexts, as well as practical challenges encountered during the piloting or implementation stages. When unplanned modifications occur in response to a specific belief or behavior, they need to be considered to increase fit and effectiveness.

Who modified the intervention? This aspect refers to documenting the stakeholders involved in the modification (e.g., researchers, clinicians, patients, and organizations). Documenting who made the final decision on whether the modification is included or not is also considered in this category. While researchers and clinicians often modify interventions, other stakeholders have much to contribute. For example, patient advisory boards, research ethics committees, and individuals in institutional management can contribute to the discussion of intervention modifications, particularly during the rollout and implementation phases. This is highly variable and depends on the context in which the intervention is being adapted. Documenting who modified the intervention is crucial for understanding its rationale and assessing the feasibility of the intervention.

What was modified? This aspect specifies whether the modifications were made at the content, context, training, or implementation levels. Content modifications refer to changes within the treatment components. This could include adding elements, modules, tasks, or similar. This type of modification also includes deleting a treatment component if it is no longer relevant within the target context. Practical and organizational reasons for content adaptations may also be required in some contexts; however, these must be carefully weighed to ensure that they do not compromise the underlying principles of the intervention.

Context modifications refer to changes in the manner of delivery of the original content of the intervention. Specifically, context modifications refer to the format, the setting wherein the overall intervention is delivered (e.g., hospital, clinic, home, community), the personnel delivering the intervention, the number of sessions, and the duration of the intervention. For example, some interventions developed for delivery in a clinical setting may need to be delivered at home due to challenges associated with transportation and accessibility. Similarly, where personnel and resources are limited (e.g., a shortage of qualified SLPs), support workers may need to be recruited to support the delivery or co-facilitate the delivery of an intervention; note that this would require appropriate training for these support workers. The contextual modifications also include changes to the population for whom the intervention is being adapted. For example, if an intervention designed for adults is being delivered to a younger age group, or if an environmental intervention designed for significant others is being modified to include other family members.

Training modifications refer to changes in how personnel are trained to deliver the intervention or how they are trained to assess intervention outcomes. The nature of the training provided to personnel who would eventually train others also needs to be considered. The modifications to training may depend on the knowledge base and experience of the personnel being trained. As discussed above, if there are changes to the nature of the qualified person chosen to deliver the training, the differences in knowledge would need to be considered.

Implementation modifications refer to the strategies used to spread the use of the intervention and scale up its use. This may refer to changes in how extensive the provision of an intervention is, such as who can deliver the intervention. For example, as discussed above, moving beyond SLPs to other trained workers to deliver the same intervention, or extending the provision of an intervention designed for a specific hospital to all regional hospitals, nationally, or even internationally.

Level of modification. This refers to the broad level at which the modifications were made, namely, at the level of an individual, a group of people with shared characteristics, a clinical unit, a broader organizational setting, or a community level. Modifications may be made to suit the delivery of an intervention to a specific person (e.g., due to literacy differences, mobility challenges), different populations (e.g., age group, gender, nationality), or due to organizational settings (e.g., opening hours, duration of therapy sessions, frequency of sessions, support services available, structural accessibility). Community-level modifications may be related to cultural differences, values, religious considerations, and other factors.

Type or nature of context or content-level modifications. This refers to the way in which the changes are made. For example, including additional elements (e.g., additional aphasia-related training for communities or healthcare workers where a knowledge difference exists), changing the presentation style (e.g., delivering the intervention face-to-face vs. virtual), removing elements (e.g., discarding treatment components that do not apply to a context), modifying elements of existing material (e.g., refining, condensing, or loosening topics), expanding the intervention (e.g., adding treatment components applicable to the context), and changing the intervention protocol (e.g., changing the order in which the treatment is administered).

The extent to which the modification is fidelity consistent. This refers to the extent to which core elements (i.e., treatment components or ingredients) of the original intervention are preserved or changed for the new context for which the intervention is being adapted. Adaptations are considered fidelity-consistent when the core elements are preserved. The field of aphasiology is growing in its systematic description of treatments in terms of ingredients and mechanisms of action, which can explain how and why treatments work. This is achieved by utilizing tools such as the Rehabilitation Treatment Specification System (RTSS; see Cherney et al., 2022; Fridriksson et al., 2022). Scientific literature on core elements for specific aphasia interventions would support the later process of adaptations. Where such evidence is not available, consulting with clinicians and researchers involved in the development of the intervention or those with expertise in the principles and provision of the specific intervention being adapted would support the identification of essential ingredients of an intervention and thereby enhance the fidelity of the adapted intervention.

The reasons for the modification. This refers to the rationale underlying why the modifications were made. The reasons could include sociopolitical factors of the culture to which the treatment is being adapted (e.g., existing laws, policies, cultural and societal norms, historical considerations, financial resources), organizational reasons of the place where the adaptation is taking place (e.g., funding, competing demands, physical and information accessibility, mission, leadership support), factors associated with the provider or clinician delivering the treatment (e.g., race and ethnicity, gender and identity, previous knowledge, training and skills, clinical judgment, perceptions), and factors relating to the recipient of the treatment (e.g., race and ethnicity, gender and identity, comorbidities, cognitive abilities, access to resources, languages spoken, cultural and religious norms).

Overall, by providing a skeleton of the various levels at which modifications can occur, FRAME (Stirman et al., 2019) supports both researchers and clinicians in ensuring rigorous documentation of the adaptation process. This documentation can also support the maintenance of fidelity of evidence-based treatments while improving fit for a specific culture. FRAME could be used for ongoing documentation of further adaptations made during the implementation of adapted interventions, when scaling up adapted interventions (e.g., to other hospitals or culturally similar contexts), and even when documenting intervention outcomes. In this way, FRAME can help bridge the gap between evidence-based practice and practice-based evidence in adapted evidence-based interventions.

An example of using FRAME to document an adaptation of communication partner training (CPT)

In this section, we illustrate the use of FRAME to document modifications made to a CPT program, tailored to the culture and language of healthcare professionals working with people with aphasia in various countries (Figure 2). Specifically, Isaksen et al. (2023) reported a collaborative study adapting a Danish CPT program called KomTil (an abbreviation of *Kommunikativ Tilgængelighed*, which roughly translates to *communication accessibility*), for healthcare professionals from seven countries (Austria, Greece, Serbia, India, Egypt, Ireland, and the United Kingdom). The collaboration involved partnerships of clinicians and researchers with expertise in stroke and aphasia.

The project resulted in multiple language and cultural adaptations of KomTil, including two Indian adaptations for the north and south of India, as well as adaptations in Austrian, Greek, Serbian, and Arabic. The broad process was as follows: representatives in each country were trained as KomTil trainers, which provided an opportunity to gain a deep understanding of the principles underlying this CPT program. This training also created an opportunity to exchange knowledge on using CPT for healthcare professionals in under-explored contexts. While the representatives completed the KomTil training, they worked locally on the linguistic and cultural adaptations of the training content. After the adaptations were completed, the representatives disseminated the training to healthcare workers in their respective countries (Isaksen et al., 2023).

General adaptations included modifying infographics, adjusting practice scenarios, expanding concepts and terminology to accommodate cultural characteristics, and tailoring the level of politeness in the language to match the cultural context. Broadly, all the cultural and linguistic adaptations, as documented by Isaksen et al. (2023), were

pre-planned and made prior to implementation. Whether further modifications were made after the context-specific implementation was not documented by Isaksen et al. (2023), as the paper focuses on the adaptation process. It is therefore difficult to comment on further adaptations (i.e., reactive or unplanned) that may have been made during and following implementation. Unplanned adaptations were documented in a different study (see Pais, 2022), which involved adapting CPT for the Indian context. In this study, unplanned modifications occurred due to organizational circumstances during implementation or individual participant circumstances during testing. Thus, further adaptations may have been required in the other countries included in the study by Isaksen et al. (2023) during the implementation phase. The modifications were made by local healthcare professionals (e.g., neurologists, physiotherapists, SLPs). Thus, this is an example of a constituent-involving adaptation process.

“What” modifications were made, the nature of the modifications, and the reasons for modification varied across the countries in the study. For example, in the North Indian context, the team modified content to increase the interest of the healthcare professionals who are likely to serve people with various communication disorders. The Austrian team, on the other hand, extended the practice time between sessions to suit resource availability within the specific clinic where the intervention was to be implemented. These examples of content and contextual changes could be described as sociocultural, although the level at which these were made was not reported. Pais and Jagoe (2024) documented similar reasons for modifying and adapting CPT to the context of family members in the Indian context, which align with those discussed by Isaksen et al. (2023), highlighting the importance of cultural considerations in both content and language that extend beyond mere translation.

Overall, a crucial benefit of using FRAME to document modifications alongside opportunities for those involved in the adaptation process to discuss adaptations is that it can further support the maintenance of fidelity, particularly at the level of core concepts, while allowing modifications to address the needs of the context for which the intervention is being adapted. This was demonstrated both in the study by Isaksen et al. (2023) and Pais and Jagoe (2024). Although Isaksen et al. (2023) do not specifically report on the fidelity of the adaptations, they note that the Egyptian and Indian teams made more extensive adaptations than the European teams (e.g., Austria and Greece). It is crucial to strike a balance between maintaining fidelity to the active ingredients and increasing suitability for the target context.

Conclusion

Aphasia treatment research has focused on English-speaking populations, leaving a gap in the development of treatments to meet the needs of the world’s diverse cultures and languages. As clinicians and researchers work to address the needs of minoritized groups, they are often left to choose between applying existing treatments without adaptation, making intuitive modifications, or developing entirely new interventions (i.e., something old, something borrowed, something new). Each of these paths presents challenges, particularly in terms of cultural fit, clinical confidence, and time constraints.

To move the field forward, there is a need for systematic frameworks to guide the cultural and linguistic adaptation of aphasia treatments. Such frameworks can help ensure that interventions are not only accessible but also acceptable and

effective across diverse populations. The bottom-up approach offers a community-driven pathway for culturally adapting aphasia treatments. Top-down approaches focus on increasing cultural awareness and can also serve as a starting point for cultural adaptations of evidence-based aphasia treatment. Together, they provide a complementary framework that can support the adaptation of evidence-based aphasia treatments to diverse cultures. Similarly, FRAME provides a framework for documenting the cultural and contextual adaptations of evidence-based aphasia treatments.

In short, advancing aphasia care for *all* people with aphasia requires culturally responsive adaptations of evidence-based treatments. Bottom-up and top-down approaches offer complementary strategies to achieve this goal, and frameworks like FRAME support the systematic documentation of adaptations. These systematic frameworks enhance the rigor of adaptation processes and, in the long term, facilitate the scalability and sustainability of evidence-based interventions across diverse linguistic and cultural contexts. By embracing these frameworks, the field of aphasiology can take steps toward more equitable care for all individuals with aphasia.

Notes

1. We used the terminology of minoritized groups preferentially in this paper to reflect the fact that a group's "minority status" is a function of oppressive structures (see Black et al., 2023), understanding and valuing that the people who have been described as "ethnic minorities" (e.g., Asian, Black, Latin American) are actually the global majority (about ~85% of the global population).
2. Although we use the terminology Global South and Global North, instead of high vs. low income countries (or multiple others categorical terminologies), we recognize that this terminology has limitations and does not fully capture the sociocultural and linguistic nuances of the populations within the Global South or Global North. We have selected this terminology only for the lack of a better one.

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CRedit: **Yina M. Quique:** Conceptualization, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing; **Analisa M. Pais:** Conceptualization, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing; **Jytte K. Isaksen:** Writing – review & editing; **Caroline Jagoe:** Writing – review & editing.

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References

- Aguirre, E., Spector, A., & Orrell, M. (2014). Guidelines for adapting cognitive stimulation therapy to other cultures. *Clinical Interventions in Aging*, 9, 1003–1007. <https://doi.org/10.2147/CIA.S61849>
- Ajide, K. B., & Alimi, O. Y. (2019). Political instability and migrants' remittances into Sub-Saharan Africa region. *Geojournal*, 84(6), 1657–1675. <https://doi.org/10.1007/s10708-018-9942-8>
- Alonzo, C. N., Komesidou, R., Wolter, J. A., Curran, M., Ricketts, J., & Hogan, T. P. (2022). Building sustainable models of research-practice partnerships within educational systems. *American Journal of Speech-Language Pathology*, 31(3), 1–13. https://doi.org/10.1044/2021_AJSLP-21-00181
- Babbitt, E. M., Ginsberg-Jaeckle, M., Larkin, E., Escarcega, S., & Cherney, L. R. (2022). Classifying interpreter behaviors during aphasia assessments: Survey results and checklist development. *American Journal of Speech-Language Pathology*, 31(5S), 2329–2347. https://doi.org/10.1044/2022_AJSLP-21-00306
- Barrera, M., Berkel, C., & Castro, F. G. (2017). Directions for the advancement of culturally adapted preventive interventions: Local adaptations, engagement, and sustainability. *Prevention Science*, 18(6), 640–648. <https://doi.org/10.1007/s11121-016-0705-9>
- Bennington, C., Isaksen, J., Shiggins, C., Beesley, E., Beesley, K., Simmons-Mackie, N., Worrall, L., Quique, Y. M., Aguilar, O., Guo, E., & Wallace, S. J. (2025). International priorities for a unified aphasia awareness campaign: A nominal group technique study across five countries. *Disability and Rehabilitation*, 48(2), 1–21. <https://doi.org/10.1080/09638288.2025.2510558>
- Bennington, C., Shiggins, C., Isaksen, J., Beesley, E., Beesley, K., & Wallace, S. J. (2024). What does it mean to be aphasia aware? An international survey of stakeholder perspectives and experiences of aphasia awareness. *Aphasiology*, 38(12), 1916–1939. <https://doi.org/10.1080/02687038.2024.2330145>
- Bernhardt, J., Urimubenshi, G., Gandhi, D. B. C., & Eng, J. J. (2020). Stroke rehabilitation in low-income and middle-income countries: A call to action. *The Lancet*, 396(10260), 1452–1462. [https://doi.org/10.1016/S0140-6736\(20\)31313-1](https://doi.org/10.1016/S0140-6736(20)31313-1)
- Beveridge, M. E. L., & Bak, T. H. (2011). The languages of aphasia research: Bias and diversity. *Aphasiology*, 25(12), 1451–1468. <https://doi.org/10.1080/02687038.2011.624165>
- Black, C., Cerdeña, J. P., & Spearman McCarthy, E. V. (2023). I am not your minority. *The Lancet Regional Health - Americas*, 19, 100464. <https://doi.org/10.1016/j.lana.2023.100464>
- Brabers, A. E. M., van Dijk, L., Groenewegen, P. P., & de Jong, J. D. (2016). Do social norms play a role in explaining involvement in medical decision-making? *The European Journal of Public Health*, 26(6), 901–905. <https://doi.org/10.1093/eurpub/ckw069>
- Brice, A., & Hinckley, J. (2022). Building research initiatives by developing group effort (BRIDGE): Patient-partners in aphasia research. *Seminars in Speech and Language*, 43(5), 426–444. <https://doi.org/10.1055/s-0042-1756644>
- Bright, T., Wallace, S., & Kuper, H. (2018). A systematic review of access to rehabilitation for people with disabilities in low- and middle-income countries. *International Journal of Environmental Research and Public Health*, 15(10), 2165. <https://doi.org/10.3390/ijerph15102165>

- Burzyński, M., Deuster, C., Docquier, F., & de Melo, J. (2022). Climate change, inequality, and human migration. *Journal of the European Economic Association*, 20(3), 1145–1197. <https://doi.org/10.1093/jeea/jvab054>
- Castro, F. G., Barrera, M., Jr., & Holleran Steiker, L. K. (2010). Issues and challenges in the design of culturally adapted evidence-based interventions. *Annual Review of Clinical Psychology*, 6, 213–239. <https://doi.org/10.1146/annurev-clinpsy-033109-132032>
- Centeno, J. G., Kiran, S., & Armstrong, E. (2020). Aphasia management in growing multiethnic populations. *Aphasiology*, 34(11), 1314–1318. <https://doi.org/10.1080/02687038.2020.1781420>
- Cherney, L. R., De De, G., Hoover, E. L., Murray, L., Obermeyer, J., & Pompon, R. H. (2022). Applying the rehabilitation treatment specification system to functional communication treatment approaches for aphasia. *Archives of Physical Medicine and Rehabilitation*, 103(3), 599–609. <https://doi.org/10.1016/j.apmr.2021.10.016>
- Comas-Díaz, L. (2006). Cultural variation in the therapeutic relationship. In C. D. Goodheart, A. E. Kazdin, & R. J. Sternberg (Eds.), *Evidence-based psychotherapy: Where practice and research meet* (pp. 81–105). American Psychological Association. <https://doi.org/10.1037/11423-004>
- Crippa, A., Dunne, J. P., & Pieroni, L. (2025). Conflict as a cause of migration. *Oxford Economic Papers*, 77(2), 596–618. <https://doi.org/10.1093/oep/gpae037>
- Cruchinho, P., López-Franco, M. D., Capelas, M. L., Almeida, S., Bennett, P. M., Miranda da Silva, M., Teixeira, G., Nunes, E., Lucas, P., & Gaspar, F. (2024). Translation, cross-cultural adaptation, and validation of measurement instruments: A practical guideline for novice researchers. *Journal of Multidisciplinary Healthcare*, 17, 2701–2728. <https://doi.org/10.2147/JMDH.S419714>
- Dillard, V., Moss, J., Padgett, N., Tan, X., & Kennedy, A. B. (2021). Attitudes, beliefs and behaviors of religiosity, spirituality, and cultural competence in the medical profession: A cross-sectional survey study. *PLOS ONE*, 16(6), e0252750. <https://doi.org/10.1371/journal.pone.0252750>
- Domenech Rodríguez, M. M., & Bernal, G. (2012). Frameworks, models, and guidelines for cultural adaptation. In G. Bernal & M. M. Domenech Rodríguez (Eds.), *Cultural adaptations: Tools for evidence-based practice with diverse populations* (pp. 23–44). American Psychological Association. <https://doi.org/10.1037/13752-002>
- Egia-Zabala, M., & Munarriz-Ibarrola, A. (2024). Language diversity and bi/multilingualism in aphasia research. *Languages*, 9(10), 325. <https://doi.org/10.3390/languages9100325>
- Ellis, C., Hyacinth, H. I., Beckett, J., Feng, W., Chimowitz, M., Ovbiagele, B., Lackland, D., & Adams, R. (2014). Racial/ethnic differences in poststroke rehabilitation outcomes. *Stroke Research and Treatment*, 2014(1), 1–12. <https://doi.org/10.1155/2014/950746>
- Fridriksson, J., Basilakos, A., Boyle, M., Cherney, L. R., De De, G., Gordon, J. K., Harnish, S. M., Hoover, E. L., Hula, W. D., Pompon, R. H., Johnson, L. P., Kiran, S., Murray, L. L., Rose, M. L., Obermeyer, J., Salis, C., Walker, G. M., & Martin, N. (2022). Demystifying the complexity of aphasia treatment: Application of the rehabilitation treatment specification system. *Archives of Physical Medicine and Rehabilitation*, 103(3), 574–580. <https://doi.org/10.1016/j.apmr.2021.08.025>
- Gadson, D. S., Wallace, G., Young, H. N., Vail, C., & Finn, P. (2022). The relationship between health-related quality of life, perceived social support, and social network size in African Americans with aphasia: A cross-sectional study. *Topics in Stroke Rehabilitation*, 29(3), 230–239. <https://doi.org/10.1080/10749357.2021.1911749>
- Gitlin, L. N., & Czaja, S. J. (2015). *Behavioral intervention research: Designing, evaluating, and implementing*. Springer.
- Goodman, M. S., & Sanders Thompson, V. L. (2017). The science of stakeholder engagement in research: Classification, implementation, and evaluation. *Translational Behavioral Medicine*, 7(3), 486–491. <https://doi.org/10.1007/s13142-017-0495-z>
- Grandpierre, V., Milloy, V., Sikora, L., Fitzpatrick, E., Thomas, R., & Potter, B. (2018). Barriers and facilitators to cultural competence in rehabilitation services: A scoping review. *BMC Health Services Research*, 18(1), 23. <https://doi.org/10.1186/s12913-017-2811-1>
- Hwang, W. (2012). Integrating top-down and bottom-up approaches to culturally adapting psychotherapy: Application to Chinese Americans. In G. Bernal & M. M. DOMENECH. Rodríguez (Eds.), *Cultural adaptations: Tools for evidence-based practice with diverse populations* (pp. 179–198). American Psychological Association.

- Hwang, W. C. (2006). The psychotherapy adaptation and modification framework: Application to Asian Americans. *American Psychologist*, 61(7), 702–715. <https://doi.org/10.1037/0003-066X.61.7.702>
- Hwang, W.-C. (2009). The formative method for adapting psychotherapy (FMAP): A community-based developmental approach to culturally adapting therapy. *Professional Psychology: Research and Practice*, 40(4), 369–377. <https://doi.org/10.1037/a0016240>
- Isaksen, J., Beeke, S., Pais, A., Efstratiadou, E. A., Pauranik, A., Revkin, S. K., Vandana, V. P., Valencia, F., Vuksanović, J., & Jagoe, C. (2023). Communication partner training for healthcare workers engaging with people with aphasia: Enacting sustainable development goal 17 in Austria, Egypt, Greece, India and Serbia. *International Journal of Speech-Language Pathology*, 25(1), 172–177. <https://doi.org/10.1080/17549507.2022.2145355>
- Kaur, H., Bajpai, S., Pershad, D., Sreenivas, V., & Nehra, A. (2017). Development and standardization of Indian aphasia battery. *Journal of Mental Health and Human Behaviour*, 22, 116–122. <https://doi.org/10.4103/jmhbb.jmhbb>
- Kayola, G., Mataa, M. M., Asukile, M., Chishimba, L., Chomba, M., Mortel, D., Nutakki, A., Zimba, S., & Saylor, D. (2023). Stroke rehabilitation in low- and middle-income countries: Challenges and opportunities. *American Journal of Physical Medicine & Rehabilitation*, 102(2S Suppl 1), S24–S32. <https://doi.org/10.1097/PHM.0000000000002128>
- Keeney, T., Jette, A. M., Freedman, V. A., & Cabral, H. (2017). Racial differences in patterns of use of rehabilitation services for adults aged 65 and older. *Journal of the American Geriatrics Society*, 65(12), 2707–2712. <https://doi.org/10.1111/jgs.15136>
- Kertesz, A. (2022). The western aphasia battery: A systematic review of research and clinical applications. *Aphasiology*, 36(1), 21–50. <https://doi.org/10.1080/02687038.2020.1852002>
- Kertesz, A., & Pascual-Leone, Á. (2000). *Batería de Afasias Western (The Western Aphasia Battery en versión y adaptación castellana)*. Nau Llibres.
- Kiran, S., & Krishnan, G. (2013). Stroke and aphasia quality of life scale in Kannada: Evaluation of reliability, validity and internal consistency. *Annals of Indian Academy of Neurology*, 16(3), 361–364. <https://doi.org/10.4103/0972-2327.116932>
- Kiran, S., & Roberts, P. M. (2010). Semantic feature analysis treatment in Spanish-English and French-English bilingual aphasia. *Aphasiology*, 24(2), 231–261. <https://doi.org/10.1080/02687030902958365>
- Kong, A. P.-H., Chan, K. P.-Y., & Jagoe, C. (2021). A systematic review of training communication partners of Chinese-speaking persons with aphasia. *Archives of Rehabilitation Research and Clinical Translation*, 3(4), 100152. <https://doi.org/10.1016/j.arrct.2021.100152>
- Kreuter, M. W., Lukwago, S. N., Bucholtz, D. C., Clark, E. M., & Sanders-Thompson, V. (2003). Achieving cultural appropriateness in health promotion programs: Targeted and tailored approaches. *Health Education and Behavior*, 30(2), 133–146. <https://doi.org/10.1177/1090198102251021>
- Kwilinski, A., Lyulyov, O., Pimonenko, T., Dzwigol, H., Abazov, R., & Pudryk, D. (2022). International migration drivers: Economic, environmental, social, and political effects. *Sustainability*, 14(11), 6413. <https://doi.org/10.3390/su14116413>
- Larkman, C., Mellahn, K., Han, W., & Rose, M. (2022). Aphasia rehabilitation when speech pathologists and clients do not share the same language: A scoping review. *Aphasiology*, 37(4), 1–23. <https://doi.org/10.1080/02687038.2022.2035672>
- Lata-Caneda, M. C., Piñeiro-Temprano, M., García-Fraga, I., García-Armesto, I., Barrueco-Egido, J. R., & Meijide Failde, R. (2009). Spanish adaptation of the Stroke and Aphasia Quality of Life Scale-39 (SAQOL-39). *European Journal of Physical and Rehabilitation Medicine*, 45(3), 379–384. <http://www.ncbi.nlm.nih.gov/pubmed/19156021>
- Maríñez-Lora, A. M., Boustani, M., Del Busto, C. T., & Leone, C. (2016). A framework for translating an evidence-based intervention from English to Spanish. *Hispanic Journal of Behavioral Sciences*, 38(1), 117–133. <https://doi.org/10.1177/0739986315612769>
- Martínez-Ferreiro, S., Arslan, S., Fyndanis, V., Howard, D., Kraljević, J. K., Škorić, A. M., Munarriz-Ibarrola, A., Norvik, M., Peñalosa, C., Pourquié, M., Simonsen, H. G., Swinburn, K., Varlokosta, S., & Soroli, E. (2024). Guidelines and recommendations for cross-linguistic aphasia assessment:

- A review of 10 years of comprehensive aphasia test adaptations. *Aphasiology*, 40(2), 1–25. <https://doi.org/10.1080/02687038.2024.2343456>
- Martínez Ferreiro, S., Quique, Y. M., Rodríguez, V. A., & Méndez Orellana, C. (2024). Linguistic and cultural properties of the Spanish adaptation of the CAT (SP-CAT): Pilot results from neurotypical subjects. *Aphasiology*, 40(2), 1–25. <https://doi.org/10.1080/02687038.2024.2319362>
- Matos, M. A. C., Abreu, E., Brandão, L., Santos, J. M. L. G., Lima, R. R., Machado, T. H., Mancini, M. A., & Jagoe, C. (2025). Communication partner training for persons with aphasia: A systematic review of Portuguese language publications. *Aphasiology*, 39(4), 539–578. <https://doi.org/10.1080/02687038.2024.2361962>
- Mavis, İ., Tunçer, A., Selvi Balo, S., Tokaç, S., & Özdemir, Ş. (2021). The adaptation process of the comprehensive aphasia test into CAT-Turkish: Psycholinguistic and clinical considerations. *Aphasiology*, 36(1), 1–20. <https://doi.org/10.1080/02687038.2021.1923947>
- Murray, E., Pollack, L., White, M., & Lo, B. (2007). Clinical decision-making: Physicians' preferences and experiences. *BMC Family Practice*, 8(1), Article 10 <https://doi.org/10.1186/1471-2296-8-10>
- O'Brien, J., Fossey, E., & Palmer, V. J. (2021). A scoping review of the use of co-design methods with culturally and linguistically diverse communities to improve or adapt mental health services. *Health & Social Care in the Community*, 29(1), 1–17. <https://doi.org/10.1111/hsc.13105>
- Pachter, L. (1994). Culture and clinical care: Folk illness beliefs and behaviors and their implications for health care delivery. *JAMA: The Journal of the American Medical Association*, 271(9), 690–694. <https://doi.org/10.1001/jama.1994.03510330068036>
- Pais, A., & Jagoe, C. (2024). Communication partner training (CPT) to improve conversation, communication, and mental health. In A.-P.-H. Kong (Ed.), *Spoken discourse impairments in the neurogenic populations: A state-of-the-art, contemporary approach* (pp. 371–382). Springer Nature. https://doi.org/10.1007/978-3-031-45190-4_26
- Pais, A. M. (2022). Communication partner training for the primary caregivers of people with aphasia in India: a multi-phase exploratory study [Doctoral dissertation, Trinity College Dublin]. TARA. <http://hdl.handle.net/2262/98560>
- Pauranik, A., George, A., Sahu, A., Nehra, A., Paplikar, A., Bhat, C., Krishnan, G., Kaur, H., Saini, J., Suresh, P., Ojha, P., Singh, P., Sancheti, P., Karanth, P., Mathuranath, P., Goswami, S., Chitnis, S., Sundar, N., Alladi, S., & Farooqi-Shah, Y. (2019). Expert group meeting on aphasia: A report. *Annals of Indian Academy of Neurology*, 22(2), 137–146. https://doi.org/10.4103/aian.AIAN_330_18
- Pauranik, A., Pauranik, N., Singh, P., Lahiri, D., & Krishnan, G. (2020). Aphasia in neurology practice: A survey about perceptions and practices. *Annals of Indian Academy of Neurology*, 23(8), S162–S170. https://doi.org/10.4103/aian.AIAN_788_20
- Quique, Y. M., Evans, W. S., Ortega-Llebaría, M., Zipse, L., & Dickey, M. W. (2022). Get in sync: Active ingredients and patient profiles in scripted-sentence learning in Spanish speakers with aphasia. *Journal of Speech, Language, and Hearing Research*, 65(4), 1478–1493. https://doi.org/10.1044/2021_JSLHR-21-00060
- Quique, Y. M., Kong, A. P. H., Owusu Antwi, A. A., & Jagoe, C. (2025). Language rights and publication practices in aphasia research: Lessons learned from developing aphasia assessments in multiple languages. *Aphasiology*, 1–18. <https://doi.org/10.1080/02687038.2025.2508444>
- Resnicow, K., Baranowski, T., Ahluwalia, J. S., & Braithwaite, R. L. (1999). Cultural sensitivity in public health: Defined and demystified. *Ethnicity & Disease*, 9(1), 10–21.
- Roger, P., & Code, C. (2011). Lost in translation? Issues of content validity in interpreter-mediated aphasia assessments. *International Journal of Speech-Language Pathology*, 13(1), 61–73. <https://doi.org/10.3109/17549507.2011.549241>
- Roger, P., Code, C., & Sheard, C. (2000). Assessment and management of aphasia in a linguistically diverse society. *Asia Pacific Journal of Speech, Language and Hearing*, 5(1), 21–34. <https://doi.org/10.1179/136132800807547573>
- Rubin, R. (2023). It takes an average of 17 years for evidence to change practice—the burgeoning field of implementation science seeks to speed things up. *JAMA: The Journal of the American Medical Association*, 329(16), 1333–1336. <https://doi.org/10.1001/jama.2023.4387>

- Sandberg, C., Gray, T., & Kiran, S. (2020). Development of a free online interactive naming therapy for bilingual aphasia. *American Journal of Speech-Language Pathology*, 29(1), 20–29. https://doi.org/10.1044/2019_AJSLP-19-0035
- Schiffman, C. B. (1995). Visually translating educational materials for ethnic populations. ERIC. <https://eric.ed.gov/?id=ED391485>
- Scimeca, M., Abdollahi, F., Peñaloza, C., & Kiran, S. (2022). Clinical perspectives and strategies for confronting disparities in social determinants of health for Hispanic bilinguals with aphasia. *Journal of Communication Disorders*, 98, 106231. <https://doi.org/10.1016/j.jcomdis.2022.106231>
- Sherman, M. H., & Ford, J. (2014). Stakeholder engagement in adaptation interventions: An evaluation of projects in developing nations. *Climate Policy*, 14(3), 417–441. <https://doi.org/10.1080/14693062.2014.859501>
- Simmons-Mackie, N., Worrall, L., Shiggins, C., Isaksen, J., McMenamin, R., Rose, T., Guo, Y. E., & Wallace, S. J. (2020). Beyond the statistics: A research agenda in aphasia awareness. *Aphasiology*, 34(4), 458–471. <https://doi.org/10.1080/02687038.2019.1702847>
- Smith, T. B., & Trimble, J. E. (2016). *Foundations of multicultural psychology: Research to inform effective practice*. American Psychological Association. <https://doi.org/10.1037/14733-000>
- Steinka-Fry, K. T., Tanner-Smith, E. E., Dakof, G. A., & Henderson, C. (2017). Culturally sensitive substance use treatment for racial/ethnic minority youth: A meta-analytic review. *Journal of Substance Abuse Treatment*, 75, 22–37. <https://doi.org/10.1016/j.jsat.2017.01.006>
- Stirman, S. W., Baumann, A. A., & Miller, C. J. (2019). The FRAME: An expanded framework for reporting adaptations and modifications to evidence-based interventions. *Implementation Science*, 14(1), 1–10. <https://doi.org/10.1186/s13012-019-0898-y>
- Stirman, S. W., Miller, C. J., Toder, K., & Calloway, A. (2013). Development of a framework and coding system for modifications and adaptations of evidence-based interventions. *Implementation Science*, 8(1), 1–12. <https://doi.org/10.1186/1748-5908-8-65>
- Sundell, K., Beelmann, A., Hasson, H., & von Thiele Schwarz, U. (2016). Novel programs, international adoptions, or contextual adaptations? Meta-analytical results from German and Swedish intervention research. *Journal of Clinical Child & Adolescent Psychology*, 45(6), 784–796. <https://doi.org/10.1080/15374416.2015.1020540>
- Tessier, A., Croteau, C., & Voyer, B. (2021). Exploring the usability of the andragogical process model for learning for designing, delivering and evaluating a workplace communication partner training. *Journal of Workplace Learning*, 33(8), 577–590. <https://doi.org/10.1108/JWL-10-2020-0163>
- Visch-Brink, E., Vandenborre, D., de Smet, H. J., & Mariën, P. (2014). *Comprehensive aphasia test - Nederlandse bewerking - handleiding*. Pearson.
- Vollebregt, M., Archibald, L. M. D., Theurer, J., & Cardy, J. O. (2022). Exploring practice-based clinical - research partnerships in speech-language pathology: A scoping review exploration. *Canadian Journal of Speech-Language Pathology and Audiology*, 46(3), 201–220.
- Weinstein, N. D. (1988). The precaution adoption process. *Health Psychology*, 7(4), 355–386. <https://doi.org/10.1037/0278-6133.7.4.355>
- Zakariás, L., & Lukács, Á. (2022). The comprehensive aphasia test-Hungarian: Adaptation and psychometric properties. *Aphasiology*, 36(9), 1127–1145. <https://doi.org/10.1080/02687038.2021.1937921>