

Personalization of Restorative and Compensatory Treatments for People With Aphasia

A Review of the Evidence

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Speech–language pathologists serving individuals with aphasia must make many decisions regarding assessment and intervention practices to support comprehension and expression of language. Each of these decisions can influence the effectiveness of therapy and long-term functional outcomes for individuals with aphasia. One factor that must be considered is the impact of personalizing therapy techniques to match the unique strengths and challenges of a client as well as incorporating personally relevant stimuli and methodologies into therapy. Research indicates that treatment customization can have a positive impact on service provision quality and can potentially lead to positive outcomes in therapy. The purpose of this article is to provide a broad overview of how personalization can be achieved across a variety of interventions. Furthermore, we explore factors (e.g., client motivation, cognitive resources) that influence therapeutic outcomes and discuss the benefits, challenges, and rationale for therapy customization. **Key words:** *aphasia, augmentative and alternative communication, impairment-based therapy, personal relevance, personalization*

THE FIRST DOCUMENTED cases of aphasia appeared in the literature more than 100 years ago (see Teive et al., 2011). Since that time, researchers and health professionals have worked to identify treatments addressing the acute and chronic communicative deficits associated with this disorder (see Brady et al., 2016). Treatment focuses have ranged from impairment-based restoration of language function to compensatory

techniques designed to alleviate the life challenges associated with aphasia. Given the range of available evidence-based treatments, it may appear as though little similarity exists among treatment methodologies; however, through careful inspection, commonalities emerge.

Some of the most notable among these commonalities are the documented importance of personalization and personal relevance of therapy targets and techniques. For the purposes of this article, we defined personalization as the selection of interventions, therapeutic targets, and supports associated with an individual's unique constellation of strengths and challenges. Commonly referred to as personalized medicine, this approach tasks clinical professionals with tailoring treatment protocols to each individual in order to ensure more successful outcomes. High variability among people with aphasia results in individuals with similar conditions (e.g., Broca's aphasia) responding entirely differently to the same treatment protocol.

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Thus, personalized approaches have the potential to optimize therapy outcomes, reduce trial-and-error decision-making, and increase patient compliance (Vogenberg et al., 2010).

We define personal relevance as the consideration of a person's unique goals, client preference regarding activities and treatment targets, and individualized contexts for participation. Since the early 2000s, support for personal relevance has emerged through the Life Participation Approach for Aphasia (LPAA; Chapey et al., 2000). This consumer-driven service delivery model focuses on an individual's reengagement in life activities post-diagnosis and places the individual with aphasia at the center of all therapeutic decisions. Subsequently, quality of life and increased participation in preferred activities drive assessment and treatment.

In this article, we explore the rationale for treatment personalization and personal relevance and provide a brief, preliminary overview of the literature in regard to word retrieval and connected speech production treatments as well as augmentative and alternative communication (AAC) intervention methods. We conducted a modified narrative review in which we completed a series of searches using PubMed and Google Scholar using the term "aphasia" coupled with the terms "personalization" and "personal relevance" to identify a list of evidence-based aphasia-specific therapies that have incorporated aspects of personalization. Following these searches, we reviewed article titles and abstracts and selected articles that were representative of a wide range of practice areas in aphasia treatment. The intent of this article is not to provide a systematic review of the available evidence in relation to personalization and personal relevance but rather to provide a broad overview of how personalization can be achieved across a variety of interventions, to examine the rationale for personalization of treatments for individuals with aphasia, and to discuss future research needs in relation to this topic.

PERSONALIZATION AND PERSONAL RELEVANCE IN RESTORATIVE THERAPIES

Personalization and personal relevance have a long-standing history in aphasia intervention. Dating back to the 1950s, Schuell (1953) noted that people with severe aphasia demonstrated accurate recognition of familiar objects and words, even when they were unable to follow simple commands. Since that time, researchers have conducted numerous studies focused on personalized and personally relevant language intervention approaches and stimuli. A variety of evidence-based treatments are available to support word finding and minimize the effects of anomia on expression, all of which may be personalized or made personally relevant to the individual with aphasia. For example, enhancing lexical retrieval for verb forms via Verb Network Strengthening Treatment (VNest; Edmonds et al., 2009), improving word-finding abilities via Semantic Feature Analysis (SFA; Boyle & Coelho, 1995), and capitalizing on nonverbal skills through gesture therapy (e.g., visual action therapy; Helm-Estabrooks et al., 1982) are examples of treatments that may be well suited for inclusion of personally relevant targets. Written expression treatments such as Copy and Recall Treatment (CART; Beeson, 1999) and Anagram and Copy Treatment (ACT; Beeson, 1999) may also be enhanced when included in personalized treatment decisions and when utilizing personally relevant targets. Given the widespread availability of word retrieval treatments for individuals with aphasia, we provide a brief review of selected treatments and acknowledge the breadth and depth of literature for future discussion.

Selection of targets for word retrieval treatment

Word retrieval issues are a hallmark deficit among individuals with aphasia (Larfeuil & Le Dorze, 1997). As such, researchers have developed a large number of therapies to target anomia (see Nickels, 2002). Although

studies indicate notable gains in trained and practiced target words, generalization to untrained words is often an issue (Nickels, 2002). Given this challenge, it is imperative that these discrete treatment targets be selected carefully so as to ensure therapy results in the most impactful gains possible. One way to accomplish this is to select functional words and messages as therapy targets. Renvall et al. (2013) described two main sources from which clinicians may identify functional words for their clients: frequently used or personally relevant vocabulary.

Selection of frequently used items refers to the practice of choosing vocabulary items that are commonly produced among individuals in a particular group (e.g., target words from a database of frequently produced words created by researchers). To enhance customization, the selection of frequently used items can be tailored to a client by asking them to review the list and select all terms they feel are personally relevant. Alternatively, clinicians may choose to select items from a database specifically developed for individuals in a demographic group that closely matches the characteristics of a particular client, thus enhancing personalization of treatment (Renvall et al., 2013).

These authors further stipulate that selection of personally relevant vocabulary occurs when a clinician interviews their client and/or a close proxy (e.g., family member) to determine the words or items most important to the client. Although this method is highly tailored to the individual, it can be somewhat challenging logistically. Personal selection of items tends to be a relatively time-consuming process as clinicians must work with their clients to develop full, encompassing lists. Also, it is often the case that those with severe aphasia who would benefit most from targeted therapy, are unable to effectively express their preferences. In these instances, reliance on proxy informants may be essential; however, not all individuals with aphasia have someone to fulfill this role. In addition, proxies may miss key information. Haley et al. (2013) examined the accuracy with

which proxy informants selected preferred topics of conversation for individuals with aphasia. They found that people with aphasia and their proxies were in agreement during only 71% of instances while identifying preferred topics of the person with aphasia. A discrepancy of this magnitude could result in substantial issues with vocabulary selection and ultimately impact therapeutic motivation and outcomes. In addition to these issues, researchers have noted that when provided with the opportunity to select their own targets, individuals with aphasia may not select words that are highly impactful to linguistic or communicative abilities but rather may select items that hold high personal value (Mason et al., 2011). Overall, these results indicate a need for further study regarding more effective methods for the selection of personally relevant targets for word retrieval therapies.

Personalized cueing

In addition to selecting meaningful targets to address word finding, researchers have examined the effects of using customized cues for individuals with word retrieval deficits (i.e., personalized cueing). This therapy relies on associative learning skills as individuals with aphasia are taught to generate word cues that they associate with symbols to aid in word retrieval. Marshall et al. (1992) described the process of developing personalized cues as a joint effort between a clinician and their client in which the client selects a word that they personally associate with a therapy target. This word, along with the associated symbol, is then presented by the clinician to prime the client to produce the associated target word. The rationale for personalized cueing is rooted in the depth of processing model developed by Craik and Lockhart (1972), which suggests that deeper level semantic processing results in greater recall than shallow level processing. Thus, the fact that personalized cueing requires individuals to think about and generate a word associated with a target that results in greater activation and strengthening of the semantic

network between the two words (Marshall & Freed, 2006). Alternatively, these same researchers have hypothesized that the positive effects of personalized cueing on word retrieval could be the result of activation of relatively preserved autobiographical memory, as evidence indicates that individuals with aphasia often developed their personal cues based on their life experiences (Marshall et al., 2002). Although evidence exists supporting personalized cueing, research is needed to determine whether this method results in effective word retrieval outside the contrived context of picture identification tasks.

PERSONALIZATION AND PERSONAL RELEVANCE IN CONNECTED SPEECH TREATMENT

Selecting meaningful targets and developing personalized cues are undoubtedly important steps toward personalizing therapeutic intervention; however, these treatments tend to focus solely on expression at the word level. Holland (2011) explained that therapies targeting word-level production are partial task or skill-based therapies as opposed to whole task training. These types of treatments focus on targets in a fractionated, acontextual manner that may not result in sufficient learning for expression of full and complete messages. One way to potentially overcome these issues is through personalizing treatment with use of functional script training.

Script training

Script training is a process by which a clinician works with a client to co-construct a sequential series of statements and/or questions that will be used in a highly specific interaction (Cherney et al., 2008). Although the level of customization varies on the basis of the amount of input provided by the client (e.g., specific topics or word choices; Cherney et al., 2015), the created scripts should be personally relevant to the client and serve a specific purpose in their life (Cherney et al., 2008). For example, if an indi-

vidual frequents a particular coffee shop and orders the same drink, the script should be tailored to contain information that is specific to their coffee shop and their drink of choice. Once a personalized and personally relevant script developed, the client systematically works with the clinician, either face-to-face (Youmans et al., 2005) or through a virtual program (Cherney et al., 2008, 2015), to learn the script through drill and practice. Support is gradually reduced until the client is able to produce the script independently. Cherney et al. (2008) described the goal of script training as providing a person with aphasia with “pockets” of fluent speech to allow them to complete a specific task or participate in a structured social interaction.

Research indicates that script training can support the communication of people with aphasia during specific interactions or tasks (Youmans et al., 2005); however, the importance of tailoring a script to each client cannot be overstated. Research indicates that people with aphasia prefer to engage in conversations focused on their everyday life activities (Holland et al., 2010) and may be disinterested in therapeutic tasks involving role-playing (a method commonly used in script training) that are not functional and personally relevant (Schlanger & Schlanger, 1970). Thus, ensuring that scripts are tailored to and approved by each client will likely result in higher levels of motivation and increased functional practice opportunities.

PERSONALIZATION AND PERSONAL RELEVANCE IN AAC THERAPIES

Even with restorative therapy, approximately 40% of individuals diagnosed with aphasia will not be able to meet their functional communication needs through natural speech (Laska et al., 2001). Instead, these individuals must rely on picture communication supports, gestures, and other compensatory methods of communication that collectively fit under the umbrella term “augmentative and alternative communication.” In the next portion of this article, we examine

the role of personalization and personal relevance in AAC service provision.

Participation model

Augmentative and alternative communication is an area of practice focused on compensating for temporary or permanent activity limitations and restricted life participation subsequent to communication impairment (Beukelman & Light, 2020). Given the focus on supporting functional communication in everyday situations, at its core, optimal AAC service provision must be customized for each user and thus is inherently personalized. Moreover, the overarching model that guides AAC service provision, the participation model, was designed with the intent of assisting individuals with complex communication needs to meet their own unique participation requirements (Beukelman & Light, 2020). Thus, the first step in the participation model is to identify existing communication needs by comparing desired participation patterns with current participation patterns.

The subsequent step in the model, assessing for participation barriers, was also designed to ensure that intervention is tailored to the individual. Specifically, clinicians work with their clients to determine their unique barriers, supports, and capabilities. It is during this portion of the assessment in which clients' individual motor, cognitive, linguistic, and sensory profiles emerge to inform creation of a unique AAC intervention plan. The process of determining which tools, technologies, and/or strategies would most effectively support an individual's communication needs, while capitalizing on their strengths, is often referred to as the feature-matching process (Shane & Costello, 1994). Garrett and Lasker (2005) provide further evidence for matching treatment targets, approaches, and supports to individuals with aphasia based on communication needs within the AAC-Aphasia Categories of Communicators. This system requires a clinician to evaluate the competencies of an individual with aphasia and match communication strategies based on the resultant profile—a process

that is inherently personalized to the client. In addition to feature matching, potential activity and participation barriers are examined within the participation model and, when necessary, personalized interventions are then implemented. Next, the clinician works with a team to create a plan for their client with consideration not only for current abilities and participation goals (i.e., personal relevance) but also for future needs. The plan is then implemented and reassessed frequently.

Proper use of the participation model should result in a relatively thorough understanding of the internal factors (e.g., barriers, strengths, needs) that guide therapeutic intervention; however, it is essential to also examine the external evidence to identify a course of action for AAC system design and implementation. As such, we provide an overview of existing literature related to vocabulary selection and display characteristics in the following sections.

Vocabulary and message selection

One aspect that is central to AAC service provision is the selection of vocabulary and messages for inclusion in communication supports. Beukelman and Light (2020) explain that it is essential that the vocabulary in AAC systems be tailored to the individual user. This may be especially true for people with aphasia, as their language deficits often impede their ability to create messages through spelling or word-by-word construction. Thus, added content must be selected with care to ensure that it meets the individual needs of the user and enhances communication efficiency. Although ideal, selecting personally relevant vocabulary is not a simple process. As with selecting targets for impairment-based therapies, the person with aphasia is the best informant for vocabulary selection within AAC supports; however, this may be a challenge for those with severe aphasia, as they may be unable to sufficiently communicate their ideas or opinions to assist in the process. As such, the inclusion of multiple proxy informants (e.g., family members,

close friends, professionals) is often essential to fully encompass the vocabulary needs of each individual (Morrow et al., 1993).

Further examination of the evidence indicates a strong need for personal relevance to be considered during the vocabulary selection process. Early studies examining the commonalities of vocabulary selection across adults with complex communication needs revealed little overlap in the words and messages selected across participants (Yorkston et al., 1989) and as compared with standardized vocabulary lists (Yorkston et al., 1988, 1989). The reason for the uniqueness in vocabulary selection is likely rooted in the fact that adults have a robust number of unique personal interests and social roles as well as a variety of life experiences that have shaped them as individuals (Dietz et al., 2013). However, Bryen (2008) points out that although adults' AAC systems should contain vocabulary needed for them to fulfill their social roles, this is often not the reality. In fact, preprogrammed vocabulary available in AAC systems is often lacking in language specific to adult activities (e.g., employment, health, and sexuality). As a result, clinicians cannot solely rely on preprogrammed messages in AAC systems and must personalize the content available for their clients.

Message representation and display design

Selecting personally relevant vocabulary is a key aspect when it comes to designing effective AAC supports for people with aphasia; however, it is also essential to ensure that people understand how vocabulary is represented and displayed within their systems. Because aphasia is a symbolic processing disorder (McNeil & Pratt, 2001; Petroi et al., 2014), it cannot be assumed that comprehension of either text- or image-based messages will be easy or possible (Hux et al., 2008). Three methods are commonly available to represent messages in aided AAC displays: text, images, or a combination of the two. For individuals with aphasia, reading deficits are common (Brookshire et al., 2014) and as such

images may be a natural message representation choice (Dietz et al., 2009). However, not all images are alike and the selection of images will substantially impact the communication process.

Selecting personalized images is likely to reduce the cognitive burden associated with using image-based AAC displays. Although further research is necessary in this area, people with aphasia have been shown to more accurately complete picture-name matching tasks when using personalized photographs as opposed to photographs taken from other sources or line drawings (McKelvey et al., 2010). In addition, people with aphasia indicate a strong preference for their own personal photographs (McKelvey et al., 2010). Furthermore, Ulmer et al. (2017) demonstrated that people with aphasia referencing personal photographs produced more content units and demonstrated improved topic maintenance than those who did not use photographs as communicative supports. Similar results were noted by Griffith et al. (2014) as they found that people with aphasia relied more on personal photographs than on other image types.

RATIONALE FOR THERAPEUTIC CUSTOMIZATION

Evidence across aphasia therapies sheds light on the potential benefits of customizing treatment. The focus of the next section is to discuss possible factors that support the rationale for tailoring therapeutic interactions.

Role of personalization and personal relevance in improving client buy-in and motivation

There are a number of theories regarding the rationale for incorporating personalization and personal relevance into therapeutic intervention for individuals with aphasia. Perhaps, the most obvious among them is that these actions could influence the motivation to comply with and participate in therapy. For example, collaborative intervention planning procedures focused on communication in

real-world contexts, such as those proposed in the FOURC model (Haley et al., 2019), incorporate clients' perspectives in therapeutic decisions, enhancing compliance, motivation, satisfaction, and engagement. It is logical to assume that people with aphasia may be motivated by and persist with therapies in which their own goals are addressed as opposed to those developed solely by their clinicians. In the realm of aphasia intervention, this could take a variety of forms; however, research indicates that involving clients and their family members in the development and selection of therapy targets could result in higher levels of compliance (Sherratt et al., 2011). Research also indicates that when asked, speech-language pathologists consider client-centered approaches as the gold standard for rehabilitation (Berg et al., 2016).

One way of tailoring therapy to suit the needs of a client is to include them and their close friends and family members in the development of therapy goals. Holliday et al. (2007) explain that goal setting should be a negotiation between clinicians, clients, and clients' families in identifying rehabilitation priorities. Evidence of this was provided in a study conducted by Cott (2004) in which individuals with a variety of chronic disabilities, including acquired brain injury, reported higher levels of preference for therapies that directly targeted their specific needs. This notion of selecting therapies based on individualized needs was referred to by these researchers as client-centered therapy, and it is one of the hallmarks of the World Health Organization's International Classification of Functioning, Disability, and Health (WHO-ICF; Üstün et al., 2003) framework. The WHO-ICF was developed to holistically classify components of functioning and disability. This framework is a shift from the traditional impairment-driven view of disability, as components including participation and activity as well as environment and personal factors are to be considered along with the diagnosis and disability. Thus, similar to LPAA, the WHO-ICF encourages health practitioners

to view disability in light of personal factors associated with the individual in order to holistically address their needs.

Capitalizing on spared hemispheric function

The benefits of using personalized and personally relevant therapeutic approaches may also be rooted in the brain's hemispheric organization. Specifically, researchers have found compelling evidence that supports that the brain's nonlanguage-dominant hemisphere (typically the right hemisphere) plays a central role in the recognition and processing of familiar or personally relevant information (Gianotti, 2013; Van Lancker, 1991). Given that aphasia is typically associated with left hemisphere damage, it stands to reason that relying on the right hemisphere's natural processing abilities could prove vital for individuals with aphasia.

The potential specialization of the right hemisphere in processing familiar information is not a new concept. Rather, it was noted decades ago in the literature surrounding prosopagnosia (Klein & Stack, 1953), a disorder characterized by an inability to recognize familiar faces (Meadows, 1974). In more recent years, increased evidence has accumulated regarding the right hemisphere's role in processing familiar targets. Researchers have conducted behavioral (e.g., Vlădeanu & Bourne, 2009), neurophysiological (e.g., Sun et al., 2012), and neuroimaging (e.g., Tsukiura et al., 2008) studies to fully determine the right hemisphere's function in recognition of familiar stimuli (Gianotti, 2013).

Although the aforementioned research provides strong evidence of the right hemisphere's natural specificity for the recognition of familiar faces, the cited studies all involved adult participants without neurological conditions. However, the same trend is noted among adults with aphasia. Van Lancker and Klein (1990) examined the ability of individuals diagnosed with global aphasia secondary to left hemisphere stroke to recognize common and proper nouns through a series

of picture-name matching tasks as well as standardized and nonstandardized language tests. Results revealed that participants performed poorly on common noun recognition tasks, which is expected with global aphasia; however, their performance was comparable with their neurotypical peers with the familiar (i.e., celebrity) picture-name matching task. In addition, Wallace and Canter (1985) found that people with fluent and non-fluent aphasia performed significantly better on auditory comprehension, speech repetition, naming, and reading comprehension tasks with personally relevant stimuli than on tasks involving nonpersonalized stimuli. Collectively, these studies indicate that personalized and personally relevant supports may be easier for people with aphasia to identify and may therefore act as more effective communication supports and language stimulation tools than nonpersonalized stimuli.

Recruiting cognitive and contextual resources to support outcomes

The use of personally relevant supports could capitalize on an individual's strengths by exploiting relatively spared or available resources for individuals with aphasia. Specifically, consideration of cognitive functions and contextual factors (e.g., familiar conversational partners, personalized environments, preferred contexts, engagement in functional activities) within therapy activities and approaches may serve to further personalize therapy while enhancing participation.

The relatively persevered cognitive functions of individuals with aphasia (McNeil, 1982) may aid in supporting participation in communicative acts. Although research is emerging to support that many individuals with aphasia experience some degree of cognitive deficits post-injury (Murray, 2012), when compared with language processing, the cognitive resources of people with aphasia are relatively preserved. Recruiting cognitive resources that rely on personalization and personal relevance such as autobiographical memory may aid in supporting the communication function of individuals with aphasia. Autobiographical memory (a type of

declarative, episodic memory) is defined as remembered information experienced in context by an individual (Gilboa, 2004). Thus, autobiographical memories are unique to each person and are thought to be akin to the "reexperiencing" of personal, past life events (Steinvorth et al., 2006). Because people with aphasia have been shown to have relatively persevered autobiographical memory, it is likely that selecting therapy targets and stimuli that are representative of or semantically linked to important life events could draw on these skills. Moreover, Greenberg and Rubin (2003) point out that although individuals with aphasia may be unable to verbally express autobiographical memories, given their language impairment, the storage of those memories is likely not lost. Thus, if one can find a way to assist these individuals in compensating for their language deficits, they may express autobiographical information effectively.

Contextual factors such as conversational partners, settings, activities, and environments may also play a key role in the communicative participation of individuals with aphasia. Unfortunately, despite gains in communication within clinical settings post-treatment, there is little evidence to suggest that either communication or participation abilities subsequently increase in home or community settings (Lyon, 1992). As discussed earlier, dating back to the 1950s, Schuell (1953) noted that people with aphasia tended to perform better in familiar environments and with familiar communication partners than they did in unfamiliar locations with unfamiliar individuals. When examining best practices in aphasia therapy, Simmons-Mackie et al. (2017) concluded that aphasia therapy should include communication partner training and that family members and caregivers should be included in the therapy decision-making process.

Conversational partner training programs are designed to increase the access to communication for individuals with aphasia and, potentially, decrease the burden of aphasia during conversational contexts (Turner & Whitworth, 2006). Supported Conversation

for Adults with Aphasia (Kagan, 1998) is one such approach motivated by the theory that a trained conversational partner can reveal the communicative competence of an individual with aphasia. Conversation Coaching (Hopper et al., 2002) is another method that is intended to work with the conversational skills of both the partner and the individual with aphasia to maximize communicative success. The setting and context in which communication occurs may further enhance conversational interaction. For example, when dyads of individuals with aphasia and familiar communication partners embark on activities of the patient's choosing in home or community environments, statistically significant gains in the patient's well-being and communication have been noted (Lyon et al., 1997). Overall, considerations of these social models for aphasia management challenge and encourage clinicians to move beyond the clinical therapy settings and maximize naturalness and functionality of aphasia treatment (Cranfill et al., 2005).

CLINICAL IMPLICATIONS AND FUTURE RESEARCH NEEDS

In addition to the specific issues associated with personalization and personal relevance for each of the therapies outlined earlier, clinicians face challenges on a global level in relation to tailoring service provision. It is essential to consider these challenges and discuss relevant clinical implications resulting from therapeutic customization. From these discussions, conclusions can be drawn regarding the need for future research.

The first issue worthy of note is the challenge of clinical time constraints. Clinicians not only deal with large caseloads but also face funding constraints, resulting in shorter therapy timelines. These issues coupled with additional challenges that may arise while attempting to customize therapy for each individual client may lead some therapists to question whether personalization and personal relevance are always essential or whether there are instances in which

generic terminology, images, and processes may be sufficient to meet a client's needs. The answer to this question remains somewhat elusive, as more systematic, empirical research is needed to fully answer these questions. Thus, clinicians must use their clinical intuition as well as trial-and-error approaches to determine when a personalized approach is necessary. In addition, researchers must identify the specific gains associated with therapeutic personalization and whether a suitable middle ground can be found between fully customized intervention and interventions designed to suit a broad range of individuals. For instance, Beukelman et al. (2021) describe the potential for overcoming the challenges of acquiring personalized photographs by selecting photographs from alternative sources (e.g., internet) in which only specific features such as the age and gender of the depicted human figures are matched to the individual user. Examining personalization in this manner may assist clinicians in providing semi-customized services that would improve client outcomes while reducing clinical and logistical demands.

A second issue that must be discussed is the traditional assessment process for adults with aphasia. Specifically, clinicians often utilize standardized assessments (e.g., Western Aphasia Battery-Revised; Kertesz, 2006) to better understand the nature of their clients' language deficits. Testing in this capacity is important; however, this approach rarely renders the information necessary to fully realize a client's unique strengths, needs, and desires. Thus, clinicians may feel unprepared when attempting to tailor therapy (e.g., select appropriate vocabulary targets, create effective scripts) to their clients. As such, it is essential that clinicians begin to move beyond traditional assessment and embrace a more holistic assessment style. The participation model, as outline earlier, provides clinicians with a relatively complete picture of each of their client's unique skills and needs and is consistent with the WHO-ICF framework. Clinicians providing services across the range of aphasia therapy types should consider the

benefits of adopting this type of assessment model when selecting personalized therapeutic interventions to match strengths and challenges of each individual client.

CONCLUSION

Customization of therapeutic practice and supports is an important aspect of service provision for people with aphasia. Although much is currently known regarding the benefits of personalization and personal relevance,

further work is necessary to identify the most effective ways to support clinicians in this endeavor, especially given the time constraints and practical challenges associated with treatment customization. Reflection on current practice trends as well as research designed to address the challenges of therapeutic customization will increase our understanding of instances in which personalization and personal relevance are essential as well as alleviate the challenges of this important aspect of therapy.

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