

Original Article

# Planning Speech and Language Therapy Interventions for Adults with Neurogenic Communication Disorders

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## ABSTRACT

The International Classification of Functioning, Disability and Health (ICF), emphasizes the need for health interventions to be tailored to each patient's unique requirements. In Chile, there are currently no consistent guidelines for the design of treatment plans. This lack of structure for speech-language therapy interventions hinders the communication between professionals and, therefore, the possibility to plan adequate therapeutic intervention. This article aims to provide a theoretical and conceptual framework that facilitates structured therapeutic planning for adult patients with neurogenic communication and/or linguistic difficulties, following international standards. A critical review was carried out, with a narrative-conceptual structure and intentional sampling of current theoretical proposals. A set of theoretical tools is proposed within the framework of the ICF model, in order to facilitate the work of speech-language therapists.

## Keywords:

Treatment Planning;  
Goals; SMART;  
SMARTER; MEANING

## Planificación terapéutica fonoaudiológica para el abordaje de usuarios adultos con dificultades comunicativas y/o lingüísticas de origen neurológico

## RESUMEN

La Clasificación Internacional de Funcionamiento, Discapacidad y Salud (CIF) indica que la intervención en salud debe responder de manera apropiada a las necesidades particulares de cada usuario/a. Actualmente, no se cuenta en Chile con pautas uniformes para el diseño de la planificación terapéutica. Esta ausencia de estructura de la intervención fonoaudiológica dificulta la comunicación entre profesionales y obstaculiza una intervención terapéutica adecuada. El objetivo del presente trabajo es proporcionar un marco teórico-conceptual que facilite la planificación terapéutica estructurada de usuarios/as adultos/as con dificultades comunicativas y/o lingüísticas de origen neurológico, considerando estándares internacionales. Se realiza una revisión crítica con una estructura narrativa-conceptual con un muestreo intencionado de las propuestas teóricas actuales. Se propone un conjunto de herramientas teóricas en el marco del modelo de la CIF con el fin de facilitar el trabajo del/la fonoaudiólogo/a.

## Palabras clave:

Planificación Terapéutica;  
Objetivos; SMART;  
SMARTER; MEANING

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## **INTRODUCTION**

Therapy planning should consider the needs of the patient (Rosewilliam et al., 2011; Sugavanam et al., 2013) that are detected during the assessment, in order to establish a baseline that allows measuring progress (Ashford & Turner-Stokes, 2015). The objectives of Speech-Language Therapy should include the role of the supported person, the skills that are sought to be developed, and strategies to measure achievements.

Setting goals for intervention is a common process for speech therapists, albeit a complex one that depends on several factors. Some of the most relevant factors are professional training, access to a variety of therapeutic tools, type of workplace, conditions available for a multidisciplinary approach, and characteristics of the patient (Diehm, 2017).

In the case of patients with neurogenic disorders, the process of setting objectives for therapy should take into account their opinions and expectations, those of their family, and those of potential caregivers (Hersh, Sherratt, et al., 2012; Hersh, Worrall, et al., 2012). The patient's participation is hindered when their injuries compromise the prefrontal and orbitofrontal areas of their brain, as these areas are responsible for setting goals and objectives, as well as for executing organized plans (Huang et al., 2020; Ruiz-Gutiérrez et al., 2020). In addition, language disturbances that are accompanied by working memory deficits affect decision-making, understanding tasks that involve the use of Theory of Mind, and social or emotional responsiveness (Leopold et al., 2012; Schneider & Koenigs, 2017; Tranel, 2002). Furthermore, the severity of the condition can be a barrier to the person's participation in therapy planning since it impacts their ability to understand the therapeutic process in its complexity (Hersh, Sherratt, et al., 2012; Stroke Foundation, 2021; Sugavanam et al., 2013; Taylor et al., 2012). More specifically, there could be issues around organization and the intervention occurring at a specific time, scarcity of resources, and the need to organize a sequence of actions that allow the rehabilitation process to be successful (Hersh, 2009; Hersh, Sherratt, et al., 2012).

The proposals for therapy planning found in the literature are limited or not exhaustive enough, and often part of the so-called 'gray literature'. Moreover, they usually present goals that are poorly adapted to the national reality, or from taxonomic frameworks that do not relate to the context of therapy.

At a national level, the most concrete proposals are aimed at vocal rehabilitation (Castillo-Allendes & Fouillioux, 2021; Crisosto, 2021). Some aspects of said proposals cannot be generalized or

applied with precision to the intervention of adults with communication and language disorders. On the other hand, the ones that are developed within the field do not address the therapeutic process in depth (Pacheco-Saavedra & Bello-Lepe, 2022; Tobar-Fredes & Salas, 2022). Consequently, the objective of this review is to offer a theoretical and conceptual framework that establishes the conditions for a well-organized therapy planning process, by analyzing the literature available in the field. With this, we aim to contribute to the development of a theoretical-conceptual body of information that addresses the procedures for Speech-Language Therapy planning, for patients with neurogenic communicative and linguistic difficulties.

## **METHODOLOGY**

This critical review (Grant & Booth, 2009) presents a narrative-conceptual structure of the current theoretical proposals on therapy planning aimed at speech-language therapy intervention for patients with neurogenic communication and/or language disorders. The review includes an analysis of the selected articles, resulting in a theoretical model that identifies and organizes the most relevant aspects of each proposal in a unified body of work (Grant & Booth, 2009).

An intentional and theoretical sampling method was used for this review (Patton, 2002; Suri, 2011). This was chosen because this study aims to examine the complexity of the concepts used to approach the phenomenon (Benoot et al., 2016).

The proposals found in the literature were assessed according to their contribution to Speech-Language Therapy at a national level, as well as to clinical and pedagogical work. From that assessment, we sought to provide a framework to discuss the structure of Speech-Language Therapy approaches and the procedures employed for setting goals. The material selection was based on studies that focused on neurorehabilitation and were "examples of the concept or construct to be addressed, with the aim of highlighting the theoretical areas of interest" (Patton, 2015, p. 401). We did not apply a time criterion since the topic is newly developed and minimally documented, hence most of the referenced research was published after the year 2000.

## RESULTS

### Development of the Proposal

The proposal separates the therapy planning process into two stages: a) Stage I: Therapeutic Framework and b) Stage II: Therapy Structuring. These stages are not strictly consecutive; however, given the iterative nature of the planning process, the Therapeutic Framework stage is usually carried out first, followed by the Therapy Structuring stage. Both stages are explained in Table 1 and Figure 1.

#### Stage I: Therapeutic Framework

##### *Determining the theoretical approach to rehabilitation*

The practice of Speech-Language Therapy follows elements of various models and/or orientations. Selecting a theoretical model for intervention is a clinical decision that contemplates the origin and severity of the disorder, the expectations and communication needs of the patient and their family, and the environmental context. In this regard, the following models can be found: linguistic, cognitive, and pragmatic or social.

The linguistic model has contributed to the interpretation of linguistic symptoms in people with aphasia and is based on the principle that language has an internal organization built on a system of rules. Thus, the intervention is based on linguistic units that, upon assessing language, are found to be affected (Basso et al., 2013). In turn, the cognitive model explains the person's symptoms based on disturbed cognitive processes that are necessary for adequate mental functioning (Manning, 1990). In this context, theoretical models of information processing have been developed, based on the study of normative cognitive functioning, to represent the underlying cognitive components that guide the selection of contents for speech-language therapy (Caramazza & Coltheart, 2006).

**Table 1.** Stages of Therapy Planning.

Stage I: Therapeutic Framework	
1.	Determining the theoretical approach for rehabilitation.
2.	Determining the contents of the intervention.
3.	Determining the prioritization criterion.
4.	Determining the therapeutic strategy.
5.	Determining the method of intervention.
Stage II: Therapy Structuring	
6.	Analysis of contextual factors.
	6.1. Environmental factors.
	6.2. Personal factors.
7.	Analysis of the Participation/Activity Level.
	7.1. Formulating the general goal.
8.	Analysis of the Function/Structure level.
	8.1. Formulating specific goals.
	8.2. Formulating operational goals.
	8.2.1. SMARTER approach.
	8.2.2. MEANING approach.
9.	Generalization/Transference level.

Finally, the pragmatic or social model (Byng & Duchan, 2005) focuses the intervention on specific communication needs (Galletta & Barrett, 2014), emphasizing the role of active communicator in real situations by creating communicative experiences that are attractive and significant for the supported person (Byng & Duchan, 2005). This model has been applied in rehabilitation with people who have suffered traumatic brain injuries (TBI). Here, the cognitive-pragmatic (Gabbatore et al., 2015), conversational-discursive (Giles et al., 1988), and social (Braunling-McMorrow et al., 1986) approaches stand out.

From the perspective of the ICF (World Health Organization [WHO], 2001), the linguistic and cognitive approaches address the levels of structure and function, while the pragmatic model is linked to the levels of activity and participation.

The selection of a model depends on a clinical decision, where it is possible to use two different orientations for the same patient. Since the intervention plan becomes dynamic as the patient develops new skills, the theoretical orientation can be adjusted whenever the person's communication requires it. Therapy at the level of structure/function is necessary; however, the evolution of the intervention should aim at working from a rather pragmatic, ecological, and social approach.

### Determining the contents of the intervention

The selection of contents is based on each particular therapeutic plan. García & Canga (2019) and Tippett et al. (2014) propose that therapy be customized according to the cognitive communicative/linguistic profile and the communication needs of the patient.

The intervention of cognitive processes, based on cognitive stimulation techniques in neurocognitive disorders and older people experiencing normal aging, has been debated and questioned in the literature (Cognitive Training Data, 2014;

Stanford Center on Longevity, 2014). A recent systematic review that included meta-analysis (Gavelin et al., 2020) concludes that, although it is possible to find objective improvements in cognitive performance, this does not necessarily translate into a positive impact on the progress of the disease or the functional skills of the person. Moreover, the review asserts that the quality of the available evidence is insufficient, as has been previously reported (Bahar-Fuchs et al., 2018; Hill et al., 2017; Oltra-Cucarella et al., 2016).

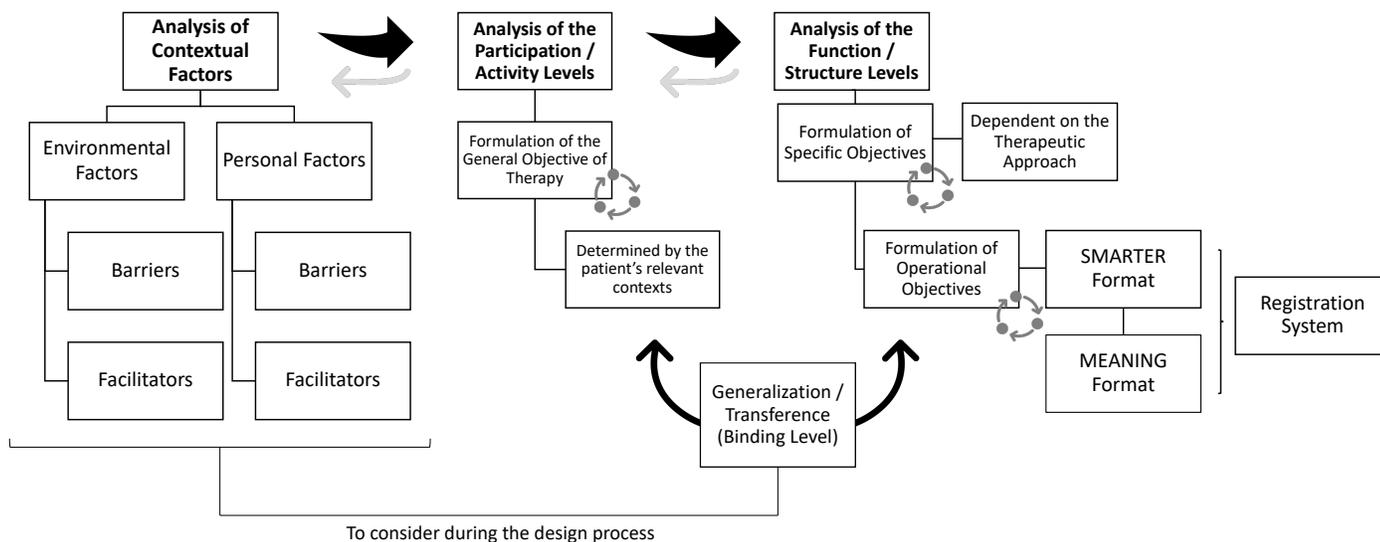


Figure 1. Flow diagram for the stages of therapy planning. Adapted and modified from Crisosto (2021).

Supporting people with Major Neurocognitive Disorder (MND) in the development of conversational skills is aimed at them maintaining their participation in social settings. With this in mind, tools are provided to communication partners to create opportunities for communication, improve their interactions with the patient, and mediate scenarios for social interaction (Lanzi et al., 2021). Alternative Augmentative Communication systems (AAC) can be used to work with people with MND, based on memory books (Bourgeois et al., 2009). Along the same lines, Reminiscence Therapy (RT) has been shown to be beneficial in the promotion of communication skills in people with MND (O' Philbin et al., 2018).

In the case of people with Cognitive Communicative Disorder (CCD) secondary to a non-progressive acquired brain injury, a study describes working on prosody, as well as discursive,

pragmatic, and communicative skills (Lehman et al., 2013) in people who have suffered TBI. This research suggests that the contents of the intervention depend on the severity of the disturbance, although they are focused on the cognitive functions that support the development of communicative and conversational skills (Marshall et al., 2021). This is also carried out with the patient's communication partner (Behn et al., 2021).

In people with CCD of a psychiatric nature, the intervention of pragmatic and discursive skills is highlighted (Joyal et al., 2016), as well as of social cognition parameters (Tan et al., 2018), which impact communicative performance in social contexts.

In people with aphasia, the contents of the intervention are determined by the theoretical orientation, and they are generally attached to the language modalities that are affected in order to maximize communication skills. Regarding listening

comprehension and oral expression, the severity of the damage is taken into account when deciding which area of language will be supported (Raymer & Turkstra, 2017). Thus, the intervention can start from basic levels such as the word, in the case of a person with severe impairment, or speech, when the disorder is milder. To facilitate aspects of expressive communication, the intervention includes the ability to access the lexicon (Efstratiadou et al., 2018; Wisenburn & Mahoney, 2009), the grammatical structuring of sentences, the use of verbs (Webster & Whitworth, 2012), the use of non-verbal language (Rose et al., 2013), and AAC (Dietz et al., 2020). The intervention will also identify strategies that the person with aphasia uses to cope with communication difficulties (Harskamp & Visch-brink, 1991), a condition for which PACE Therapy (Promoting Aphasics' Communicative Effectiveness) (Davis, 2005) and Cognitive Behavioral Language Therapy (Akabogu et al., 2019) have been suggested.

People with aphasia can struggle with writing, reading aloud, and/or reading comprehension. The intervention contents are determined by the skills that underlie the deficit. Thus, if difficulties are found in the grapheme-phoneme conversion process (Patterson & Shewell, 1987), phonological awareness training is recommended at the word level (Beeson et al., 2010; Brookshire et al., 2014; Friedman & Lott, 2002). If reading comprehension is affected, the textual level should be addressed, including the cognitive skills that support reading comprehension (attention, working memory, and abstraction, among others). Purdy et al. (2018) review the effectiveness of different approaches when stimulating reading comprehension in people with aphasia.

Finally, it is important to consider the communication partners of people with aphasia (Simmons-Mackie et al., 2016), who can be taught effective communication strategies to interact with the person based on their preserved skills.

At the initial stages of the intervention, contents are focused on structure and function, increasingly being oriented towards functional, family, social, and/or work communication. In this regard, the ICF describes certain domains that Speech-Language Therapy could target at this stage (see Table 2).

**Table 2.** Proposed content selection for the intervention of activity and participation.

Activity and Participation	
Domains	Descriptors
Learning and applying knowledge	Basic sensory experiences, basic learning, and application of knowledge.
General tasks and demands	Carrying out a single task, multiple tasks, and everyday routines.
Communication	Communication – reception, production, conversation, and using communication devices and techniques.
Self-Care	Bathing, caring for parts of the body, personal hygiene related to processes of excretion, getting dressed, eating, drinking, and caring for their own health.
Domestic Life	Acquiring what is necessary to live, house chores, caring for house objects, and helping others.
Interactions and Interpersonal Relationships	General and particular interpersonal interactions.
Main Areas of Life	Education, work, employment, and financial life.
Community, Social, and Civic Life	Community life, freelance work and leisure, religion and spirituality, human rights, political life, and citizenship.

In Table 3, we suggest specific contents for different communication and language disorders. Cognitive functions are based on what the Diagnostic and Statistical Manual of Mental Disorders (5th. ed.; DSM–5; American Psychiatric Association [APA], 2013) describes, and the aspects of language and communication on the specifications that the American Speech-Language-Hearing Association (ASHA) (2007) suggests regarding the work of speech therapists. It is important to mention that the learning domain is linked to the memory domain due to the relevance of the encoding stage in storing and later retrieving information. Remembering or forgetting is mediated by the ability or inability to retrieve what has been learned (Baddeley, 2018).

**Table 3.** Proposal for selecting intervention contents within the cognitive domains, language content and form, and use of language.

Cognitive Domains	Language Content and Form	Use of Language
Complex Attention - Continuous Attention - Divided Attention - Selective Attention	Verbal Receptive Language	Non-Verbal Receptive Language
Executive Function - Planning - Decision-Making - Work Memory - Inhibition - Mental Flexibility	Verbal Expressive Language	Non-Verbal Expressive Language
Learning and Memory - Immediate Memory - Recent Memory - Long-Term Memory	Reading	Pragmatic Skills
Perceptual-Motor Skills - Visual Perception - Visuoconstructional Abilities	Writing	Conversational Skills of the Patient
Social Perception - Recognizing Emotions - Theory of Mind		Conversational Skills of the Communication Partner

**Determining the prioritization criterion**

Once the therapeutic contents are identified based on the assessment, a hierarchy must be established to structure the intervention.

One proposal is to follow the cognitive complexity of the skills to intervene. The therapist should determine which skills are more or less complex regarding the promotion of communication. As for linguistic skills, it is proposed that comprehension be treated before and/or in parallel to expression, considering verbal and non-verbal aspects (Hendriks & Koster, 2010).

There are three prioritization criteria. First, we have the symptomatological criterion, where the contents are organized from the highest to the lowest level of severity. The second criterion is functional, based on which symptoms impact the level of activity/participation the most, according to the ICF (WHO, 2001). Finally, the symptomatological-functional criterion

proposes that the most evident symptoms and, therefore, the ones with the greatest clinical impact are those that affect the patient's activities of daily life the most. Therefore, this criterion does not differentiate between the functional impact or severity of the symptoms to prioritize the contents since both criteria are considered to overlap.

**Determining the therapeutic strategy**

Choosing a therapeutic strategy depends on the purpose of the intervention considered relevant by the therapist, based on the level of severity and the nature of the communication/linguistic disorder. Torralva (2019) mentions that the intervention strategy will be determined by the patient's level of awareness about their communicative-linguistic disorder. Thus, it is recommended to use external aids when there is little awareness, as the ability to actively collaborate is reduced. On the other hand, participation strategies are chosen when the patient has a better awareness of their state.

Three types of strategies are distinguished: rehabilitation or restorative, compensatory, and holistic.

The rehabilitation or restorative strategy seeks to recover the lost function by using exercises that directly stimulate it. The compensatory strategy refers to the use of external aids that allow the person to carry out the lost function (Fasotti, 2017). This includes AAC (Fried-Oken et al., 2012), the use of technology (GPS, mobile applications, etc.), and environmental adjustments, among others (Bourgeois et al., 2010). The holistic strategy (Torralva, 2019), which is mainly used to work with CCD, uses rehabilitation and compensatory procedures depending on the stage of intervention in which the patient is. This strategy considers emotional, cognitive, and social aspects, which should be tackled by the speech therapist and other professionals in a multidisciplinary manner.

**Determining the intervention method**

Three methods can be found: Direct, indirect, and mixed. In the direct method, the intervention is targeted exclusively at the patient, either in individual or group therapy, through activities that address the selected cognitive, communicative, and/or linguistic content. Hopper et al. (2015) propose, as a direct approach for people with MND, to work on residual communication skills that allow them to maintain functionality, teaching them to use external communication and memory aids, and offering strategies that enable them to retrieve personal information. Direct work on short-term and working memory has been considered for people with aphasia (Murray, 2012) based on

the available evidence that shows their relevance in linguistic processes typical of this condition. In the case of interventions aimed at CCD secondary to TBI, patients are also taught strategies that allow them to self-regulate their participation in communicative interactions (Meulenbroek et al., 2019).

The indirect method suggests physical, social, and attitude modifications by working with the family, caregivers, and communication partners (Hopper, 2001; Hopper et al., 2015; Murray, 2012). This method emphasizes the teaching and practice of strategies to optimize communication between caregivers and/or partners and the person with a communication and/or linguistic disorder (Maneta et al., 2001). Physical modifications to the environment and developing routines and activities are especially relevant for people with MND (Hopper, 2001). On the other hand, the use of technological devices is described when working with people with aphasia. These devices would make it possible to record phrases that the patient can use when they need to, thus allowing them to form longer utterances (Linebarger et al., 2007).

The mixed method encompasses direct and indirect interventions, which are not mutually exclusive. This could be adequate depending on the criteria of the professional and the needs of the patient. This method reinforces the skills acquired in therapy for everyday activities within the different contexts of the person, and it is the method most used by clinicians.

## **Stage II: Therapy Structuring**

### *Analysis of contextual factors*

The ICF model considers that the context surrounding the person's health condition provides relevant information, and divides contextual factors into environmental and personal (WHO, 2001). Additionally, Byrne & Orange (2005) mention that the caregivers' lack of knowledge regarding how to communicate with a person with dementia constitutes a barrier, in which case it would be essential to educate family members and caregivers on communication techniques, using an indirect approach.

### *Environmental factors*

These represent the physical, social, and attitudinal environments in which people live their lives. Some examples of this are the individual's immediate environment, the physical and material context that a person faces, and their direct contact with other people such as family, friends, and colleagues. In addition, macrosocial conditions can act as facilitators or barriers to the health condition (WHO, 2001). These are community services,

social organizations, transport, social networks, and the legal system (Blake & McLeod, 2018).

Patients with neurological disorders experience communication difficulties that hinder their relationship with the environment, limiting their interactions and social roles (Lasker et al., 2007). This could decrease their participation in social activities, and result in isolation and loneliness (Hjelmlink et al., 2007).

Finally, it is necessary to take into account the family, social, and personal environment of the person, as well as their interaction with other professionals, starting from their referral (Pacheco-Saavedra & Bello-Lepe, 2022). This makes it possible to address barriers when these are outside the competencies of the speech therapist. Furthermore, the efforts of speech therapists should not only focus on removing barriers but also on increasing facilitators, since removing barriers does not necessarily create an enabling environment (Threats, 2007).

### *Personal Factors*

These are individual characteristics that are not part of the health condition, which is why they are not included in the ICF model (Blake & McLeod, 2018; OMS, 2001). Some of these characteristics are gender, age, education, race, and resilience.

### *Analysis of the Participation/Activity Level*

#### *Formulating the General Goal*

The ultimate goal of every intervention plan is that the person can participate in different contexts of their life. Therefore, it is essential that the wording used to formulate the general objective clearly conveys this aspect, to not lose sight of the aim of rehabilitation. This would be for the person to reintegrate into their community, similar to how it was before their disability, or with the necessary adaptations (WHO, 2001).

General goals in Speech-Language Therapy do not need to include measurable achievement criteria but rather should show what is expected after the patient is discharged (Landis et al., 2004). This distinguishes this type of objective from others lower in the hierarchy, which need to specify how performance will be quantified.

On the other hand, the general goal should take into account the severity of the deficit. In this regard, González & Donoso (2000) state that, in severe cases, therapy should be aimed at the family—and sometimes the social—environment. In milder cases, it should also consider the context of work and/or school. The inclusion of environmental conditions is not exclusively attached to the

severity of the neurocognitive condition but also depends on individual psychosocial factors.

In addition to the context, the goal must always be written in a person-first manner, that is, it should state who it is aimed at. The literature shows that on certain occasions, therapists even incorporate the name of the patient in the objective (Quinn & Swain, 2018). It is suggested to always customize the plan by incorporating the notion of the patient (Crisosto & Flores, 2022).

A general goal oriented toward psychosocial adjustment should be considered (González & Donoso, 2000), as communication disorders in adults significantly disturb the person's role in different contexts. This results in diminished activity and participation, both from the community to the individual and vice versa. Therefore, the person needs to adjust to their new communicative identity, but the community should also adapt to the individual's new way of communicating.

### ***Analysis of the Function/Structure Levels***

After identifying the body functions and structures that are affected therapy objectives are defined, allowing quantification strategies for the intervention to be determined (Chaná & Alburquerque, 2006). In this proposal, we define two levels of therapy goals besides the general objective: specific and operational.

These objectives should include the patient's perspective in order to satisfy their communication needs and make them compatible with what the rehabilitation team seeks (Chaná & Alburquerque, 2006). Including the patients and their families in the creation of these objectives is essential (Siegert & Levack, 2014).

### ***Formulating specific goals***

Specific objectives hierarchically display each symptom and/or sign that was found to be disturbed during the assessment (Aspé, 2015).

Each goal should aim at achieving functional communication (García & Canga, 2019). This is not necessarily made explicit in writing but rather should be part of the reflection that leads to the objective. For example, in the specific goal "the patient will improve their expressive language in the context of functional communication" it is not necessary to clarify the "communication context". This is because the said context was established in the general goal and is inherent to the Speech-Language Therapy intervention, hence, does not offer new information.

It is suggested to use the contents in Table 2 to write specific objectives.

### ***Formulating operational goals***

Operational goals address the patient's performance in the different tasks that are carried out during rehabilitation, according to the components of each specific goal (Crisosto, 2021). The operationalization of variables allows abstract concepts to reach a concrete and observable action that can be monitored and evaluated (Reguant & Martínez-Olmo, 2014). Thus, therapy contents, which are essentially abstract, can be observed in therapy through operational goals.

The SMART methodology (Doran, 1981; Wade, 2009) has been widely used to write operational goals. This methodology did not originate from clinical settings, but rather organizational ones. It is considered a standard for setting goals in rehabilitation sciences and proposes that these should be specific, measurable, achievable, relevant, and time-based (Siegert & Levack, 2014). However, this approach does not consider adjustments according to the patient or how the activity is linked to their relationships (Worrall et al., 2011).

Writing rehabilitation goals should be aimed at improving the person's performance in activity and participation. The formulation of these objectives must consider the cognitive mechanisms of learning and the skills that have been developed or recovered in therapy (Siegert & Levack, 2014). Accordingly, they frequently focus on the structure/function level as they seek for the patient to reach the communication needs that will allow them to interact with their immediate environment. However, as the aforementioned learning mechanisms are strengthened, they will allow and force the clinician to move towards the level of activity/participation, where the patient can practice the resources they have acquired (García & Canga, 2019).

The SMARTER methodology complements the SMART paradigm in people with aphasia, working collaboratively with them to generate a sense of mutual respect that is accessible, receptive, and flexible, and allows a clearer understanding of the therapeutic process (Worrall et al., 2011). Hersh, Worrall, et al. (2012) define each part of the SMARTER acronym, explaining what they focus on.

- a) 'Shared' implies understanding the perspective of other participants in order to reach agreements with the patient when establishing objectives. This contrasts with SMART, which restricts the exchange of information between members of the work team, thus developing non-objective goals.

- b) The term ‘Monitored’ replaces the concept ‘Measureable’ from the SMART framework. It offers a measurement that is not necessarily quantitative, including qualitative aspects to enrich the understanding of therapeutic progress. Although the objectives should be based on evidence, they should not be rigid or driven solely by the quantitative results of an evaluation. Additionally, they should involve the requirements and desires of the patient.
- c) The term ‘Accessible’ refers to how easy it is to access information. Information should be accessible to people with communication difficulties, even if this adaptation implies additional time in the therapy planning process. Therefore, it is necessary to develop material that makes it possible to adapt the objectives to language accessible to the patients.
- d) ‘Relevant’ refers to a therapeutic plan whose goals are functional and applied to real life. For therapy to be relevant to patients, it is necessary to work with them in the process of establishing objectives that respond to their activity and participation needs (WHO, 2001).
- e) ‘Transparent’ refers to the relationship between the affected body structure, the functional approach of the sessions, and the goals at the level of activity and participation. The links between the general, specific, and operational goals should be made explicit.
- f) The term ‘Evolving’ highlights the need to regularly review the objectives and allow the patients to request changes to the initial therapeutic guidelines.  
Hersh (2003) mentions that professionals tend to discharge patients who do not show positive changes during therapy. This would not occur if goals were reviewed and reconsidered according to how the condition progresses. Therapists must be aware of how individual goals may evolve, and thus make them more efficient.
- g) The concept ‘Relationship-Centred’ focuses on the relationships of the patient/therapist/support network triad. It emphasizes that all the actors involved in rehabilitation contribute to an adequate therapeutic alliance. This alliance prioritizes goal setting and formal assessment since communication is woven into social connections.

#### *Other conceptualizations for establishing rehabilitation goals*

One of the criticisms of the SMART and SMARTER models is that they are useful for setting simple and concrete goals, but they distance themselves from complex rehabilitation contexts (McPherson et al., 2015). Consequently, other methods are required that adapt to these complexities.

In this section, we will mention a method, although an in-depth analysis will not be carried out due to the lack of references in the specialized literature. However, it is important to mention it due to its rather humanist approach to rehabilitation. This method is called MEANING, and is based on the theory of self-regulation and the theory of intentional action, which address how human beings set goals (McPherson et al., 2015).

A series of concepts derived from the acronym in this proposal:

- a) ‘Meaning’ refers to general and significant goals. The most relevant aspect should be identified as a context to propose each activity.
- b) ‘Engage’ refers to the commitment to establish trust and adequate communication, which are the bases for discussing what is relevant.
- c) ‘Anchor’ refers to the fact that the specific and operational objectives must include what is most significant for the patient, which would add meaning to therapy and allow the person to use the skills they acquired in therapy in their daily life.
- d) ‘Negotiate’ refers to negotiating stages of progress that allow for achieving goals.
- e) ‘Intention - Implementation Gap’ refers to the distance between the intention to improve and the implementation of an objective.
- f) ‘New Goal’ refers to the fact that what is relevant is not pursuing each objective but rather achieving skills to engage in different situations.

#### **Generalization/Transference Level**

The therapy plan is subjected to a series of reevaluations during the intervention process that determine whether the specific and operational goals have been achieved. One way to measure these achievements is to observe whether the patient can use the strategies that have been learned in therapy, in everyday contexts (Raimondi, 2019). Accordingly, it is important to consider the use of pragmatic and communicative intervention models. When generalization occurs it usually means it is the final stage of the intervention, therefore, discharge can be proposed.

Despite the above, it is not possible to generalize all skills, so it is essential to know which can be generalized. First, the consecutive achievement of operational objectives does not necessarily impact the subject's functionality immediately. It is possible that certain skills decline or that performance is affected by psychosocial factors. Furthermore, progress might not be evident until several skills are strengthened.

Furthermore, not all the achievements of the person during the intervention process may be evident. This is because certain skills, activities, or tasks necessarily require interaction with society to reach their maximum potential (Tobar Fredes & Toledo Rodríguez, 2021). The discharge process is complex and requires an in-depth analysis of all those involved in the intervention, a discussion that exceeds the purpose of this work.

Discharge must be consensual and expected (Hersh, 2003) and is determined by the achievement of the general goal(s) proposed for the recovery or compensation of the communication disorder (ASHA, 2004).

## **DISCUSSION**

This work offers a review of the theoretical foundations that support speech-language therapy intervention in adults with brain injury. Through this review, we aim for therapists to be able to structure and reflect on the processes that guide their practice.

Some frameworks attempt to define the actions that lead to evidence-based therapy planning. Pacheco-Saavedra & Bello-Lepe (2022) offer a proposal based on the components of the ICF model, which is centered around short-, medium-, and long-term goals, using the SMARTER principles as a reference. Although the authors state these goals should be based on the results of the Speech-Language Therapy assessment and the needs that are detected by the patient-family-therapist triad, this approach is not exempt from difficulties. This is because the evolution of the therapy plan depends on the patient's progress, which means that medium or long-term goals might lose their relevance with time. Even though goals are also modified according to the person's performance, the general goal seeks to establish functional communication, independent of how they progress.

On the other hand, the goal-based model does not specify all the stages involved in a therapeutic process, nor its goals and aims. Establishing a prioritization criterion, strategies, and intervention method is crucial since it will make it possible to set goals that are centered around the person and their context.

The literature also highlights the Rehabilitation Treatment Specification System (Hart et al., 2019), which seeks to explain how and why an intervention method is successful, in any discipline. Furthermore, it makes it possible to organize treatment around three elements: A treatment target, one or more therapy contents (ingredients), and one mechanism of action. This model has been applied to determine the therapeutic ingredients in

people with aphasia (Basilakos et al., 2022; Cherney et al., 2022) and CCD due to TBI (Meulenbroek et al., 2019).

A significant advantage of this model is that it specifies which therapeutic contents will be addressed to reach an objective, which has the potential of standardizing the ingredients (van Stan et al., 2021). This would enhance the understanding and replicability of treatment. However, just like the goal-based model, it does not emphasize the need to determine an approach, strategy, or model before selecting the contents.

The methodological strategy used in this research does not follow a systematic approach to selecting the material. The emphasis is put on the conceptual contribution of the literature and not on showing the search methods, which is consistent with the notion of critical review (Grant & Booth, 2009). It is understood that conceptual innovation processes are developed through strategies that seek to compile and review existing information, which results in each version being added to previous ones.

One limitation of this proposal is the impossibility of covering all the different intervention scenarios that exist; this should be taken into consideration when analyzing it. Nevertheless, the proposed model provides a first approach to a theoretical construct that serves as a foundation to generate new reflections.

## **CONCLUSIONS**

The therapy planning process is complex and influenced by various factors, which is why it is not possible to fully address it in one document. Consequently, this study does not aim to position itself as a unique model for therapy planning. On the contrary, it should be understood as an ever-evolving framework that highlights new theoretical perspectives existing in the literature but that, due to lack of knowledge, are not incorporated into clinical practice.

Speech-Language Therapy interventions are carried out within a context determined by the characteristics of the patient, the therapist or the clinical center, the availability of different actors, material resources, cultural environment, and/or environmental conditions. Therefore, it is difficult to account for all the particular realities to which therapy may have to adapt.

Regarding specific and operational objectives, we believe there is sufficient evidence to question the use of the SMART methodology. This means other methodological frameworks can be promoted, including the SMARTER method, whose philosophy considers all the parties involved in the therapeutic

process, or MEANING, as long as it is accompanied by a systematic collection of evidence to support its use.

We emphasize the importance of personalized therapy plans, for which the ICF provides a precise framework. Despite the structural deficiencies and functional difficulties that the patient may have, Speech-Language Therapy should seek to address the limitations and restrictions in their activity and participation, respectively, understanding how these are influenced by the patient's personal and environmental aspects, which make up a significant part of the personalized nature of the intervention.

This research makes it possible to confirm the lack of evidence available on criteria and factors (both regarding objectives and functionality) that determine the discharge process of a patient with neurocognitive disturbances. This represents a significant challenge for future research since it enables adequate articulation between therapy planning and discharge from Speech-Language Therapy.

This study should be considered a starting point for the incorporation of new elements into therapy planning rather than a final product.

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## REFERENCES

- Akabogu, J., Nnamani, A., Otu, M. S., Ukoha, E., Uloh-Bethels, A. C., Obiezu, M. N., Ike, C. V., Iyekekpolor, O. M., Omile, J. C., & Dike, A. E. (2019). Efficacy of cognitive behavior language therapy for aphasia following stroke: Implications for language education research. *Medicine*, *98*(18), e15305. <https://doi.org/10.1097/MD.00000000000015305>
- American Psychiatric Association [APA]. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* (5<sup>th</sup> ed.). American Psychiatric Association. <https://dsm.psychiatryonline.org/doi/book/10.1176/appi.books.9780890425596>
- American Speech-Language-Hearing Association [ASHA]. (2007). *Scope of Practice in Speech-Language Pathology* (SP2007-00283; pp. SP2007-00283). American Speech-Language-Hearing Association. <https://doi.org/10.1044/policy.SP2007-00283>
- American Speech-Language-Hearing Association [ASHA]. (2004). *Admission/Discharge Criteria in Speech-Language Pathology*. American Speech-Language-Hearing Association; American Speech-Language-Hearing Association. <https://www.asha.org/policy/gl2004-00046>
- Ashford, S., & Turner-Stokes, L. (2015). Goal Attainment Scaling in Adult Neurorehabilitation. En R. J. Siegert & W. M. M. Levack (Eds.), *Rehabilitation Goal Setting: Theory, Practice and Evidence* (pp. 123–142). Taylor & Francis Group. <https://doi.org/10.1201/b17166>
- Aspeé, J. (2015). Metodología de planificación operacional. *Revista Electrónica de Trabajo Social Universidad de Concepción*, *12*, 82–102. <https://www.revistatsudec.cl/wp-content/uploads/2015/12/Vol-12-2015-v2.pdf>
- Baddeley, A. (2018). Aprendizaje. En A. Baddeley, M. Eysenck, & M. Anderson (Eds.), *Memoria* (pp. 135–167). Alianza Editorial. <https://www.google.cl/books/edition/Memoria/9qCbDwAAQBAJ?hl=es>
- Bahar-Fuchs, A., Martyr, A., Goh, A. M., Sabates, J., & Clare, L. (2018). Cognitive training for people with mild to moderate dementia. *Cochrane Database of Systematic Reviews*, *7*. <https://doi.org/10.1002/14651858.CD013069>
- Basilakos, A., Hula, W. D., Johnson, L. P., Kiran, S., Walker, G. M., & Fridriksson, J. (2022). Defining the Neurobiological Mechanisms of Action in Aphasia Therapies: Applying the Rehabilitation Treatment Specification System Framework to Research and Practice in Aphasia. *Archives of Physical Medicine and Rehabilitation*, *103*(3), 581–589. <https://doi.org/10.1016/j.apmr.2021.10.017>
- Basso, A., Forbes, M., & Boller, F. (2013). Chapter 27—Rehabilitation of aphasia. En M. P. Barnes & D. C. Good (Eds.), *Handbook of Clinical Neurology* (Vol. 110, pp. 325–334). Elsevier. <https://doi.org/10.1016/B978-0-444-52901-5.00027-7>
- Beeson, P. M., Rising, K., Kim, E. S., & Rapsack, S. Z. (2010). A Treatment Sequence for Phonological Alexia/Agraphia. *Journal of Speech, Language, and Hearing Research*, *53*(2), 450–468. [https://doi.org/10.1044/1092-4388\(2009\)08-0229](https://doi.org/10.1044/1092-4388(2009)08-0229)
- Behn, N., Francis, J., Togher, L., Hatch, E., Moss, B., & Hilari, K. (2021). Description and Effectiveness of Communication Partner Training in TBI: A Systematic Review. *The Journal of Head Trauma Rehabilitation*, *36*(1), 56. <https://doi.org/10.1097/HTR.0000000000000580>
- Benoot, C., Hannes, K., & Bilsen, J. (2016). The use of purposeful sampling in a qualitative evidence synthesis: A worked example on sexual adjustment to a cancer trajectory. *BMC Medical Research Methodology*, *16*(1), 21. <https://doi.org/10.1186/s12874-016-0114-6>
- Blake, H. L., & McLeod, S. (2018). The International Classification of Functioning, Disability and Health: Considering Individuals From a Perspective of Health and Wellness. *Perspectives of the ASHA Special Interest Groups*, *3*(17), 69–77. <https://doi.org/10.1044/persp3.SIG17.69>
- Bourgeois, M., Dijkstra, K., Burgio, L., & Allen-Burge, R. (2009). Memory aids as an augmentative and alternative communication strategy for nursing home residents with dementia. *Augmentative and Alternative Communication*, *17*(3), 196–210. <https://doi.org/10.1080/aac.17.3.196.210>
- Bourgeois, M., Fried-Oken, M., & Rowland, C. (2010). AAC Strategies and Tools for Persons With Dementia. *The ASHA Leader*, *15*(3), 8–11. <https://doi.org/10.1044/leader.FTR1.15032010.8>
- Braunling-McMorrow, D., Lloyd, K., & Fralish, K. (1986). Teaching Social Skills to Head Injured Adults—ProQuest. *Journal of Rehabilitation*, *52*(1), 39–44. <https://www.proquest.com/docview/1310696568?pq-origsite=gscholar&fromopenview=true>
- Brookshire, C. E., Conway, T., Pompon, R. H., Oelke, M., & Kendall, D. L. (2014). Effects of Intensive Phonomotor Treatment on Reading in Eight

- Individuals With Aphasia and Phonological Alexia. *American Journal of Speech-Language Pathology*, 23(2), S300–S311. [https://doi.org/10.1044/2014\\_AJSLP-13-0083](https://doi.org/10.1044/2014_AJSLP-13-0083)
- Byng, S., & Duchan, J. F. (2005). Social model philosophies and principles: Their applications to therapies for aphasia. *Aphasiology*, 19(10–11), 906–922. <https://doi.org/10.1080/02687030544000128>
- Byrne, K., & Orange, J. B. (2005). Conceptualizing communication enhancement in dementia for family caregivers using the WHO-ICF framework. *Advances in Speech Language Pathology*, 7(4), 187–202. <https://doi.org/10.1080/14417040500337062>
- Caramazza, A., & Coltheart, M. (2006). Cognitive Neuropsychology twenty years on. *Cognitive Neuropsychology*, 23(1), 3–12. <https://doi.org/10.1080/02643290500443250>
- Castillo-Allendes, A., & Fouilloux, C. (2021). Objetivos de intervención en voz: Una propuesta para su análisis y redacción. *Revista de Investigación e Innovación en Ciencias de la Salud*, 3(1), Article 1. <https://doi.org/10.46634/riics.56>
- Chaná, P., & Alburquerque, D. (2006). The International Classification of Functioning, Disability, and Health and the Neurological Practice. *Revista chilena de neuro-psiquiatría*, 44(2), 89–97. <https://doi.org/10.4067/S0717-92272006000200002>
- Cherney, L. R., DeDe, 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>
- Cognitive Training Data. (2014). Open letter response to the Stanford Center on longevity [Blog]. *Cognitive Training Data Response Letter*. <https://www.cognitivetrainingdata.org/the-controversy-does-brain-training-work/response-letter/>
- Crisosto, J. (2021). Theoretical proposal for therapy planning in vocal practice: A ICF model application. *Revista Chilena de Fonoaudiología*, 20, 1–18. <https://doi.org/10.5354/0719-4692.2021.58315>
- Crisosto, J., & Flores, A. (2022). Estructura de los objetivos terapéuticos en la intervención fonoaudiológica de usuarios con necesidades vocales: Una revisión sistemática exploratoria. *Revista Chilena de Fonoaudiología*, 21(1), Article 1. <https://doi.org/10.5354/0719-4692.2022.64698>
- Davis, G. A. (2005). PACE revisited. *Aphasiology*, 19(1), 21–38. <https://doi.org/10.1080/02687030444000598>
- Diehm, E. (2017). Writing Measurable and Academically Relevant IEP Goals With 80% Accuracy Over Three Consecutive Trials. *Perspectives of the ASHA Special Interest Groups*, 2(16), 34–44. <https://doi.org/10.1044/persp2.SIG16.34>
- Dietz, A., Wallace, S. E., & Weissling, K. (2020). Revisiting the Role of Augmentative and Alternative Communication in Aphasia Rehabilitation. *American Journal of Speech-Language Pathology*, 29(2), 909–913. [https://doi.org/10.1044/2019\\_AJSLP-19-00041](https://doi.org/10.1044/2019_AJSLP-19-00041)
- Doran, G. (1981). There's a SMART way to write management's goals and objectives. *Management Review*, 70(11), 35–36.
- Efstratiadou, E. A., Papanthasiou, I., Holland, R., Archonti, A., & Hilari, K. (2018). A Systematic Review of Semantic Feature Analysis Therapy Studies for Aphasia. *Journal of Speech, Language, and Hearing Research*, 61(5), 1261–1278. [https://doi.org/10.1044/2018\\_JSLHR-L-16-0330](https://doi.org/10.1044/2018_JSLHR-L-16-0330)
- Fasotti, L. (2017). Mechanisms of recovery after acquired brain injury. En B. Wilson, J. Winegardner, C. van Heugten, & T. Ownsworth (Eds.), *Neuropsychological Rehabilitation: The International Handbook* (pp. 25–35). Routledge & CRC Press. <https://www.routledge.com/Neuropsychological-Rehabilitation-The-International-Handbook/Wilson-Winegardner-Heugten-Ownsworth/book/9781138643116>
- Friedman, R. B., & Lott, S. N. (2002). Successful blending in a phonological reading treatment for deep alexia. *Aphasiology*, 16(3), 355–372. <https://doi.org/10.1080/02687040143000627>
- Fried-Oken, M., Rowland, C., Daniels, D., Dixon, M., Fuller, B., Mills, C., Noethe, G., Small, J., Still, K., & Oken, B. (2012). AAC to Support Conversation in Persons with Moderate Alzheimer's Disease. *Augmentative and Alternative Communication*, 28(4), 219–231. <https://doi.org/10.3109/07434618.2012.732610>
- Gabbatore, I., Sacco, K., Angeleri, R., Zettin, M., Bara, B. G., & Bosco, F. M. (2015). Cognitive Pragmatic Treatment: A Rehabilitative Program for Traumatic Brain Injury Individuals. *The Journal of Head Trauma Rehabilitation*, 30(5), E14. <https://doi.org/10.1097/HTR.0000000000000087>
- Galletta, E. E., & Barrett, A. M. (2014). Impairment and Functional Interventions for Aphasia: Having it All. *Current Physical Medicine and Rehabilitation Reports*, 2(2), 114–120. <https://doi.org/10.1007/s40141-014-0050-5>
- García, V., & Canga, M. (2019). Rehabilitación del lenguaje. En T. Torralva, C. Raimondi, & M. Roca (Eds.), *Rehabilitación cognitiva. De la teoría a la práctica profesional* (pp. 183–198). Editorial El Ateneo. <https://medilibro.com/product/rehabilitacion-cognitiva-de-la-teoria-a-la-practica-profesional/>
- Gavelin, H. M., Lampit, A., Hallock, H., Sabatés, J., & Bahar-Fuchs, A. (2020). Cognition-Oriented Treatments for Older Adults: A Systematic Overview of Systematic Reviews. *Neuropsychology Review*, 30(2), 167–193. <https://doi.org/10.1007/s11065-020-09434-8>
- Giles, G. M., Fussey, I., & Burgess, P. (1988). The behavioural treatment of verbal interaction skills following severe head injury: A single case study. *Brain Injury*, 2(1), 75–79. <https://doi.org/10.3109/02699058809150933>
- González, R., & Donoso, A. (2000). Programa de rehabilitación fonoaudiológica para pacientes afásicos. *Revista Chilena de Fonoaudiología*, 2(3), 35–48. [https://www.researchgate.net/publication/340438750\\_PROGRAMA\\_DE\\_REHABILITACION\\_FONOAUDIOLÓGICA\\_PARA\\_PACIENTES\\_AFÁSICOS](https://www.researchgate.net/publication/340438750_PROGRAMA_DE_REHABILITACION_FONOAUDIOLÓGICA_PARA_PACIENTES_AFÁSICOS)
- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2), 91–108. <https://doi.org/10.1111/j.1471-1842.2009.00848.x>
- Harskamp, F. V., & Visch-brink, E. G. (1991). Goal recognition in aphasia therapy. *Aphasiology*, 5(6), 529–539. <https://doi.org/10.1080/02687039108248558>
- Hart, T., Dijkers, M. P., Whyte, J., Turkstra, L. S., Zanca, J. M., Packel, A., Van Stan, J. H., Ferraro, M., & Chen, C. (2019). A Theory-Driven System for the Specification of Rehabilitation Treatments. *Archives of Physical Medicine and Rehabilitation*, 100(1), 172–180. <https://doi.org/10.1016/j.apmr.2018.09.109>

- Hendriks, P., & Koster, C. (2010). Production/comprehension asymmetries in language acquisition. *Lingua*, *120*(8), 1887–1897. <https://doi.org/10.1016/j.lingua.2010.02.002>
- Hersh, D. (2003). “Weaning” clients from aphasia therapy: Speech pathologists’ strategies for discharge. *Aphasiology*, *17*(11), 1007–1029. <https://doi.org/10.1080/02687030344000364>
- Hersh, D. (2009). How do people with aphasia view their discharge from therapy? *Aphasiology*, *23*(3), 331–350. <https://doi.org/10.1080/02687030701764220>
- Hersh, D., Sherratt, S., Howe, T., Worrall, L., Davidson, B., & Ferguson, A. (2012). An analysis of the “goal” in aphasia rehabilitation. *Aphasiology*, *26*(8), 971–984. <https://doi.org/10.1080/02687038.2012.684339>
- Hersh, D., Worrall, L., Howe, T., Sherratt, S., & Davidson, B. (2012). SMARTER goal setting in aphasia rehabilitation. *Aphasiology*, *26*(2), 220–233. <https://doi.org/10.1080/02687038.2011.640392>
- Hill, N. T. M., Mowszowski, L., Naismith, S. L., Chadwick, V. L., Valenzuela, M., & Lampit, A. (2017). Computerized Cognitive Training in Older Adults With Mild Cognitive Impairment or Dementia: A Systematic Review and Meta-Analysis. *American Journal of Psychiatry*, *174*(4), 329–340. <https://doi.org/10.1176/appi.ajp.2016.16030360>
- Hjelmblink, F., Bernsten, C. B., Uvhagen, H., Kunkel, S., & Holmström, I. (2007). Understanding the meaning of rehabilitation to an aphasic patient through phenomenological analysis – a case study. *International Journal of Qualitative Studies on Health and Well-being*, *2*(2), 93–100. <https://doi.org/10.1080/17482620701296358>
- Hopper, T. (2001). Indirect interventions to facilitate communication in Alzheimer’s disease. *Seminars in Speech and Language*, *22*(4), 305–315. <https://doi.org/10.1055/s-2001-17428>
- Hopper, T., Douglas, N., & Khayum, B. (2015). Direct and Indirect Interventions for Cognitive-Communication Disorders of Dementia. *Perspectives on Neurophysiology and Neurogenic Speech and Language Disorders*, *25*(4), 142–157. <https://doi.org/10.1044/nnsld25.4.142>
- Huang, Y., Yaple, Z. A., & Yu, R. (2020). Goal-oriented and habitual decisions: Neural signatures of model-based and model-free learning. *NeuroImage*, *215*, 116834. <https://doi.org/10.1016/j.neuroimage.2020.116834>
- Joyal, M., Bonneau, A., & Fecteau, S. (2016). Speech and language therapies to improve pragmatics and discourse skills in patients with schizophrenia. *Psychiatry Research*, *240*, 88–95. <https://doi.org/10.1016/j.psychres.2016.04.010>
- Landis, K., Vander, J., & Jongsma, A. (2004). *The Speech-Language Pathology Treatment Planner* (1<sup>st</sup> ed.). John Wiley & Sons.
- Lanzi, A. M., Ellison, J. M., & Cohen, M. L. (2021). The “Counseling+” Roles of the Speech-Language Pathologist Serving Older Adults With Mild Cognitive Impairment and Dementia From Alzheimer’s Disease. *Perspectives of the ASHA Special Interest Groups*, *6*(5), 987–1002. [https://doi.org/10.1044/2021\\_PERSP-20-00295](https://doi.org/10.1044/2021_PERSP-20-00295)
- Lasker, J., Garrett, K., & Fox, L. (2007). Severe aphasia. En D. Beukelman, K. Garrett, & K. Yorkston (Eds.), *Augmentative communication strategies for adults with acute or chronic medical conditions* (pp. 163–206). Paul H. Brookes. <https://products.brookespublishing.com/Augmentative-Communication-Strategies-for-Adults-with-Acute-or-Chronic-Medical-Conditions-P73.aspx>
- Lehman, M., Frymark, T., & Venedictov, R. (2013). An Evidence-Based Systematic Review on Communication Treatments for Individuals With Right Hemisphere Brain Damage. *American Journal of Speech-Language Pathology*, *22*(1), 146–160. [https://doi.org/10.1044/1058-0360\(2012/12-0021\)](https://doi.org/10.1044/1058-0360(2012/12-0021))
- Leopold, A., Krueger, F., dal Monte, O., Pardini, M., Pulaski, S. J., Solomon, J., & Grafman, J. (2012). Damage to the left ventromedial prefrontal cortex impacts affective theory of mind. *Social Cognitive and Affective Neuroscience*, *7*(8), 871–880. <https://doi.org/10.1093/scan/nsr071>
- Linebarger, M., McCall, D., Virata, T., & Berndt, R. S. (2007). Widening the temporal window: Processing support in the treatment of aphasic language production. *Brain and Language*, *100*(1), 53–68. <https://doi.org/10.1016/j.bandl.2006.09.001>
- Maneta, A., Marshall, J., & Lindsay, J. (2001). Direct and indirect therapy for word sound deafness. *International journal of language & communication disorders / Royal College of Speech & Language Therapists*, *36*, 91–106. <https://doi.org/10.1080/13682820150217581>
- Manning, L. (1990). Neuropsicología cognitiva: Consideraciones metodológicas. *Studies in Psychology*, *11*(43–44), 151–168. <https://doi.org/10.1080/02109395.1990.10821148>
- Marshall, S., Harnett, A., Welch-West, P., Ferri, C., Janzen, S., Togher, L., & Teasell, R. (2021). Cognitive Communication Post Acquired Brain Injury. En R. Teasell, N. Cullen, S. Marshall, M. Bayley, & A. Harnett (Eds.), *Evidence-Based Review of Moderate to Severe Acquired Brain Injury* (14<sup>a</sup> ed., pp. 1–60). [https://erabi.ca/wp-content/uploads/2018/12/Module-1\\_V12\\_Intro.pdf](https://erabi.ca/wp-content/uploads/2018/12/Module-1_V12_Intro.pdf)
- McPherson, K., Kayes, N., & Kersten, P. (2015). MEANING as a Smarter Approach to Goals in Rehabilitation. En R. J. Siegert & W. M. M. Levack (Eds.), *Rehabilitation Goal Setting: Theory, Practice and Evidence*. Taylor & Francis Group. <https://www.routledge.com/Rehabilitation-Goal-Setting-Theory-Practice-and-Evidence/Siegert-Levack/p/book/9781138075184>
- Meulenbroek, P., Ness, B., Lemoncello, R., Byom, L., MacDonald, S., O’Neil-Pirozzi, T. M., & Moore Sohlberg, M. (2019). Social communication following traumatic brain injury part 2: Identifying effective treatment ingredients. *International Journal of Speech-Language Pathology*, *21*(2), 128–142. <https://doi.org/10.1080/17549507.2019.1583281>
- Murray, L. L. (2012). Direct and indirect treatment approaches for addressing short-term or working memory deficits in aphasia. *Aphasiology*, *26*(3–4), 317–337. <https://doi.org/10.1080/02687038.2011.589894>
- O’ Philbin, L., Woods, B., Farrell, E. M., Spector, A. E., & Orrell, M. (2018). Reminiscence therapy for dementia: An abridged Cochrane systematic review of the evidence from randomized controlled trials. *Expert Review of Neurotherapeutics*, *18*(9), 715–727. <https://doi.org/10.1080/14737175.2018.1509709>
- Ultra-Cucarella, J., Pérez-Elvira, R., Espert, R., & Sohn McCormick, A. (2016). Are cognitive interventions effective in Alzheimer’s disease? A controlled meta-analysis of the effects of bias. *Neuropsychology*, *30*(5), 631–652. <https://doi.org/10.1037/neu0000283>
- Organización Mundial de la Salud [OMS] (Ed.). (2001). *Clasificación Internacional del Funcionamiento, de la Discapacidad y de la Salud*. Grafo. [https://aspace.org/assets/uploads/publicaciones/e74e4-cif\\_2001.pdf](https://aspace.org/assets/uploads/publicaciones/e74e4-cif_2001.pdf)

- Pacheco-Saavedra, J., & Bello-Lepe, S. (2022). Estrategias de planificación a lo largo del curso de la vida. En A. Herrera Lillo & M. Sandoval Ramírez (Eds.), *Identidad profesional y fonoaudiología. Reflexiones y fundamentos prácticos* (pp. 142–164). Ediciones UVM.
- Patterson, K., & Shewell, C. (1987). Speak and spell. Dissociations and word-class effect. En M. Coltheart, G. Sartori, & R. Job (Eds.), *The Cognitive Neuropsychology of Language* (pp. 273–294). Psychology Press. <https://www.routledge.com/The-Cognitive-Neuropsychology-of-Language/Coltheart-Sartori-Job/p/book/9781848723108>
- Patton, M. Q. (2002). *Qualitative Research & Evaluation Methods*. Sage Publications. <https://us.sagepub.com/en-us/nam/qualitative-research-evaluation-methods/book232962>
- Patton, M. Q. (2015). *Qualitative Research & Evaluation Methods: Integrating Theory and Practice | Online Resources* (4<sup>a</sup> ed.). Sage Publications. <https://study.sagepub.com/patton4e>
- Purdy, M., Coppens, P., Madden, E. B., Mozeiko, J., Patterson, J., Wallace, S. E., & Freed, D. (2018). Reading comprehension treatment in aphasia: A systematic review. *Aphasiology*, 33(6), 629–651. <https://doi.org/10.1080/02687038.2018.1482405>
- Quinn, S., & Swain, N. (2018). Efficacy of intensive voice feminisation therapy in a transgender young offender. *Journal of Communication Disorders*, 72, 1–15. <https://doi.org/10.1016/j.jcomdis.2018.02.001>
- Raimondi, C. (2019). La planificación y el diseño. En T. Torralva, C. Raimondi, & M. Roca (Eds.), *Rehabilitación cognitiva. De la teoría a la práctica profesional* (pp. 85–100). Editorial El Ateneo. <https://medilibro.com/product/rehabilitacion-cognitiva-de-la-teoria-a-la-practica-profesional/>
- Raymer, A., & Turkstra, L. (2017). Rehabilitation of language disorders in adults and children. En B. Wilson, J. Winegardner, C. van Heugten, & T. Ownsworth (Eds.), *Neuropsychological Rehabilitation: The International Handbook* (pp. 25–35). Routledge & CRC Press. <https://www.routledge.com/Neuropsychological-Rehabilitation-The-International-Handbook/Wilson-Winegardner-Heugten-Ownsworth/p/book/9781138643116>
- Reguant, M., & Martínez-Olmo, F. (2014). *Operacionalización de conceptos/variables*. Barcelona: Dipòsit Digital de la UB. <https://diposit.ub.edu/dspace/bitstream/2445/57883/1/Indicadores-Repositorio.pdf>
- Rose, M. L., Raymer, A. M., Lanyon, L. E., & Attard, M. C. (2013). A systematic review of gesture treatments for post-stroke aphasia. *Aphasiology*, 27(9), 1090–1127. <https://doi.org/10.1080/02687038.2013.805726>
- Rosewilliam, S., Roskell, C. A., & Pandyan, A. (2011). A systematic review and synthesis of the quantitative and qualitative evidence behind patient-centred goal setting in stroke rehabilitation. *Clinical Rehabilitation*, 25(6), 501–514. <https://doi.org/10.1177/0269215510394467>
- Ruiz-Gutiérrez, J., Arias-Sánchez, S., & Martín-Monzón, I. (2020). Neuropsychology of executive functions in patients with focal lesion in the prefrontal cortex: A systematic review. *Brain and Cognition*, 146, 105633. <https://doi.org/10.1016/j.bandc.2020.105633>
- Schneider, B., & Koenigs, M. (2017). Human lesion studies of ventromedial prefrontal cortex. *Neuropsychologia*, 107, 84–93. <https://doi.org/10.1016/j.neuropsychologia.2017.09.035>
- Siebert, R. J., & Levack, W. M. M. (2014). *Rehabilitation Goal Setting: Theory, Practice and Evidence*. CRC Press.
- Simmons-Mackie, N., Raymer, A., & Cherney, L. R. (2016). Communication Partner Training in Aphasia: An Updated Systematic Review. *Archives of Physical Medicine and Rehabilitation*, 97(12), 2202–2221.e8. <https://doi.org/10.1016/j.apmr.2016.03.023>
- Stanford Center on Longevity. (2014). *A Consensus on the Brain Training Industry from the Scientific Community*. Stanford Center on Longevity. <https://longevity.stanford.edu/a-consensus-on-the-brain-training-industry-from-the-scientific-community-2/>
- Stroke Foundation. (2021). *Clinical Guidelines for Stroke Management. Melbourne Australia*. Living Clinical Guidelines for Stroke Management. <https://informme.org.au/guidelines/living-clinical-guidelines-for-stroke-management>
- Sugavanam, T., Mead, G., Bulley, C., Donaghy, M., & van Wijck, F. (2013). The effects and experiences of goal setting in stroke rehabilitation – a systematic review. *Disability and Rehabilitation*, 35(3), 177–190. <https://doi.org/10.3109/09638288.2012.690501>
- Suri, H. (2011). Purposeful Sampling in Qualitative Research Synthesis. *Qualitative Research Journal*, 11(2), 63–75. <https://doi.org/10.3316/QRJ1102063>
- Tan, B.-L., Lee, S.-A., & Lee, J. (2018). Social cognitive interventions for people with schizophrenia: A systematic review. *Asian Journal of Psychiatry*, 35, 115–131. <https://doi.org/10.1016/j.ajp.2016.06.013>
- Taylor, W. J., Brown, M., William, L., McPherson, K. M., Reed, K., Dean, S. G., & Weatherall, M. (2012). A pilot cluster randomized controlled trial of structured goal-setting following stroke. *Clinical Rehabilitation*, 26(4), 327–338. <https://doi.org/10.1177/0269215511419384>
- Threats, T. (2007). Access for persons with neurogenic communication disorders: Influences of Personal and Environmental Factors of the ICF. *Aphasiology*, 21(1), 67–80. <https://doi.org/10.1080/02687030600798303>
- Tippett, D. C., Niparko, J. K., & Hillis, A. E. (2014). Aphasia: Current Concepts in Theory and Practice. *Journal of Neurology & Translational Neuroscience*, 2(1), 1042.
- Tobar Fredes, R., & Toledo Rodríguez, L. (2021). Consideraciones generales para la evaluación de la persona con afasia. En R. Tobar Fredes & L. Toledo Rodríguez (Eds.), *Manejo fonoaudiológico de la persona con afasia* (pp. 41–48). Departamento de Fonoaudiología, Universidad de Chile. <https://doi.org/10.34720/sk5c-p194>
- Tobar-Fredes, R., & Salas, C. (2022). Rehabilitation of communication in people with traumatic brain injury: A systematic review of types of intervention and therapeutic ingredients (Rehabilitación de la comunicación en personas con traumatismo encefalocraneal: una revisión sistemática de tipos de intervención e ingredientes terapéuticos). *Studies in Psychology*, 43(1), 88–131. <https://doi.org/10.1080/02109395.2021.2009292>
- Torralva, T. (2019). Fundamentos, bases y principios de la rehabilitación cognitiva. En T. Torralva, C. Raimondi, & M. Roca (Eds.), *Rehabilitación cognitiva. De la teoría a la práctica profesional* (pp. 17–34). Editorial El Ateneo. <https://medilibro.com/product/rehabilitacion-cognitiva-de-la-teoria-a-la-practica-profesional/>

Tranel, D. (2002). Emotion, Decision Making, and the Ventromedial Prefrontal Cortex. En D. T. Stuss & R. T. Knight (Eds.), *Principles of Frontal Lobe Function* (pp. 338–353). Oxford University Press.

van Stan, J., Whyte, J., Duffy, J. R., Barkmeier-Kraemer, J. M., Doyle, P. B., Gherson, S., Kelchner, L., Muise, J., Petty, B., Roy, N., Stemple, J., Thibeault, S., & Tolejano, C. J. (2021). Rehabilitation Treatment Specification System: Methodology to Identify and Describe Unique Targets and Ingredients. *Archives of Physical Medicine and Rehabilitation*, 102(3), 521–531. <https://doi.org/10.1016/j.apmr.2020.09.383>

Wade, D. T. (2009). Goal setting in rehabilitation: An overview of what, why and how. *Clinical Rehabilitation*, 23(4), 291–295. <https://doi.org/10.1177/0269215509103551>

Webster, J., & Whitworth, A. (2012). Treating verbs in aphasia: Exploring the impact of therapy at the single word and sentence levels. *International Journal of Language & Communication Disorders*, 47(6), 619–636. <https://doi.org/10.1111/j.1460-6984.2012.00174.x>

Wisernburn, B., & Mahoney, K. (2009). A meta-analysis of word-finding treatments for aphasia. *Aphasiology*, 23(11), 1338–1352. <https://doi.org/10.1080/02687030902732745>

Worrall, L., Sherratt, S., Rogers, P., Howe, T., Hersh, D., Ferguson, A., & Davidson, B. (2011). What people with aphasia want: Their goals according to the ICF. *Aphasiology*, 25(3), 309–322. <https://doi.org/10.1080/02687038.2010.508530>