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International Classification of Functionality and language disorders: integrative literature review

Classificação Internacional de Funcionalidade e transtornos da linguagem: revisão integrativa da literatura

Clasificación Internacional de Funcionalidad y trastornos del lenguaje: revisión integradora de la literatura

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Abstract

Purpose: Identify scientific evidence for the use of International Classification of Functioning, Disability and Health in the characterization of functioning of patients with language disorders, considering the way it has been applied and aiming to explore application strategies. **Research strategies:** Search in national and international literature in the bases BVS, PubMed and CAPES. This review guiding question is the use of the ICF to characterize the functioning of patients with language disorders. **Selection criteria:** Articles published until September 2019 in Portuguese, English or Spanish that addressed the relation between the ICF and Speech, Language and Hearing Sciences. **Results:** 257 articles found that were narrowed down to 35 after the filters. The most recurrent topics were the use of the ICF in the evaluation of the impact of communication disorders, in the analyses and creation of assessment instruments and in

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Authors' contributions:
BMC and AKBV: Data collection, literature review, pair reading and listing of selected studies, discussion, conclusion and article writing;
JBL and GDRN: Literature review, discussion and conclusion of the article;
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the follow-up of the intervention process, especially in childhood. **Conclusion:** The ICF has been used for different purposes in language scope and it can reveal functionality aspects relating to the environment and conditions in which the person is in. Its use is recommended by researchers and health professionals in order to establish the biopsychosocial model.

Keywords: Speech, Language and Hearing Sciences; International Classification of Functioning; Language; Speech and Language Pathology; Stuttering

Resumo

Objetivo: Identificar as evidências científicas do uso da Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF) na caracterização da funcionalidade de pacientes com transtornos da linguagem, considerando o modo como tem sido aplicada e visando explorar estratégias de aplicação. **Estratégia de pesquisa:** Levantamento de literatura nacional e internacional com buscas realizadas nas bases BVS, PubMed e Portal de Periódicos da CAPES. A pergunta norteadora da revisão questiona a utilização da CIF na caracterização da funcionalidade de pacientes com transtornos da linguagem. **Critério de seleção:** Artigos publicados até setembro de 2019 em português, inglês ou espanhol que abordassem a relação entre CIF e Fonoaudiologia. **Resultados:** 257 artigos encontrados que se restringiram a 35 após os filtros. Os temas mais recorrentes foram o uso da CIF na avaliação do impacto dos transtornos da linguagem, na análise e criação de instrumentos avaliativos, e no acompanhamento do processo terapêutico, principalmente na infância. **Conclusão:** A CIF tem sido empregada para distintos fins no âmbito da linguagem e pode revelar aspectos da funcionalidade em relação ao meio e às condições em que o sujeito está inserido. Seu uso é recomendado por pesquisadores e profissionais de saúde para estabelecer o modelo biopsicossocial.

Palavras-chave: Fonoaudiologia; Classificação Internacional de Funcionalidade; Linguagem; Patologia da Fala e da Linguagem; Gagueira

Resumen

Objetivo: Identificar la evidencia científica del uso de la Clasificación Internacional de Funcionalidad, Discapacidad y Salud en la caracterización de la funcionalidad de pacientes con trastornos del lenguaje, considerando la forma en que se ha aplicado y buscando explorar estrategias de aplicación. **Estrategia de investigación:** Relevamiento de la literatura nacional e internacional con búsquedas realizadas en el Portal de Revistas BVS, PubMed y CAPES. La pregunta orientadora de la revisión cuestiona el uso de la CIF para caracterizar la funcionalidad de los pacientes con trastornos del lenguaje. **Criterios de selección:** Artículos publicados hasta septiembre de 2019 en portugués, inglés o español que abordaran la relación entre CIF y Logopedia. **Resultados:** Se encontraron 257 artículos que se restringieron a 35 después de los filtros. Los temas más recurrentes fueron el uso de la CIF en la evaluación del impacto de los trastornos del lenguaje, en el análisis y creación de herramientas de evaluación y en el seguimiento del proceso terapéutico, especialmente en la infancia. **Conclusión:** La CIF se ha utilizado para diferentes propósitos en el ámbito del lenguaje y puede revelar aspectos de funcionalidad en relación con el entorno y las condiciones en las que se inserta el sujeto. Su uso es recomendado por investigadores y profesionales de la salud para establecer el modelo biopsicosocial.

Palabras clave: Logopedia; Clasificación Internacional de Funcionalidad; Lenguaje; Patología del Habla y el Lenguaje; Tartamudeo

Introduction

The International Classification of Functioning, Disability and Health (ICF)[1] is a tool prepared by the World Health Organization (WHO) in order to learn about the functional conditions of an individual, establish a common language among health professionals and develop a scientific basis for the study of health determinants and the circumstances involved. This tool is based on a biopsychosocial model due to the multidirectional influence between its elements, namely: body functions and structures, activities and participation, and contextual factors, divided into environmental and personal factors.

The ICF has an important role in Speech-Language Pathology for the analysis of language disorders by reporting the effects on individuals in relation to their physical, social and mental health, thus allowing a targeted intervention addressing all aspects and going beyond the implications of the disorder. This tool allows the description of the experiences of individuals when the damages resulting from their condition are not easily identified, since they are not observable characteristics[2].

The concept of language includes the form, function and use of a conventional symbol system, such as spoken or written words, with a set of rules for communication[3]. Language disorders, which, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), are characterized by difficulties in the acquisition and use of language due to deficits in understanding or in the production of vocabulary, in the structure of sentences and in discourse[3], impact children and adults in communication, influencing the way they interact with others, deal with society, their inclusion in spaces and formal and spontaneous learning. Understanding how and to what extent individuals are affected in all areas through a coding that investigates beyond symptoms is essential for an effective assessment and intervention[4], in which the goals of therapy are defined through a bias centered on comprehensiveness.

This study aimed to compile and investigate scientific evidence on the application of the ICF for the characterization of functionality and disability to show its relevance, encourage its practice and guide its applicability, in addition to recognizing the elements and codes that should be considered. Furthermore, the unification of a language among members of the health field results in benefits from the integration of research and the clinical field, planning of speech-language pathology actions focused on specific cases and as guide for the consequent actions of public policies[5].

Purpose

To identify and synthesize the scientific literature on the use of the ICF to characterize the functionality of children and adults with language disorders, investigating its application and aiming to explore application strategies.

Search strategy

This is an integrative literature review based on the following guiding question: *what is the use of the ICF in characterizing the functionality of patients with language disorders?*

The study design was defined based on national[6] and international[7] recommendations. The literature search was divided into six stages, namely: (i) the definition of the problem; (ii) selection of databases and other sources of information to search for studies; (iii) planning and designing search strategies; (iv) the registration of the search and the evaluation of the results; (v) reporting of the search process; and (vi) selection, evaluation and synthesis of findings.

The definition of the problem was carried out through the survey of key concepts related to the main objective of the study, namely "ICF" and "Language". The study selected bibliographic databases from LILACS and others through the VHL Regional Portal, MEDLINE via PubMed, and Cochrane, CINAHL, Scopus and Web of Science via CAPES Journal Portal, filtered by Brazilian Portuguese, English and Spanish. The search strategy was designed to find the studies that were at the intersection of the sets that include the key concepts together with the Boolean operators OR and AND that expand the scope of the search and connect the concepts in order to refine the search. The descriptors selected in Brazilian Portuguese were "International Classification of Functioning, Disability and Health", "Language Disorders", "Speech Disorders", "Communication Disorders', "Childhood-Onset Fluency Disorder", "Language", "Stuttering" and "Speech, Language and Hearing Sciences" .

Chart 1. Search strategies

Database	Strategy/Formula
VHL Regional Portal	("International Classification of Functioning, Disability and Health" OR "Clasificación Internacional del Funcionamiento, de la Discapacidad y de la Salud" OR "Classificação Internacional de Funcionalidade, Incapacidade e Saúde" OR "CIF") AND ("Language Disorders" OR "Trastornos del Lenguaje" OR "Transtornos da Linguagem" OR "Speech Disorders" OR "Trastornos del Habla" OR "Distúrbios da Fala" OR aprosodia OR "Communication Disorders" OR "Trastornos de la Comunicación" OR "Transtornos da Comunicação" OR "Childhood-Onset Fluency Disorder" OR "Trastorno de Fluidez de Inicio en la Infancia" OR "Transtorno da Fluência com Início na Infância" OR "Distúrbio da Fluência com Início na Infância" OR language OR lenguaje OR linguagem OR "Família Linguística" OR "Parentesco Linguístico" OR stuttering OR tartamudeo OR gagueira OR "Speech, Language and Hearing Sciences" OR fonoaudiología OR fonoaudiologia) AND (db:("LILACS" OR "IBECS" OR "BBO" OR "BINACIS" OR "INDEXPSI"))
MEDLINE via PubMed	("International Classification of Functioning, Disability and Health") AND ("Language Disorders" OR "Speech Disorders" OR "Communication Disorders" OR "Childhood-Onset Fluency Disorder" OR "Language" OR "Stuttering")
Cochrane	("International Classification of Functioning, Disability and Health") AND ("Language Disorders" OR "Speech Disorders" OR "Communication Disorders" OR "Childhood-Onset Fluency Disorder" OR "Language" OR "Stuttering")
CINAHL	
Scopus	
Web of Science	

The non-conventional publications evaluated, which were included as gray literature[8], included the preliminary version for discussion of the Manual on the use of the ICF[9] (provided by the WHO), the Guide for Beginners - ICF[10], (provided by the Faculty of Public Health at USP), the Guiding Guide on ICF in Speech-Language Pathology[11] (provided by the Brazilian Federal Council of Speech-Language Pathology and Audiology) and the Practical Guide for Speech-Language Pathologists[12] (prepared by the Regional Council of Speech-Language Pathology.

Selection criteria

Inclusion criteria were as follows: articles published in full, in Brazilian Portuguese, English and Spanish, with degree of recommendation A and B and levels of evidence 1, 2 and 3, according to the level of scientific evidence by type of study published in the table of level of evidence by the Oxford Centre[13], which referred to the use of the ICF in Speech-Language Pathology and/or the application of the ICF in the characterization of communicative functionality. In turn, exclusion criteria were as follows: articles with evidence level 4 and 5, which are case studies or case series, expert opinions, letter to the editor and editorials. Studies that addressed the use of the ICF in classifying the functionality of exclusively motor alterations were also excluded.

Data analysis

The identification of studies was carried out by independent reading of the titles and abstracts of all selected articles by two researchers. Each researcher created a spreadsheet including options 'yes', 'no' and 'maybe', reporting whether the article should be read in its entirety. The decision was based on selection criteria, considering articles that referred to language and/or speech. After this process, a consensus meeting was held to compare the spreadsheets and define the 'maybes' and draws.

Results

257 articles were found in total, 58 articles via VHL, 132 articles via PubMed and 303 via CAPES Journal Portal, which were refined by the inclusion filters 'communication disorders' and 'speech language pathology', thus reducing the result to 67. Of these, 18 studies were excluded due to repetition, as they were found in more than one database. After the consensus meeting, 39 articles were selected to be read in full by the researchers. However, four articles were excluded according to the exclusion criteria: one written in Persian (only the abstract was in English), two referred to seminar presentations and one was a clinical commentary. Therefore, the content citation records were performed with the remaining 35 articles after reading in full, being 9 national and 26 international.

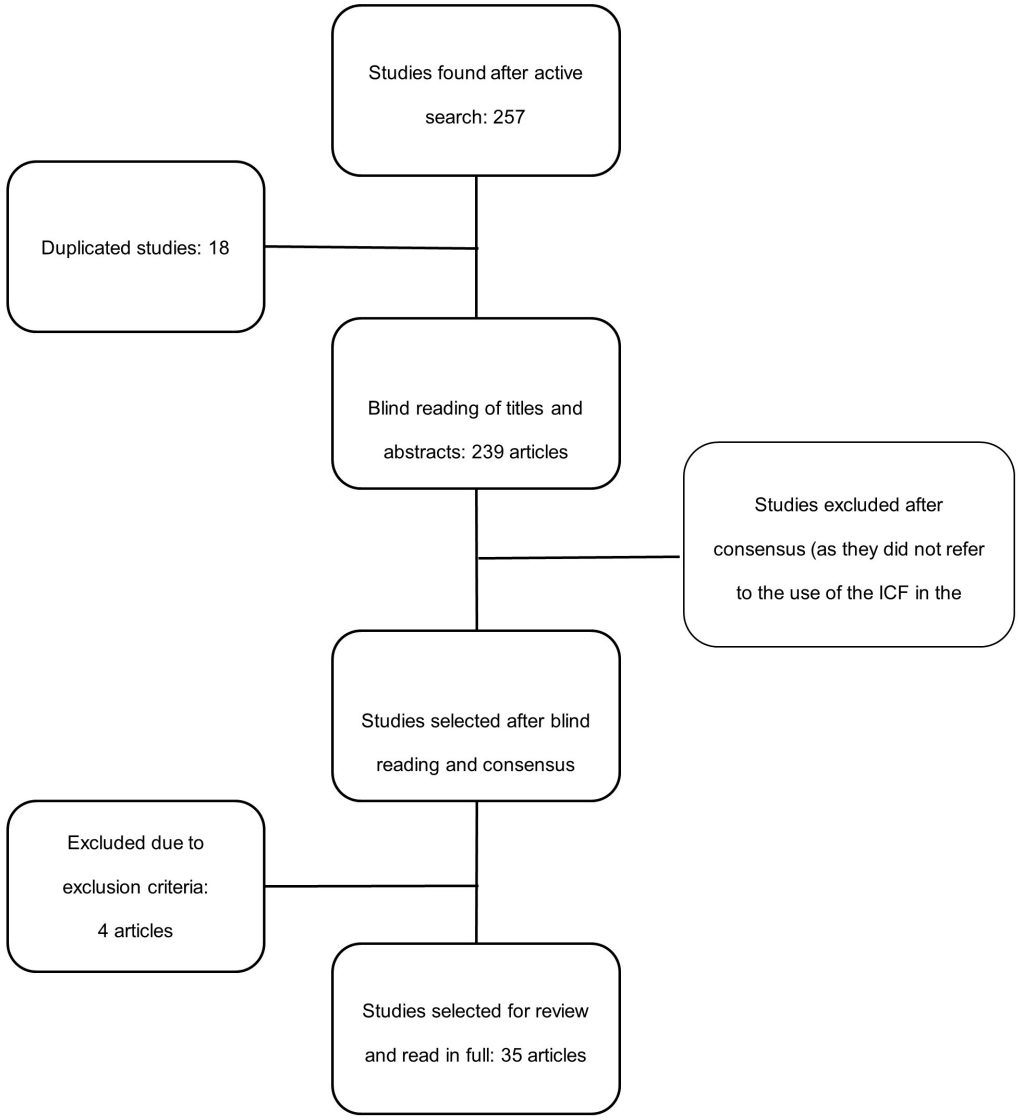

Figure 1. Flowchart of electronic search for studies

As for the design, most of the articles included referred to a literature review, distributed as follows: two scope reviews[14,15], two systematic reviews[16,17], an integrative review[18], twelve critical review[2,19-29], and five narrative reviews[30-34], one of which includes a tutorial[32]. Then, the second most frequent methodological design was the descriptive observational, with comparative, cross-sectional and qualitative types in thirteen studies found[4,5,35-45]. The predominance of scientific production identified was related to the use of the ICF to investigate restrictions on participation and limitations due to the various language and speech disorders in patients and environmental factors. Other common topics included using the ICF to investigate assessment tools, develop new instruments, and as a follow-up to the therapeutic process and verification of its effectiveness [INSERT CHART 2]. The main language changes described in the selected studies were Stuttering[2,39,45], Developmental Language Disorder (LDL)[22-24] and Aphasia[37,38]. Regarding age group, 12 studies addressed the language and speech of children[5,14,15,22-24,28,33,34,41-43], while three[4,36,44] studies addressed the speech of children and adolescents, and six[16,37-40,45] studies addressed the speech of adults and the elderly.

Chart 2. Characteristics of selected studies for integrative review

Authors/Year	Country	Study design types	Purpose	Main Discussion
Wright, Washington, Crowe, Jenkins, Leon, Kokotet, et al. 2019	USA	Scope review	To identify current language skill assessments of multilingual preschoolers in the context of the ICF.	Description of assessment methods using the ICF.
Borges, Medeiros and Lemos. 2018	Brazil	Observational, descriptive and cross-sectional study	To characterize the performance in speech-language pathology aspects of outpatients using the ICF.	Characterization of speech-language pathology aspects and better understanding of demands.
Romano, Bellezo and Chun. 2018	Brazil	Observational, quanti-qualitative and cross-sectional study	To investigate the impact of stuttering and its implications on the activities and participation of stuttering patients.	Assessment of the impact of stuttering through the ICF.
Pinto, Schiefe and Perissinoto. 2018	Brazil	Observational, descriptive, retrospective, exploratory and cross-sectional study	To identify the most frequent categories and components related to functionality through the speech-language anamnesis of cases related to Language and Speech Disorders.	Correlation between the anamnesis reports and the ICF.
Mcneilly. 2018	USA	Literature critical review	To promote the use of the ICF in different areas of health, as well as the training of professionals	Use of the ICF for better understanding among health professionals.
Cunningham, Washington, Binns, Rolfe, Robertson and Rosenbaum. 2017	Canada	Scope review	To identify current assessments used to investigate the speech-language consequences of communication disorders in preschool-age children.	Investigation of the scope of issues covered by current assessments.
Santana and Chun 2017	Brazil	Observational, descriptive and cross-sectional study	To evaluate and classify aspects of language, functionality and participation of post-stroke patients based on the ICF and to characterize the sociodemographic profile of individuals.	Use of the ICF as a complementary instrument to the assessment.
Bernardi, Pupo, Trenche and Barzaghi 2017	Brazil	Observational, descriptive and prospective study	To use the ICF in the services provided by the Unified Health System to record the hearing and language development of children in the first year of life.	Use of the ICF to monitor child development.
Ostrochi, Zanolli and Chun. 2017	Brazil	Observational, descriptive, quali-quantitative and cross-sectional study	To investigate the perception of family members about the linguistic conditions and social participation of children and adolescents with speech/language disorders through the ICF.	Analysis of the impact of language changes.
Westby and Washington. 2017	USA	Literature narrative review - tutorial	To help speech-language pathologists to apply the ICF in the assessment and treatment of children with language disorders.	Use of the ICF in the assessment and intervention in school-age children.
Pommerehn, Delboni and Fedosse. 2016	Brazil	Observational, descriptive, qualitative and cross-sectional study	To identify and analyze the impact of aphasia on the social participation and daily activities of patients, in addition to investigating the implications of environmental factors on the limitations and restrictions of participation, based on the ICF criteria.	Investigation of social participation.
Rowland, Fried-Oken, Bowser, Granlund, Lollar, Phelps, et al. 2016	USA	Observational, descriptive and comparative study	To validate an instrument designed to facilitate the development of educational goals related to communication for students with complex communication needs.	Document development based on the ICF.

Authors/Year	Country	Study design types	Purpose	Main Discussion
Wallace, Worrall, Rose and Le Dorze. 2016	Australia	Observational, descriptive and cross-sectional study (Delphi Method)	To identify results that aphasia researchers understand as essential on the treatment of aphasia.	Seeking consensus on the essential results to be evaluated on the treatment of aphasia.
Schipper, Lundequist, Coghill, de Vries, Granlund, Holtmann, et.al. 2015	USA	Literature systematic review	To identify, number, and connect the concepts of functionality and disability used in the scientific literature on Autism Spectrum Disorder (ASD) based on the ICF.	Development of a core-set for the assessment of abilities and disabilities in the ASD.
Romano and Chun. 2014	Brazil	Observational, descriptive and longitudinal study	To investigate the linguistic-cognitive conditions of children who use Complementary and Alternative Communication (CAC) based on the ICF.	Analysis of language issues, participation, performance and functionality of children who use CAC in linguistic-cognitive activities.
Bragatto, Osborn, Yaruss,, Quesal, Schiefer, Chiari. 2012	Brazil	Observational, descriptive and cross-sectional study	To investigate the applicability of the Overall Assessment of the Speaker's Experience of Stuttering - Adults (OASES-A) instrument translated into Brazilian Portuguese.	Application of OASES-A for the assessment and treatment of people who stutter.
Pless and Granlund. 2012	Sweden	Integrative literature review	To discuss the implementation of the ICF in the context of the Complementary and Alternative Communication (CAC).	Comparison of ICF implementation examples in the CAC context in different countries.
Xiong, Bunning, Horton and Hartley. 2011	United Kingdom	Literature systematic review	To identify assessment instruments and relevant outcome measures used in randomized clinical trials that are related to intervention in adult communication disorders, and to investigate and compare them using the ICF.	Analysis of the development and outcome of the intervention.
Walsh 2011	Australia	Literature critical review	To investigate the perspective that classification theory can provide about the ICF for communication.	Suggestion of classification theory to assist in the application of the ICF.
Dempsey and Skarakis-Doyle. 2010	Canada	Literature critical review	To describe the conceptual structure of the ICF and investigate its relationship with Specific Language Disorder/Developmental Language Disorder (DLD).	Benefits of the integrated perspective of ICF on DLD.
McCormack, McLeod, Harrisson and McAllister. 2010	Australia	Observational, descriptive and cross-sectional study	To investigate the application of the Activities and Participation component as a framework to analyze the perception of the impact of speech disorders in childhood.	Assessment of the impact of speech disorder.
Threats 2010	USA	Literature narrative review	To describe the fundamentals of the ICF and the ICF-CY and their possible clinical, educational and research influences in the area of communication disorders.	Implications of using the ICF.
Threats 2008	USA	Literature critical review	To address issues discussed in the procedures manual and a range of topics related to the clinical use of ICF by speech-language pathologists.	Use of ICF in clinical practice.
O'Halloran and Larkins. 2008	Australia	Literature critical review	To describe the Activities and Participation component and its relationship with communication.	Interrelationship between activities and participation and their different perspectives.
Thomas-Stonell,, Oddson, Robertson and Rosenbaum. 2008	Canada	Observational, descriptive and cross-sectional study	To compare the expectations regarding the therapy of parents and physicians of preschool children with the perception of changes after the intervention.	Monitoring the evolution of therapy.

Authors/Year	Country	Study design types	Purpose	Main Discussion
McCormack and Warrall. 2008	Australia	Literature narrative review	To describe the codes of Body Functions and Structures that are most relevant to speech-language pathology and discuss the overlap with the Activities and Participation component.	Relationship between Body Functions and Structures and Speech-Language Pathology.
Howe 2008	Australia	Literature critical review	To describe how environmental factors are coded in the ICF and identify the codes that are relevant for people with communication disorders, in addition to personal factors.	Relevance of approaching contextual factors in speech-language pathology practice.
Worrall and Hickson. 2008	Australia	Literature critical review	To develop a research agenda for speech-language pathologists in relation to the ICF.	The study identifies gaps in research in Speech-Language Pathology that address the ICF and makes recommendations about the research agenda for the ICF in Speech-Language Pathology.
Cruice 2008	United Kingdom	Literature critical review	To discuss the contribution of the ICF to the development of the concept and to the assessment of quality of life.	ICF contribution to the conceptualization and measurement of quality of life.
Washington 2007	Canada	Literature critical review	To emphasize the applicability of the ICF to describe the Developmental Language Disorder (DLD).	Use of the ICF in the DLD.
Campbell and Skarakis-Doylel, 2007	Canada	Literature critical review	To describe the most common characteristics of the Developmental Language Disorder and its associated deficits, and to show the potential of the ICF as a facilitator of the provision of collaborative services in the school environment.	Use of the ICF to list abilities and deficits that characterize children with DLD.
Threats 2006	USA	Literature critical review	To show the fundamentals of the ICF and its differences in relation to the International Classification of Impairments, Disabilities, and Handicaps (ICIDH), in addition to addressing the benefits and possibilities of application in communicative disorders.	Overview of the application of the ICF internationally and the benefits of a common language in Speech-Language Pathology.
Yaruss and Quesal 2004	USA	Literature critical review	To investigate how the ICF can be used to describe the experience of a person who stutters.	Use of ICF to show the internal factors of stuttering.
McLeod and Bleile 2004	Australia	Literature narrative review	To report the importance of joint work between speech-language pathologists and teachers in language disorders.	Show the ICF as a facilitating tool in the approach and communication between speech-language pathologists and teachers to understand the child's demands and act directly.
Simeonsson, Leonard, Lollar, Bjorck-Akesson, Hollenweger and Martinuzz 2003	USA	Literature narrative review	To identify issues related to the application of the ICF to assess childhood disability, review approaches and tools used, and identify priorities for the development of ICF-based measures of functionality and disability in children.	Use of the ICF to encourage the preservation of the rights of children with disabilities.

Discussion

The experience of incorporating the ICF to the speech-language anamnesis was an important piece of data presented in the studies in order to improve the analysis of language disorders and detect their effects on individuals and society, showing how and how much the environment supports a global intervention. Thus, the authors reported that it is conceivable to measure the interference of language changes in the subject's functionality through classifying codes, requiring their use from the first contact in the anamnesis[35]. The classification also allows addressing the structures involved in breathing, phonation, resonance and articulation, which are essential for speech, in addition to the cognitive part of child development, which includes learning to communicate, the circumstances involving the patient[35], support family, the environments they experience and the sharing of social circles[30].

The adoption of the ICF as part of the speech-language anamnesis also provides auditory and language development monitoring in children, as it documents these characteristics and the characteristics of the environment that surround them. The researchers correlated the questions from a questionnaire on child development to the domains and codes of the ICF to include it in the anamnesis and enable monitoring. However, the study did not use the qualifiers that report the degree of change and its implication on functionality, choosing only to report the presence or absence of change without it being specified[5], thus aiming to be consistent with the possible responses of the questionnaire used, which are limited to 'yes' and 'no'. Combining the ICF with a questionnaire that simplifies it and makes it easier to fill out is an alternative to expand its use[5], as it is an extensive and complex classification, and its application requires time. In addition, there are specific categories that were developed in core-sets to be used in unique health conditions or contexts[19] and, similarly, a study in 2008[31] selected the codes most commonly related to speech and language disorders.

As shown in a study carried out in 2018 in a Speech-Language Pathology Clinic of a University Teaching Hospital, the ICF has been beneficial in the characterization of speech-language pathology aspects of a population. Several ICF categories were applied after investigating the patients' medical records and this process showed the skills and functions with greater changes among the group, thus allowing the characterization of the patients' profile and clarifying their demands.

Regarding the monitoring of therapeutic processes and evolutionary data, the ICF allows comparing different treatments for a given disorder[14,37] or comparing a patient's situation in the reassessment processes[16]. These possibilities are the result of the extension and scope of the ICF categories, which ensure a broad understanding of the functional point of view of each subject. Furthermore, as the reassessment must necessarily be focused on the aspects that received intervention[16], its detailed categories can help by covering the various potential consequences of a language disorder.

The relevance of the Activities and Participation component is remarkable in speech-language pathology practice, as it reports functionality both from an individual and social point of view[20]. Being essential for the functioning of cognitive functions, language is a significant factor involved in the socialization process. A language disorder is not limited to communication problems, as it can also be related to psychological and physical implications that, together with environmental factors, predict the individual's social participation[38-40]. A study in 2018[40] showed that, when compared to adults without fluency disorders, a group of adults who stutter had worse qualifiers in the Activities and Participation and Environmental Factors domains, thus reinforcing the value of the biopsychosocial assessment.

The Contextual Factors component is also very relevant, as the patients need to apply the communication skills acquired in the clinic to their daily practice. The intervention must assess the Environmental Factors to minimize barriers and encourage facilitators in order to make the treatment more effective[32]. Similarly, Personal Factors are useful in therapy to make it more suited to the patient's individuality. The components of the ICF allow professionals to better understand the history and characteristics of individuals to understand the most correct approach[21].

The ICF proves to be adequate to check communication skills and inabilities and monitor the child's evolution, especially those affected by some health condition, as the Autism Spectrum Disorder[17]. Due to the wide range of its components, the ICF is able to analyze the different aspects of verbal and non-verbal communication and social interac-

tion, which can limit or impair the subject's daily functioning. This ability also allows monitoring the individual even without a diagnosis, as meeting the child's needs is the most important. This approach is especially beneficial in education, as, in addition to diagnosis, it makes it possible to assess the child's functionality, allowing for adaptations and individualized care[22,33].

In turn, Developmental Language Disorder (DLD) may involve bodily aspects that go beyond language impairment, such as neurological and motor disorders, impacting participation in activities the context of the patient[22,23]. Therefore, the ICF can be a relevant element for the early identification of the implications of the DLD, providing support for the differential diagnosis and for the collaborative process between health and teaching professionals, aiming at the flexibility and adaptation of the school environment to optimize learning[24].

Regarding the functionality and performance of daily activities of subjects who stutter, the ICF contributes to the understanding of this condition by enabling the connection between observable behaviors, such as blocks, extensions and repetitions, to the limitations of participation in society, enabling the description of the stuttering and the interpretation of factors and internal perceptions of the individual, in addition to qualifying treatments that can improve or mitigate the negative consequences of the disorder[2]. Furthermore, as three reviews reported that family participation in assessment and intervention processes using the ICF can ensure a more holistic approach, the ICF can show the potential limitations and restrictions of a particular disorder in people's lives [25,41,42].

When language difficulties affect verbal production and interpretation and complementary and alternative communication is one of the selected strategies, the ICF provides grounds for its use as a guide in the therapeutic process, in the qualification of the child's performance in relation to its limitations and potentialities, in monitoring the effectiveness of the therapeutic plan and its demonstration to parents and family members, and in supporting the speech-language pathologist in understanding their patients, being useful for linguistic-cognitive analysis of non-vocalized children[18,43].

The CSI (Communication Supports Inventory – Children and Youth) is a tool that was developed based on the ICF and aimed at teaching professionals and speech-language pathologists, and aims to favor the language development in children. The purpose of this tool is to identify the strengths and limitations of students with complex communication needs[44] for implementing facilitators in the school and in the family environment. Furthermore, the CSI extends the common language of the ICF to teaching professionals, in addition to documenting communicative strategies/objectives and guiding the rehabilitation of children with difficulties in expressing themselves orally or through language. It should be noted the relevance of the approach of speech-language pathologists and teachers to achieve excellence in direct intervention, as there must be a great partnership between the child, their family, their friends, the school and society[26].

The Brazilian version of the OASES-A (Overall Assessment of the Speaker's Experience of Stuttering – Adults) protocol, which describes the stuttering disorder from the perspective of the individual who stutters, also proposed to meet the premises of the ICF[45]. The OASES-A protocol is divided into sections that inform about the speaker's perception of their own fluency, as well as affective, behavioral and cognitive reactions, communication difficulties in social environments and quality in all aspects of life. Furthermore, the protocol also addresses the evolution of the therapeutic process after being reapplied and comparisons with previous results.

Despite all the aspects encompassed by the ICF, improvements and upgrades are suggested by researchers mainly to individualize the therapeutic intervention in children with specific or chronic conditions. The addition of codes to the Body Functions domain related to sensory modulation, stereotypy and self-harm behavior could predict the characteristics of the ASD that can impact the approach and therapeutic planning[33]. In turn, including codes in the Activity and Participation domain that classify skills for playing in pairs, imitation and caregiver-child[33] interaction could contribute to assimilate the abilities to dialogue with others. The Environmental Factors domain has codes that address the physical and social configurations of the environment in which the child lives, including social and cultural practices that involve the customs of care for the child and the values and beliefs that are passed on by the parents[33]. In addition, it is recommended to add codes informing about mechanisms and technologies that facilitate

your mobility, communication and performance of personal tasks to the existing categories[33].

A model aimed at the classification in relation to communication was also proposed by researchers in order to specifically meet the needs of speech-language pathologists[27]. Thus, it is proposed to develop a new domain called Communication Well-being, bringing together the Body Structures that are restricted to anatomical structures proper to communication, such as the structure of the mouth, and biological functions, such as neurological functions of language; Intentional Actions include communicative behaviors, such as articulating sounds and listening; Communication Material Products include speech, writing and the symbology of words/concepts; Meaningful Tasks are connected to the Communication Proposition, which includes the conversation and the expression of an opinion using communicative or written language; and finally the Communication Purposes that is connected to the Participation in Social Roles and imply effective communication in daily life, such as shopping, boarding a bus and reading the news, in addition to be a member of a society[27]. This model assists inter and intra-professional discussions related to global communication[28].

Furthermore, there is an investigation into the perspective of the ICF being appropriate as an object of study by health academics, as they may associate similar diagnoses with different impacts on the daily life and quality of life of each patient[29], being a summary measure for this functioning. Finally, studies have shown the relevance of the ICF in research for the development of references regarding the incidence, prevalence and comorbidities of human communication disorders[5] and, therefore, speech-language pathologists are encouraged to learn the dynamics and constructions of classification[34], and develop studies related. Manuals aimed at health professionals are being prepared to encourage its use, and to guide clinical application and clarify the interpretation of each code[15,19].

Conclusion

After reading and evaluating the selected articles, the ICF was found to be applied to different purposes in the field of language, being useful from the anamnesis and monitoring of language development in children - although combined with questionnaires that simplify it or by the core-sets format, in monitoring therapeutic processes and measuring advances in therapy, to the development of tools aimed at favoring the acquisition and development of language in children and protocols that meet their premises.

It should be noted that the ICF has been incorporated into the care of individuals with specific language and speech conditions, such as Language Development Disorder, stuttering, Autism Spectrum Disorder and in the presence of Complementary and Alternative Communication.

The components of the ICF, such as Activities and Participation and Contextual, Environmental and Personal Factors, are essential in speech-language pathology practice as they show aspects of functionality in relation to the environment and conditions of the subject.

Although the reports of the accuracy in the development of codes and domains that specifically meet the interests related to language and speech, the use of the ICF has expanded significantly in the field of speech-language pathology and is encouraged by researchers and health professionals to strongly establish the biopsychosocial model and provide the therapist with a more comprehensive view of the patient, which goes beyond the obvious[31].

References

1. Organização Mundial da Saúde. Classificação Internacional de Funcionalidade, Incapacidade e Saúde. Trad. Centro Colaborador da OMS. 1 ed. São Paulo: Edusp. 2020.

2. Yaruss JS, Quesal R. Stuttering and the International Classification of Functioning, Disability, and Health (ICF): An update. J Commun Disord. 2004 jan-fev; 37(1): 35-52. https://doi.org/10.1016/S0021-9924(03)00052-2.

3. American Psychiatric Association. Manual diagnóstico e estatístico de transtornos mentais: DSM-5. 5.ed. Porto Alegre: Artmed, 2014.

4. Ostroschi D, Zanolli M, Chun R. Percepção de familiares de crianças e adolescentes com alteração de linguagem utilizando a Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF-CJ). CoDAS 2017; 29(3): e20160096. http://dx.doi.org/10.1590/2317-1782/20172016096.

5. Bernardi S, Pupo A, Trenche M, Barzaghi L. O uso da CIF no acompanhamento do desenvolvimento auditivo e de linguagem de crianças no primeiro ano de vida. Rev. CEFAC. 2017 mar-abr; 19(2): 159-70. http://dx.doi.org/10.1590/1982-021620171928016.

6. Berwanger O, Suzumura EA, Buehler AM, Oliveira JB. Como avaliar criticamente revisões sistemáticas e metanálises. Rev Bras Ter Intensiva. 2007; 19(4): 475-80. https://doi.org/10.1590/S0103-507X2007000400012.

7. Braga M, Melo M. Como fazer uma revisão baseada na evidência. Rev Port Clin Geral. 2009;25(6):660-6. http://dx.doi.org/10.32385/rpmgf.v25i6.10691.

8. Población D. (1992). Literatura cinzenta ou não convencional: um desafio a ser enfrentado. Ciência da Informação. 21(3). Recuperado de http://revista.ibict.br/ciinf/article/view/4387.

9. Organização Mundial da Saúde. Como usar a CIF: Um manual prático para o uso da Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF). Versão preliminar para discussão. Genebra. Outubro de 2013.

10. ICF Beginner's Guide. Traduzido para o Português pelo Centro Colaborador da OMS para a Família de Classificações Internacionais – Centro Brasileiro de Classificação de Doenças. São Paulo. 2004.

11. Conselho Federal de Fonoaudiologia. Guia norteador sobre a Classificação Internacional de Funcionalidade e Incapacidade/CIF em Fonoaudiologia. 1ª ed. 2013.

12. Conselho Regional de Fonoaudiologia 6ª Região. Classificação Internacional de Funcionalidade: um guia prático para fonoaudiólogos da 6ª região. Belo Horizonte. 2018.

13. OCEBM Levels of Evidence Working Group*. "The Oxford 2011 Levels of Evidence". Oxford Centre for Evidence-Based Medicine. [Internet] 2011 [acesso em 18 maio 2020]. Disponível em: http://www.cebm.net/index.aspx?o=5653.

14. Cunningham BJ, Washington KN, Binns A, Rolfe K, Robertson B, Rosenbaum P. Current methods of evaluating speech-language outcomes for preschoolers with communication disorders: a scoping review using the ICF-CY. J Speech Lang Hear Res. 2017 fev; 1;60(2): 447-64. https://doi.org/10.1044/2016_JSLHR-L-15-0329.

15. Wright KR, Washington KN, Crowe K, Jenkins A, Leon M, Kokotek L, et al. Current Methods of Evaluating the Language Abilities of Multilingual Preschoolers: A Scoping Review Using the International Classification of Functioning, Disability and Health – Children and Youth Version. Lang, Speech and Hear Serv Sch. 2019 jul; 12; 50(3):434-51. https://doi.org/10.1044/2019_LSHSS-18-0128.

16. Xiong T, Bunning K, Horton S, Hartley S. Assessing and comparing the outcome measures for the rehabilitation of adults with communication disorders in randomised controlled trials: an International Classification of Functioning, Disability and Health approach. Disabil Rehabil. 2011 abr; 33(23-24): 2272-90. https://doi.org/10.3109/09638288.2011.568666.

17. Schipper E, Lundequist A, Coghill D, de Vries PJ, Granlund M, Holtmann M, et.al. Ability and Disability in Autism Spectrum Disorder: A Systematic Literature Review Employing the International Classification of Functioning, Disability and Health-Children and Youth Version. Autism Res. 2015 mar; 8(6): 782-94. https://doi.org/10.1002/aur.1485.

18. Pless M, Granlund M. Implementation of the International Classification of Functioning, Disability and Health (ICF) and the ICF Children and Youth Version (ICF-CY) within the context of Augmentative and Alternative Communication. Augment Altern Commun. 2012 mar; 28(1): 11-20. https://doi.org/10.3109/07434618.2011.654263.

19. Threats TT. Use of the ICF for clinical practice in speech-language pathology. Int J Speech Lang Pathol. 2008 jul; 10(1-2): 50-60. https://doi.org/10.1080/14417040701768693.

20. O'Halloran R, Larkins B. The ICF Activities and Participation related to speech-language pathology. Int J Speech Lang Pathol. 2008; 10(1-2): 18-26. https://doi.org/10.1080/14417040701772620.

21. Howe TJ. The ICF Contextual Factors related to speech-language pathology. Int J Speech Lang Pathol. 2008; 10(1–2): 27–37. https://doi.org/10.1080/14417040701774824.

22. Dempsey L, Skarakis-Doyle E. Developmental language impairment through the lens of the ICF: An integrated account of children's functioning. J Commun Disord. 2010 set-out; 43(5): 424-37. https://doi.org/10.1016/j.jcomdis.2010.05.004.

23. Washington KN. Using the ICF within speech-language pathology: Application to developmental language impairment. Advances in Speech–Language Pathology. 2007 sep; 9(3): 242–55. https://doi.org/10.1080/14417040701261525.

24. Campbell WN, Skarakis-Doyle E. School-aged children with SLI: The ICF as a framework for collaborative service delivery. J Commun Disord. 2007 out; 40(6): 513-535. https://doi.org/10.1016/j.jcomdis.2007.01.001.

25. Cruice M. The contribution and impact of the International Classification of Functioning, Disability and Health on quality of life in communication disorders. Int J Speech Lang Pathol. 2008; 10(1-2): 38-49. https://doi.org/10.1080/17549500701790520.

26. Worrall LE, Hickson L. The use of the ICF in speech-language pathology research: Towards a research agenda. Int J Speech Lang Pathol. 2008; 10(1-2): 72-7. https://doi.org/10.1080/17549500701852148.

27. Walsh R. Looking at the ICF and human communication through the lens of classification theory. Int J Speech Lang Pathol. 2011 abr; 13(4): 348–59. https://doi.org/10.3109/17549507.2011.550690.

28. McNeilly LG. Using the International Classification of Functioning, Disability and Health Framework to Achieve Interprofessional Functional Outcomes for Young Children: A Speech-Language Pathology Perspective. Pediatr Clin North Am. 2018 fev; 65(1): 125-34. https://doi.org/10.1016/j.pcl.2017.08.025.

29. Threats TT. Towards an international framework for communication disorders: Use of the ICF. J Commun Disord. 2006 jul-ago; 39(4): 251-65. https://doi.org/10.1016/j.jcomdis.2006.02.002.

30. Threats TT. Application of the World Health Organization (WHO) ICF and ICF-CY to communication disability. Rev Logop Fon Audiol. 2010; 30(1): 34-47. https://doi.org/10.1016/S0214-4603(10)70006-1.

31. McCormack J, Worrall LE. The ICF Body Functions and Structures related to speech-language pathology. Int J Speech Lang Pathol. 2008; 10(1-2): 9-17. https://doi.org/10.1080/14417040701759742.

32. Westby C, Washington KN. Using the International Classification of Functioning, Disability and Health in Assessment and Intervention of School-Aged Children With Language Impairments. Lang Speech Hear Serv Sch. 2017 jul; 26; 48(3):137-52. https://doi.org/10.1044/2017_LSHSS-16-0037.

33. Simeonsson RJ, Leonardi M, Lollar DJ, Bjorck-Akesson E, Hollenweger J, Martinuzzi A. Applying the International Classification of Functioning, Disability and Health (ICF) to measure childhood disability. Disabil Rehabil. 2003 jun; 25(11-12): 602-10. https://doi.org/10.1080/0963828031000137117.

34. McLeod S, Bleile K. The ICF: a framework for setting goals for children with speech impairment. Child Language Teaching and Therapy. 2004; 20(3): 199-219. https://doi.org/10.1191/0265659004ct272oa.

35. Pinto F, Schiefer A, Perissinoto J. A Anamnese Fonoaudiológica segundo os preceitos da Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF). Distúrb Comun. 2018 jun; 30(2): 252-65. https://doi.org/10.23925/2176-2724.2018v30i2p-252-265.

36. Borges MGS, Medeiros AM, Lemos SMA. Caracterização de aspectos fonoaudiológicos segundo as categorias da Classificação Internacional de Funcionalidade, Incapacidade e Saúde para Crianças e Jovens (CIF-CJ). CoDAS. 2018; 30(4) e20170184. http://dx.doi.org/10.1590/2317-1782/20182017184.

37. Wallace SJ, Worrall L, Rose T, Le Dorze G. Core outcomes in aphasia treatment research: an e-Delphi consensus study of international aphasia researchers. Am J Speech Lang Pathol. 2016 dez; 25(4S): 729-42. https://doi.org/10.1044/2016_AJSLP-15-0150.

38. Pommerehn J, Delboni MCC, Fedosse E. Classificação Internacional de Funcionalidade, Incapacidade e Saúde e afasia: um estudo da participação social. CoDAS. 2016; 28(2): 132-40. http://dx.doi.org/10.1590/23171782/201620150102.

39. Romano N, Bellezo JF, Chun RYS. Impactos da gagueira nas atividades e participação de adolescentes e adultos. Distúrb Comun. 2018 set; 30(3): 510-21. https://doi.org/10.23925/2176-2724.2018v30i3p-510-521.

40. Santana MTM, Chun RYS. Linguagem e funcionalidade de adultos pós-Acidente Vascular Encefálico (AVE): avaliação baseada na Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF). CoDAS. 2017; 29(1): e20150284. http://dx.doi.org/10.1590/2317-1782/20172015284

41. Mccormack J, McLeod S, Harrison L, McAllister L. The impact of speech impairment in early childhood: Investigating parents' and speech-language pathologists' perspectives using the ICF-CY. J Commun Disord 2010 aug; 43(5): 378-96. https://doi.org/10.1016/j.jcomdis.2010.04.009.

42. Thomas-Stonell N, Oddson BE, Robertson B, Rosenbaum PL. Predicted and observed outcomes in preschool children following speech and language treatment: Parent and clinician perspectives. J Commun Disord. 2008 aug; 42(1): 29-42. https://doi.org/10.1016/j.jcomdis.2008.08.002.

43. Romano N, Chun R. Condições linguístico-cognitivas de crianças usuárias de comunicação suplementar e /ou alternativa segundo componentes da CIF. Distúrb Comun. 2014 set; 26(3): 503-18.

44. Rowland C, Fried-Oken M, Bowser G, Granlund M, Lollar D, Phelps R, et al. The Communication Supports Inventory-Children & Youth (CSI-CY), a new instrument based on the ICF-CY. Disabil Rehabil. 2016 set; 38(19): 1909-17. https://doi.org/10.3109/09638288.2015.1107778.

45. Bragatto E, Osborn E, Yaruss JS, Quesal R, Schiefer AM, Chiari BM. Versão brasileira do protocolo Overall Assessment of the Speaker's Experience of Stuttering – Adults (OASES-A). J Soc Bras Fonoaudiol. 2012; 24(2): 145-51. http://dx.doi.org/10.1590/S2179-64912012000200010.