

Communication Disorders Journal: analysis of articles published in the last five years

Revista Distúrbios da Comunicação: análise
dos artigos publicados nos últimos cinco anos

Revista de Trastornos de la Comunicación:
análisis de los artículos publicados en los
últimos cinco años

*Leslie Piccolotto Ferreira**

*Telma Dias dos Santos**

*Caroline Lopes Barbosa**

*Tatiane Ichitani**

*Ana Maria Hernandez**

*Giovana Targino Esturaro**

*Barbara Cristina da Silva Rosa**

*Maria Cecília Bonini Trenche**

*Beatriz de Castro Andrade Mendes**

Abstract

The magazine “Disorders of Communication” was first published in 1986. It is now available online, inserted in the Latin American and Caribbean Literature database in Health Sciences (LILACS) and classified as B2 in area 21 of the Coordination of Improvement of Higher Level Personnel (CAPES). **Objective:** to analyze the scientific publication specifically in the category of original articles, in the last five years of the Journal of Communication Disorders according to the educational institution, thematic, type of research and descriptors. **Method:** This is a retrospective and exploratory study. It was carried out a survey of the publications in the scientific article of the last five years, considering number of the journal, volume, title, abstract, and subject area, type of research (literature review, observational or intervention study), number of research centers involved and descriptors. **Results:** 250 articles were

* Pontificia Universidade Católica de São Paulo, São Paulo, SP, Brazil.

Authors' contributions:

LPF: Study design; Methodology; Critical review; Article elaboration; Guidance

TDS, CLB, TI, AMH, GTE: Study design; Methodology; Data collection; Article elaboration

BCSR: Study design; Methodology; Article Outline

MCBT e BCAM: Critical review

Correspondence address: Caroline Lopes Barbosa - carolinelopesb@gmail.com

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evaluated and 19.2% of the publications belonged to the Pontifical Catholic Universities, including in that category those of São Paulo, Rio Grande do Sul and Campinas, followed by the Federal University of Santa Maria - UFSM (18, 8%). Language is the main subject addressed (38.8%), is present in 69.6% observational studies and among the top 250 selected descriptors, followed by 13.6% on Speech-Language Hearing Sciences and 8.8% on Voice. **Conclusion:** The data showed that the journal DIC has managed to expand its scope with a significant participation of educational institutions from different regions of Brazil. The prevalence of language articles and observational studies is highlighted. Suggestion: The research found the misuse of the descriptor Speech Language Pathology and Audiology.

Keywords: Speech, Language and Hearing Sciences; Health; Education; Periodicals.

Resumo

A revista Distúrbios da Comunicação (DIC) realizou sua primeira publicação em 1986. Atualmente, está disponibilizada *on-line*, inserida na base de Literatura Latina Americana e do Caribe em Ciências da Saúde (LILACS) e classificada como B2 na área 21 da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES). **Objetivo:** analisar a publicação científica especificamente na categoria de artigos originais, nos últimos cinco anos da Revista Distúrbios da Comunicação, segundo a instituição de ensino, temática, tipo de pesquisa e descritores. **Método:** trata-se de estudo retrospectivo e exploratório. Foi realizado levantamento das publicações na modalidade artigo científico dos últimos cinco anos, considerando número da revista, volume, título, resumo, área temática, tipo de pesquisa (revisão de literatura, estudo observacional ou de intervenção), número de centros de pesquisa envolvidos e descritores. **Resultados:** foram avaliados 250 artigos e desses 19,2% das publicações pertencem às Pontifícias Universidades Católicas (São Paulo, Rio Grande do Sul e de Campinas), vindo a seguir a Universidade Federal de Santa Maria – UFSM (18,8%). Linguagem é a principal temática abordada (38,8%), 69,6% são estudos observacionais e entre os 250 primeiros descritores selecionados. 13.6% do primeiro descritor foi Fonoaudiologia e 8.8% foi Voz. **Conclusão:** Os dados evidenciaram que a revista DIC tem conseguido ampliar sua abrangência com participação expressiva de instituições de ensino de diferentes regiões do Brasil. Destaca-se a prevalência de artigos de linguagem e de estudos observacionais. A pesquisa constatou o uso generalizado e, portanto, equivocado do descritor Fonoaudiologia.

Palavras-chave: Fonoaudiologia; Saúde; Educação; Publicações periódicas.

Resumen

La revista Distúrbios de la Comunicación (DIC) realizó su primera publicación en 1986. Actualmente, está disponible *on-line*, insertada en la base de Literatura Latina Americana y del Caribe en Ciencias de la Salud (LILACS) y clasificada como B2 en el área 21 de la Coordinación de Perfeccionamiento de Personal de Nivel Superior (CAPES). **Objetivo:** analizar la publicación científica específicamente en la categoría de artículos originales, en los últimos cinco años de la Revista Distúrbios de la Comunicación, según la institución de enseñanza, temática, tipo de investigación y descriptores. **Método:** se trata de un estudio retrospectivo y exploratorio. Se realizó una recoleta de las publicaciones en la modalidad artículo científico de los últimos cinco años, considerando número de la revista, volumen, título, resumen, y área temática, tipo de investigación (revisión de literatura, estudio observacional o de intervención), número de centros de investigación involucrados y descriptores. **Resultados:** fueron evaluados 250 artículos. De ellos, 19,2% pertenecen a las Pontificias Universidades Católicas (São Paulo, Rio Grande do Sul y Campinas), en seguida viene la Universidad Federal de Santa Maria-UFSM (18,8%). El lenguaje es la principal temática abordada (38,8%) y 69,6% son estudios observacionales. Entre los 250 primeros descriptores seleccionados, en 13.6% el primero fue Fonoaudiología y en 8.8% fue Voz. **Conclusión:** Los datos evidenciaron que la revista DIC está logrando ampliar su alcance con participación expresiva de instituciones de enseñanza de diferentes regiones de Brasil. Se destaca la prevalencia de artículos de lenguaje y de estudios observacionales. La investigación constató el uso generalizado y, por lo tanto, equivocado, del descriptor Fonoaudiología.

Palabras claves: Fonoaudiología; Salud; Educación; Salud; Publicaciones Periódicas.

Introduction

The *Distúrbios da Comunicação* [Communication Disorders] journal (DIC) was first published in 1986, being one of the pioneers in the Speech-Language Pathology. Physician and Professor Dr. José Geraldo Silveira Bueno, editor of the first issue, emphasizes in the Editorial that the Communication Disorders department of the Pontifical Catholic University of São Paulo (composed at the time by the Speech-Language Pathology Course, the Qualification Course in Audio Communication Impaired Education, the Communication Disorders department, Division for Education and Rehabilitation for Communication Disorders - DERDIC and the Program of Graduate Studies in Communication Disorders): “has undergone in the last 10 years to an accelerated process of development and improvement, in which the functional, didactic and scientific integration of all those sectors that comprise it has undoubtedly excelled”.¹

However, according to the editor there was also a lack of “a more agile publication, which could bring together articles not only from teachers of PUC-SP, but from all the professionals who work in our area”.¹

This was the spirit with which the DIC journal was established, which circulated every six months until 2008 in the printed format. The first electronic issue was released in 2006 and it became exclusively online from 2009 to the present time. As for the periodicity, it began to be published every four months from 2004, and from 2014 to date, quarterly, and it also provided an English version of all articles from the issue 25 (2015) onwards. In 2017, DIC also started to present the Digital Object Identifier (DOI), making it possible to customize each article introduced in the electronic platform.

The journal is inserted in the platform called *Sistema Eletrônico de Editoração de Revistas* (SEER), and the scope of the journal is the publication of “scientific and technological advances made in the Communication Disorders field, providing theoretical basis and updating professionals and students of Speech-Language Pathology and related fields. One of its advantages is the dissemination of studies and researches that interface between Health Sciences and Human Sciences.”²

Although the online access to journals was available since the 1970s in Brazil³ it came later in Speech-Language Pathology, with the

Communication Disorders, Audiology and Swallowing (CoDAS) journal⁴, which initially was called *Pró-Fono*⁵, that was the first to be provided online, since 2004.

Currently, DIC is indexed on the Latin-American and Caribbean System on Health Sciences Information (LILACS) database, and allows the submission of the following types of manuscripts: original articles (including case studies and systematic reviews), communications, reviews, letters to the editor, as well as abstracts of dissertations and theses. In this last session in particular, the journal aims to promote the work developed in different Graduate Programs, thus quickly reporting to the reader what is being produced in the academic.

Celebrating 30 years of DIC first release, a group formed by the editors and students of the Graduate Studies Program in Speech-Language Pathology at the Pontifical Catholic University of São Paulo (PUC-SP) conducted this research that consists of the survey of the publications in the original articles category, in the last five years.

At the present time, publications of this nature that aims to discuss certain aspects have been more frequent, by considering the production of an area, through analysis of articles^{6,7} or papers and theses^{8,9,10} and the results of this study will certainly help the group involved in the organization and development of this journal, as well as the planning the next few years.

One of the variables set for this research was to know the most present topics in the articles. A recent survey that aimed to know the topics addressed in the dissertations and theses defended in the Speech-Language Pathology and Audiology Graduate Studies Program (PUC-SP) reported the predominance of publications in the hearing field, followed by language.¹¹

We believe that the survey proposed in this article may indicate a part of the production in DIC journal, and also it may honor all those involved in this process, such as editors, authors and readers, taking this moment to thank everyone for their contribution to Speech-Language Pathology.

Therefore, the objective of this research is to analyze the scientific publication specifically in the category of original articles, in the last five years of the Journal of Communication Disorders according to the educational institution, thematic, type of research and descriptors.

Method

This is a retrospective, descriptive and exploratory study, which by its nature dispenses the referral to the Ethics Committee.

A survey of original papers published in the journal was carried out through its website. Subsequently, all material published between 2012 and 2016, corresponding to four annual issues, that is, from 24 to 28, was downloaded.

These data were recorded in Excel spreadsheet (1997-2003 version), considering number of the journal, volume, title, abstract, institution of the first author, up to five descriptors, with special analysis of the first one, considering that the first descriptor listed by the authors corresponds to the keyword that identifies the work, thus becoming the most important descriptor in the disclosure of the article; subject area, considering the seven areas established by the Brazilian Society of Speech-Language Pathology and Audiology¹², namely: Hearing and Balance, Dysphagia, Educational Speech-Language Pathology, Language, Orofacial Motricity, Collective Health and Voice; characteristics of the methodological procedures of the researches, namely: literature review, observational or Interventional study¹³, and number of research centers involved.

Data were submitted to a descriptive analysis by means of absolute and relative frequencies, central tendency and scatter measurements.

For the trend analysis, scatter diagrams were built to show the most appropriate function according to the model. The linear ($y = \beta_0 + \beta_1 X$) and polynomial ($y = \beta_0 + \beta_1 X + \beta_2 X^2$) regression was used, considering the coefficient of determination (R^2) and homoscedasticity by residue analysis. The

number of publications was considered a dependent variable (y) while the year was considered the independent variable (x). The transformation of the variable was conducted to avoid collinearity: year by year-centered (x - as the midpoint of the historical series). The chi-square trend test was applied in the comparison between the institutions according to the years. A descriptive level ($p < 0.05$) was assumed for statistical significance. The data were analyzed in the SPSS software, version 22.0, for Windows.

Results

250 articles were evaluated, between 2012 and 2016. It can be seen in Table 1 that 19.2% of the publications are linked to the Pontifical Catholic Universities (São Paulo, Rio Grande do Sul and Campinas), followed by 18.8% linked to the Federal University of Santa Maria - UFSM and by 10% linked to the University of São Paulo - USP, including São Paulo, Ribeirão Preto and Bauru campuses and, finally, 7.6% linked to the São Paulo State University - UNESP, Marília campus. The remaining 44.4% are distributed to another 37 institutions. In total, 45 institutions published articles between 2012 and 2016, of which 41 are domestic institutions and 80.4% of those are located in southeast and south regions (Figure 1).

Among the articles evaluated, 68.4% corresponded to observational studies, mostly transversal. 69.2% of them were conducted as single-center studies (Table 1). Figure 2 shows a reduction of publications from UFSM and USP-SP between 2014 and 2016, and an increase in publications of other institutions in the same period ($p = 0.001$).

Table 1. Number and percentage of publications, according to characteristics related to the year of publication, Institution of the authors, type and conduction of the study, and age group analyzed.

Variables	Category	n	%
Year	2012	33	13.2
	2013	36	14.4
	2014	61	24.4
	2015	60	24.0
	2016	60	24.0
Institution	PUCs	48	19.2
	UFMS	47	18.8
	USPs	25	10.0
	UNESP	19	7.6
	Others	111	44.4
Study design types	Literature review	35	14.0
	Observational study	171	68.4
	Interventional study	44	17.6
Conduction of study	Not specified	55	22.0
	Single-center study	173	69.2
	Multicenter study	22	8.8
Total		250	100.0

* 150 of those were cross-sectional studies.

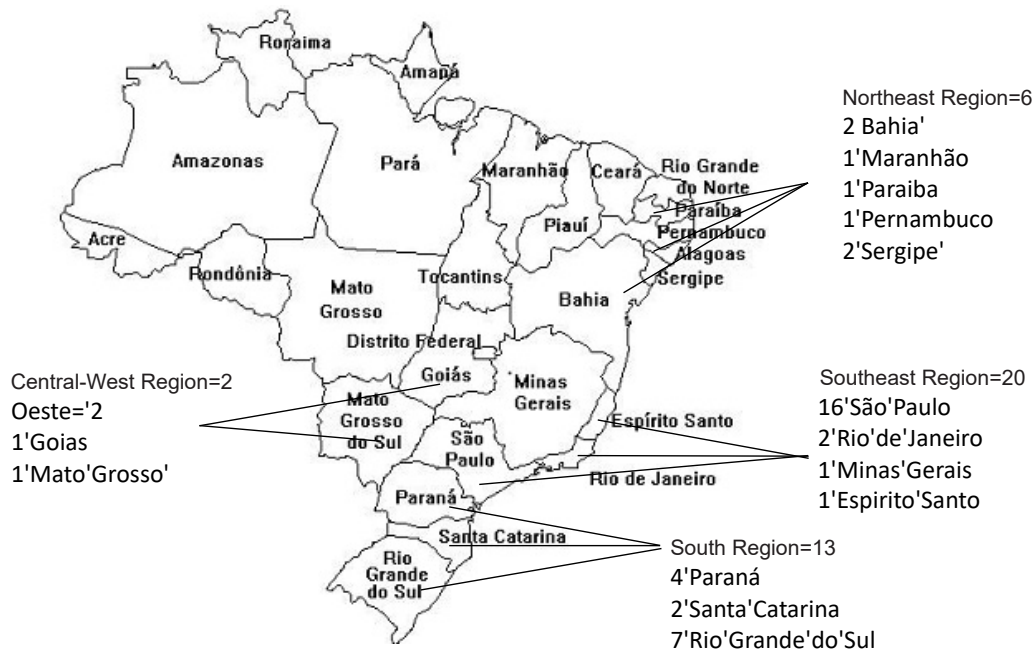
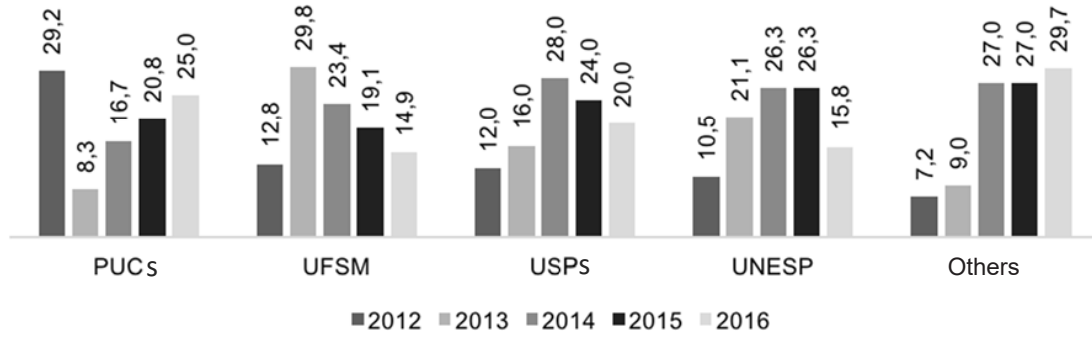


Figure 1. Numerical distribution of higher education institutions involved in the articles analyzed (n=41)



*p=0,001

Figure 2. Distribution of publications, according to year and institution.

Regarding the topic addressed, Table 2 shows that Language (38.8%) was the most studied, followed by Voice (23.6%) and Audiology and Balance (22.4%).

It can be observed in Table 3 that Speech-Language Pathology was the first descriptor chosen

by authors in 13.6% of the 250 articles, followed by Voice (8.8%). Another 35 words were chosen two or more times by the authors as the first descriptor, and another 75 words were used as the first descriptor as chosen by authors (Appendix 1).

Table 2. Number and percentage of publications, according to topic addressed.

Topic	Category	n	%
Voice	No	191	76.4
	Yes	59	23.6
Language	No	153	61.2
	Yes	97	38.8
Hearing and Balance	No	194	77.6
	Yes	56	22.4
Orofacial Motricity	No	221	88.4
	Yes	29	11.6
Dysphagia	No	240	96.0
	Yes	10	4.0
Educational Speech-Language Pathology	No	228	91.2
	Yes	22	8.8
Collective Health	No	217	86.8
	Yes	33	13.2
Total		250	100.0

Table 3. Number and percentage of publications, according to the record of the first descriptor selected by the authors.

Descriptors	n	%
speech-language pathology	34	13.6
voice	22	8.8
hearing loss	11	4.4
child	10	4.0
hearing	9	3.6
speaking	6	2.4
child language	6	2.4
language development	4	1.6
dysphonia	4	1.6
handwriting	4	1.6
reading	4	1.6
breastfeeding	3	1.2
voice disorders	3	1.2
teaching staff	3	1.2
stuttering	3	1.2
elderly	3	1.2
language	3	1.2
newborn	3	1.2
deafness	3	1.2
speech acoustics	2	0.8
aphasia	2	0.8
obstructive sleep apnea	2	0.8
audiology	2	0.8
swallowing	2	0.8
dyslexia	2	0.8
voice disorder	2	0.8
ageing	2	0.8
facial paralysis	2	0.8
noise-induced hearing loss	2	0.8
auditory evoked potentials	2	0.8
quality of life	2	0.8
mother-child relationships	2	0.8
remediation	2	0.8
worker's health	2	0.8
stomatognathic system	2	0.8
telemedicine	2	0.8
swallowing disorders	2	0.8
Other descriptors (Appendix 1)	75	30.0
Total	250	100.0

Figure 1 shows the word cloud, which totaled 1000 descriptors mentioned by the authors in the 250 articles analyzed. The Speech-Language

Pathology descriptor is the most obvious, followed by Voice, Child, and Language.



Figure 3. Word cloud (n= 1000).

It can be noticed in Table 4 and Figure 2 that, despite a higher occurrence of observational studies, there was no statistically significant difference

in the trend of publications, according to type of study.

Table 4. Trend analysis by simple and polynomial linear regression.

Studies	Model	R2	p	Trend
Literature Review	$y = 18.4 + 0.5x - 2.7x^2$ (ano-14)	0.53	0.474	Stable
Observational	$y = 70.1 - 5.4x$ (ano-14)	0.51	0.174	Stable
Interventional	$y = 18.4 + 4.9x - 0.8x^2$ (ano-14)	0.39	0.618	Stable

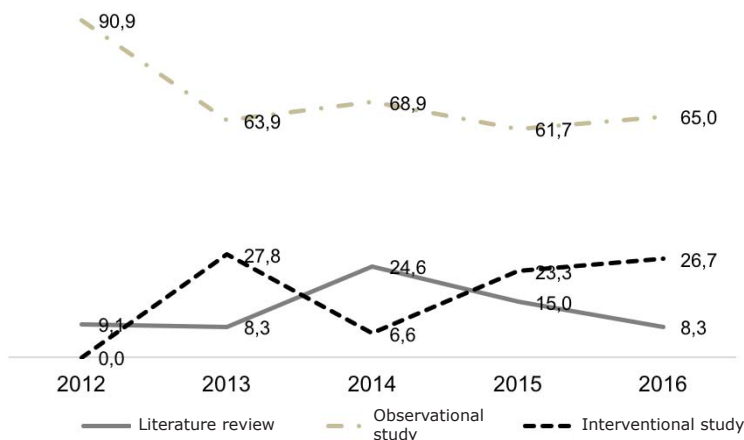


Figure 4. Trend analysis, according to types of studies.

Discussion

As previously mentioned, the history of DIC journal begins with the need to promote the work developed in the Speech-Language Pathology of PUC-SP, while it also allowed other researchers to share their experiences. At that time there was a moment when publications maintained by Higher Education Institutions (HEI) were encouraged with the idea that they could “promote” their own production.

Over time, this endogenous action was questioned and criticized mainly by the Coordination for the Improvement of Higher Education Personnel (CAPES) as something that needed to be avoided. This fact, when added to other issues, mainly those of a financial nature, was the main challenge faced by the DIC journal throughout its history.

In recent years, it has been shown that this history, which was initially linked with the Speech-Language Pathology of PUC-SP, is now built with the experience of other institutions. The results of the analysis of the 250 articles, related to the last five years, point to a growing participation of HEIs from all over the country. This participation became more significant from 2014, when the editors decided once again to submit the DIC to the Scielo platform, with the initiative in 2006. Currently, the requirement for indexing platforms in the Health field is that at least 60 articles are published per year. The adoption of this goal for the number of publications and the encouragement of CAPES for the publications of the Graduate Programs corroborated for the increase of the scientific publication. It is noteworthy that, despite the significant increase in the number of institutions that have published articles in the DIC journal, there are only few multicentre studies. The vast majority of articles was developed in private and public single centers or in specialized clinics, which was indicated in a previous study.¹⁴

The analysis recorded a participation of 45 institutions, of which four are international, from Portuguese universities. Among the 41 national institutions that published articles in this period, some of them are highlighted. There is still predominance among the PUCs and publications of PUC-SP that is responsible for the publication of the journal. Despite the movement in favor of non-endogenous actions mentioned above, this is a fact that still requires attention.

With respect to the geographic territory, in which the educational institutions are located, related to the articles published by the DIC journal, there is still a predominance of the Southeast and South regions, as expected. At this point, it may be related to the fact that there is a greater number of Graduate Programs in these regions.^{15,16,17,18} A change in this scenario in the coming years is possible with the implementation of new Graduate Programs, especially in the Northeast, and also with research grants, especially those provided by the National Council for Scientific and Technological Development (CNPq), which has provided 30% of the budget for this region.

The significant increase in published articles from the Southern region of the country is certainly due to the movement initiated by the teaching staff of the Federal University of Santa Maria - UFSM, in Rio Grande do Sul state, mainly focused in voice and language, the latter certainly due to the presence of the same theoretical framework in other articles published in the DIC..

Language is the most addressed topic, which represents more than 38% of the articles. This finding differs from the data reported by Ferreira et al (2015),¹⁹ when they analyzed the theses and dissertations of the Graduate Studies Program in Speech-Language Pathology (PUC-SP), in which they recorded a larger number of papers addressing Audiology.²⁰ It is interesting to note that there is a trend within the two institutions with the highest number of published articles (PUC-SP and UFSM) to produce more studies in the Language field. This trend is probably related to the fact that the DIC journal has a vision more related to the Human Sciences in its scope and it allows analysis with a more descriptive nature, which favors the research groups of those institutions that share similar theoretical references.

Regarding the predominance of cross-sectional observational studies, it is worth mentioning that they are used in the scientific environment in the description of population characteristics in order to identify risk groups and to prepare actions and planning related to Health.²¹ Most studies show intervention effects and provide a more accurate indication of what can be achieved in everyday clinical practice.²² However, it should be noted that they do not make it possible to establish a temporal relationship between events and they do



not even indicate if the relationship between them is causal or not.²¹

Another fact that should be emphasized is that the samples from observational studies are often more representative of the target population of the intervention than randomized clinical trials²². This survey has a small number of intervention researches, which point out the Speech-Language Pathology nature to the scientific community. Although the intervention is a characteristic of the field, there are still few published studies of this nature, also in other periodicals.

Regarding the search of descriptors, it is worth mentioning that these keywords were created in order to classify the information and facilitate bibliographic searches; however, the correct use of the descriptors associated to the article summary, allows the access to location and retrieval of the articles in the databases by the most diverse groups of researchers²³.

A total of 1000 descriptors were recorded in this study. The analysis of the first descriptor was decided from the understanding that this is the most important descriptor for locating and retrieving the articles in the databases. As for the first descriptors of the 250 articles, 35 were highlighted as the most listed by the authors for being used in the first position in two or more articles. Regarding the search of descriptors listed as the first option in the articles, Speech-Language Pathology was the most used term.

It should be noted that at the beginning of this century, the Speech-Language Pathology and Audiology was not in the list of Descriptors in Health Sciences (DeCS)²⁴. This was introduced by a movement carried out by the Brazilian Society of Speech-Language Pathology and Audiology (SBFa), with the Latin-American and Caribbean System on Health Sciences Information - BIREME, which recognized its importance and, later included it in DeCS. Different authors were asked to consider this term in the publication of their articles so that it could begin to be used. However, this term is currently included in the list of descriptors, and therefore, it is up to the researchers of the field to make use of it exclusively when the article aims to analyze something relevant to the profession (training, curriculum, regulation, etc.), and not themes related to the subareas studied..

Authors tend to use this descriptor first, followed by the descriptor of the area of expertise

(such as Voice or Language) and the subject of the research (such as vocal health or language disorder). The way that authors are choosing the descriptors of their searches has made article search to be ineffective. This inefficiency contributes to the dissatisfaction in the information retrieval through searches carried out in the indexed databases of journals.

According to DeCS¹ the descriptor is a vocabulary with the important role of describing, organizing and providing access to information and provides greater specificity to the search. The use of a structured vocabulary allows the researcher to retrieve information with the exact term used and also works as a map that directs the users to the information. The correct choice of descriptors is decisive for an adequate literature search.

Maybe due to the fact that specific descriptors of Speech-Language Pathology are still very restricted, since they are still little known and do not address the specificities of the publications; as authors often choose to use keywords rather than descriptors; or even because there isn't a more strict control during the indexing of articles on the databases..^{18,25, 26}

Among the 250 words listed as the first descriptor, according to Appendix 1, 35 were related to Speech-Language Pathology, and another 75 were listed by a single author/one time. It is also interesting to note that, among the first 250 descriptors mentioned, just one, "cinema as subject", was not included in the list of Descriptors in Health Sciences²⁵, which is regarded only as a keyword. All others can be found in DeCS. Finding a descriptor established by DeCS is an important standard that should be followed in the preparation of academic papers, especially when the author wants to publish his articles in scientific journals. If the term chosen is not in accordance with the nomenclature of the database chosen, there is a risk that the scientific production will not be found by others..^{10, 25, 27}

Voice is the second descriptor most used. This is an area that has stood out in recent years, either by the production related to the clinical performance of the speech-language pathologist with patients or by the production related to the so-called voice professionals, with proposals for improvement for the work environment. In particular at the PUC-SP, the Voice Laboratory (LaborVox) has

1 <http://decs.bvs.br/>

produced 150 dissertations and theses since it was established, and part of which was published in the journal analyzed.^{28, 29}

Finally, special emphasis should be given to the intense work of all involved in the edition of the issues, aiming to reduce the time between submitting and concluding the evaluation. There have also been constant calls in recent congresses for the participation of the editors of the journals, a practice that also assists in the dissemination of the periodicals.³⁰

Conclusion

The data showed that the journal DIC has managed to expand its scope with a significant participation of educational institutions from different regions of Brazil. The prevalence of language articles and observational studies is highlighted. The research found the misuse of the descriptor Speech-Language Pathology.

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Appendix 1

List of the first descriptors chosen once by the authors of the 250 articles analyzed.

stroke	motor skill	disabled people
adult	early detection	politics
young adult	diagnosis	premature
anxiety	Alzheimer's disease	auditory processing
learning	labyrinth disorders	health promotion
audiometry	education	developmental psychology
autism	special education	scientific and technical literature
self-perception	higher education	voice quality
hearing aids	electrophysiology	rehabilitation
communication aids for disabled people	amyotrophic lateral sclerosis	family relationships
health assessment	early stimulation	reproducibility of findings
low vision	language studies	breathing
vital capacity	hospitalization	noise
cinema as a subject	speech intelligibility	school health
cranial circumference	early intervention	Digeorge syndrome
bariatric surgery	chewing	Down's syndrome
International Classification of Diseases	feeding methods	tonsillectomy
cochlea	music	autistic disorder
cholesteatoma	hereditary sensory and autonomic neuropathies	Attention deficit hyperactivity disorder
multidisciplinary	neuropsychology	joint disorders
prenatal care	obesity	learning disorders
hearing impairment	cerebral palsy	tracheostomy
intellectual disability	speech and language pathology	newborn hearing screening
child development	auditory perception	newborn screening
health profile	central hearing loss	vocabulary