

Profile of language area theses defended by Brazilian speech language pathologists

Perfil das teses da área da linguagem defendidas por fonoaudiólogos brasileiros

Perfil de tesis en el area de lenguaje defendidas por logopedas brasileños

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Abstract

Introduction: In order to strengthen a profession, it is essential to link practice to scientific studies. The Doctoral Degree is the graduate program that allows professionals to dedicate themselves to in-depth research on a given topic in order to solve problems relevant to society and contribute to academic knowledge and scientific progress. **Objective:** To characterize the profile of Brazilian speech-language pathologists and their respective theses defended in the language area from 1976 to 2017. **Method:** This is an exploratory retrospective documentary study based on database analysis with information from different variables on the researcher's profile and the theses defended, namely: sex; time between undergraduate studies and thesis defense; type of institution; geographic region; area of knowledge established by the National Council for Scientific and Technological Development-CNPq; topics according to the Committees of the Brazilian Society of Speech-Language Pathology and Audiology-SBFa and the objectives and procedures used. **Results:** Most of the professionals with a Doctoral Degree among

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the 396 theses analyzed are female (94%), defended their thesis within 10 years after the Undergraduate Degree (35%), in public institutions (76%), located in the Southeast region (67.7%), mostly in the area of Linguistics, Literature and Arts (42.5%), focused on oral and written language in childhood and adolescence (57.6%), and addressing assessment (60.7%). **Conclusion:** Most of the theses were defended by female doctors in Brazilian public institutions in the Southeast region, addressing topics of oral and written language in childhood and adolescence.

Keywords: Speech Language Pathology and Audiology; Language therapy; Speech; Periodical publications; Scientific production indicators; Academic Education.

Resumo

Introdução: Para fortalecer uma profissão é imprescindível a prática vinculada a estudos científicos. Doutorado é o curso de pós-graduação que permite aos profissionais se dedicar a uma pesquisa aprofundada sobre determinado tema com objetivo de solucionar problemas relevantes à sociedade e contribuir com o conhecimento acadêmico e o progresso científico. **Objetivo:** Caracterizar o perfil dos fonoaudiólogos brasileiros e suas respectivas teses defendidas na área de linguagem entre os anos de 1976 e 2017. **Método:** Estudo documental retrospectivo do tipo exploratório baseado em análise de banco de dados com informações de diferentes variáveis sobre o perfil do pesquisador e das teses defendidas, a saber: sexo; tempo entre término da graduação e defesa da tese; tipo de instituição em que a tese foi defendida; região geográfica; área de conhecimento estabelecida pelo Conselho Nacional de Desenvolvimento Científico e Tecnológico-CNPq; temáticas de acordo com os Comitês da Sociedade Brasileira de Fonoaudiologia-SBFa e quanto aos objetivos e métodos utilizados. **Resultados:** Dentre as 396 teses analisadas, a maioria dos doutores é do sexo feminino (94%), defendeu sua tese em até 10 anos após a graduação (35%), em instituições públicas (76%), situadas na região Sudeste (67,7%), em programas da área da Linguística, Letras e Artes (42,5%), com temática em Linguagem oral e escrita na infância e adolescência (57,6%), versando sobre avaliação (60,7%). **Conclusão:** A maioria das teses foi defendida por doutores do sexo feminino em instituições brasileiras e públicas da região Sudeste, abordando temas de linguagem oral e escrita na infância e na adolescência.

Palavras-chave: Fonoaudiologia; Terapia da linguagem; Fala; Publicações periódicas; Indicadores de produção científica; Formação acadêmica.

Resumen

Introducción: Para fortalecer una profesión, la práctica ligada a los estudios científicos es fundamental. El doctorado es el curso de posgrado que permite a los profesionales dedicarse a la investigación profunda sobre un tema determinado con el fin de resolver problemas relevantes para la sociedad y contribuir al conocimiento académico y al progreso científico. **Objetivo:** Caracterizar el perfil de los fonoaudiólogos brasileños y sus respectivas tesis defendidas en el área de lenguaje entre 1976 y 2017. **Método:** Estudio documental retrospectivo exploratorio basado en el análisis de bases de datos con información de diferentes variables sobre el perfil del investigador y las tesis defendidas, a saber: sexo; tiempo entre graduación y defensa de tesis; tipo de institución en la que se defendió la tesis; región geográfica; área de conocimiento establecida por el Consejo Nacional de Desarrollo Científico y Tecnológico-CNPq; temas de acuerdo con los Comités de la Sociedad Brasileña de Patología del Habla-Lenguaje y Audiología-SBFa y los objetivos y métodos utilizados. **Resultados:** Entre las 396 tesis analizadas, la mayoría de los doctores son mujeres (94%), defendieron su tesis dentro de los 10 años posteriores a la graduación (35%), en instituciones públicas (76%), ubicadas en la región Sudeste (67,7%), en programas del área de Lingüística, Letras y Artes (42,5%), con temática sobre lenguaje oral y escrito en la niñez y la adolescencia (57,6%), que se ocupan de la evaluación (60,7%). **Conclusión:** La mayoría de las tesis fueron defendidas por doctoras en instituciones públicas y brasileñas de la región Sudeste, abordando temas del lenguaje oral y escrito en la infancia y la adolescencia.

Palabras clave: Fonoaudiología; Terapia del Lenguaje; Habla; Publicaciones Periódicas; Indicadores de Producción Científica; Enseñanza.

Introduction

There are several purposes for the production of scientific studies, such as the dissemination of knowledge produced and the creation of a community of interest involving certain topics and research objects.¹ With regard to the production of doctoral theses specifically, the aspect of originality is an essential requirement insofar as original findings are fundamental to scientific progress.²

Thus, it is crucial that professional practice is associated with scientific studies to strengthen the profession of speech-language pathologists. From this perspective, the Doctoral Degree is the *stricto sensu* Graduate program that allows professionals to focus on in-depth research on a particular topic in order to solve problems, being relevant to society, in addition to contributing to the advancement of academic knowledge.³

Therefore, in addition to making it possible to know and disseminate this material, the profiling of speech-language pathologists and their doctoral theses, it is also possible to stimulate scientific research, enabling the planning of new work agendas and, thus, contributing to the construction of knowledge in the area. In this sense, there are some initiatives that have been developed for this purpose.⁴⁻⁸ More recently, aiming to update these data, Ferreira et al. (2019)⁸ surveyed the theses defended by speech-language pathologists from 1976, when the first Doctoral Thesis in Speech-Language Pathology and Audiology was defended, until March 2018. This survey found 1125 theses considering the different subareas of Speech-Language Pathology and Audiology. Thus, the objective of this study is to make a data cut on this material, considering only the theses addressing topics related to language in order to characterize the profile of these speech-language pathologists and their respective theses defended from 1976 to 2017. This data cut was selected based on the theoretical-methodological diversity in this area, which, on the one hand, can produce a dispersion that makes its consolidation difficult, but, on the other hand, can withstand a tension required for the production of knowledge. Therefore, it is assumed that the definition of the profile of these theses will help us to limit and give due importance to the different types of methodologies used in the language area, as well as to the topics covered.

Method

This is a retrospective, exploratory study, using the database of the study by Ferreira et al. (2019)⁸.

As a survey using searches on the Lattes Platform, and according to the study design, there was no need for approval by the Research Ethics Committee.

It should be noted that the data collected at the time of the study (March/2018) helped to prepare a database referring to theses defended by Brazilian speech-language pathologists⁸. However, from the first record, in 1976, until 2017, 1,125 theses eligible for analysis were identified, and, as the data cut for this study selected only the theses defended in the Language area, 396 (35.2%) theses were identified for analysis.

Initially, the researchers used the following variables for the analysis and collection of the original database: sex; time between graduation and thesis defense (in years); type of educational institution (State, Federal, Private or International), geographic region of the institution (North, Northeast, Southeast, South, Central-West or other countries); area of knowledge of the CNPq [*National Council for Scientific and Technological Development*] (Health Sciences, Human Sciences, Biological Sciences, Social Sciences, Exact Sciences or Linguistics, Literature and Arts); period of completion of the Doctoral Degree (grouped in years: before 1990, from 1990 to 1999, from 2000 to 2009 and from 2010 to 2018); subfield of expertise of Speech-Language Pathology in Language established and recognized as committees by the SBFa [*Brazilian Society of Speech-Language Pathology and Audiology*] (Oral and written language in childhood and adolescence; Oral and written language of adults and elderly people; Fluency; Alternative Communication and LIBRAS [*Brazilian Sign Language*]).

The analysis of the results was carried out in two different moments after the selection of the variables: in the first moment, the researchers defined the profile of the institution in which the thesis was defended, the geographical region of the institution, and the area of knowledge according to CNPq. Then, in a second step, the researchers defined the profile of the subfield of expertise of Speech-Language Pathology and Audiology according to the Language Committees of the SBFa.

The theses were then grouped into five categories, namely: A1: Studies that use assessment instruments in their methods; A2: Studies that aim to propose assessment instruments; T1: Studies that use therapy in their methods; T2: Studies that aim to propose intervention programs or therapeutic methods; and Other: Studies that do not fit into any of the above groups.

A descriptive analysis of the data was performed using absolute and relative frequencies, measures of central tendency and dispersion.

The last eligible year for trend analysis was 2017, and the researchers prepared scatter plots in order to visualize the most suitable function for the model. Thus, this study used linear regression ($y = \beta_0 + \beta_1 X$) considering the coefficient of determination (R^2) and homoscedasticity by residual analysis. In addition, the three-period moving average was applied in order to smooth short-term fluctuations and highlight longer-term trends.

A descriptive level ($p < 0.05$) was assumed for statistical significance. The data were introduced in an Excel spreadsheet and analyzed in the SPSS v22.0 for Windows.

Results

The period of analysis included 41 years (1976 to 2017), during which 396 theses defended were registered, as previously reported.

It should be noted that the first thesis in Language, entitled “*A norma fonético-fonológica do paralítico-cerebral*”, defended by Dr. Suzana Magalhães Maia, at Universidade de São Paulo (USP), was also the first thesis in Speech-Language Pathology and Audiology¹⁰.

Table 1 shows that most professionals with a Doctoral Degree in the area are female (96.71%), and just over a third of them defended their thesis within 10 years after completing their degree in Speech-Language Pathology and Audiology (35.1%).

The average time between the Undergraduate Degree and the Doctoral Degree was 14.8 years ($SD=6.8$), with a median of 13, ranging from 3 to 34 years.

A growing trend was observed with a statistically significant average increment of one thesis each year (Theses = $-2.72 + 1.04x$; $p < 0.001$ – $R^2 = 0.96$)

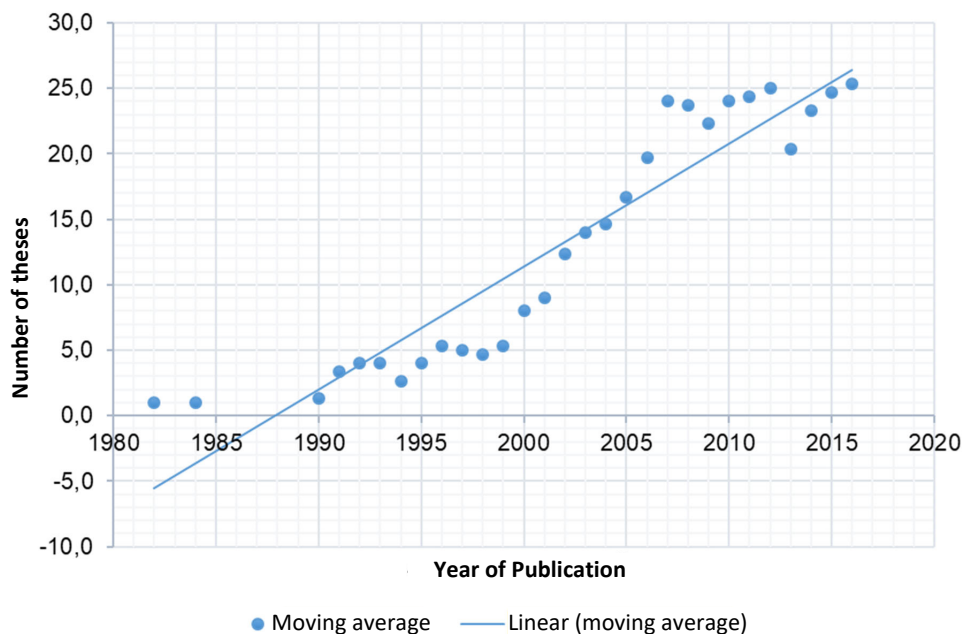


Figure 1. Analysis of the distribution of theses over the years.

As for the characteristics of the institution in which the theses were defended, most of the professionals obtained their Doctoral Degree in Brazilian institutions (95%), public (76%), located in the

Southeast region (67.7%), in Programs focused, for the most part, in the areas of Linguistics, Literature and Arts (42.4%), followed by Health Sciences (40.9%) (Table 1)

Table 1. Numerical and percentage distribution of theses defended by Brazilian speech-language pathologists based on the study variables

Variable	N	%
Sex		
Female	383	96.7%
Male	13	3.3%
Time between undergraduate and doctoral degrees (years)		
Up to 10 years	139	35.1%
11 to 15	107	27.02%
16 to 20	63	15.9%
21 to 25	44	11.11%
26 to 30	29	7.32%
31 to 35	12	3.03%
*Nothing on record	3	0.75%
Type of educational institution		
Federal	160	40.40%
State	141	35.60%
Private	75	18.93%
International	20	5.05%
Geographic regions		
Southeast	268	67.67%
South	61	15.40%
Northeast	42	10.60%
Central-West	5	1.26%
North	1	0.25%
Abroad	19	4.80%
Period of completion (year) of the doctoral degree		
Before 1990	03	0.75%
1990 to 1999	39	9.84%
2000 to 2009	166	41.91%
2010 to 2018	188	47.47%
Knowledge area of the CNPq [National Council for Scientific and Technological Development]		
Health Sciences	162	40.90%
Human Sciences	59	14.90%
Biological Sciences	5	1.26%
Social Sciences	1	0.25%
Exact Sciences	1	0.25%
Linguistics, Literature and Arts	168	42.42%

* 03 theses that did not include the data required for analysis.

Table 2 shows the data related to the analysis of the topic addressed in the theses. Based on the categorization according to the Committees of the SBFa, more than half of the theses are related to the subfield of oral and written language in childhood and adolescence (54.04%), followed by oral and written language of adults and elderly people (21.21%). In turn, the category called “others” (11.61%) included studies on specific topics, such as some genetic syndromes reported in the clinical practice of the speech-language pathology, in addi-

tion to studies on topics that are general pillars in the speech-language pathology clinic. In the analysis that considered whether the topic of the theses addressed assessment (A1 and A2) or therapy (T1 and T2), most of the theses (60.35%) referred to assessment, recorded in the methodological procedures. This means that either the author used the evaluation as a resource to achieve the research objective (A1 - 50.25%) or in order to propose and/or validate an evaluation instrument (A2 - 10.10%).

Table 2. Numerical and percentage distribution of theses defended by Brazilian speech-language pathologists, regarding the topic addressed.

Speech-language pathology practice according to the proposal of the Committees of the SBFa [Brazilian Society of Speech-Language Pathology and Audiology]	n	%
Oral and written language in childhood and adolescence	214	54.04%
Oral and written language of adults and elderly people	84	21.21%
Fluency	20	5.05%
Alternative Communication and LIBRAS [Brazilian Sign Language]	32	8.08%
Other	46	11.61%
Classification of thesis content by category		
A1	199	50.25%
A2	40	10.10%
T1	44	11.11%
T2	18	4.54%
Other	98	24.74%

Abbreviations: A1: Studies that use assessment instruments in their methods; A2: Studies that aim to propose assessment instruments; T1: Studies that use therapy in their methods; T2: Studies that aim to propose intervention programs or therapeutic methods; Other: Studies that do not fit into any of the above groups.

Discussion

The record that almost all speech-language pathologists with a Doctoral Degree in the area of language are female is a finding of this study that is in line with the vast majority of studies that analyze, since the beginnings of Speech-Language Pathology and Audiology, some aspect related to the performance of speech-language pathologists and that include this variable^{5,8,11}. This finding can be explained both by the Brazilian demographic trend, which shows an increase in the female population, and by the increase in the number of women who choose health professions linked to caring for others¹².

Regarding the time between the Undergraduate Degree and the Doctoral Degree, there are more Doctoral theses defended by speech-language

pathologists who graduated recently compared to those who graduated longer ago. This means that the number of theses is inversely proportional to the time between the Undergraduate Degree and the Doctoral Degree. This finding is in line with the professional report of several speech-language pathologists who report that, after a few years dedicated to professional practice, they find it very difficult to return to the academic area to dedicate themselves to their studies. In addition, it is known that the expansion of *stricto sensu* graduate courses and the growing increase in research funding during undergraduate studies, through Scientific Initiation scholarships, have favored the extension of graduate studies following the graduation¹¹.

In this sense, the number of theses produced in the area of language in Speech-Language Pathology and Audiology has also been growing every

year, with a higher concentration recorded in the last years analyzed (2010 to 2017). In this regard, the increase in the number of theses in all areas of Speech-Language Pathology and Audiology should be highlighted, which is probably due to the greater number of professionals seeking to continue their studies after graduation. In addition, it should also be noted that the data were collected on the Lattes Platform, which in recent years has been the place where researchers promote their technical and scientific productions, and also the increase in *Stricto Sensu* Graduate programs in Speech-Language Pathology and Audiology^{5,8,11}. With regard to this last aspect, it is worth noting that in 1972 there was a single Program that made it possible to carry out the Master's Degree and Doctoral Degree, while currently there are 12 in the area of Speech-Language Pathology and Audiology at Capes. This number includes programs that offer only the Master's Degree, including the professional modality (5) or also the Doctoral Degree (7). In addition, there is also the possibility that the speech-language pathology may choose to develop their thesis also in programs in other areas⁹.

In addition, most theses were registered in the Southeast region (67.60%), which is also the region that concentrates the largest number of speech-language pathologists in Brazil and most graduate courses. According to the SBFa, seven (58.3%) of the twelve Master's and Doctoral programs are located in the state of São Paulo⁹.

This study also shows that the highest percentage of theses was defended in public, federal and state institutions, which can be explained by the fact that these institutions have older and more consolidated Doctoral programs in the area⁸ and by offering free training courses, which facilitates entry and student retention. Often, this does not occur in private institutions that offer paid courses, which are usually expensive, considering the average salary of speech-language pathologists¹³.

As for the area of knowledge of the Graduation Program among those established by CNPq [National Council for Scientific and Technological Development], there was a greater choice for Programs focused on the areas of "Linguistics, Literature and Arts" and "Health". This finding can be explained by the very foundations of the creation of Speech-Language Pathology, which emerged from the practices of Medicine and Education, but also from Psychology and Linguistics and, as

such, much of its clinical reasoning is based on these sciences^{14,15}.

The time between Undergraduate Degree and Doctoral Degree was concentrated in up to 10 years, which shows that systematic Graduate programs are more recent and have grown since the 1990s, when there was an expansion of postgraduate courses. In turn, these programs have evolved in terms of quality, quantity and accessibility¹⁶ with the creation of some programs in other regions of Brazil. Therefore, it is expected that professionals who graduated longer ago took longer to complete their Doctoral Degree, as shown in the results, and that younger professionals decide to continue their qualifications soon after completing their Undergraduate Studies⁹.

With regard to the division of theses according to the proposal of the Committees of the SBFa, the high prevalence of theses focused on the study of children's oral and written language and the reduced production of theses in the area of Fluency, and Alternative Communication and Brazilian Sign Language, lead to a questioning about the subdivision of the language committees of the Brazilian Society of Speech-Language Pathology and Audiology. This proposed division is probably based on the definition of speech-language pathology, which details that these professionals are "... the professionals responsible for health promotion, prevention, assessment and diagnosis, guidance, therapy (development and rehabilitation) and improvement of speech-language pathology aspects of peripheral and central auditory function, vestibular function, oral and written language, voice, fluency, speech articulation and myofunctional, orofacial, cervical and swallowing systems". As the description of the speech-language pathology practice recognizes several areas of activity, it opens up possibilities for speech-language pathologists to organize (research, publish, and propose committees, congresses, seminars, and specializations) according to each area. This leads to a verticalization of the area into subareas, represented in the SBFa by the Departments and Committees.

In addition, when analyzing the content of these theses, it is possible to notice another very significant finding that, if taken into account for the direction of future studies, will provide the speech-language pathologist with important advances in their training: Among the theses analyzed, there were six times more theses related to assessment

protocols in language when compared to proposals for analysis of therapeutic processes. Since studies involving assessment protocols are usually of a quantitative nature, while studies addressing intervention are mostly qualitative, it is possible to state that research involving language assessment protocols are more likely to achieve the “desired objectivity”, as they meet the submission rules for publication in journals and include statistically significant data and recent published literature. On the other hand, most qualitative studies in language are carried out without the use of protocols that allow measurements of clinical evolution, which are supposedly more objective. This means that these studies are less measurable and usually include a statistically insignificant sample, constituting case studies^{18,19}.

However, when carried out with the theoretical-methodological rigor that defines them, the case studies allow a scientifically consistent analytical generalization, which results in a prestige evidenced by the publication in qualified speech-language pathology journals¹⁸.

Conclusion

The descriptive and statistical analysis of the findings in this study allowed profiling the theses in the area of language defended by Brazilian speech-language pathologists from 1976 to 2018 (March). As shown in the findings, most of the theses were defended by female professionals, within 10 years after Undergraduate Studies in Speech-Language Pathology and Audiology, linked to Brazilian public institutions located in the Southeast region and focused on topics addressing mainly oral and written language in childhood and adolescence. In addition, most researchers carried out studies that involved language assessment processes.

Thus, it is believed that the findings obtained in this study were essential to better understand the qualification of Speech-Language Pathology and Audiology professionals in the area of Language. In this sense, it is emphasized that Doctoral programs, as well as Master’s programs, aim to train professionals focused on the production and transmission of knowledge with the objective of transforming this most recent and good quality scientific knowledge into significant professional performances²⁰. In addition, having empirical data and disseminating them in recognized communication vehicles

facilitates the promotion of new research and the consolidation of a field of knowledge in constant transformation.

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