Original Article

https://doi.org/10.1590/2317-6431-2025-3061en

Audiology Communication Research
ISSN 2317-6431

Profile of speech-language-hearing pathologists working in head and neck cancer in Brazil

Perfil dos fonoaudiólogos que atuam em câncer de cabeça e pescoço no Brasil

Katia Nemr[1], *Fernanda Roberta de Faria Rocha da Silva*[1], *Rafaela Negretti de Lima*[1], *Gilberto da Cruz Leal*[1], *Michelle Guimarães*[2], *Felipe Moreti*[3]

ABSTRACT

Purpose: To characterize the profile of Brazilian speech-language pathologists who work with patients with head and neck cancer. **Methods:** This is a descriptive, exploratory, and cross-sectional study conducted by the Committee of the Brazilian Society of Speech-Language Pathology in partnership with the University of São Paulo. Data were collected through a semi-structured electronic questionnaire covering the following topics: sociodemographic data; education and professional practice in head and neck cancer; areas requiring further training; and the meaning of working in oncologic speech-language pathology. **Results:** A total of 128 Brazilian speech-language pathologists identified as working in oncologic area participated in the study. Most participants were female, aged between 31 and 50, mainly working in the Southeast and Northeast regions of Brazil, with specialist certifications (mostly in dysphagia, voice, and/or orofacial motricity) and/or short-term postgraduate training in various areas of speech-language pathology. Among them, 43.75% held a master's or doctoral degree. Most reported working in more than one setting (e.g., hospital and private practice), with self-employed and formal contracts being the most common arrangements. The majority (92.2%) worked in oncology and other areas, and nearly half combined clinical practice with research, teaching, and/or administrative duties. Topics of greatest interest for further training included therapeutic techniques and palliative care. The words most frequently associated with the meaning of this work were: "quality of life," "rehabilitation," "reframe," and "challenge." **Conclusion:** The practice of oncologic speech-language pathology is marked by diverse clinical contexts, multiple roles, and a continuous pursuit of professional development. This expanding field calls for structured policies in education and work to meet the clinical, ethical, and human demands of head and neck cancer rehabilitation.

Keywords: Speech, language and hearing sciences; Head and neck neoplasms; Professional training; Job description; Specialization

RESUMO

Objetivo: caracterizar o perfil dos fonoaudiólogos brasileiros que atuam com pacientes com câncer de cabeça e pescoço. **Métodos:** estudo descritivo, exploratório e transversal, realizado pelo Comitê de Fononcologia da Sociedade Brasileira de Fonoaudiologia em parceria com a Universidade de São Paulo. Utilizou-se um formulário eletrônico semiestruturado, com blocos sobre dados sociodemográficos, formação e atuação em fononcologia, áreas de aprofundamento e o significado de atuar na área. **Resultados:** participaram 128 fonoaudiólogos brasileiros identificados como atuantes em fonoaudiologia oncológica. A maioria era do sexo feminino (85,9%), com idade entre 31 e 50 anos, atuando, sobretudo, nas Regiões Sudeste e Nordeste, com certificações de especialista (principalmente em disfagia, voz e/ou motricidade orofacial) e/ou formações de curta duração em diversas áreas. Entre os participantes, 43,75% possuíam mestrado ou doutorado. A maior parte relatou trabalhar em mais de um ambiente (hospital, consultório, etc.), sendo os vínculos autônomos e formais os mais comuns. A maioria (92,2%) atuava em oncologia e em outras áreas, e quase metade também exercia atividades de pesquisa, ensino e/ou gestão. Os principais interesses de aprofundamento foram técnicas fonoaudiológicas e cuidados paliativos. As palavras mais citadas sobre o significado da atuação foram: "qualidade de vida", "reabilitação", "ressignificar" e "desafio". **Conclusão:** a atuação em Fononcologia é marcada por diversidade de contextos, múltiplas funções e busca por qualificação contínua. Os dados apontam para um campo em expansão que demanda políticas estruturadas de formação e trabalho, alinhadas às exigências clínicas, éticas e humanas da reabilitação em fononcologia.

Palavras-chave: Fonoaudiologia; Neoplasias de cabeça e pescoço; Capacitação profissional; Perfil profissional; Especialização

Study carried out at Universidade de São Paulo – USP – São Paulo (SP), Brasil.
[1]Departamento de Fisioterapia, Fonoaudiologia e Terapia Ocupacional, Faculdade de Medicina, Universidade de São Paulo – USP – São Paulo (SP), Brasil.
[2]Departamento de Fonoaudiologia, Universidade Federal do Espírito Santo – UFES – Vitória (ES), Brasil.
[3]Departamento de Fonoaudiologia, Faculdade de Filosofia e Ciências, Universidade Estadual Paulista "Júlio de Mesquita Filho" – Unesp – Marília (SP), Brasil.
Conflict of interests: No.
Authors' contribution: KN, FM and MG were responsible for designing and coordinating the study, analyzing and discussing the data and writing the manuscript. FRFRS, RLN and GCL participated in data collection, data analysis and revision of the manuscript.
Data Availability Statement: Research data is not available.
Funding: None.
Corresponding author: Katia Nemr. E-mail: knemr@usp.br
Received: May 13, 2025; **Accepted:** September 09, 2025
Editor-in-Chief: Maria Cecilia Martinelli Iorio.
Associate Editor: Cláudia Regina Furquim de Andrade.

This is an Open Access article distributed under the terms of the Creative Commons Attribution license (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The work of speech-language-hearing (SLH) therapy in oncology, especially in head and neck cancer (HNC), is complex and comprehensive, aiming to improve quality of life through functional and aesthetic outcomes. SLH impairments vary depending on the type and location of the tumor and the therapeutic modalities adopted. Thus, voice, swallowing, and oral-motor impairments can occur to varying degrees[1].

Although head and neck oncology is not yet an officially recognized specialty by the Brazilian Federal SLH Council (CFFa), it has been gradually incorporated into SLH practice in Brazil since the 1970s – i.e., even before the official recognition of the profession, which occurred in 1981[2]. More recently, the practice has expanded to general oncology and palliative care[3-5].

Known nationally as phononcology, work in this field depends on broad theoretical and practical knowledge[6,7]. The training of professionals working in this field, and especially in HNC, encompasses a broad field of knowledge involving multiple SLH specialties, such as voice, speech, oral-motor therapy, and dysphagia.

This recognized role in multidisciplinary teams begins with oncological diagnosis and continues through pre-rehabilitation intervention, speech therapy, monitoring communication and feeding conditions, and, in some cases, palliative care. Similarly, experts agree that SLH assessment, in this context, should include aspects of oral motor skills, voice, swallowing, articulation pattern, and the use of a feeding tube, temporary or permanent tracheostomy, and respiratory conditions[8-10]. The literature has scarcely addressed the complexity of this subspecialty or the profile of SLH pathologists for this role[8].

The authors of a recent study on the training of SLH pathologists in HNC in the United Kingdom shared an educational program developed over 18 months. It aimed to train and qualify SLH pathologists who worked in HNC, allowing them to acquire the necessary skills to offer a new integrated service that, according to the authors, met the demands and needs of two regional HNC services[9].

It is known that, to understand the scenario of a given field, one must investigate the characteristics of specific professional groups, considering sociodemographic, educational, and performance characteristics. Hence, there is a need for research that establishes direct interaction with these professionals.

SLH studies with different objectives have sought to map specific professional and/or practice profiles. A recent study documented the individual and professional factors and the region of practice of SLH pathologists working in Brazil with social media profiles. The authors concluded that approximately two-thirds of them use their profiles professionally, which suggests the need for reflection and discussion on desirable and accepted approaches regarding the appropriate use of these media for work[11].

A study[12] aimed to identify the main aspects of SLH pathologists' decision-making when recommending the use of augmentative and alternative communication (AAC) and concluded that there is a lack of research and professional training in this area. Another study[13] analyzed the profile of SLH pathologists working in oral-motor therapy and found that the majority are women over 41 years old with specialist qualifications. These professionals work in various domains and levels of complexity within the field, with an emphasis on the diagnosis and rehabilitation of orofacial myofunctional disorders.

Hence, for a field to expand in an organized manner and consolidate its credibility, it is essential to understand the profile of the professionals involved in clinical and academic practice. These periodic investigations reveal the trends in a given field (whether there are qualitative and quantitative advances and any existing gaps) and equip the profession to improve training and clinical practice. The importance of characterizing the profile of SLH pathologists who work with individuals with HNC, for example, lies in the need to understand the conditions under which they provide their services, which can help to improve clinical practices and develop more assertive guidelines.

Furthermore, surveying and analyzing their profiles provides crucial data for identifying gaps in academic training and professional development and implementing strategies that foster continuous improvement in the care and rehabilitation of these patients. This knowledge also assists professionals in specialized referrals, equips teachers in professional training, and stimulates the creation of job openings and additional courses that meet potential identified needs.

There is a clear lack of studies that seek to characterize the profile of Brazilian SLH pathologists working in HNC, despite the complexity and specificity of this field. The scarcity of systematized data makes it difficult to understand who these professionals are, how they are trained, where they work, and what their main training and care needs are. Given the above, this study aimed to characterize the profile of Brazilian SLH pathologists working in phononcology.

METHODS

Study type

This quantitative, descriptive, exploratory, cross-sectional study was approved by the Research Ethics Committee of the University of São Paulo School of Medicine (FMUSP), under approval number 7.211.011.

This study was carried out in partnership between FMUSP's SLH Program and the Brazilian SLH Society (SBFa), through the Phononcology Committee (management 2023-2025), linked to the Voice Department.

Study population

The participants were SLH pathologists with valid and active registration in Brazil and who self-identified as working in phononcology, with an emphasis on HNC. All participants agreed to participate in the study by reading and signing an electronic informed consent form.

Eligibility criteria

The study eligibility criteria were being a SLH pathologist with a valid and active registration with the respective Regional SLH Council and working or self-declaring to work in phononcology with an emphasis on HNC. Professionals who did not have experience working with HNC or who did not complete the data collection instrument were excluded.

Data collection and organization

A semi-structured electronic form was created with four sections that addressed sociodemographic data, HNC training and experience, areas in which they need further training, and the meaning of working in phononcology (Appendix 1). Data were collected between September and November 2024.

It's worth noting that the instrument allowed SLH pathologists to select multiple options, including fields where they complement responses. Thus, for certain items, it was possible to select multiple qualification options, such as specialties and professional practice locations.

This study used convenience sampling, complemented by the snowball technique[14], a non-probabilistic sampling strategy. It is used when access to the study population is difficult or restricted. In this method, the researcher begins with a limited number of participants (initial cases) who meet the research eligibility criteria. These participants, in turn, refer or recruit new participants to the sample, who may also refer others, and so on, forming a growing network of individuals[14]. To this end, 30 SLH pathologists known to work in this field and belonging to a common WhatsApp group were initially invited. They were asked to forward the invitations to professionals with whom they had contact. Additionally, the survey was publicized on the researchers' social media channels.

The data were organized in a Microsoft© Excel spreadsheet and analyzed using descriptive statistics, with presentation of absolute and relative frequencies.

RESULTS

Sociodemographic data

Altogether, 128 SLH pathologists responded to the online questionnaire by the deadline announced in the invitations. Chart 1 describes the survey participants.

Chart 1. Characterization of participants

Age range	N (128)	%
20 to 30 years	26	20.3
31 to 40 years	27	21.1
41 to 50 years	52	40.6
51 to 60 years	12	9.4
Over 60 years	11	8.6
Gender	**N (128)**	**%**
Females	110	85.9
Males	18	14.1
Region of Brazil	**N (128)**	**%**
North	6	4.7
Northeast	22	17.2
South	12	9.4
Southeast	84	65.6
Central-West	4	3.1
Highest title	**N (128)**	**%**
Bachelor's degree	9	7
Specialist	55	43
Master's degree	19	14.9
Doctoral degree	37	28.9
Postdoctoral degree/Associate professor/Full professor	8	6.2

Subtitle: N = number of participants; % = percentage

Chart 2. Participants' contact with speech-language-hearing care of patients with head and neck cancer

In undergraduate studies	**N (90)**	**%**
	In one or more classes of a course = 37	41.1
	In a specific theoretical or internship course = 35	38.9
	During undergraduate studies, but outside of college = 14	15.5
	In undergraduate research or senior project = 3	3.4
	Volunteering at the university = 1	1.1
In postgraduate studies	**N (30)**	**%**
	During postgraduate studies = 30	100
At work	**N (7)**	**%**
	At the hospital or clinic	100
Through journals	**N (1)**	**%**
	By reading an article in the journal	100

Subtitle: N = number of participants; % = percentage

HNC training and practice

Chart 2 presents information regarding the respondents' first contact with SLH pathology in the care of patients with HNC.

The results of professional training showed that four of the nine SLH pathologists who had only a bachelor's degree (7%) were, at the time of collection, attending residencies or specializations. Of the total sample, 111 (86.7%) reported having completed several short-term complementary courses to their undergraduate degree, in the most varied SLH and related areas.

Regarding specializations, 103 participants (80%) reported being specialists in some SLH areas or in health areas other than those recognized as SLH specialties. Chart 3 shows the list of specialties.

Also, 56 professionals (43.75%) had master's and doctoral degrees. Of the 37 with doctoral degrees, 12 did not mention a master's degree, which may indicate a direct doctorate. Regarding educational background, 23 participants (18%) reported having completed some additional training abroad.

Regarding professional performance, 127 participants (97.7%) were working or had worked with individuals diagnosed with HNC in the last 3 years. Of these, 25 (19.68%) had worked for less than 5 years; 23 (18.11%) for 5 to 10 years; 21 (16.53%) for 11 to 15 years; 24 (18.89%) for 16 to 20 years; 17 (13.38%) for 21 to 25 years; 17 (13.38%) over 25 years. Of the total participants, 10 (7.8%) worked exclusively in phononcology, and the remaining 118 (92.2%) also worked in other areas.

Most participants worked in more than one location: 91 (72.2%) worked in hospitals; 77 (61.1%) in offices; 51 (40.5%) in clinics/outpatient clinics; 44 (34.9%) in educational institutions; and 14 (11.1%) in management, including professional associations. The most cited employment relationships were self-employed by 57 participants (44.9%); Brazilian CLT (labor-law contract) by 48 (37.8%); statutory by 30 (23.6%); and legal entity by 37 (29.1%), some of which overlapped.

Areas in need of further study

Clinical practice, research, teaching, and management predominated, being combined in the case of 62 professionals (48.43%); clinical practice alone was the case of 64 (50%); and research alone was practiced by one participant (0.78%). The topics of greatest interest for further study in the area, cited by 126 participants, were SLH techniques (69.8%), palliative care (64.3%), organ preservation protocols (36.5%), salivary gland cancer (34.1%), and quality of life (30.2%).

Meaning of working in phononcology

Participants were asked to summarize, in a single word, what it means to work in phononcology. Figure 1 shows the word cloud generated from the 128 responses. The size of each word represents its frequency of mention – i.e., the larger the word, the more often it was mentioned by respondents.

Chart 3. List of the respondents' professional specialties

	N (103)	%
Specialty	Specializing in dysphagia = 22	21.4
	Specializing in voice = 18	17.5
	Specializing in dysphagia and oral-motor therapy = 13	12.6
	Specializing in oral-motor therapy = 10	9.7
	Specializing in three areas = 10	9.7
	Specializing in dysphagia and voice = 5	4.8
	Specializing in oral-motor therapy and voice = 3	2.9
	Others = 22*	21.4

* = other specialties, such as language, gerontology, hospital speech-language-hearing therapy, audiology, health education, neuropsychology, public health, neurofunctional speech-language-hearing therapy, palliative care, intensive care/critical adult care, occupational speech-language-hearing care, and neonatology

Subtitle: N = number of participants; % = percentage

DISCUSSION

This study aimed to map the profile of Brazilian SLH pathologists working in phononcology with an emphasis on HNC, based on their self-reported experience. Because this is a complex practice that encompasses different SLH specialties, understanding these professionals' characteristics allows us to reflect on strategies that can strengthen, expand, and consolidate this field. Furthermore, the lack of recent national publications with this type of mapping reinforced the need for this research.

When searching recent international literature, the only study that addressed this issue in some way comes from the United Kingdom. The authors noted that, in an initial informal comparative evaluation of SLH pathology services in HNC, they observed that two services had the smallest substantial staffing levels, while simultaneously serving the largest group of individuals with HNC. The same authors emphasized that there is no nationally accepted undergraduate or postgraduate SLH curriculum specialized in HNC in the United Kingdom[9], which confirms the Brazilian reality of not having an SLH HNC specialty.

The sampling was established by inviting a group of recognized experts working in the field. The snowball sampling method[14] was used through their contacts and social media outreach to complement the sample, allowing the largest possible number of professionals to participate in the study. This approach was necessary because the sample size calculation proved statistically unfeasible. Establishing a defined population for calculation purposes, such as the number of specialists registered with the Council in a given SLH specialty area, would not reflect reality, precisely because of the said complexity. Furthermore, considering an undefined population would also lead to an unrealistic overestimation of the number of SLH pathologists working in the field. This finding, along with the uncertainty surrounding the number of SLH pathologists working in HNC, reinforced the relevance of this study.

An initial informal survey, although similar to this one regarding the investigated sample aspects, was conducted

Figure 1. Word cloud

internally by the SBFa Phononcology Committee in 2013 to implement a database within the SBFa for registering and recommending professionals by region and mapping their profiles[15]. At the time, 93 professionals responded to the preliminary questionnaire, representing two-thirds of the current list. The results are recorded at the SBFa in an internal report by the cited management. It is believed that this increase may have occurred due to increased dissemination on social media. However, further investigations may estimate whether there has, in fact, been an increase in the number of professionals, or whether access to the online questionnaires has become easier.

Over the last decade, the area has achieved significant representation, especially with the Green July campaigns (created by the Brazilian Society of Head and Neck Surgery [SBCCP] in 2014 and included in the Ministry of Health's calendar) and the engagement of scientific societies, professional councils, and professionals from related areas to publicize and strengthen the SLH role in the interdisciplinary team in HNC treatment[16-18].

Sample characterization revealed that most participants (85.9%) were 31 to 50 years old, an age range in which professionals already have a specialization and are seeking or have obtained their master's or doctoral degrees. The predominance of women agrees with the preliminary survey[15], corresponding approximately to the percentage of SLH pathologists in general, mostly comprising women. Other studies that aimed to characterize the profile of SLH pathologists in certain areas of activity confirm these results[11,12].

The wide range of experience, from up to 5 years to over 30 years, demonstrates that this is an area whose performance has been consolidated over the last 3 decades and which maintains the interest of younger professionals.

Approximately two-thirds of the sample worked in Southeastern Brazil, a finding consistent with a recent survey regarding the proportionality of CFFa enrollees by region[19]. Nevertheless, the other regions of Brazil were represented in one-third of the study sample. Reflection in this regard is relevant; despite being a restricted area, there are professionals working in it throughout Brazil. Added to this finding, to some extent, is the consonance with the general estimate by the National Cancer Institute (INCA)[20] for the number of cases by region of the country projected for 2024, in which half of the cases would be in the Southeast, a quarter in the Northeast, and the remaining cases in the other regions of the country. One possible explanation may lie precisely in the different demands and the search for qualified professionals, especially in head and neck surgery services spread throughout the country, most of which are references in the national and international scenario for this medical specialty[18].

This close interaction between SLH therapy and the medical specialty of head and neck surgery has existed since the beginning of the history of Brazilian phononcology, in the mid-1970s[2]. Over the decades, this partnership has integrated and complemented knowledge for the benefit of individuals undergoing HNC treatment with SLH sequelae and has been consolidated with SLH pathologists working on teams within and outside major centers, seeking professional development in reference centers, both nationally and internationally.

Regarding the maximum qualification, 103 professionals (80.4%) reported having at least one specialization, recognized or not by the CFFa. Of these, 64 (62.1%) went on to a master's, doctorate, and/or post-doctorate degree or associate professorship.

The questionnaire item on first exposure to phononcology offered surprising data compared to the previous preliminary survey, given that this knowledge appears to be more embedded in undergraduate curricula. The majority (n = 72; 80%) reported that it occurred during undergraduate studies, in one or more classes in a specific course, or during an internship. This progress in introducing undergraduates to the topic reveals a very different reality compared to the beginning of their careers in this field[2]. Further research that delves deeper into this issue regarding workloads and content could contribute to this mapping.

The few participants who mentioned having had contact with phononcology during their undergraduate studies through scientific initiation research or as a final project (n = 4; 4.4%) likely felt motivated to supplement their knowledge through specialization or a master's degree. Also noteworthy is the case of one participant who learned about the field through a printed article by an SLH pathologist working in phononcology (1.1%). Although this contact occurred some years ago, when there were no specific undergraduate courses on the topic, it demonstrates the importance of promoting knowledge in lesser-known areas. Similarly, constant promotion in different media, with well-founded and reliable information provided by experts, is essential for disseminating knowledge about this professional field. A recent study analyzed YouTube videos about voice guidance and found that not all the information in the videos was scientifically based, which means that people with voice problems have easy access to information that could even harm them if used in their professions[21]. The authors emphasize the need for specialists to disseminate reliable information. On the other hand, some SLH pathologists (n = 7; 5.4%) reported that their first contact with phononcology occurred in the workplace (hospital or clinic). These professionals, aged 41 to 60 years and with at least 16 years of experience, indicate that they began their careers when the field was not yet fully established.

Different levels of training should be considered besides the highest degree. In this regard, the specialization and/or residency programs mentioned have, in addition to the designations of voice, orofacial myology, and dysphagia, other names not necessarily related to any specialty recognized by the CFFa, such as oncology, intensive care, critical adult care, palliative care, and so forth. Among the 71 specialists in at least one of the three areas (voice, orofacial myology, and dysphagia), 20.3% reported two, and 9.7% all three areas of specialization; other professionals combined other SLH specialties, such as language, public health, and management.

It is worth highlighting a relevant historical fact here: audiology, language, orofacial motricity, voice, and public health were among the first SLH specialties recognized by the CFFa in 2006[22]. Currently, 15 specialties are recognized by the CFFa: language, oral-motor therapy, voice, audiology, public health, dysphagia, occupational SLH therapy, hospital SLH therapy, neurofunctional SLH therapy, gerontology, educational SLH therapy, fluency, neuropsychology, forensic SLH analysis, and otoneurology. According to the CFFa, other specialties are under study, and SLH therapy approaches several areas in all practice scenarios in addition to those recognized[23].

This finding leads to some reflections. Postgraduate phononcology training allows SLH pathologists to pursue specialist status in various fields, such as after residencies in oncology. Options such as hospital SLH therapy, depending on the program profile, may include oncology focused more on dysphagia, as well as courses focused on intensive care or

critically ill adults. Specific courses in voice, oral-motor therapy, and dysphagia cover general head and neck knowledge and may or may not include a practical component, depending on the location where they are offered. Furthermore, when searching by specialty on the CFFa website during the development of this research, it was observed that there is no way to identify specialists in this area. This explains, in addition to the sampling issue, the fact that patients are referred to professionals in clinical practice with whom the medical team has contact or who are working in hospitals and/or specialized clinics.

This finding is even more complex when examining the current CFFa definition for requesting or renewing the specialist title, starting in October 2023[24], in which scoring tables consider specialization and postgraduate courses, research and publications, conference participation, and so on. This study found a large number and diversity of short-term courses taken by participants in areas directly or indirectly related to phononcology, which precluded a more in-depth analysis at this time. Furthermore, it should be considered that the majority did not work exclusively in phononcology, which in itself may justify the range of courses and specializations. The 2013 preliminary mapping[15] found that a quarter of the sample worked exclusively with HNC, and more than half also worked in clinical voice, neurogenic dysphagia, and general oral-motor therapy. Other specialties, such as language and audiology, were cited to a lesser extent. Thus, a significant change in the expansion of areas of activity took place in the last decade.

Furthermore, those who, besides specialization, obtained a master's, doctoral, or postdoctoral degree or associate professorship have deepened their knowledge, but not necessarily in HNC or general phononcology. Master's, doctoral, and postdoctoral degrees are knowingly more closely related to academic careers, and many of these professionals become university professors or teach specialization courses after graduating. This finding may explain the percentage of approximately one-fifth of them who reported dedicating themselves predominantly to teaching and research, whether or not associated with clinical practice and management.

A very small proportion (18%) received additional training abroad, which could be a significant advantage for professionals. No SLH data were available on how many completed additional training abroad, but most likely have or had a connection to master's, doctoral or postdoctoral training. In this study, all but one of those who completed additional training abroad reported having such degrees or an associate professorship.

This context, in which less than half opted for these degrees (43.75%), agrees with the predominance of work in clinical practice, reinforcing the fact that many professionals choose specialization to improve their performance. Confirming this finding, the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (Coordination for the Improvement of Higher Education Personnel – CAPES) recently pointed out a downward trend in the demand for master's to postdoctoral degrees in several areas of knowledge, especially in the last 5 years. The possible reasons for this scenario have been discussed in various spheres[25].

Added to the predominance of clinical practice is the high percentage of professionals who reported more than one employment relationship, with the majority in offices/clinics and hospitals, which broadens the explanation for working in broader areas or in more than one specialty.

Regarding the topics suggested for complementary courses, it was observed that they were more specific in this research (e.g., SLH techniques and palliative care) than in the previous decade, when suggestions focused more on general phononcology. Hence, it can be inferred that, unlike years ago, basic concepts may be more widely offered in undergraduate programs and short courses, and professionals are now seeking in-depth knowledge on more specific topics, such as SLH techniques, palliative care, organ preservation protocols, and so forth. It is also worth noting the significant increase in bibliography in the field produced in recent years.

Finally, the word cloud formed with responses to the meaning of work in this field demonstrates that it is a challenging one, with an emphasis on rehabilitation and quality of life. This mapping can contribute to specific actions that professional associations, universities, and specialization programs may carry out to enhance the training and development of professionals who work or will work, even partially, in phononcology, increasingly encouraging evidence-based practice and specific SLH knowledge in voice, oral-motor therapy, and dysphagia in oncology.

Study limitations

It is important to emphasize that these results cannot be generalized to the entire population of SLH pathologists who work with HNC patients in Brazil, since the sample consisted of volunteer participants recruited through an electronic form, providing self-declared experience in the field. It is recognized that this design may favor the participation of more engaged professionals, or those with greater access to research dissemination networks, which may constitute a selection bias. To mitigate this limitation in future studies, we recommend methodological strategies that broaden the scope and representativeness of the sample, such as using institutional and professional registries, different data collection methods (in person, by phone, or at scientific events), and formulations that include probabilistic sampling.

Acknowledging these limitations and pursuing broader approaches are crucial for strengthening the evidence base for SLH in phononcology. On the other hand, the data from this study aid future SBFa strategies, especially considering that, since 2023, the Brazilian Head and Neck Conference has had a phononcology room dedicated to discussing specific topics in this area, holding up to 200 people in the last two editions, which has been sufficient to meet demand. The database may benefit from the participants in this study and the SLH pathologists present in the phononcology room at future conferences.

CONCLUSION

Phononcology practice is marked by the complexity and diversity of clinical and training contexts. The commitment of professionals in this field to developing specific knowledge is evident, as well as the recognition of the impact of their practice on the trajectory of oncological care. The diversity of roles and

the pursuit of continuous training point to the consolidation of a growing field, which requires more structured training and work policies capable of responding to the clinical, ethical, and humane demands of HNC rehabilitation.

These professionals work primarily in hospitals and private settings, with a variety of employment relationships, with self-employment being the most common. Furthermore, many SLH pathologists combine clinical practice with research, teaching, and management, suggesting a multifaceted and dynamic approach to the field. The interest in deepening knowledge of SLH techniques and palliative care reflects the phononcology needs and challenges, a field focused on rehabilitation and improving patients' quality of life. Terms such as "quality of life," "give new significance," and "challenge" were highlighted in the word cloud, demonstrating the relevance of these concepts in daily practice.

REFERENCES

1. Feitosa ALF, Depolli GT, Guimarães MF, organizadores. Mapas conceituais em fonoaudiologia - fononcologia. Ribeirão Preto: Book Toy; 2023. 424 p.
2. Nemr K. Histórico da Fononcologia no Brasil. In: Carvalho V, Barbosa EA, organizadores. Fononcologia. Rio de Janeiro: Revinter; 2012. p. 1-10.
3. Moreira MJS, Guimarães MF, Lopes L, Moreti F. Contribuições da Fonoaudiologia nos cuidados paliativos e no fim da vida. CoDAS. 2020;32(4):e20190202. http://doi.org/10.1590/2317-1782/20202019202. PMid:32756853.
4. Castilho RK, Silva VCS, Pinto CS. Manual de cuidados paliativos da Academia Nacional de Cuidados Paliativos (ANCP). 3. ed. Rio de Janeiro: Atheneu; 2021. 624 p.
5. D'Alessandro MPS, editor. Manual de cuidados paliativos. 2. ed. São Paulo: Hospital Sirio-Libanês, Ministério da Saúde; 2023. 424 p.
6. Behlau M, Almeida AA, Amorim G, Balata P, Bastos S, Cassol M, et al. Reducing the GAP between science and clinic: lessons from academia and professional practice - part A: perceptual-auditory judgment of vocal quality, acoustic vocal signal analysis and voice self-assessment. CoDAS. 2022;34(5):e20210240. http://doi.org/10.1590/2317-1782/20212021240pt. PMid:35920467.
7. Behlau M, Almeida AA, Amorim G, Balata P, Bastos S, Cassol M, et al. Reducing the gap between science and clinic: lessons from academia and professional practice - part B: traditional vocal therapy techniques and modern electrostimulation and photobiomodulation techniques applied to vocal rehabilitation. CoDAS. 2022;34(5):e20210241. http://doi.org/10.1590/2317-1782/20212021241pt. PMid:36000681.
8. Rossi VC, Moraes JL, Molento CF. Speech therapy in head and neck cancer. Rev Bras Otorrinolaringol (Engl Ed). 2021 Set-Out;87(5):495-6. http://doi.org/10.1016/j.bjorl.2021.02.002. PMid:33648852.
9. Fleming C, Robinson HF. Delivering a bespoke education programme and learning framework for the integrated speech & language therapy head and neck cancer service across Cheshire and Merseyside, within the UK. Curr Opin Otolaryngol Head Neck Surg. 2025;33(3):149-55. http://doi.org/10.1097/MOO.0000000000001042. PMid:40167995.
10. Patterson JM, Govender R, Roe J, Clunie G, Murphy J, Brady G, et al. COVID-19 and ENT SLT services, workforce and research in the UK: a discussion paper. Int J Lang Commun Disord. 2020;55(5):806-17. http://doi.org/10.1111/1460-6984.12565. PMid:32770652.
11. Dimer NA, Gabana-Silveira JC, Mezzomo CL, Goulart BNG. Fatores associados ao uso profissional de mídias sociais por fonoaudiólogos que atuam no Brasil: inquérito populacional via web. Rev CEFAC. 2022;24(3):e0922. http://doi.org/10.1590/1982-0216/20222430922.
12. Martinez LS, Pires SCF. Perfil do atendimento fonoaudiológico voltado para a Comunicação Suplementar e Alternativa. Audiol Commun Res. 2022;27:e2642.
13. Assis HS, Alves MVM, Barreto ÍDC, Rezende GES, Medeiros AMC. Perfil dos fonoaudólogos com formação em motricidade orofacial no Brasil. Audiol Commun Res. 2023;28:e2801.
14. Handcock MS, Gile KJ. Comment: on the concept of snowball sampling. Sociol Methodol. 2011 Ago 1;41(1):367-71. http://doi.org/10.1111/j.1467-9531.2011.01243.x. PMid:35095124.
15. SBFa: Sociedade Brasileira de Fonoaudiologia. Relatório do levantamento preliminar dos fonoaudiólogos que atuam em câncer de cabeça e pescoço. Comitê de Fononcologia. Gestão 2012-2014. São Paulo: SBFa; 2015.
16. CREFONO1: Conselho Regional de Fonoaudiologia - 1ª Região. CREFONO1 participa de Fórum sobre Assistência em Fononcologia [Internet]. Rio de Janeiro: CREFONO1; 2019 [citado em 2025 Fev 3]. Disponível em: https://crefono1.org.br/crefono1-promove-pesquisa-na-area-de-fononcologia/
17. CFFa: Conselho Federal de Fonoaudiologia. #Julhoverde promove prevenção ao câncer de cabeça e pescoço [Internet]. Brasília: CFFa; 2025 [citado em 2025 Jan 29]. Disponível em: https://fonoaudiologia.org.br/julhoverde-promove-prevencao-ao-cancer-de-cabeca-e-pescoco/
18. SBCCP: Sociedade Brasileira de Cirurgia de Cabeça e Pescoço. Folder Julho Verde 2024 [Internet]. São Paulo: SBCCP; 2025 [citado em 2025 Fev 3]. Disponível em: https://sbccp.org.br/julhoverde
19. CFFa: Conselho Federal de Fonoaudiologia. Quantitativo de fonoaudiólogos no Brasil por Conselho Regional 2023 [Internet]. Brasília: CFFa; 2023 [citado em 2025 Jan 29]. Disponível em: https://www.fonoaudiologia.org.br/wp-content/uploads/2023/01/CFFa_Quantitativo_Fonoaudiologos_no_Brasil_por_Conselho_Regional_202301.pdf
20. INCA: Instituto Nacional de Câncer. Estimativa [Internet]. Brasília: INCA, Ministério da Saúde; 2023 [citado em 2025 Mar 26]. Disponível em: https://www.gov.br/inca/pt-br/assuntos/cancer/numeros/estimativa
21. Cillo FS, Zenari MS, Nemr NK. Vocal hygiene: what are professional voice users saying about it on YouTube? J Voice. 2024. In press. https://doi.org/10.1016/j.jvoice.2024.08.028.
22. Brasil. Conselho Federal de Fonoaudiologia - CFFa. Resolução CFFa nº 320, de 17 de fevereiro de 2006. Dispõe sobre as especialidades reconhecidas pelo Conselho Federal de Fonoaudiologia, e dá outras providências. Diário Oficial da União [Internet]; Brasília; 2006 [citado em 2025 Fev 3]. Disponível em: https://www.fonoaudiologia.org.br/resolucoes/resolucoes_html/CFFa_N_320_06.htm
23. CFFa: Conselho Federal de Fonoaudiologia. História da Fonoaudiologia [Internet]. Brasília: CFFa; 2025 [citado em 2025 Mar 26]. Disponível em: https://fonoaudiologia.org.br/historia-da-fonoaudiologia/
24. Brasil. Conselho Federal de Fonoaudiologia - CFFa. Resolução CFFa nº 721, de 14 de outubro de 2023. Dispõe sobre os critérios para concessão de título de especialista, nas modalidades obtenção e renovação, no âmbito da Fonoaudiologia. Diário Oficial da União

[Internet]. Brasília; 2023 [citado em 2025 Fev 3]. Disponível em: https://fonoaudiologia.org.br/fonoaudiologos/como-obter-ou-renovar-o-titulo-de-especialista/

25. Colombari E. Por que o interesse em mestrado e doutorado está caindo no Brasil. Nexo Jornal [Internet]. 28 abr. 2024 [citado em 2025 Fev 3]. Disponível em: https://www.nexojornal.com.br

Appendix 1. Online Questionnaire

After reading the informed consent form:
( ) Yes, I agree and ACCEPT to participate in the study.
( ) No, I DO NOT ACCEPT to participate in the study.
1. Name
2. Email
3. Age range
( ) 20 to 30 years old
( ) 31 to 40 years old
( ) 41 to 50 years old
( ) 51 to 60 years old
( ) Over 60 years old
4. What gender do you identify with?
( ) Female
( ) Male
( ) Non-binary
( ) Prefer not to state
( ) Other
5. How long have you been working with head and neck cancer?
( ) Less than 5 years
( ) 5 to 10 years
( ) 11 to 15 years
( ) 16 to 20 years
( ) 21 to 25 years
( ) 26 to 30 years
( ) More than 30 years
6. What is(are) your degree(s)?
( ) Undergraduate
( ) Specialization
( ) Master's
( ) Doctoral
( ) Postdoctoral/Associate professorship
( ) Full Professor
7. In what year did you obtain each degree?
8. If a specialist, indicate one or more specialties whose title you have:
( ) Voice
( ) Oral-motor therapy
( ) Dysphagia
( ) Language
( ) Public Health
( ) Other:
9. Where did you obtain your bachelor's degree?
10. Have you made any improvements and/or updates (short courses: less than 500 hours)?
( ) Yes
( ) No
11. If so, how many and in which areas?
12. Did you complete specializations and/or residency (courses over 500 hours)?
( ) Yes
( ) No
13. If so, how many and in which areas?
14. If you completed a residency/postgraduate specialization, was it specifically in head and neck cancer?
( ) Yes
( ) No
15. If not, in what field?
16. If you completed a postdoctoral degree/associate professorship, was it specifically in head and neck cancer?
( ) Yes
( ) No
17. If not, in what field?
18. In which region of the country do you work professionally?
( ) North
( ) Northeast
( ) Central-West

( ) Southeast
( ) South
19. Have you done any internships abroad?
( ) Yes
( ) No
20. If so, where?
Regarding your first contact with head and neck cancer
21. When was your first contact with head and neck cancer?
( ) During undergraduate studies, in a specific head and neck course
( ) During undergraduate studies, in a class (or a few classes) within a course
( ) After undergraduate studies, during postgraduate studies (e.g., specialization, residency, etc.)
( ) During undergraduate studies, but outside of the university (in refresher courses, complementary courses, visits to institutions, etc.)
( ) Other
22. If your first contact with head and neck cancer was in postgraduate studies, at what stage did it occur?
( ) Specialization
( ) Advanced Training
( ) Residency
( ) Refresher Course
( ) Master's studies
( ) Doctoral studies
( ) My first contact with head and neck cancer was not in postgraduate studies
Speech-language-hearing practice and professional training
23. Do you work/Have you worked in head and neck cancer in the last 3 years?
( ) Yes
( ) No
24. Where did you work/Have you worked in this field in the last 3 years? Check all that apply.
( ) Office
( ) Specialized clinic/outpatient clinic
( ) General clinic
( ) Management (boards, committees, etc.)
( ) Hospital
( ) Educational institution
25. Where have you worked (in the last 3 years)?
( ) Public institution
( ) Private institution
( ) Mixed
( ) I am self-employed
( ) I am exclusively a professor
26. What is your employment relationship?
( ) Self-employed
( ) Employment contract (labor-law contract – Brazilian CLT)
( ) Statutory
( ) Legal Entity
27. What is your workload (hours/week)?
( ) Up to 20 hours
( ) Up to 30 hours
( ) Up to 40 hours
( ) More than 40 hours
28. Do you work only with head and neck cancer?
( ) Yes
( ) No
29. If not, indicate which other areas:
30. Do you consider yourself a professional predominantly:
( ) in clinical practice
( ) in research
( ) in teaching
( ) in management
31. Do you think that Brazilian speech-language-hearing therapy has advanced most:
( ) in clinical practice
( ) in research
( ) in teaching
( ) in all

( ) in none
( ) Other
Areas in need of further study
32. In which areas of knowledge do you think there is a lack of depth and/or dissemination?
( ) Mouth cancer
( ) Laryngeal cancer
( ) Thyroid cancer
( ) Salivary gland cancer
( ) Organ preservation protocols
( ) Palliative care
( ) Quality of life
( ) Speech-language-hearing techniques/therapeutic programs
( ) Other
33. Do you regularly keep up to date with scientific articles? If so, which journals/databases do you usually research/read?
The meaning of working in speech-language-hearing therapy
34. Define in one word what speech-language-hearing therapy in head and neck cancer represents to you:
Thank you for your participation!