

# Possibilities of integration between speech therapy and nutrition based on national productions

Possibilidades de integração entre a fonoaudiologia e a nutrição com base em produções nacionais

Posibilidades de integración entre la terapia del lenguaje y la nutrición a partir de las producciones nacionales

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# Abstract

**Introduction:** Interdisciplinary performance between speech therapy and nutrition contributes to a more integral care among health users, a fact that demonstrates the importance of researching their correlations. **Objective:** The purpose of this study was to verify if there is integration between the performance of the speech therapist and nutritionist, identifying the existing publications, the specialities contemplated, as well the performance of professionals in different life cycles and levels of health care. **Methods:** 3.551 electronic articles were analyzed, in the electronic journals CODAS, CEFAC, Distúrbios da Comunicação and Audiology Communication Research, between the years 2013 and 2022, through an Article Classification Protocol. **Results:** Among the analyzed publications, 274 (7,7%) integrate Speech Language and Hearing Sciences and Nutrition, especially in orofacial motricity (n=124; 26,9%), Children's Life Cycle (n=132; 43%), and secondary care level (n=97; 35,4%). **Conclusion:** it was concluded that there is an interface between the two professions, although it is still necessary to

#### **Authors' contributions:**

DRSP, GC, GHM, LMG: Study conception, Methodology, Data collection, Article design. ENN: Study conception, Methodology, Critical revision, Orientation.

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strengthen the performance in the different life cycles. Furthermore, to encourage professional practice at other levels of care, especially in the primary, to prevent nourishment disorders and promote healthy eating among users of the health system.

**Keywords**: Speech, Language and Hearing Sciences; Nutrition Policy; System Stomatognathic; Life Cycle Stages; Primary Health Care.

### Resumo

Introdução: A atuação interdisciplinar entre a fonoaudiologia e a nutrição colabora para um atendimento mais integral entre os usuários da saúde, fato que demonstra a importância de pesquisar suas correlações. Objetivo: O objetivo deste estudo foi verificar se existe integração entre a atuação do fonoaudiólogo e do nutricionista, identificando as publicações existentes, as especialidades contempladas, bem como a atuação dos profissionais nos diferentes ciclos de vida e níveis de atenção à saúde. Metodologia: Foram analisados 3.551 artigos eletrônicos disponíveis eletronicamente dos periódicos CODAS, CEFAC, Distúrbios da Comunicação e Audiology Communication Research, entre os anos de 2013 e 2022, por meio de um Protocolo de Classificação de Artigos. Resultados: Dentre as publicações analisadas, 274 (7,7%) integram a Fonoaudiologia e a Nutrição, especialmente na Especialidade da Motricidade Orofacial (n=124; 26,9%), no Ciclo Vital Infantil (n=132; 43%) e no Nível de Atenção Secundário (n=97; 35,4%). Conclusão: Concluiu-se que existe interface entre as duas profissões, porém, ainda é necessário fortalecer a atuação nos diferentes ciclos de vida. Além disso, incentivar a prática profissional em outros níveis de atenção, especialmente na primária, para prevenção dos distúrbios alimentares e promoção da alimentação saudável entre usuários do sistema de saúde.

**Palavras-chave**: Fonoaudiologia; Política Nutricional; Sistema Estomatognático; Estágios do Ciclo de Vida; Atenção Primária à Saúde.

## Resumen

Introducción: El rendimiento interdisciplinario entre la terapia del habla y la nutrición contribuye a una atención más integral entre los usuarios de la salud, un hecho que demuestra la importancia de investigar sus correlaciones. **Objetivo:** El objetivo de este estudio fue verificar si existe integración entre la terapia del habla y la nutricionista, identificando las publicaciones existentes, las especialidades contempladas, así como la actuación de los profesionales en diferentes ciclos de vida y niveles de atención a la salud. **Métodos:** Fueron analizados 3.551 artículos electrónicos, en las revistas electrónicas CODAS, CEFAC, Distúrbios da Comunicação y Audiology Communication Research, entre los años 2013 a 2022, a través de un Protocolo de Clasificación de Artículos. **Resultados:** Entre las publicaciones analizadas, 274 (7,7%) integran terapia del habla y Nutrición, especialmente en motricidad orofacial (n=124; 26,9%), Ciclo de Vida Infantil (n=132; 43%), y secundaria nivel asistencial (n=97; 35,4%). **Conclusións:** Se concluyó que existe una interfaz entre las dos profesiones, aunque aún es necesario fortalecer el desempeño en los diferentes ciclos de vida. Además, incentivar la práctica profesional en otros niveles de atención, especialmente en el primario, para prevenir trastornos de la alimentación y promover la alimentación saludable entre los usuarios del sistema de salud.

**Palabras clave:** Fonoaudiología; Política Nutricional; Sistema Estomatognático; Estadios del Ciclo de Vida; Atención Primaria de Salud.



#### Introduction

Brazilian Federal Constitution states that feeding and nutrition are social rights, acquired through basic conditions which prevent diseases and promote health, both essential to healthy growing and development of human beings<sup>1</sup>. The Organic Law of Health (8080/1990)<sup>2</sup> encourages the inclusion of this theme among the public policies of health, both in federal and state spheres, and municipal.

The National Feeding and Nutrition Policy (PNAN)<sup>3</sup> endorses the need to implement efforts to promote healthy eating among citizens in all life cycles. And the Strategy Breastfeeding and Feeding Brazil<sup>4</sup> stimulates breastfeeding from the baby's birth and adequate complementary feeding for those at the age of six months old and more.

The speech therapist is a health professional who works with orofacial motricity and thus assists in dealing with children with eating difficulties, as well as dysphagia, suction, and mastication. This professional, as he encourages breastfeeding, contributes to effective development of the baby's stomatognathic system, with the movement of the masticatory muscles and development of the bone structure, resulting in effective breathing, adequate tongue and lip posture, and development of temporomandibular joint<sup>5</sup>.

In cases of dysphagia, the speech therapist acts on the choice of the texture, consistency, and type of food that will be introduced, because with the aging there are significant alterations in the stomatognathic system which affect the function of swallowing<sup>6</sup>. In the area of Nutrition, the importance and necessity of promoting healthy eating is noticeable, encouraging the prevention of deficiency of micronutrients and chronic diseases in the population<sup>7</sup>.

Based on that, it seems that there is a theoretical proximity between these two areas of knowledge, Speech Therapy and Nutrition, because both professions work with the knowledge about eating and nutrition habits, healthy eating, orofacial motricity, swallowing, among others. However, we must question: what is the interface between them?

Thus, the aim of this study was to verify if there is an integration between the work of the speech therapist and the nutritionist, identifying the existing publications, the specialties contemplated, as well as the work of professionals in different life cycles and levels of health attention.

# **Method**

Concerning the aims proposed, instruments of data collection and analysis, it is respectively an exploratory, bibliographic, and quantitative and qualitative<sup>8</sup>. Still from the methodological point of view, it is a longitudinal and retrospective research, as it investigates through time, that is, based on records from the past. A similar work was done when the periodical publications between Speech Therapy and Occupational Therapy<sup>9</sup>, and Speech Therapy and Psychology<sup>10</sup>, were characterized.

3,551 full electronic articles indexed in Scientific Electronic Library (SCIELO) or available directly in the electronic portal of the journal were analyzed. At the moment of the investigation, four national journals in the area of Speech Therapy were available electronically: CODAS, CEFAC, Communication Disorders, and Audiology Communication Research. We highlight that Communication Disorders was not indexed in Scientific Electronic Library (SCIELO) at the moment of the analysis, but still it was considered.

For the retrospective longitudinal study, we considered a period of nine years, that is, between 2013 and 2022. We stipulated a period until the first semester of 2022 because there were no subsequent publications which had been finished and begun in 2013, because some journals did not have publications available before.

During the collection of data, we analyzed the title of the works, the abstract, and the content of the articles. We sought to verify the presence of nutritional information integrated to the work in speech therapy. This analysis was carried out by for students of a course of Speech Therapy of a public university XXX, having one of them a degree in Nutrition, as well as a professor of the discipline of Collective Health, with 60 hours lesson-time, whose program deals with the insertion of the speech therapists in the Unified Health System (SUS) and their areas of work and connections. Each work was evaluated and categorized individually, however, in case of concerns, the material was presented to the other members of the group until there was a consensus among the participants.

With the purpose of organizing systematically the information, we elaborated the "Instrument of Article Classification" (APPENDIX), adapted from another study<sup>10</sup>. We highlight that we considered, in the formatting of this instrument, the special-



ties recognized by the Federal Council of Speech Therapy, the definitions of life cycles provided by the Child and Adolescent Statute (ECA)<sup>11</sup> and the Statute of the Elderly<sup>12</sup>, as well as the Levels of Health Attention defined by the World Health Organization (WHO)<sup>13</sup>. The information was organized in graphics and tables, aiming at a qualitative and quantitative analysis.

The journals analyzed were randomized and named by letters (A, B, C, D) randomly, through an online drawing lots of instrument, in order to preserve the anonymity. This technique aims at avoiding a biased and/or partial investigation, according to the Attachment.

# Results

3,551 publications were analyzed in the period between January 2013 and July 2022, of which 274 (7.7%) related Speech Therapy to Nutrition. Among the publications, we highlight journal B, which presented a higher number of articles (n= 119; 9.3%), as it is shown in Table 1.

Table 1. Publications in the journals analyzed

Scientific journal	Publications (n)	Speech Therapy and Nutrition (n)				
Α	970	71	7,5%			
В	1273	119	9,3%			
С	777	40	5,1%			
D	531	44	8,2%			
Total	3551	274	7,7%			

Source: Elaborated by the authors

According to the data obtained and shown in Table 2, most of the publications are original articles (n= 205; 74.8%), followed by case studies (n= 26; 9.5%) and review articles (n= 25; 9.1%).

Communications, critical reviews, and letters to the editor had a low quantity in the time interval studied. There was a highlight to editorials, which there was none showing relation.

**Table 2.** Distribution of the kind of work published between 2013 and 2022, correlating speech therapy and nutrition

Type of article	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Original article	22	28	18	27	20	21	18	17	15	19	205
Case study	3	3	6	2	1	2	2	3	3	1	26
Review article	0	3	3	4	2	0	5	2	1	5	25
Communications	1	1	0	0	0	0	2	1	2	1	8
Critical reviews	0	1	1	1	0	2	2	0	0	0	7
Letter to the Editor	0	0	0	0	0	0	0	2	0	1	3
Total:	26	36	28	34	23	25	29	25	21	27	274

Source: Elaborated by the authors



Among the specialties presented, it is highlighted with a higher amount Orofacial Motricity (n= 124; 26.9%), followed by Dysphagia (n= 87; 18.9%), Hospital Health (n= 67; 14.6%) and Collective Health (n= 57; 12.4%) related to Nu-

trition. While Fluency (n= 5; 1.1%) and Labor Speech Therapy (n= 2; 0.4%) had low numbers, according to Figure 1. Forensic Speech Therapy did not show any results, that is why it was not mentioned.

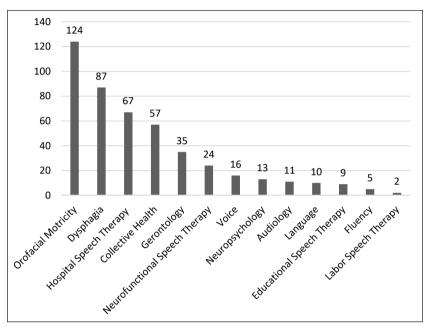
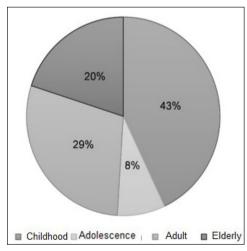


Figure 1. Distribution of the Specialties of Speech Therapy.

Concerning life cycle, the analysis of the distribution of it in the publications was also done, where most of the works focused on childhood (n=132; 43%) and with a lesser quantity adolescence (n=25; 8%). Thirty-nine articles did not identify the life cycle; therefore they were not included in Figure 2.



**Figure 2.** Distribution of life cycles correlating Speech Therapy and Nutrition.



Considering the analyses of the Levels of Attention to Health, shown in Figure 03, the Secondary Level (n= 97; 35.4%) had more emphasis than the other ones, presenting a peak in 2014 and 2020. Among the articles analyzed, forty-six did not detail

the level of health or presented information related to the complexity. It is important to mention that, in this topic, more than one article was added in more than one option.

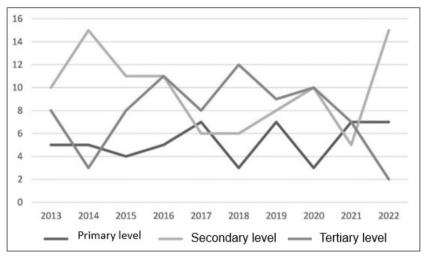


Figure 3. Distribution of the Levels of Attention to Health correlating Speech Therapy and Nutrition.

## **Discussion**

Concerning the years of publication of the works analyzed, it is possible to verify that the number is due to the Resolution of the Federal Council of Speech Therapy (CFFa) no. 453 of September 26, 2014<sup>14</sup>, which recognized new specialties of speech therapists in which many are related to the adaptation of functions intrinsically related to nutrition, like mastication and swallowing, being fostered by the recent National Campaigns of Breastfeeding, also by CFFa, which may have encouraged speech therapists to reflect about the theme of the nutritional aspects and their role in eating.

The production of scientific articles relating Speech Therapy and Nutrition did not show significant variations or continuous growth, with peaks in years of area registrations like 2014 and 2016. There was a smaller number in 2021, which may be related to the peak of COVID-19 pandemic<sup>16</sup>. In 2022, we noticed an increase in the publication of articles, which may be influenced by the regulation of the Specialty of Hospital Speech Therapy by the

Federal Council, under Resolution of CFFa no. 604, of March 10, 2021<sup>16</sup>, very connected to the eating of people hospitalized in Intensive Care Units.

Concerning the types of articles found, the most used one which relates Speech Therapy and Nutrition is the original article. According to ABNT<sup>17</sup>, the original article is a publication of original ideas and themes. Thus, it aims at researching about some subject with the purpose of developing it and adding to scientific community. In order to do so, it uses original ideas, developing them in a well-grounded and secure way. Moreover, this work had the analysis of reviews which could be defined as informative, when they comment/ show information from other authors, or criticism, when comments and criticism of the author of the review about others' work are introduced18, which were found in a lesser number, only below the Letters to the Editor.

Concerning the results of the specialties, we highlight the predominance of publications on Orofacial Motricity and Dysphagia related to Nutrition. The relation between Orofacial Motricity and Nutrition is clear in literature which demonstrates through a nutritional perspective, that Orofacial



Motricity is correlated to Speech Therapy through the mastication and swallowing muscles<sup>19</sup>.

Dysphagia is defined as a dysfunction of in the process of swallowing and may result from neurological, structural, functional disorders, as well as being a consequence of the states of debilitation, which may result in malnutrition, dehydration, aspiration pneumonia and other important complications, leading to an increase of mortality, time of hospitalization, and expenses. Dysphagia has a prevalence of around 12 to 30% of patients hospitalized<sup>20</sup>.

Another specialty that deserved attention was Collective Health, specially as it concerns to breastfeeding, in educational work with mothers and health professionals, besides assistance to premature newborns by the Public Policy of Health Kangaroo Method<sup>21</sup>, promotion of health and prevention of eating disorders and orofacial myofunctional in preschoolers<sup>22</sup> and the participation and work of the health community agents in the promotion and prevention of health<sup>23</sup>.

Research related to the specialty Speech Therapy Expertise, revealing that there are few specialist professionals working and publishing in the area currently. We observe the limited contact during undergraduate course and little knowledge about the activities performed by them, reducing the demand for such specialization. Despite the limitation of publications, the wide capacity of working is notorious, as technical assistants, administrative expertise, public services, among others<sup>24</sup>.

Concerning the primary level of health, we identified a participation of articles related to the campaigns of promotion of breastfeeding and deleterious oral habits<sup>25</sup>. While in secondary level, we highlight the rehabilitation of cases of dysphagia of mild degree associated to other diseases and facial paralysis, as in the case report<sup>26</sup> that demonstrates the importance of a multidisciplinary team involving the speech therapist for the rehabilitation of mimetic movements of the face and excitability of the damaged nerve. Cases of dysphagia were treated in a Specialization Center in Alagoas, identifying most of the cases of neurological origin as Chronic Encephalopathies, and CVAs, and of mild degree, allowing the maintenance of the oral way<sup>27</sup>.

Also, the work of the speech therapist in the tertiary level deserves highlight, especially in the Intensive Care Units, where the speech therapist works with many cases of dysphagia, participating in the choice of feeding and the diet of the patients<sup>28</sup>.

Concerning the age, there was a highlight to childhood, evidencing works which correlate studies with breastfeeding, oral motor functions in newborns and children<sup>29</sup>. There are few studies in this area with adolescents, only some articles show aspects of mastication and swallowing among this group, relating their impact in the health of obese adolescents<sup>30</sup>.

## Conclusion

This work showed that there is an integration between Speech Therapy and Nutrition. The publications are predominantly original and released in Portuguese in national journals. The studies covered mainly the specialties of Orofacial Motricity and Dysphagia, working specially in childhood, having as main scenarios the services of secondary level, that is, rehabilitation.

The speech therapy work presents an interface with the work of the nutritionists especially in cases of eating reintroduction, offering foundations to the best eating option, time of introduction, consistency, and texture. Besides, in the cases of breastfeeding, the works present techniques and exercises for the dealing with breastfeeding, especially the baby's grasp to mother's breast.

These two professions are complementary in their work, mostly in the therapeutic action and assistance. However, with respect to Collective Health, it is still necessary the expansion of the studies approaching the joint practice of prevention of eating disorders and promotion of healthy eating habits, in different life cycles of the population.

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# **APPENDIX**

# Chart 1. Instrument of classification of the articles

Title of the article:						
Journal:						
Year:						
Article	Original Article					
	Review Article					
	Case Study					
	Letter to the Editor					
	Critical Review					
	Editorial					
	Others: Specify					
Specialty	Audiology					
	Dysphagia					
	Gerontology					
	Educational Speech Therapy					
	Neurofunctional Speech Therapy					
	Labor Speech Therapy					
	Neuropsychology					
	Language					
	Orofacial Motricity					
	Voice					
	Collective Health					
	Fluency					
	Speech Therapy Expertise					
	Hospital Speech Therapy					
Life Cycle	Childhood					
	Adolescence					
	Adult					
	Elderly					
	Unidentified					
Levels of Attention to Health	Primary level					
	Secondary level					
	Tertiary level					
	Unspecified					