Speech-Language Pathology and Occupational Therapy interface: an integration of scientific knowledge

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Objective: to analyze the national scientific production of Speech-Language Therapy in the interface with Occupational Therapy (OT) based on an integrative literature review.

Methods: a selection of articles published in Brazilian journals in the field of Occupational Therapy: Cadernos Brasileiros de Terapia Ocupacional of UFSCar, Revista de Terapia Ocupacional of USP, Revista Baiana da Terapia Ocupacional and Revista Interinstitucional Brasileira de Terapia Ocupacional with the descriptors “speech therapy, speech therapist and speech-language therapy”. The sample, consisting of 10 articles, was analyzed with quantitative and qualitative procedures.

Results: the search showed publications from 2000 to 2017, with the largest number of articles in 2015. The main findings point to the language area as the most prevalent, revealing a connection between speech therapy and OT. Assistive Technology, particularly adopted with children, is a common field among the professional areas studied, with the highest incidence in the articles.

Conclusion: the analysis of the scientific production showed that the partnership between Speech-Language Therapy and OT appeared under different objectives and the public, as early intervention, actions in multiple disabilities, with the disabled child and their family, with autists in hippotherapy, in school inclusion and in assistive technology, the latter more frequently. These findings allowed reflections on the interdisciplinarity of both professions and fields of knowledge.

Keywords: Interdisciplinarity; Occupational Therapy; Speech, Language and Hearing Sciences; Information Dissemination
INTRODUCTION

This study seeks to reflect on the theme of interdisciplinarity of two professions and fields of knowledge: occupational therapy and speech therapy, from a literature analysis.

“Starting from the creation of a broader paradigm that overcomes the domination of the bio-medical model and the reductionist conceptions of the social sciences, the scientific scope of health has in its favor the direct and strategic connection with the lived world, the world of suffering, of pain and death that faces everyday. This daily appeal of service and social policy puts the health area into the unquestionable arena of life. And in the dialogue with this radically human appears its shield for the interdisciplinary qualitative leap”.

Health is constituted in each person’s way of living, with difference that depend on social, cultural, family, beliefs and political experiences, taking into account the social, biological and ethical-political dimensions of life.

It is believed that the intervention of teams consisting of more than one specialty gives more access to care based on promotion, prevention and recovery that takes into account all aspects of the subject and not just the disease.

Research related to interdisciplinarity in the health area was developed aiming to discuss the foundations, importance and obstacles of the teamwork as well as the dimensions of interdisciplinarity, proposing recommendations. It states that when addressing the importance of the Interdisciplinary Team in the treatment of quality in health, some categories that deserve greater understanding are implicit in this practice.

“First, we have to recognize that the space of the institution where the action is developed is fundamental to direct professional practice, favoring research or health care. These purposes, that is, production of knowledge or intervention, direct reflection, and interdisciplinarity, should be analyzed in both aspects. Secondly, quality treatment indicates an ethical-political conception that translates the notion of individual to the sick person or the segments that require health services and actions. This individual has rights to be protected and the first is the right to quality treatment, translated into aspects ranging from the right to information about their health status, to proper care in issues of daily living. This conception expands the team, integrating professionals who have scientific knowledge with other agents, with specific practices and roles and who are also in direct relation to the user and their families”.

The author points out the presence of two dimensions of interdisciplinarity that are highly demarcated, although interconnected and interdependent: one is the dimension related to the construction of knowledge and the other refers to the interventional action related to the intervention praxis.

Studies have been developed to describe interfaces between areas of knowledge; the current study highlights those from the fields of health and education focused on speech therapy.

In 2001, interdisciplinarity between speech therapy and psychology was studied from a descriptive perspective of a documentary nature. The objective of this study was to characterize patients who attended a private psychology and speech therapy clinic, including the integration between speech therapy and psychology. The results showed that the main complaints for the field of psychology focused on behavioral and relationship problems while in the speech therapy area, the focus was on speech, oral and written language problems. The emphasis was given to the fact that complaints occurred during speech-language interviews related to emotional and relationship problems. The need for interdisciplinary work was pointed out and discussed as intervention alternatives.

In 2013, a documentary research was developed aiming at reflections on the interface between speech therapy and special education identifying theoretical references used by authors of theses and dissertations developed in a Postgraduate Program in Special Education from 1981 to 2009, through bibliometric analysis and analysis of scientific collaboration networks. The results showed that among the most prevalent themes in the speech-language pathology interface is hearing impairment, either in relation to behaviors in deafness, reading teaching or intellectual disability in evaluation procedures, diagnosis and intervention in oral and written language.

It is observed that in various sectors, public or private, speech therapists and occupational therapists are part of the same health team. One of the current definitions attributed to Occupational Therapy is to favor improvements in health and well-being from the understanding that all people have the right to
participate fully in everyday life, that is, they have the right to choose their occupations and how to achieve them or overcome the difficulties that may make them impossible. In the field of speech therapy, the commitment to the Health Promotion of the population and the development of language transcends the traditional limits of speech therapy practice and public health and education institutions and overcomes demands on changes in language, in order to involve, as subjects of development practices, any citizens in their relationships and social contexts of coexistence.

When a communication disorder occurs, whether, for example, in voice, speech, hearing, reading or writing, it will be related to sociocultural and demographic aspects and these should be taken into account at the time of diagnosis and in the information about the subject served. Human Communication Disorders are a reference in the field of study of Speech Therapy, but taking into account the scope of the lives of the subjects involved and the need for comprehensive care, other professionals, such as speech therapists and occupational therapists will contribute to ensure the effective qualification or rehabilitation of these subjects. Thus, we understand the need for professionals in these areas to know each other and to recognize the importance of interdisciplinary work in rehabilitation that guarantees integrity in the care of the subjects served.

Sample Composition

The sample consisted of articles published in the following journals: Cadernos Brasileiros de Terapia Ocupacional of UFSCar (CaBTO), Revista de Terapia Ocupacional of USP (TO-USP Magazine), Revista Baiana da Terapia Ocupacional (BAHIANA JOURNALS) and Revista Interinstitucional Brasileira de Terapia Ocupacional (RevisBRATO). These journals were defined for the purpose of exploring and systematizing the knowledge of this field, at this first moment, analyzing what has been published in journals of this field of knowledge. Through the data found, one intends to conduct future research from national and international Speech-Language Therapy journals.

It is noteworthy that only publications available online were considered, and the period analyzed were: of CaBTO from 1990 to 2018, of Revista TO-USP from 2002 to 2018, Revista BAHIANA from 2005 to 2018 and RevisBRATO from 2013 to 2018. This period is justified because Cadernos Brasileiros de Terapia Ocupacional of UFSCar have available on the website, publications from 1990 and Revista de Terapia Ocupacional of USP, from 2002, Revista BAHIANA from 2005 and RevisBRATO from 2013.

Procedures for Data Collection and Analysis

For searching articles in those journals, we used the expressions "speech therapy", "speech therapist" and "speech-language therapy". As inclusion criteria, for sample composition, we selected articles from occupational therapy journals, which cited at least one of the search expressions, regardless of the objective, population or methodology of the study.

Twenty-three articles were recovered in the search. Subsequently, articles that, despite appearing in the search, did not contain the words in the text, were deleted. It is worth mentioning that the vast majority of the articles were excluded, since the word “speech therapy” appeared because many authors were part of the department entitled “Department of Speech Therapy, Physiotherapy and Occupational Therapy, Faculty of Medicine FMUSP, University of São Paulo”, but there were no search words in the body of the text.

Figure 1 shows the distribution of articles recovered according to the descriptors used in these journals' searches.

METHODS

Type of study

This is an integrative review study of the Brazilian scientific literature that aims to systematize the knowledge produced, regardless of its methodologies or epistemological affiliation, in order to indicate what is evident and/or unknown.
It was observed that most articles, 239 (96%), recovered with descriptors, were excluded because there were no search words in the body of the text. Thus, 10 articles (4%) of the sample had at least one of the keywords in the body of the text and dealt with Speech-Language Therapy and Occupational Therapy concomitantly.

Quantitative data were analyzed using descriptive frequency statistics and average of appearance in magazines/journals and expressed in tables and graphs. Qualitative data, i.e. related to the objectives of the studies and joint actions between occupational therapy and speech therapy, were analyzed using the content analysis technique and following one of the dimensions described in the literature: the dimension of interventional action. For this, the articles were read and reread in full to identify repeated content that can compose thematic categories. Content analysis enabled the elaboration of two thematic categories: “Conceptual Objectives and Bases” and “Praxis: areas of activity, work teams and target audience”.

**LITERATURE REVIEW**

Calculating the frequency of the articles according to the journals, we see that Revista de Terapia Ocupacional of USP had the highest number of articles and the Revista Bahiana de Terapia Ocupacional did not have any articles that corresponded with the criteria for the composition of the sample. Figure 2 illustrates the frequency in which the articles appeared in each vehicle analyzed.
In relation to the distribution of the ten articles in the analyzed period, there is a variation between one and three articles per year, and in some years there were no publications.

![Figure 3. Distribution of selected articles according to the year of publication](image)

The distribution of the articles in the period studied revealed that the year 2015 had the highest number of publications that addressed Speech-Language Therapy and Occupational Therapy concomitantly.

It is inferred that the finding in relation to the years of publication may be a reflection of ordinance No. 2,488 of October 21, 2011 approving the “National Primary Care Policy, establishing the review of guidelines and norms for the organization of Primary Care, for Family Health Strategy (FHS) and the Community Health Agents Program (CHAP)”\(^4\), which highlighted the need for a team work that allows the comprehensive care of the users of the system. In addition, this ordinance states that actions should be shared through an interdisciplinary process in which teamwork can be carried out and in which professional nuclei can integrate technical areas and different training to enrich the common field and thus expand the care capacity\(^4\).

Based on the principles and guidelines of the legislation of the Unified Health System, it is perceived the need to sensitize health professionals to an interdisciplinary look that guarantees the integrity of care in the area, as well as the production of knowledge that encourages these interdisciplinary practices. Interdisciplinarity then emerges as a way to better understand the complexity of the human being and to have an articulated view of them with their natural environment, so that this is possible to build and transform this environment\(^4\).

The thematic category “Objectives and Conceptual Bases” (FIGURE 4) reveals that the partnership between occupational therapy and speech therapy was mostly focused on Assistive Technology (N=4) followed by School Inclusion (N=2). Other objectives and conceptual bases such as Early Intervention, Multiple Disability, Functional Performance of Autistic Children in Hippotherapy and Disabled Children and their Families appeared only once.

In the thematic category “Praxis: areas of activity, work teams and target audience” (Figure 4), in relation to the areas of Occupational Therapy, we observed Early Intervention, Motor Rehabilitation, Functional Performance and Assistive Technology. Regarding the areas of Speech Therapy, the language cited in all productions of Occupational Therapy was verified. However, two studies included another area each. One study included the area of Audiology, as it involved a participant who demanded the use of individual sound amplification apparatus (hearing aids) for deafness and in another article the area of Orofacial Stimulation due to sequelae and demands of cerebral palsy.

The area of Language emphasized related Speech Therapy intervention with that of Occupational Therapy, mostly in cases involving Assistive Technology, particularly in rehabilitation processes and school inclusion processes.

Assistive Technology was defined in Brazil by the Technical Aid Committee (TAC) as a knowledge area...
| N  | Author(s)                                      | Title                                                                 | Conceptual Objectives and Bases                                                                                                                                                                                                                                                                                                                                 | Praxis: working partners/                                                                 | Target audience                                                                 | Areas of activity                                      |
|----|-----------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------|
| 1  | Peruzzolo D. L.; Oliveira L. D., Filheiro M. e Souza A P. R. | Contributions to occupational therapy practice in the area of early intervention in an interdisciplinary team | Narrate the early intervention process offered by an extension program of occupational therapy and speech therapy courses. Discuss the theoretical and practical paths for practice with babies and for occupational therapy.                                                                                                         | - Occupational Therapist and Speech Therapist                                          | Male child                                                                           | Early language and stimulation                             |
| 2  | Bruneta. R e Ferreira, C.L                     | Occupational Therapy and speech therapy: a multidisciplinary vision in multiple disability | Demonstrate the importance of interdisciplinarity in the evolution of the cognitive, linguistic and psychosocial process of children with multiple disabilities (cerebral palsy and hearing impairment) using the BOBATH method.                                                                                          | - Occupational Therapist and Speech Therapist                                          | Male child with multiple disabilities                                                | Language, Audiology, Sensory-Motor Stimulation            |
| 3  | Givigi, RCN; Mudo, BC; Diógenes, BS e Santos, IMF | Language changes and their senses: effects of a speech therapy network | Analyze the effects of an intervention with children, their families and schools.                                                                                                                                                                                                                                                                         | - Speech Therapy                                                                      | Children with language changes, aged between 0 and 5 years, their families and schools | Language                                                |
| 4  | Sant'Ann, MMM; Deliberat. D e Rocha, ANDC.     | User perception of supplementary and alternative communication and their interlocutors about the use of graphics systems | Describe the history of an alternative supplementary communication user of a user, identifying her perception and interlocutors about the media used.                                                                                                                                                                                                         | - Occupational Therapist and Speech Therapist                                          | 26-year-old woman diagnosed with Cerebral Palsy                                      | Language and Assistive Technology                        |
| 5  | Pelosi, MB e Nunes, LROP                      | The joint action of health and education professionals in inclusive school | Assessing whether the introduction of Assistive Technology favors the inclusion of students with cerebral palsy in four regular schools in the city of Rio de Janeiro when it is mediated by the joint action of health and education professionals.                                                                                                     | - Occupational Therapist and Speech Therapist                                          | Teachers, occupational therapists, speech therapists, principals, students with cerebral palsy and their families | Assistive Technology                                     |
| 6  | Bender, DD e Guarany, NR.                     | Effect of hippotherapy on functional performance of children and adolescents with autism | Identify the effect of hippotherapy on the functional performance of children and adolescents with autism comparing practitioners and non-practitioners.                                                                                                                                                                                               | - Occupational Therapist and Speech Therapist                                          | Autistic and non-autistic children participating and non-participants in hippotherapy, as well as caregivers. | Functional performance                                   |
of multidisciplinary characteristics that comprises resources, strategies, methodologies, practices and services in order to promote the functionality and participation of people with disabilities aiming at autonomy, quality of life and social inclusion. Augmentative and Alternative Communication (AAC), according to the American Speech-Language-Hearing Association (ASHA), is intended to compensate and facilitate, permanently or not, impairments and disabilities of individuals with severe disturbances of understanding and expressive communication (gestural, spoken and/or written). It is an area of clinical, educational and research practice and, above all, a set of procedures and processes aimed at maximizing communication, complementing or replacing speech and/or writing. It is recommended that the speech therapist should be attentive and attuned to the guidelines on AAC of the American Speech-Language-Hearing Association (ASHA), which highlight the responsibilities, knowledge and skills of speech therapists in relation to this area of knowledge. Thus, it is observed that assistive technology is essential to support the different stages of development and offers conditions of social participation, where thinking about daily life can be expressed through language. This area of knowledge has an interdisciplinary character and enables the involvement of many professionals at work, such as engineers, educators, occupational therapists, speech therapists,
physiotherapists, psychologists, nurses, social workers, ophthalmologists, hearing specialists, prosthetics and other areas. It is an area constituted by the expertise of many professionals that also involves users and their families. Among the various forms of Assistive Technology, the Alternative and Supplementary Communication stands out, where regardless of the system or method chosen, it is believed to be adequate to involve the work of the speech therapist professional together with the occupational therapist.

Regarding the work teams, they were constituted depending on the needs of the users and considering the realities of the places where the work was being developed.

In a partnership performance, the speech therapist can perform the first selection of vocabulary, teach the system of symbols, promote interaction strategies using Alternative Communication, promote speech skills, auditory perception, reading, writing and language development of their patients. The occupational therapist acts in the access, implementation and integration of motor and sensory aspects, evaluates and performs postural adequacy in the different activities of everyday life and acts in the development of the use of hands or other part of the body for the control of Assistive Technology. In this line, on specialties and work teams, three distinct conceptions about teamwork are identified, each highlighting the results, relationships and interdisciplinarity. In studies that highlight the results, the team is conceived as a resource for increasing productivity and rationalization of the services. Studies that highlight relationships take concepts of psychology for reference, analyzing the teams mainly based on interpersonal relationships and psychic processes. The field of interdisciplinarity concentrates the work that discuss the articulation of knowledge and the division of work, that is, the specialization of health work.

Also regarding Assistive Technology, the use of supplementary and alternative communication and its relationship with language, it is noteworthy that communication defines patterns of understanding and expression and thus create networks of exchanges between interlocutors and listeners. In this perspective, language is constructed in the relationship with the other and the child, who starts to establish meanings that gradually constitute their own language. Working with assistive technology, the activity may use a communication board, a communicator, involve the development of autonomy by a motorized wheelchair, a cooking activity with adapted resources, adapted games or writing with an electric machine, rubber letters or computer. In an integrative review of the recent international literature on the intervention of occupational therapy and the use of alternative communication resources in children with cerebral palsy, the authors stated that the selected studies showed the use of benefits of the resources and methods of Alternative Supplementary Communication in occupational therapy interventions. In addition, studies have shown that the effectiveness of these resources for people with complex problems, their communication needs depend on properly teaching these methodologies to family members and teachers. The performance of occupational therapy with Alternative Supplementary Communication is enhanced when the focus is on the significant activities of the different contexts of human development in order to promote occupational engagement. These statements strengthen the idea of the indispensable interface between the work of occupational therapist and speech-language therapist to achieve the objectives and justifies the prevalence of the theme in the articles found.

Regarding the findings about the target audience, children with disabilities were predominant in the sample articles. This fact is probably due to the fact that both areas are still strongly active in the rehabilitation of children with disabilities, especially in public institutions and non-governmental organizations focused on childhood and disability, whether physical, mental or intellectual. Adults were also mentioned as a target public in the studies of the sample in the role of children’s relatives, educators and/or occupational therapists, speech-language therapists, physiotherapists and psychologists.

It was also found that most of the authors who appeared in the search are part of a department that contains the word speech therapy in their name, being scarce the number of publications that actually deal with Speech Therapy as science. Thus, it is possible to state that despite being linked to the same department and area of activity, there are not many studies involving Occupational Therapy and Speech-Language Therapy in an inter, trans or multidisciplinary way.

These data reveal a lack of studies published that relate Occupational Therapy and Speech Therapy, even though these professions have been worked together often because of the demands of the clients. Thus, there is a need to discuss the respective spheres of work with regard to the objects of study and action that
are common, creating consensus between categories and envisioning joint and complementary publications for strengthening both areas.

The emphasis on interdisciplinary action arises in the health area at a time when the biomedical model becomes insufficient to meet the needs arising from the population which may be related to social and economic factors\textsuperscript{15,11}. We can see the need to deconstruct the practice based on the training common and frequent tasks and to propose dialogue between subjects that become usual in practice and not only in the acquisition of knowledge\textsuperscript{4}, and going beyond, creating studies, research and consequent publications that make both areas stronger.

When searching for the keyword Speech-Language Therapist in the productions of Occupational Therapy, the objective was to find aspects of collaboration among professionals of Speech Therapy and Occupational Therapy.

The word “collaboration” can be defined, according to the Dictionary of the Portuguese Language, as “Act or effect of collaborating; helping, assisting: working collaboratively”. We can perceive that the concept is broad, however we cannot deny that collaboration is, par excellence, a social and interactive process, which can be triggered by various reasons and in different ways\textsuperscript{6,22}. In some work and research environments, we can see the area called “collaborative consulting”\textsuperscript{23}, which is a style of interaction between two or more partners working together in decision making, in search of a common goal. This practice is exposed in the literature by professionals of the areas of Education and Speech Therapy\textsuperscript{24}, but according to the results, it is not found between Speech-Language Therapists and Occupational Therapists since there were no joint productions in the journals in the field of occupational therapy, although most likely the collaboration between them occurs routinely in clinics, universities or institutions. However, it is believed that this interaction between Speech-Language Therapist and Occupational Therapist that is already experienced in practice, would add value to joint work and publications on the subject and could create new perspectives, joint and collaborative reflexive actions.

It is known that the causes of language alterations and learning difficulties can vary, although there are many studies indicating neurological factors cause such problems. Advances in understanding the neurobiology of language development and learning processes will certainly contribute to an improvement in the therapeutic approach of these patients. The systematic investigation in search of precise diagnosis can direct the health professional in choosing the best treatment for each case\textsuperscript{25}. Stimulation through singing, conversation, games and reading provides the acquisition of skills that favor development. In order to start a communication process, the child must feel motivated. There should be what is called communicative intent (through speech it is possible to obtain the child’s objects of interest). This aspect arises by daily contact with people and stimulation that this interaction provides\textsuperscript{26}, which means that all professionals involved in the education and rehabilitation of children with disabilities are potential language stimulators when performing their work.

In this direction, we retake the issue of interdisciplinarity as a principle that organizes knowledge and emerged after “the exhaustion of a pattern of rationality constructed under the paradigm of natural sciences and which led to a model of science unrelated from ethical and political content”.

Currently, there is a search for recovering aspects that integrate the phenomena in social life and overcoming a fragmented scientific model. Thus, knowledge “is undivided and its fragmentation is not related to courses but it is thematic: “the themes are galleries through which knowledge progresses to meet each other”, [...] knowledge advances as its object expands\textsuperscript{27}.

In accordance with a global scenario of reorienting public policies in health, and a national scenario of redeeming democratic values and building citizenship in the country, Speech-Language Therapy begins to review the conceptions and practices that guide the construction of a new social place for this professional; a place where Speech Therapy is committed to transform this unequal and exclusionary reality in the country. It implies knowing how to make communication and language in daily practice a concrete political action that aims to produce social knowledge and culturally committed to the sharing of common goods and the transformation of the reality of education and health of the population, which contributes to overcoming social inequalities and exclusion, improving quality of life and Health Promotion of the population\textsuperscript{28}. In the same respect, occupational therapy is a field of knowledge and intervention in health, education and social action, which brings together technologies oriented towards the emancipation and autonomy of people who, for reasons related to specific problems (physical,
sensory, psychological, mental and/or social), have, temporarily or definitively, difficulties in integrating and participating in social life. 

CONCLUSIONS

The current study, based on the analysis made of the Brazilian scientific production of Occupational Therapy in its interface with Speech Therapy, allowed reflections on the theme of interdisciplinarity of both professions and fields of knowledge.

The number of studies that composed the sample was small when compared to those recovered through the descriptors, but sufficient to bring elements to inferences, reflections and questions.

The partnership between occupational therapy and speech-language therapy appeared under different objectives and public, such as early intervention, actions in multiple disability, with disabled children and their family, with autistic people in hippotherapy, school inclusion and technology, the latter being more often. It is noteworthy that the children were the target audience with greater appearance in the studies of collaborative work between speech-language therapy and occupational therapy. It is known that, historically, both areas have been active in the rehabilitation of children with disabilities.

The language area, among the areas of Speech Therapy, was the most cited in the productions, many involving Assistive Technology. It is considered that because AT is an interdisciplinary area of knowledge, it favored the finding of the speech-language pathology area of Language in addition to occupational therapeutic action. In the field of Occupational Therapy, interventions take place in motor rehabilitation, functional performance and, in common with speech-language therapy, in Assistive Technology.

This study presents limitations, since it is dedicated to the examination of data from national journals exclusively in the field of occupational therapy. Therefore, it is important to continue investigations on this theme in national journals of speech-language therapy and also in international ones, both in the field of occupational therapy and speech-language therapy. The importance of continuing investigations is based on the fact that interdisciplinary work has been considered as a possibility of promoting comprehensive care to people with different needs for a dignified life in society. In addition, we believe that following-up research in this field can promote the development of knowledge related to interventional and collaborative praxis between the areas.

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